

# INTEGRATION OF TECHNOLOGY INTO THE JUDICIAL PROCESS: ENHANCING ACCESSIBILITY, CAPABILITY, AND EFFICIENCY IN JUSTICE DELIVERY

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## ABSTRACT

Technology has become an indispensable tool for strengthening judicial systems worldwide. In India, the integration of digital processes within the judiciary has revolutionized access to justice, transparency, and administrative efficiency. From e-filing to virtual hearings and artificial intelligence-assisted case management, technology is redefining how justice is delivered. This article examines the impact of digitalization on the Indian judicial process, highlighting both the progress achieved and the challenges that remain. It argues that a technologically empowered judiciary enhances accessibility, builds institutional capability, and ensures efficient justice delivery — reaffirming public trust in the rule of law.

## KEYWORDS

Judicial Technology, e-Courts, Access to Justice, Artificial Intelligence, Virtual Hearings, Digital Judiciary, Indian Legal System, Case Management, Legal Reform

## INTRODUCTION

Justice is a fundamental right guaranteed under Article 21 of the Constitution of India, encompassing not only fair trial but also **timely and affordable access** to legal remedies. Yet, the Indian judiciary faces challenges of **enormous case backlogs**—over 50 million cases pending as of 2025—leading to prolonged delays in justice.<sup>1</sup>

Technology has emerged as a transformative force capable of bridging systemic gaps. The introduction of **Information and Communication Technology (ICT)** in court administration has enhanced transparency, accountability, and accessibility.<sup>2</sup>

The Supreme Court of India and the Ministry of Law & Justice have consistently emphasized that “**technology is an enabler, not a disruptor**” in judicial reform.<sup>3</sup> By integrating digital tools into traditional court processes, India is witnessing a paradigm shift from a manual, paper-based system to a **data-driven, technology-assisted judicial ecosystem**.

## EVOLUTION OF JUDICIAL DIGITALIZATION IN INDIA

### EARLY REFORMS: THE FOUNDATION PHASE

The modernization of Indian courts began in 2005 with the **National Policy and Action Plan for Implementation of ICT in the Judiciary**, initiated by the **e-Committee of the Supreme Court of India**.<sup>4</sup>

The first phase of the **e-Courts Mission Mode Project (2007–2015)** achieved significant milestones:

- Computerization of over 14,000 district and subordinate courts.

- Introduction of the **Case Information System (CIS)** for cause lists, judgments, and case status.
- Creation of the **National Judicial Data Grid (NJDG)** — a digital repository enabling real-time monitoring of case pendency.<sup>5</sup>

This phase laid the groundwork for digitized record-keeping and improved data visibility within the judicial network.

## 2.2 Phase II: Expansion and Integration (2015–Present)

The second phase of the e-Courts project aimed at **interconnecting courts and enhancing user accessibility**. Key developments include:

- Launch of **e-Filing, e-Payment, and e-Summons** platforms.
- Development of **JustIS App** for judicial officers to manage cases digitally.
- Deployment of **Video Conferencing Systems (VCS)** to facilitate remote hearings, especially during the COVID-19 pandemic.<sup>6</sup>

The pandemic accelerated digital adoption, transforming video hearings from emergency measures into **a new normal** for certain categories of cases.<sup>7</sup>

### ENHANCING ACCESSIBILITY AND TRANSPARENCY

#### DEMOCRATIZING ACCESS TO JUSTICE

Technology has enabled citizens to engage with the justice system irrespective of geography or socio-economic barriers. The **e-Courts Services Mobile App** provides real-time updates on case status, judgments, and hearing dates in regional languages.<sup>8</sup>

For marginalized litigants, digital tools reduce dependency on intermediaries, lowering costs and delays. The **NJDG portal**, accessible to the public, ensures transparency in judicial performance and empowers citizens to monitor justice delivery.<sup>9</sup>

#### BRIDGING THE DIGITAL DIVIDE

However, digital transformation must remain inclusive. Ensuring last-mile connectivity and digital literacy is essential to prevent technology from becoming an instrument of exclusion.

### ENHANCING CAPABILITY: ARTIFICIAL INTELLIGENCE AND DATA ANALYTICS

Artificial Intelligence (AI) is gradually transforming judicial functioning. Tools like **SUPACE (Supreme Court Portal for Assistance in Court Efficiency)** are being piloted to help judges with research, data extraction, and drafting assistance.<sup>11</sup>

Predictive analytics can help identify bottlenecks in case flow management, while **machine learning algorithms** may support uniformity in sentencing or bail decisions.<sup>12</sup> Nevertheless, AI must complement—not replace—judicial discretion. Judicial ethics and accountability remain the cornerstone of technological integration.

### EFFICIENCY AND THE FUTURE OF DIGITAL JUSTICE

#### STREAMLINING CASE MANAGEMENT

The transition to **paperless courts** through e-filing systems has significantly reduced administrative delays. In High Courts like Delhi and Kerala, virtual cause lists, electronic evidence submission, and AI-based document indexing have streamlined procedures.<sup>13</sup>

The **National Service and Tracking of Electronic Processes (NSTEP)** initiative has minimized delays in serving summons, improving procedural efficiency across jurisdictions.<sup>14</sup>

## **TOWARDS A UNIFIED DIGITAL ECOSYSTEM**

The vision for **Phase III of the e-Courts Project (2023–2026)** is to create a **One Nation–One Platform** for integrated judicial services, including cloud-based case management, virtual courts, and blockchain-enabled record authentication.<sup>15</sup>

Such innovations are not merely administrative reforms—they mark a shift toward a **technologically empowered justice system** capable of meeting the demands of the 21st century.

## **CHALLENGES AND ETHICAL CONSIDERATIONS**

While technological integration enhances efficiency, it also raises critical issues:

- **Data Privacy and Cybersecurity:** Sensitive judicial data must be protected against unauthorized access.
- **Algorithmic Bias:** AI tools must be transparent and auditable to avoid reinforcing systemic biases.
- **Digital Exclusion:** Rural and underprivileged populations risk being left behind without adequate infrastructure.

Therefore, **technological neutrality and ethical oversight** must guide all future digital interventions in the judiciary.<sup>16</sup>

## **CONCLUSION**

The integration of technology into the judicial process represents one of the most profound reforms in India’s legal history. By improving accessibility, enhancing institutional capability, and streamlining procedures, digital transformation has brought justice closer to the people.

However, technology must remain **a servant, not the master** of justice. As the judiciary embraces innovation, it must safeguard constitutional values of fairness, transparency, and equality. Only when technology is harnessed to uphold these principles can India truly achieve the ideal of “*Justice—delayed no more.*”

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