

Indian Judicial System in Digital Age – Issues, Challenges and Way Forward

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Abstract

The Indian judicial system, rooted in a rich tradition of legal principles and constitutional values, is facing a transformative moment in the digital age. The rapid rise of digital technology has brought about significant changes in the way justice is delivered, accessed, and perceived in India. From virtual courts to e-filing systems and digitized case records, the integration of technology into the judiciary has the potential to enhance efficiency, reduce pendency, and improve transparency. These advancements promise to make the justice delivery system more accessible, especially for those living in remote areas who previously faced logistical barriers. This digital transformation also brings a unique set of challenges. Issues related to data security, digital privacy, and cyber threats pose significant risks to the integrity of judicial proceedings. The digital divide in India, where a substantial portion of the population lacks internet access or digital literacy, threatens to exacerbate inequalities in accessing justice. Moreover, the adoption of technology raises concerns about maintaining the sanctity and confidentiality of sensitive legal information in a digital ecosystem. The Judiciary's shift to digital platforms has not been without hurdles. Virtual hearings, while necessary during times of crisis like the COVID-19 pandemic, have been criticized for their limitations in ensuring effective communication, fair representation, and a comprehensive evaluation of evidence. The challenge of adapting traditional courtroom procedures to digital settings raises questions about fairness, due process, and the potential biases that may arise from technology-driven decision-making. As the Indian judiciary navigates this digital transformation, there is a need for a balanced approach that harnesses the benefits of technology while addressing its challenges. Establishing robust digital infrastructure, training legal professionals, ensuring data security, and creating inclusive platforms for marginalized communities are crucial steps in ensuring that technology enhances rather than hinders the delivery of justice. The future of India's judicial system lies in embracing innovation while safeguarding its foundational principles of fairness, transparency, and accessibility.

Keywords: Digitalization, Indian Judiciary, Cyber Security, E-Court.

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Introduction

The advent of the digital age has brought transformative changes across various sectors, including the judiciary. The Indian judicial system, long criticized for delays, inefficiencies, and limited accessibility, has increasingly embraced technology to address these challenges. From e-filing systems and virtual hearings to digital case management and online dispute resolution, the integration of digital tools aims to make the judicial process more efficient, transparent, and accessible to the public. The COVID-19 pandemic further accelerated this transition, compelling courts to adopt virtual platforms for hearings and proceedings. According to the **e-Courts Project Phase II Evaluation Report 2022**, more than **18 crore cases and 3 crore judgments** have been digitized across Indian courts, highlighting the scale of digital adoption. Initiatives like the **e-Courts Project**, launched under the National e-Governance Plan, and the Supreme Court's move towards paperless courts are significant milestones in this journey. These developments promise not only to reduce the backlog of cases but also to enhance accessibility for individuals from remote and underserved areas. The digitalization of the judicial system also presents unique challenges. Issues such as digital literacy, cybersecurity threats, inadequate infrastructure, and the digital divide exacerbate disparities in access to justice. Except that questions surrounding the security of sensitive legal data, the ethical use of artificial intelligence in legal judgments, and the preservation of judicial independence in the face of technological disruptions remain critical concerns.

Major Issues Associated with the Digital Functioning of the Judiciary

The digitalization of the judiciary offers potential for improved efficiency and accessibility. It also presents significant challenges, such as unequal access to technology, infrastructure limitations, and concerns regarding cybersecurity and digital literacy. To ensure that digital transformation benefits all citizens and maintains the integrity of the legal system, these issues must be effectively addressed. Some of the key issues associated with the digital functioning of the judiciary are:

- **Digital Divide:** A significant gap exists in access to digital infrastructure between urban and rural areas. While urban courts are often equipped with advanced technology, rural and remote regions face challenges such as poor internet connectivity and limited access to digital resources, which hinder their participation in virtual judicial processes.
- **Infrastructure Gaps:** Many courts, especially at the subordinate level, lack the infrastructure necessary for smooth digital functioning. Issues like unreliable internet services, outdated hardware, and inadequate technical support hinder the effectiveness of digital operations within the judicial system.
- **Digital Literacy:** The lack of digital literacy among legal professionals, court personnel, and litigants creates a significant barrier to the successful implementation of technology. In particular, stakeholders in lower courts often

struggle with adapting to technology-based procedures like virtual hearings and e-filing, which slows down judicial processes.

- **Cybersecurity and Data Privacy:** As more judicial data is digitized, concerns over cybersecurity arise. Courts face the risk of data breaches, unauthorized access, and cyberattacks that could compromise sensitive legal information. Strong data protection frameworks are essential to maintain the integrity and trustworthiness of the judicial system (**Wylde et.al., 2022**).
- **Case Backlog Management:** While digital tools are intended to reduce case backlogs, the transition to a digital system often experiences delays due to technical issues, resistance to change, and inadequate training, which may worsen the existing backlog problem rather than resolve it (**Pandey & Pathak, 2024**).
- **Ethical Issues with AI:** As artificial intelligence starts playing a role in legal processes such as case research and judgment preparation, ethical concerns emerge. Issues like potential bias in AI algorithms and an over-reliance on automated decision-making may undermine the fairness and independence of the judicial system.
- **Cost of Implementation:** Setting up and maintaining digital infrastructure requires substantial financial resources. Courts, particularly in economically underdeveloped regions, face challenges in securing the necessary budget to modernize their technological frameworks and support long-term digitalization efforts.
- **Access and Inclusivity:** The transition to virtual hearings may exclude marginalized groups who lack access to digital devices or the necessary skills to participate in online proceedings. This raises concerns about equity and the fair delivery of justice to all citizens.
- **Judicial Independence:** Relying on third-party vendors and external technology providers for digital infrastructure introduces potential risks to judicial independence. The judiciary must ensure it retains control over its digital systems to prevent undue external influence on legal processes.

As digital transformation in the judiciary holds immense position for greater efficiency and accessibility, addressing challenges such as the digital divide, infrastructure gaps, cybersecurity risks, and ethical concerns is essential. Ensuring equitable access, maintaining judicial independence, and securing robust funding will be crucial for successful digital integration.

Challenge in the way to E - Judiciary in India

The transition to e-judiciary in India promises enhanced efficiency and accessibility, but several challenges hinder its progress. Issues like inadequate infrastructure, digital literacy gaps, cybersecurity concerns, and resistance to change pose significant barriers. Overcoming these challenges is vital to ensuring that the

digital transformation of the judiciary serves all citizens equitably and strengthens the justice system.

With the arrival of e-Court concept the amount of data that needs to be managed and protect will be a mammoth and ultimate challenge for the judiciary. Based on data generated in the established e-Court, almost 85k files with 1.3TB data will be generated per year. System can't afford to lose even a single file as it makes the entire records unreliable and invalid in judicial terms. Currently H.264 video format has been used with AES encryption for video recording which may be change/upgrade in the future therefore it is required to develop methodology for Interoperability of ever changing media formats/codecs (**Prakash et.al, 2018**). The shift towards an e-judiciary in India offers significant potential for improving efficiency, transparency, and accessibility in the legal system. However, several challenges must be addressed to ensure a successful implementation.

- **Digital Access Gap:** A noticeable gap in digital access exists between urban and rural regions. While urban centers benefit from advanced technological infrastructure, rural and remote areas often struggle with poor internet connectivity, limited access to digital devices, and low digital literacy, which hinder participation in e-judiciary processes.
- **Inadequate Technological Infrastructure:** The successful implementation of e-judiciary relies heavily on reliable infrastructure. Many courts, especially at the district and subordinate levels, face challenges such as outdated technology, inconsistent internet connections, and a lack of technical support, all of which impede the effectiveness of digital judicial operations.
- **Limited Digital Proficiency:** A significant barrier to e-judiciary adoption is the lack of digital literacy among judicial officers, court staff, and litigants. Many individuals, particularly in lower courts, find it challenging to adapt to new technology like e-filing and virtual hearings, which leads to inefficiencies and delays in the judicial process.
- **Cybersecurity Risks and Data Protection:** As judicial data moves online, concerns about data breaches and cyberattacks grow. Protecting sensitive legal information from unauthorized access and tampering is crucial to maintaining the trustworthiness and integrity of the judicial system. Implementing robust cybersecurity measures is essential to safeguard legal records (**Amal Chandra, C., 2024**).
- **Resistance to Technological Change:** There is considerable resistance to the adoption of digital tools within the judiciary, especially among legal professionals, court staff, and some judges. This reluctance can delay the transition to an e-judiciary and hinder the optimal use of digital platforms due to insufficient training and understanding.
- **Financial Constraints:** The shift to an e-judiciary requires substantial financial investments in technology, infrastructure, and training. Many courts, particularly those in economically challenged areas, struggle with limited budgets, which

makes it difficult to allocate adequate funds for the necessary technological upgrades.

- **Ethical Concerns in AI Integration:** The incorporation of Artificial Intelligence (AI) in areas like case management and legal research raises ethical questions. Concerns about bias in AI algorithms, the potential loss of transparency, and over-reliance on automated decision-making challenge the fairness and independence of judicial processes.
- **Exclusion of Marginalized Groups:** The move to an e-judiciary could inadvertently exclude marginalized groups who lack access to digital devices or reliable internet connections, or who struggle with digital literacy. Ensuring that digital judicial processes are accessible to all, including vulnerable groups, is vital for equitable justice delivery.

E-judiciary offers significant potential to enhance efficiency and accessibility, challenges such as digital infrastructure, literacy, cybersecurity, and inclusivity must be addressed. Overcoming these hurdles will ensure a more effective and equitable digital judicial system in India.

Suggestion and Recommendations

To successfully implement e-judiciary in India, several steps must be taken. One of the most important is improving digital infrastructure, especially in rural and remote areas where access to technology is limited. Ensuring that courts in these areas have reliable internet, updated hardware, and technical support will help make the justice system more accessible to everyone. Digital literacy is another key factor. Judges, court staff, and litigants need training to effectively use digital tools like e-filing systems and virtual hearings. This training should include both basic digital skills and specific guidance on using court-related platforms. Ensuring strong cybersecurity is also vital to protect sensitive judicial data. Implementing robust security measures will prevent unauthorized access and cyberattacks, while regular security updates will keep the system safe.

To encourage adoption of digital technologies in courts, offering incentives to judges and court staff who effectively implement these tools can help. Highlighting the benefits, such as time savings and improved efficiency, can encourage broader acceptance. Adequate funding is also necessary for ongoing upgrades to technology, training programs, and the improvement of court infrastructure, which will support the long-term success of the e-judiciary. The use of artificial intelligence (AI) in the judiciary also raises concerns. It is important to ensure that AI tools are tested for fairness and transparency, to prevent biases. Establishing clear guidelines for AI usage will ensure that it enhances, rather than compromises, the integrity of the judicial process. Inclusivity is essential to ensure everyone has access to the system. Measures should be taken to assist people who do not have access to digital devices or are unfamiliar with technology. This might involve providing alternative ways to engage with the judicial system.

Collaboration with technology experts is crucial for developing and maintaining digital systems in courts. Their expertise will ensure that digital platforms function smoothly. Regular monitoring and evaluation of the e-judiciary system will help identify areas for improvement. Feedback from judges, court staff, and users will be vital to make necessary adjustments. At last but not least raising awareness among the public about the availability of e-judiciary services, the benefits of virtual hearings, and how to use online platforms will ensure that everyone can participate in the digital judicial system. This will help make the transition to e-judiciary more inclusive and beneficial to all.

Conclusion

The adoption of digital technology within India's judicial system offers significant opportunities to improve efficiency, accessibility, and transparency. Digitizing case records, optimizing case management, and facilitating virtual hearings can help reduce delays and enhance the overall performance of the judiciary. However, challenges such as the digital divide, infrastructure shortcomings, cybersecurity risks, and the need for digital literacy must be addressed to ensure equitable access to justice, particularly for individuals in remote and underserved areas. Concerns related to the ethical application of technology, especially artificial intelligence, need careful attention to safeguard fairness and transparency in legal processes. It is crucial to manage these technologies in a way that prevents biases. In addition, upgrading technology and providing comprehensive training for legal professionals and court personnel is essential for the effective use of digital tools. Cybersecurity protocols are also vital to protect sensitive judicial data from unauthorized access and breaches, thus maintaining the integrity of the system. Ensuring that the digital judicial infrastructure is inclusive is key, so all individuals, regardless of socio-economic background, can access online services. By focusing on enhancing infrastructure, promoting digital literacy, and ensuring data security, India's judiciary can fully leverage the potential of digital transformation, creating a more efficient, accessible, and fair justice system for all.

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