



Jus Corpus Law Journal

Open Access Law Journal – Copyright © 2025 – ISSN 2582-7820

Editor-in-Chief – Prof. (Dr.) Rhishikesh Dave; Publisher – Ayush Pandey

This is an Open Access article distributed under the terms of the Creative Commons Attribution-Non-Commercial-Share Alike 4.0 International (CC-BY-NC-SA 4.0) License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium provided the original work is properly cited.

Role of Technology in Modernizing the Indian Court System

Aradhya Yaduvanshi^a

^aSymbiosis Law School, Nagpur, India

Received 06 December 2024; *Accepted* 07 January 2025; *Published* 11 January 2025

Technology integration into the Indian judicial system marks the era of technological transformation, which makes the Indian legal system more effective, accessible, less costly, and transparent. The beginning of this era was marked by the digitalization of court records in the 1990s, followed by other developments like E-courts and other online tools like SUPACE, SUVAS, and NJDG. Technology-based innovations like ODR, smart contracts based on blockchain, AI, and data analysis help in case management and reduce case pendency. This technology helps marginalized groups have easy access to Justice. Despite these developments, there are challenges like high implementation costs, the need to train court staff and legal professionals, data security concerns, privacy rights violations, AI based on an algorithm that can generate a biased result, and more. So, the government and Judiciary must address these issues to ensure the smooth transformation of technology into a legal system by addressing ethical and privacy concerns. As the world is continuously evolving, technology's role in the future will still play a pivotal role in bringing transparency, easy accessibility, and an effective justice delivery system.

Keywords: *judiciary, digitalization, e-courts, smart contract, online dispute resolution, data analysis, transparency, blockchain.*

INTRODUCTION

The Judiciary is considered the guardian of the Indian constitution because it is responsible for the interpretation and protection of the Constitution, and is one of the fundamental pillars of democracy. The introduction of technology in courts started in the 1990s with computerization in court, led by the National Informatics Centre (NIC). Significant developments happened in courts with the launch of the E-courts project in 2005 under the National E-governance Plan, which centres on digitalization, Online access to case records, and a court management system. SUPACE (Supreme Court Portal for Assistance in Court Efficiency) is launched to benefit from AI in legal research.¹ During the COVID-19 lockdown, video conferencing was started to hear cases of under-trial prisoners and reduce their transportability to the court. During COVID-19, courts were forced to use technology for court proceedings because of the lockdown. Courts adopt virtual proceedings as a new normal. So many websites have come into existence, like Indian Kanoon, the Ministry of Legal Affairs website, and so many others, which give information about recent judgments, case laws, socio-legal issues, etc. The Judiciary uses AI as research tools, blockchain, and digital platforms to enhance transparency, accessibility, and effectiveness.

DIGITALIZATION OF COURT RECORDS AND VIRTUAL HEARING

The initial introduction of digitalization in court started in 1990 with computerization in courts. SUPACE, SUVAS (Supreme Court Vidhik Anuvaad Software), and CIS (Case Information Software) are technology tools that detail all the crucial judgments and cases. National Judicial Data Grid is a website that provides information about cases, decisions, and laws. During the lockdown, many case trials were held through video conferring. The Judiciary accepted video conferencing to hear trials during the lockdown. One of the famous cases is the Salem Advocate Bar Association v Union of India², a trial through video conferencing. Supreme Court and High

¹ 'CJI launches Top Court's AI-Driven Research Portal' *The Indian Express* (06 April 2021) <<https://indianexpress.com/article/india/cji-launches-top-courts-ai-driven-research-portal-7261821/>> accessed 03 December 2024

² *Salem Advocate Bar Association v Union of India* (2004) 6 SCC 344

Court, at the start of the lockdown, heard about 4,82,942³ And 78,82,941 cases through video conferring. The district court and the subordinate court heard about 2,01,57,517 at the beginning of the lockdown. Digitization of court records aims to make them more Judiciary more efficient, accessible, and transparent. It is still an ongoing process. Digitizing the case record makes it easy for lawyers, judges, and ordinary people to access cases, judgments, and laws. It will reduce the need to reach every file for cases physically. By clicking a button, judges and staff can access information about cases. Documents are securely stored online without any fear that documents can lost or misplaced. Ordinary men can track their cases, see the progress of the cases, and prioritize the older cases. All these things can reduce the case's pendency. It will also minimize corruption because the file will be uploaded online directly without any physical hand, reducing any chance of corruption. The landmark judgment, *Swapnil Tripathi v Supreme Court of India*⁴ opened the gate for the live streaming of constitutional matters and cases of national importance. Gujrat High Court became India's first high court to livestream its proceedings. These moves of the Supreme Court and High Court ensure transparency among people. Digitalization of records reduces paper consumption, providing a sustainable and eco-friendly environment. With the digitalization of court records, the unprivileged groups accessing the internet can access legal records.

E-COURTS IN INDIA

E-court is a mission in which the judicial process is done using technology. Its project partners with the Department of Justice and the E-committee of the Supreme Court across the district and lower courts of India to deliver Justice more efficiently and transparently. It is funded by the Department of Justice, the Ministry of Law and Justice, and the government of India for district courts to address India. It aims to make justice delivery systems faster and more effective, economical, transparent, accessible, and affordable and improve judiciary productivity. The E-court project started in 2007. Many court complexes are equipped with computers, LANs, and case information software (CIS), which provide basic facilities to lawyers

³ 'Video Conferencing' (Ministry of Law and Justice) <<https://doj.gov.in/video-conferencing/>> accessed 03 December 2024

⁴ *Swapnil Tripathi v Supreme Court of India* (2018) 10 SCC 609

and court staff. About 14,249 district and subordinate courts have computerised. Phase I ended on 13 March 2015.⁵

Phase II received approval from the honourable Chief Justice of India on 8 January 2014. The government approves it on 4 August 2015, aiming to improve technology in court to make it more technology-friendly. In this phase, existing courts are provided with a computers per courtroom. The court, which is not covered under Phase I, is now covered under Phase II. the modern infrastructure provided to the office of the district legal service authority and Taluka Legal Service committee is computerized. Judicial officers and court staff were trained to use technology. More local languages were added to the court website to make information available to many people. Certain certified documents were made available online to be easy to download; ePayment gateways were made for payments., fines could be deposited online, and more. The National Judicial Data Grid (NJDG) was improved. Now, it gives information about courts, the government, and the public. The first e-court in India was the Karkardooma complex, inaugurated by Hon'ble Justice SH.A. P Shah in 2008. High Court of Gujrat, Patna, Madhya Pradesh, Uttarakhand, Jharkhand, Gauhati, Orissa, and the honourable Supreme Court started the online live streaming of cases.⁶

AI IN LEGAL RESEARCH

Traditionally, legal research is done by manually searching the library, reading printed published reports, and interpreting the law. Artificial Intelligence (AI) is a technology that enables computers to perform tasks that generally perform with human intelligence. AI in legal research means using Natural language processing (NLP) and machine learning to analyse legal information, which legal professionals use in their professional work. Legal research, done manually, requires employees and consumes a lot of time. If legal research is done through AI, research has fewer chances of human error and will be more time-saving than traditionally by reaching physically through every file. Research done by the National Legal Research Group reveals that research done using AI tools completes their work 24.5% faster than research done

⁵ 'Computerisation Of Courts' (PIB, 08 August 2024) <<https://pib.gov.in/PressReleasePage.aspx?PRID=2042986>> accessed 03 December 2024

⁶ Video Conferencing (n 3)

by legal professionals by traditional methods.⁷ NLP is a significant factor in legal research that helps to understand complex legal language. The NLP tool can reveal essential facts and points in legal documents, allowing legal professionals to prepare the case. Let's manually compare legal research accessibility to legal research using AI. We can see the difference in that, traditionally, legal professionals visit the library to collect information for research. The library has limited books and resources, but in the case of AI, it has lots of world information; it is not limited.

BLOCKCHAIN FOR LEGAL TRANSPARENCY

Blockchain stores the digital record that records digital transactions across many computers in decentralized and often in public ways. The legal system has gone through significant changes in the past two decades. One of the essential changes is integrating the legal system into blockchain technology, which will make legal systems more accurate. Blockchain technology allows law firms to store and validate accurate data without going into paperwork. Blockchain in the legal sector can be used for smart contracts, financial transactions, litigation, etc. Smart contracts are the most recognized use of blockchain technology. A smart contract is made automatically and more accurately, with fewer chances of human error because of blockchain. It will automatically execute the contract when both parties complete all the formalities like payments, agreeing on conditions, signature, etc. With smart contracts, lawyers do not have to spend more time drafting the contracts. They can utilize this time for other work, like giving legal advice. Today, many companies are working on blockchain technology to benefit the legal system. Intellectual property lawyers can also use this technology to establish evidence for creators, register, handle IP rights, and many more. It maintains information records like proof of ownership and date of creation established by the investor. This recorded information can help to reduce future IP-related disputes. It allows parties to work directly with interested parties without the interference of third parties because it provides a decentralized IP marketplace. Legal documentation, which is created by blockchain, is more rigid and accurate. There is less chance of temper, damage, and misuse than paper documents. However, blockchain technology makes these documents more accurate, inflexible, and less prone to

⁷ *Ibid*

temper. It will play a pivotal role in the future of law as society develops. People want more accuracy and transparency, which can be achieved through blockchain technology. It can make legal documents more rigid and accurate. There is no set of rules and regulations for its governance in India. India has not accepted any definition of a smart contract. While some countries have recognized blockchain-based records and smart contracts, 47 states in the US adopted the Uniform Electronic Transactions Act (UETA), which allows electronic signatures and contracts. Arizona, Nevada, and Vermont are the states that regulate smart contracts on the blockchain. Countries are trying to make specific rules and regulations on blockchain.

ONLINE DISPUTE RESOLUTION (ODR)

ODR is a type of dispute resolution that resolves disputes through technology. It includes Information communication and technology (ICT). ICT is a dynamic concept that uses a wide range of technology to store, access, and share data. It includes cell phones, social networking, computer networks, etc. Communication technology in ODR consists of the telephone, which advances audio-visual tools, smart devices, emails, etc. Initially, ODR was considered similar to Alternative Dispute Resolution (ADR). ODR includes mediation and negotiation. In ADR, disputes are resolved out of litigation, mainly without technology, while ODR involves technology for solving disputes. But now ODR become more advanced and goes beyond Electronic-ADR. ODR resolves many interpersonal disputes, consumer-to-consumer (C2C), marital separations, court disputes, interstate conflicts, etc. It also resolves business-to-consumer (B2C) disputes, including E-commerce disputes. ODR's characteristics are that it can be used in cases during, before, and after the case settlement; it is distinct from ICT, which has advantages. If we settle the dispute through court, that will be more expensive. Court dispute resolution is more of a burden and stressful, making it cost-saving for both parties. We know that in India, there is a large pendency of cases. It takes around five years on average to solve one case. ODR saves time since we do not need physical presence in court. We have to submit the argument whenever we have time and also need not the presence of both parties simultaneously. The government took steps to establish the ODR committee, established by the Supreme Court of India in 2005, to implement ICT in the Judiciary. Before COVID-19, it was slow, but after COVID-19, it became the priority of the government; in 2016, the Ministry of Consumer Affairs

established the Online Consumer Mediation Centre (OCMC) at the National Law School India University, Bengaluru; Samadhan Portal launched by govt to resolve payment delays dispute of micro and small enterprise; E-ADR launched by govt in 2019 to solve dispute out of court with the use of advance technology.

ACCESS TO JUSTICE: BRIDGING THE GAP THROUGH TECHNOLOGY

Article 21⁸ guarantees all citizens the right to Justice. However, still, people from marginalized groups and unprivileged groups feel that going to court for Justice will be more stressful, take longer waiting years, be expensive, etc. Let us understand how marginalized groups and unprivileged areas have limited access to Justice. A report published by Harvard Law School stated that many factors are responsible for this, such as geographical barriers.⁹ About 68% of India's population lives in rural areas where they have limited access to legal resources. This urban-rural barrier limits access to Justice for rural people. Case pendency of about 31 million cases are still pending in Indian courts as of 2022.¹⁰ Due to this, people face difficulty in accessing Justice. There are almost 1.4 million registered advocates in India¹¹. However, a large number of advocates are present in urban areas. There are very few advocates present in rural areas. This is because advocates get fewer work opportunities in Ruler areas. They are more concentrated in urban areas. Economic barriers people face financial issues due to high ligation fees. They face lots of expenses like transportation. Still, this gap can be decreased by introducing technology into the legal system. The introduction of technology in the Legal system makes Justice a more accessible, cost-effective, and fast justice delivery system. The introduction of technology in the legal system can have various advantages. First, there are free legal resources: there are many websites that give information about laws, social issues, socio-legal issues, etc. People from urban to rural can get information by using cell phones and the internet. Second, now legal professionals have their websites, which provide facilities like virtual legal clinics and online consultations. These, especially people from rural areas, can seek legal advice without

⁸ Constitution of India 1950, art 21

⁹ Harvard Law School on legal profession, *India national report: ILAG Conference* (2023)

¹⁰ *Ibid*

¹¹ Amal Kumar Ganguli, 'Overview of the Legal Profession in India' (*Union Internationale de Avocats*) <<https://www.uianet.org/en/actions/overview-legal-profession-india>> accessed 03 December 2024

geographical barriers. Third, ODR is like a game-changer for people living in rural areas. They can have access to Justice online. ODR has a flexible system. Whenever a person is free, they can submit their arguments. Fourth, legal documentation makes technology easy, such as smart contracts on the blockchain. The smart contract automatically executes the contract when information, signature, and aggressive conditions are met.

CHALLENGES ASSOCIATED WITH EMERGING TECHNOLOGY IN THE LEGAL SYSTEM

Many challenges come with implementing technology in the legal system. First, the amount of data collocated by the Judiciary is enormous, so the Judiciary must secure this data. If there is any breach of this, it will lead to a loss of trust in the Judiciary. Second, AI is used in legal research, and AI is based on algorithms that can be biased, so the government must make an algorithm in a way that is not biased. If it is biased, it can lead to unexpected circumstances. Third, many legal professionals are not familiar with modern technology, so the government must train these professionals for the smooth functioning of technology in the legal system. Fourth, emerging technology can violate privacy rights. For example, AI is based on an algorithm that collects data from other works without the permission of the creator of the data. Fifth, implementing modern technology in the legal system is very costly.

DATA ANALYSIS IN CASE MANAGEMENT

ADR and ODR were introduced in India to decrease the pendency of the cases. However, despite this, the case pendency does not decrease. Now, the government is considering using AI and data analysis in case management to help the judges. AI can study a more significant amount of data. This will help judges analyse specific trends and make a decision. Data analysis can potentially explore the legal system and suggest where there is a need for reform. For example, there are a lot of false rape cases, so data analysis studying these false cases can tell the trend of these cases, which law is most misused, and can suggest reform. However, the government has to check its algorithm and design the algorithm in an unbiased way.

RECOMMENDATION TO ENHANCE EFFECTIVENESS

To integrate the Indian legal system into technology, every courtroom must have a reliable internet connection from urban to rural areas. All courts should have high-speed internet facilities and video conferencing set up. Everyone should know how to use it for proceedings and other court work to make judges, court staff, and advocates familiar with technology. The government should conduct seminars and workshops so that they know how to use them ethically and correctly. AI algorithms should be developed in a way that is designed to respect individual privacy rights. The government should introduce national standards to implement technology across the nation. Legislature should introduce to define and regulate AI in legal research, blockchain, smart contracts, etc. The Government should include more types of cases under ODR mechanisms that will make justice delivery fast. The government should run an awareness campaign to make people aware of ODR so that they can opt to use ODR to solve disputes. In the future, the Judiciary should use AI for just assistance rather than decision-making to avoid dependency on AI. The government should translate the judgment into the local language and upload it to the court's website so that even people who know only their local language can read it.

CONCLUSION

Technology integration into the Indian legal system marked a technology era for increasing efficiency, accessibility, and transparency. From the digitalization of court records to making courts more modern through the introduction of e-courts, ODR, and the adoption of smart contracts on the blockchain, this development in the Judiciary has to remove geographical and economic barriers. It ensures Justice is accessible to rural areas, unprivileged, and marginalized groups. Tools like SUPACE, E-ADR, smart contracts, AI, and data analysis for case management can assist judges during cases to reduce case pendency. However, there are some challenges also, like data security concerns, high implementation costs, AI based on algorithms that can be biased, and legal professionals needing to be trained in technology. Through the efforts of the government and the Judiciary, these issues can be addressed to maximize the benefit of technology while safeguarding ethical and privacy concerns. As the legal system evolves, technology will improve the judiciary's effectiveness and strengthen our country's democracy.