

The Integration of Technology in Alternative Dispute Resolution Process in India

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Abstract

In today's fast paced and ever changing world, science, technology and innovation is playing a vital role in every aspect of human life. The rise of technology is transforming every profession including legal profession. It includes the use of technology in case management, legal research, contract management document automation, online dispute management and the list goes on and on. The advanced technologies such as artificial intelligence, Machine learning, automation, virtual reality, data analysis are used being rapidly used in producing efficiency, transparency and accessibility in justice delivery system in India. The Indian history of science and technology is marked with remarkable achievements from ancient to modern period. Science and technology have always been part of India's culture and with a rich tradition of natural philosophy. The traditional legal practises are being replaced by legal technology designated with integrated advanced software and digital solutions. The shift from traditional to modern technology efficient tools in justice delivery system is ensuring greater transparency and accountability in India. With technological advancements, a new notion of online dispute resolution has emerged in few years in India. The increase in virtual hearings and e filling in India has fostered the development of arbitration, conciliation and Mediation, judicial settlement and Lok Adalat. This not only have reduced courts workload but also have speed up the justice delivery system and makes it more cost effective for general public. This paper aims to analyse the impact of technology on ADR processes, its evolution in India, the benefits of online dispute resolution, the integration of technology in ADR and its future challenges.

Keywords: Technology, Law, Innovation, Science

Introduction-

The rapid growth of science and technology in today's era has brought significant and transformative changes in the dispute resolution process in India. It have also changed the alternative dispute resolution process by introducing new techniques and methods while resolving dispute by making it fast and cost effective. The problems faced by the judiciary in delivering justice can be well addressed with technological advancements equipped with operational efficiency, coordination and accessibility. Alternative dispute resolution has been an important part of dispute resolution worldwide which provides for amicable, speedy and economical settlement of dispute outside courtrooms. The use of technology in the ADR system has unfolded a new era transforming the ways disputes are settled. During ancient times, arbitration, conciliation and mediation were the means for settlement of dispute

outside the formal legal system.¹ Alternative dispute resolution may be defined as the settlement of dispute outside the scope of formal legal system. This system of dispute settlement is prevalent in India even before the Mughal Regime. India is a country of villages and among the rural folks the settlement of dispute used to be resolved by rural intellectuals and prominent persons of villages.² The Britisher's then introduced the formal legal system but due to its time costing and expensive methods of dispute people started losing faith on justice. After independence it was realised that there is need of having an alternative dispute resolution process which is less expensive and less time consuming. The concept of ADR found a well structural place in the Arbitration and Conciliation Act, 1996 which is based on the United Nations Commissions on International Trade Law (UNCITRAL) Conciliation Rules, 1980.³ The chief processes of ADR are Arbitration, Conciliation, and Mediation and Judicial settlement through Lok Adalat. The present days shows significant advancement with information technology, communication network and artificial intelligence by making the alternative dispute resolution process more efficient, effective and affordable.

Research Problem

Despite the increasing relevance and potential of technology to enhance efficiency, accessibility, and transparency in the Alternative Dispute Resolution (ADR) process, its integration in India remains fragmented and inconsistent. The traditional ADR mechanisms—such as arbitration, mediation, and conciliation—continue to face challenges related to delays, lack of standardization, and limited reach, especially in rural and semi-urban areas. While digital tools and platforms have emerged, their adoption is hindered by infrastructural gaps, digital literacy barriers, legal ambiguities, and resistance from practitioners accustomed to conventional processes. This lack of coherent technological integration undermines the goal of making ADR a truly accessible, efficient, and cost-effective means of dispute resolution in India.

Research Objective

- To examine the current state of technological integration into India's ADR mechanisms.
- To identify the key challenges and barriers that hinders the effective adoption of technology in ADR processes.
- To evaluate the effectiveness of existing legal frameworks and policies in facilitating or impeding the integration of technology within ADR mechanisms.
- To propose strategic recommendations for enhancing the adoption and implementation of technology in ADR processes.

Methods of ADR

It has to be noted that ADR has several methods. However the principle of nature justice is required to be followed while adopting any method under ADR. These methods are as follows-

¹ Dr. S.C. Tripathi, *Arbitration and Conciliation Act, 1996* 333 (Central Law Publications, Allahabad, 5th edn, 2010).

² Ibid.

³ Ibid.

1. **Arbitration-** It is the process of determination of issue where a third person is appointed as an arbitrator who is a neutral person who resolves the dispute between the parties. In this process the disputed matter is submitted to the arbitrators constituting an arbitral tribunal which possess a reasoned arbitral award binding on the parties.
2. **Conciliation**—It is another method of alternative dispute settlement where the impartial person called conciliator settles the dispute amicably and make recommendations pertaining to the dispute.
3. **Mediation**—In this process a third party assists the conflicting parties to find out the solution to their problem.
4. **Negotiation**—in negotiation there is no intervention of third party but the disputants takes their own initiative across the table to settle their dispute. It is a non binding process where discussions and deliberations take place between the parties or representatives of the parties specifically without intervention of third parties.

Technological Advancement in ADR

The legal landscape in India has witnessed a significant transformation with the integration of technology in Alternative Dispute Resolution (ADR). As courts remain overburdened with a backlog of cases, ADR mechanisms like arbitration, mediation, and conciliation have gained prominence. The infusion of digital solutions such as Online Dispute Resolution (ODR), Artificial Intelligence (AI)-driven case management, and block chain-powered smart contracts is enhancing the efficiency, accessibility, and transparency of dispute resolution in India. Following are some of the important technological advancement in ADR in India—

Online Dispute Resolution

ODR is referred as the method of resolving dispute between parties without physical appearance. It uses information technology to carry out the techniques of alternative disputes such as mediation, conciliation and arbitration. In order to adapt with the technological needs India have transformed the alternative dispute resolution process into Online Dispute Resolution. The ODR process has taken its place from 1990's when certain e commerce website allowed the customers to lodge a complaint and commence the resolution process online. In the upcoming years the system was adopted by many businesses and governments in a more sophisticated version popularly known as online dispute resolution. During the time of Covid- 19 the system has become more popular by making dispute settlement process possible. In fact in many of the occasions during Covid- 19 the judges had expressed their views on having ODR procedures across the country. As a result the legislative framework as well as the precedents set by the Supreme Court of India encourage the use of technology for dispute resolution and encourages the use of ODR techniques.⁴

Merits

1. One of the advantage of Online Dispute Resolution process is that here disputes may be resolved without physical appearance of the parties which makes the process more convenient, accessible and less costly.

⁴ Yamini Gupta, "Online Dispute Resolution: An analysis "I pleaders, November 21, 2021

2. Online dispute resolution process promotes innovation and development of new techniques in settling cases by applying technology.
3. Regarding cross border issues and international commercial disputes Online Dispute Resolution is an effective method as it facilitates communication and collaboration between parties located in different regions.
4. It also offers flexibility in choosing appropriate methods of dispute resolution such as negotiation, mediation, arbitration or conciliation.
5. The speedy disposal of cases is possible in this process without physical presence of the parties.

Challenges

1. The lack of digital facilities amongst significant portion of country's population limits the access to online dispute resolution.
2. To maintain data privacy and confidentiality related to sensitive personal data's of parties in the online resolution process is quite challenging.
3. The legal recognition and enforceability of ODR outcomes remain a significant concern, as the Indian legal system is still evolving to accommodate and validate ODR mechanisms.⁵

Legal Framework for ODR process in India

India does not have a specific legislation particularly dealing with ODR however there are certain legislations which can be invoked in the cases related to ODR. They are as follows

Information Technology Act, 2000

- **Section 10A:** This section provides legal recognition to electronic records and digital signatures, which are essential components of ODR platforms.
- **Section 43A and Section 72A:** These sections deal with compensation for failure to protect data and confidentiality and privacy of data, respectively, addressing concerns related to data privacy and security in ODR.

Arbitration and Conciliation Act, 1996:

- The Arbitration and Conciliation Act, 1996, provides a legal framework for the conduct of arbitration proceedings, including those conducted through ODR platforms. ODR can be used as a tool to facilitate online arbitration and expedite the resolution of disputes.⁶

AI Assisted Alternative Dispute Methods-

One of the significant developments of 21st Century is the integration of A into every aspects of human life. AI has also made important advancement into legal field making dispute resolution process ensuring efficiency, effectiveness and accountability. The role of AI in Mediation and Arbitration

⁵ Online Dispute Resolution (ODR) IN India, available at: <https://lawnotes.co/online-dispute-resolution-odr-in-india/> (last visited on March 11, 2025)

⁶ Ibid.

process is increasing with the growth of technology. AI is likely to come up in mediation discussions and lead to changes in the atmosphere in which mediation is conducted, even if mediators and their teams do not depend on using AI tools to assist them in their work. This implies that mediators must be aware of AI and its potential effects on the substance and setting of mediation, regardless of whether they intend to use it in their work. This begs the question of what AI-related knowledge and abilities mediators should possess or acquire. It is obvious that not everyone is suited to become a technical expert or should. AI should be understood on a basic level by all parties involved in mediation who use it or are likely to be impacted by it. Applying the idea of technological literacy to AI is a useful way to frame this.⁷ The new paths of AI assisted mediation are helping parties with effective and fair means of dispute settlement. Artificial intelligence is proving to be a valuable asset in enhancing the quality of legal work in India. While AI cannot yet replace lawyers in courtrooms, computers and robots excel at gathering information and generating legal documents. Consequently, the need for lawyers in office-based tasks may be significantly reduced. AI-driven technologies are streamlining legal documentation, accelerating processes, and boosting the overall efficiency of legal practices. However, AI-assisted mediation should be regarded as a supplementary tool that enhances the mediation process rather than replacing human mediators. It does not eliminate the necessity of human involvement but instead serves as a support system, helping mediators provide impartial assessments and recommendations for potential settlement terms.

Benefits of AI

- AI can handle various administrative tasks, allowing mediators to concentrate on fostering dialogue and strengthening relationships between parties. This can result in quicker and more effective dispute resolution.
- AI-assisted mediation can offer a more cost-effective alternative to traditional mediation by minimizing the time and resources needed to settle disputes.
- AI-driven tools can enhance the accessibility of mediation for individuals and businesses that may struggle to access traditional mediation services. For instance, AI-powered chat bots can offer initial assistance and guidance to parties before they proceed with formal mediation.
- AI can examine extensive datasets of previous cases, detect patterns, and offer valuable insights to mediators. This enables mediators to make well-informed decisions and devise more effective strategies.
- AI can promote fairness and neutrality in the mediation process by offering objective information and analysis. This helps prevent mediators from being swayed by personal biases or preconceived opinions.

⁷ Vinayak Shukla, Pragati Shreya, "Artificial Intelligence's impact on India's conflict settlement process" 12 International Journal of Creative Research Thoughts (IJCRT) 743 (2024)

Challenges-

- The integration of AI in mediation brings ethical concerns, including the risk of bias in AI algorithms and the privacy challenges associated with data collection.
- AI cannot completely replace the human aspect of mediation, which includes fostering relationships, interpreting emotions, and enabling meaningful communication.
- AI technology is continuously developing, and its effectiveness may be limited in certain situations.
- Some people may be hesitant to adopt AI in mediation, particularly those who are less familiar with technology or who prefer conventional methods.

Block chain Based Arbitration

Block chain technology provides a secure and transparent method for recording and verifying information. In arbitration, it can be utilized to establish a decentralized arbitration platform where parties can submit evidence, monitor case progress, and access the final ruling. This enhances security by minimizing the risks of fraud and data manipulation while also strengthening the enforceability of arbitration awards. Additionally, blockchain can facilitate cross-border arbitration by offering a neutral and reliable platform for dispute resolution.

The rise of block chain technology has transformed various sectors, including finance and supply chain management. Its decentralized structure, transparency, and security make it an appealing solution for numerous applications, including dispute resolution. In arbitration, blockchain-based systems present an innovative approach to resolving disputes, offering improved efficiency, transparency, and enforceability.

Block chain-powered arbitration integrates block chain technology into the arbitration process by recording agreements, managing evidence, tracking case developments, and enforcing awards. By utilizing block chain's decentralized framework, arbitration becomes more secure and transparent, effectively reducing the likelihood of fraud and data tampering.

Merits

- Block chain technology maintains an immutable and transparent record of all transactions and interactions in the arbitration process, promoting accountability and enhancing trust among all parties. By providing a verifiable and tamper-proof ledger, it ensures greater confidence in the fairness and integrity of the proceedings.
- Block chain offers a high level of security through its cryptographic mechanisms, safeguarding sensitive information and preventing unauthorized access. Its decentralized structure and encryption techniques ensure data integrity and protect against tampering or breaches.
- Block chain enhances the enforceability of arbitration awards by creating a verifiable and tamper-proof record of the dispute and its resolution. This transparency and reliability make it easier for parties to uphold and enforce awards across different jurisdictions.

- Block chain-based arbitration enhances accessibility for parties across different regions by enabling seamless cross-border transactions and communication. Its decentralized nature allows for efficient and transparent dispute resolution, regardless of geographical location.

Challenges Adopting block chain-based arbitration demands a thorough understanding of block chain technology and its applications, which can be challenging for individuals unfamiliar with the system. Overcoming this learning curve is essential for effective implementation and utilization.

- The legal and regulatory framework for block chain-based arbitration is still developing, leading to potential uncertainties and challenges for both parties and arbitrators. Navigating these evolving regulations is crucial for ensuring compliance and effective dispute resolution.
- As the number of disputes grows, block chain networks may encounter scalability issues, potentially affecting the efficiency and cost-effectiveness of block chain-based arbitration. Addressing these challenges is essential to maintaining smooth and timely dispute resolution.
- Ensuring seamless interoperability between various block chain platforms can be challenging. However, it is crucial for enabling cross-border arbitration and ensuring that arbitration awards are recognized and enforced across different jurisdictions.

The Future of Technology in Dispute Resolution---

The field of dispute resolution is undergoing significant transformation, driven by the integration of advanced technologies into both alternative dispute resolutions (ADR) and traditional litigation. Looking ahead, several emerging trends are set to reshape how conflicts are managed and resolved. One particularly promising innovation is the adoption of digital twins—virtual representations of physical entities or systems. This technology enables legal professionals to generate highly accurate simulations of dispute scenarios, providing valuable insights into potential outcomes. By allowing parties to visualize the consequences of different choices before engaging in formal dispute resolution, digital twins can enhance decision-making and streamline the resolution process. With the rapid adoption of online dispute resolution (ODR) platforms, artificial intelligence (AI)-powered case analysis, block chain-based smart contracts, and digital twins for scenario simulations, ADR is becoming more technology-driven than ever before. These advancements not only streamline arbitration and mediation processes but also reduce the burden on traditional courts, making justice more accessible to businesses and individuals alike. The integration of virtual and augmented reality in evidence presentation, along with cloud-based solutions for seamless case management, further enhances the efficiency of ADR mechanisms. Moreover, online dispute resolution (ODR) platforms powered by generative artificial intelligence are emerging as powerful tools for resolving commercial disputes.⁸ However, challenges such as digital literacy gaps, cyber security concerns, and regulatory frameworks need to be addressed to fully harness the potential of these innovations. As India continues to embrace digital transformation across various sectors, the legal system must adapt accordingly, ensuring that ADR processes remain not only technologically advanced but also transparent, cost-effective, and user-friendly. By overcoming

⁸ Anupoma B U, "The role of Technology in Alternative Dispute Resolution and Litigation : Bridging the gap for resolving commercial disputes" Journal of Emerging Technology and Innovative Research (JETIR) 582 (2024).

these challenges and fostering a robust ecosystem for legal technology, India can set a global benchmark in the seamless integration of technology in dispute resolution, ultimately ensuring fair and timely justice for all.

Conclusion

The integration of technology in alternative dispute resolution (ADR) is revolutionizing the way disputes are managed in India, offering a more efficient, accessible, and cost-effective alternative to traditional litigation. With the rise of online dispute resolution (ODR) platforms, artificial intelligence (AI)-driven analytics, block chain-enabled smart contracts, and immersive technologies like virtual and augmented reality, ADR is becoming more sophisticated and streamlined. These advancements not only enhance decision-making but also significantly reduce the time and cost associated with dispute resolution. However, challenges such as digital literacy, data security, and the need for a strong regulatory framework must be addressed to ensure widespread and effective implementation. As India moves forward in its digital transformation journey, embracing technological innovations in ADR will be crucial in reducing the backlog of cases, improving access to justice, and strengthening the legal ecosystem. With continued investment, policy support, and awareness, India has the potential to emerge as a global leader in tech-driven dispute resolution, making legal processes more transparent, efficient, and user-friendly for all stakeholders.