E-JUSTICE IN INDIA: PROGRESS, PITFALLS, AND THE PATH FORWARD IN THE DIGITAL AGE

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ABSTRACT

India's e-justice journey, initiated by the Supreme Court's e-Courts project in 2005, seeks to transform justice delivery into an affordable, accessible, efficient, time-bound, transparent, and accountable system, primarily to address substantial case backlogs. Significant progress includes the digitization and digital preservation of case records, deployment of video conferencing facilities, and development of core services like e-filing, e-payment, and e-summons. Key achievements also feature the National Judicial Data Grid (NJDG), offering real-time information on millions of pending cases, and the Case Information System (CIS), serving as the master application for case administration and a platform for e-filing and e-payment. These efforts, backed by substantial funding, aim to streamline judicial administration, reduce pendency, and enhance public trust by minimizing human interaction to curb corruption. However, the implementation faces critical pitfalls such as a persistent digital divide, leading to unequal access to technology and internet connectivity, particularly in rural areas, and potential marginalization. Other challenges include poor data quality, lack of standardization, technical glitches, and insufficient training for judges, lawyers, and court staff, compounded by concerns over data security and privacy and resistance to change. The Vision for Phase III of the e-Courts project maps a forward path towards "Digital Courts" by transforming judicial processes through a foundational digital infrastructure based on open APIs and an "ecosystem" approach. This includes leveraging Artificial Intelligence (AI) for intelligent scheduling and case analysis, strengthening data governance, and ensuring inclusive design to overcome the digital divide and foster a fair, fast, simple, and low-cost justice system in India.

Keywords: e-Courts Project, Judicial Digitization, Digital Justice in India, Access to Justice, Artificial Intelligence in Judiciary

Introduction

The global judicial landscape is experiencing significant changes, driven by the need to adapt to the digital age and improve efficiency. This move towards e-justice accelerated due to global events like the COVID-19 pandemic, which required the quick adoption of digital tools to keep judicial functions operating amidst health protocols. Fundamentally, the objective of law is to ensure justice, legal certainty, and legal expediency for everyone. Implementing electronic trials and digital court systems is an important way to achieve these goals, aiming for a legal system that is simple, fast, and low-cost.

For India, the need for digitalization is especially pressing, due to substantial case backlogs and pendency that have created a long-standing challenge for its justice system. In 2018, approximately 27 million cases were pending in Indian courts, with around 8.4% of these cases pending for over ten years. By 2023, this figure rose to approximately 44 million cases. The inefficiency of conventional trials, with time-consuming and complex processes and accessibility issues for litigants, worsens this problem. The large number of cases also leads to a high citizen-to-judge ratio and significant pressure on judges to resolve cases quickly.

To address these significant issues, the Supreme Court of India launched the e-Courts project in 2005. This initiative aims to make the justice system more affordable, accessible, efficient, time-bound, transparent, and accountable for everyone seeking justice. This transformation aims to streamline judicial administration by integrating Information and Communication Technologies (ICT). The goal is to reduce case backlogs, enhance public trust, and minimize corruption by limiting direct human interaction in routine processes.

This research paper examines India's e-justice journey, focusing on the e-Courts project as the nation's primary effort in judicial modernization. The study aims to understand its implementation, achievements, and the challenges faced. By exploring both progress and pitfalls, this paper highlights how digital transformation can lead to a more equitable and efficient justice system. The paper will first trace the history and development of e-justice in India, detailing the phases of the e-Courts project. Next, it will highlight the progress and achievements, including important technological developments. Subsequently, it will address the pitfalls and challenges that have limited effective implementation. Finally, the paper will outline the path forward, providing recommendations and future directions to achieve the vision of "Digital Courts" in India.

The Genesis and Evolution of E-Justice in India

India's journey towards digital justice is a response to the pressing need for judicial reform, driven primarily by the considerable burden of pending cases and the inherent complexities of traditional court proceedings. The integration of Information and Communication Technologies (ICT) has thus become a critical strategy to enhance the efficiency, accessibility, and transparency of the legal system.

A. Early Computerization Efforts (Pre-2005)

The initial steps towards computerizing the Indian judiciary began modestly. The Supreme Court of India was first computerized in 1990 by the National Informatics Centre (NIC). However, attempts to extend this modernization to lower courts faced early hurdles. In 1997, NIC's effort to computerize all district courts under a Centrally Sponsored Scheme proved unsuccessful, a failure attributed to factors such as a lack of leadership, insufficient resources, and an incomplete understanding of ICT's potential in the judiciary.

Subsequent efforts targeted a limited number of subordinate courts in two stages. The first stage, spanning 2001-2002, saw the sanction of a centrally-funded pilot project for the computerization of 700 city courts in the four metropolitan cities of Delhi, Mumbai, Chennai, and Kolkata. This phase, initially estimated at Rs. 10.60 crore, reportedly incurred significantly higher costs, although the exact figures vary in official records (e.g., Rs. 18.22 crore or Rs. 17.26 crore). The second stage, undertaken in 2003-2004, extended computerization to an additional 900 courts in state capitals or cities with High Courts, at an estimated cost of Rs. 24.81 crores. These early initiatives, however, were characterized by multiple budgetary revisions and overlapping schemes, indicating a discernible lack of policy clarity and institutional coordination from the outset.

B. The Supreme Court's e-Courts Project (2005 Onwards)

The formal and comprehensive push for e-justice truly began with the Supreme Court's e-Courts project.

1. Inception and Strategic Planning

The genesis of the e-Courts project can be traced to a proposal by then Chief Justice of India

(CJI) R.C. Lahoti in 2004 to establish an e-Committee. This led to the formation of a committee under the chairmanship of Justice G.C. Bharuka, which, on May 11, 2005, submitted a "Strategic Plan for Implementation of Information and Communication Technology in Indian Judiciary". The e-Committee recognized that while ICT could support judicial processes, a "clear vision and a scientific action plan for meaningfully using the potential of ICT tools" was missing. The Strategic Plan advocated for a centrally devised National Policy and Action Plan, following consultations with all High Courts, the Central Government, State Governments, and other stakeholders. The overarching goal was to achieve "speedy, qualitative and cost-effective justice, reducing harassment and corruption or enhancing transparency and accountability". This Action Plan proposed a three-phased implementation to integrate ICTs into Indian courts.

2. Phase I (2007-2015)

The first phase of the e-Courts project received approval from the Cabinet Committee of Economic Affairs (CCEA) on February 8, 2007, with an initial budget of Rs. 442 crore. This budget was subsequently revised on September 16, 2010, to Rs. 935 crore, more than doubling the original amount. This revised figure alone exceeded the budget originally proposed for *all three phases* of the project.

The initial phase of India's e-Courts project, Phase I (2007-2015), outlined several key objectives and deliverables aimed at establishing a foundational digital infrastructure for the judiciary. This phase focused significantly on hardware installation and network connectivity, including the creation of computer rooms in all court complexes with internet provisioning and the establishment of Local Area Networks (LANs). A critical component was the deployment of essential system software, such as operating systems (OS), Relational Database Management Systems (RDBMS), and office packages. To support these systems, a centralized facility for system administration was also established.

Beyond infrastructure, Phase I emphasized equipping judicial personnel and enhancing their digital literacy. This included the provision of laptops to approximately 15,000 judicial officers and judges. Concurrently, initial Information and Communication Technology (ICT) training was provided to judicial officers and staff for the first year, ensuring they could effectively utilize the new systems. A major software development during this period was the Case Information Software (CIS), which served as a core application for case management. Finally, to enhance transparency and accessibility for the public, Phase I saw

the launch of the e-Courts national portal, providing online access to case status, cause lists, and judgments.

Despite these ambitious goals, Phase I encountered significant challenges. Project deliverables initially framed in 2007 lacked fundamental components such as the digitization of pending cases and provisions for uninterrupted power supply, which had to be added later as "learnings". There were delays in site preparation, LAN implementation, and hardware installation, contributing to cost overruns. Furthermore, a lack of effective, stable, and reliable Wide Area Network (WAN) connectivity emerged as a significant hindrance. Although officially concluded with extended timelines up to March 30, 2015, some modules remained unfinished, with reports indicating approximately 95% completion by March 2016. The indefinite timelines for completion also posed challenges for accountability.

3. Phase II (2015 Onwards)

Building on Phase I, the plan for Phase II was finalized by the e-Committee in January 2014 and approved by the Government of India in August 2015, with a substantial budget of Rs. 1,670 crores. This allocation was nearly double the original budget estimate for the entire three-phase e-Courts project and more than seven times the initial Phase II estimate from 2005.

Building on the foundational work of Phase I, the objectives for Phase II of the e-Courts project were considerably expansive, aiming to further integrate Information and Communication Technologies (ICT) into the Indian judiciary. This phase sought to expand the ICT infrastructure by provisioning additional hardware. Covered courtrooms received one to three new systems, while newly established courtrooms were equipped with two to six systems. A significant goal was to connect all remaining court complexes with jails for video conferencing, moving beyond routine remands to include the recording of evidence in sensitive cases. To enhance knowledge management, Phase II also aimed to develop a Judicial Knowledge Management System, which encompassed an Integrated Library Management System and the use of Digital Libraries.

Furthermore, this phase prioritized the implementation of Free and Open-Source Solutions (FOSS) for the deployment of required software. Strategic objectives included workflow automation and a comprehensive assessment of judicial performance utilizing data from the

National Judicial Data Grid (NJDG). To improve citizen-centric services, a focus was placed on developing mobile-based service delivery through SMS and mobile applications. Finally, Phase II also aimed to discontinue the use of manual registers wherever feasible, marking a move towards a more paperless environment in court administration. These objectives collectively aimed to make the justice delivery system more accessible, efficient, and transparent.

By 2019, 75.5% of the objectives outlined in Phase II were reported as accomplished. However, Phase II also faced its share of pitfalls. The budget approval document set the timeline for completion at "four years, or until the project is completed, whichever is later," creating an ambiguous and practically unmonitorable deadline. There were issues of underspending of allotted funds and a lack of coordination and effective communication between different ministries regarding budgetary specifics. Data quality issues, including missing section numbers, inconsistent case classification, and erroneous data input, also persisted, limiting the utility of the collected data. Furthermore, despite planning for decentralized implementation to curb delays, the actual commencement of Phase II was delayed by over ten months.

C. Vision for Phase III: Towards "Digital Courts" (2022)

The Vision for Phase III of the e-Courts project, formally accepted in September 2022 by then CJI Lalit, represents a significant conceptual shift. Moving beyond mere digitization, it envisions a "natively digital" judicial system that fundamentally transforms existing processes for a digital environment, rather than simply replicating paper-based workflows. This ambitious vision is rooted in Mahatma Gandhi's talisman, aiming to provide expeditious and inexpensive access to justice for all citizens, especially the marginalized, by leveraging technology as a powerful tool for equity, efficiency, access, and inclusion.

Phase III proposes an "ecosystem approach" to achieve scale, speed, and sustainability, encouraging collaboration among public, private, and citizen sector actors. It prioritizes the creation of a foundational Digital Infrastructure with open APIs, standards, and specifications, enabling the development of an infinite number of services and solutions.

For Phase III of the e-Courts project, key goals include ensuring the installation of relevant hardware, alongside reliable connectivity and power supply, with an expanded scope for solar

energy adoption. A central objective is the adoption of a comprehensive data governance framework that carefully balances the principle of open courts with privacy and security considerations, addressing cybersecurity and interoperability with artificial intelligence. This phase also prioritizes the creation of Judicial Trustworthy Digital Repositories (JTDRs), which will serve as authoritative digital case registries featuring unique Case Number Records (CNRs) and QR codes to track the lifecycle of cases. Furthermore, a goal is the development of a comprehensive and updated repository of case law that is freely accessible and indexed through coordination with High Courts and open APIs. To enhance efficiency and data analysis, documents will be made machine-readable and secure through technologies such as Optical Character Recognition (OCR), smart forms, digital signatures, and blockchain to ensure integrity and authenticity. The project also aims for the implementation of intelligent scheduling systems, leveraging Artificial Intelligence (AI) to optimize judicial time by coordinating the schedules of various actors. Finally, a critical goal is strengthening the Interoperable Criminal Justice System (ICJS) to integrate data seamlessly across police, prisons, and courts by developing data standards and protocols.

The vision also emphasizes user-centric design, promoting accessibility and inclusivity for all individuals, including those with disabilities and limited digital literacy. This includes multi-lingual access and support through initiatives like e-Seva Kendras and help desks. To guide this transformation, a new institutional and governance framework is proposed, featuring a Digital Courts Technology Office (DCTO) in the short term, evolving into a statutory National Judicial Technology Council (NJTC), responsible for strategic direction, design, and standards. High Court Computer Committees (HCCCs) and Technology Offices at High Courts are envisioned for localized implementation and configuration. Continuous investment in comprehensive training, robust governance, and effective feedback mechanisms are identified as crucial for successful adoption and sustained improvement.

Progress and Achievements of E-Justice in India

India's e-justice initiative, spearheaded by the Supreme Court's e-Courts project, has yielded substantial progress since its inception, transforming various facets of the judicial system. These efforts demonstrate a concerted drive towards a more affordable, accessible, efficient, time-bound, transparent, and accountable justice delivery system for all citizens.

A. Core Systems and Infrastructure Development

The e-Courts project has successfully established a robust foundation through the development and deployment of critical ICT systems and infrastructure. A fundamental achievement has been the scanning, digitization, and digital preservation of case records, including legacy documents, creating a digital repository for future reference and minimizing paper-based processes. This effort provides a crucial base for all administrative functions in the judiciary, contributing to environmental sustainability by reducing paper usage and the associated carbon footprint. The project has also significantly expanded video conferencing (VC) facilities, with 3,477 court complexes now equipped for remote hearings. These facilities link courts with jails, enabling not only routine remands but also the recording of evidence in sensitive cases, thereby reducing delays caused by physical distance and addressing health concerns. The National Judicial Data Grid (NJDG) stands as a significant outcome, functioning as an online, real-time information system that provides data on millions of pending and disposed cases across various levels of Indian courts. This powerful monitoring tool aids in identifying, managing, and reducing case pendency. It includes valuable classifications by case type (civil and criminal), age, and categories such as cases involving women and senior citizens, although there remains a need for more detailed classification to provide deeper insights. A similar portal, the High Court-NJDG, exists for High Courts, enhancing transparency and public access to judicial information. The NJDG allows the public and litigants to view case status, cause lists, and information related to past hearings. This publicly available data is indispensable for independent empirical research and for making data-based policy decisions.

The e-Courts project in India has successfully developed and deployed several critical Information and Communication Technology (ICT) systems and services aimed at modernizing the judiciary. Central to these efforts is the Case Information System (CIS), which serves as the master application for case administration. The CIS, which is based on free and open-source software, not only manages cases but also facilitates crucial services such as e-filing, e-payment, and e-summons. These core litigant services have been implemented to simplify legal processes, offering greater accessibility, efficiency, and transparency to all stakeholders.

E-filing in India is implemented as a two-stage process. The initial stage involves uploading files through the designated portal, www.efiling.E-Court.gov.in. Once uploaded, these files

are then processed by the CIS. This system is accessible to registered advocates and in-person parties, who are required to fill out various forms, including those for the petitioner, respondent, additional information, case type (act/section), and extra parties, before uploading necessary documents, power of attorney, and advocate cards. This digital approach enables 24/7 filing, significantly enhancing convenience. Similarly, e-summons are now implemented using the e-summon system within CIS 3.0. This system generates "relaas", official notifications and summons, with special templates and QR codes, delivering them to the parties' verified electronic addresses, such as email or telephone numbers. While the first hearing summons for the plaintiff or applicant can be electronic, the first summons for the defendant or respondent is typically manual, unless they agree to electronic trials. Finally, e-payment allows for the online payment of court fees, fines, penalties, and judicial deposits. This system utilizes virtual account codes, often in collaboration with state banks like Bank Syariah Indonesia (BSI), Bank Negara Indonesia (BNI), Bank Mandiri, and Bank Tabungan Negara (BTN), making the process more transparent and efficient.

To further streamline case management and enhance transparency, the project has introduced several unique identifiers. A Unique Case Number Record (CNR) is assigned to each case, serving as a vital locator for efficient data processing and facilitating interactions with other related services, such as video conferencing, e-filing, or scheduling. QR codes are used to link with pleadings, orders, and judgments, providing easy access to all related documents of a particular case. These QR codes are also integrated into e-summons to protect their validity and minimize misadministration. A Judicial Officer (JO) Code provides a unique ID for every judge, enabling the tracking of case statistics and building capabilities for judicial assessment. Additionally, national codes for case types and legislation have been developed to establish back-end standardization for diverse case classification systems across different High Courts, enabling the collation of comparable metadata at both state and national levels. The National Service and Tracking of Electronic Processes (N-STEP) is a GPS-enabled application that tracks the service of processes by bailiffs or process servers, increasing accountability and transparency in the delivery of summons. This system helps save time for litigants and lawyers, eliminates manual processing by registry officials, and resolves disagreements over document receipt.

A significant effort towards integrated justice delivery is the Interoperable Criminal Justice System (ICJS). This initiative aims to integrate data and ensure seamless interoperability

among various pillars of the justice system, including the police, prisons, courts, legal aid authorities, and forensic labs. The goal of the ICJS is to accelerate processes, prevent procedural lapses, and ensure the efficient execution of judicial orders. While the ICJS project has commenced sharing certain data, such as PDF versions of First Information Reports (FIRs), many systems still function in silos and are not fully interoperable. Strengthening these linkages is critical to maximizing the benefits of ICT adoption by eliminating data duplication across platforms and reducing delays in the transmission of documents, such as the immediate transmission of release orders from courts to prisons.

The e-Courts project has laid a robust foundation through the deployment of essential physical infrastructure and user-friendly mobile applications. Fundamental Information and Communication Technology (ICT) infrastructure, including the installation of hardware and software across approximately 13,500 courts, has been a key achievement. This includes the creation of Local Area Networks (LAN) and the establishment of Wide Area Network (WAN) connectivity through optical fiber cable, with speeds ranging from 10 Mbps up to 100 Mbps, depending on the number of functioning courtrooms in a complex. Further supporting these digital efforts, solar energy backup has been provisioned in 242 court complexes. Complementing this infrastructure are various mobile applications designed to enhance accessibility. The JustIS Mobile App has been launched for all judges in the district judiciary, offering details of cases in their courts along with case management features such as calendaring. For the public, a free downloadable e-Courts Services App provides easy access and search functionalities for relevant case information, including status, orders, and cause lists, often utilizing QR codes for quick retrieval. These mobile applications offer real-time access to essential judicial information, further integrating technology into daily legal processes for both the judiciary and litigants.

B. Enhanced Transparency and Accessibility

The e-Courts project has substantially advanced the transparency and accessibility of judicial services in India, aiming to create a justice delivery system that is more accessible, efficient, time-bound, transparent, and accountable for all citizens. A significant achievement is the unprecedented public access to judicial information through the National Judicial Data Grid (NJDG), the e-Courts portal, and various mobile applications. These platforms provide real-time data on case status, cause lists, daily orders, and judgments, empowering citizens with

immediate access to accurate and up-to-date information.

Furthermore, the implementation of services such as e-filing, e-summons, and video conferencing has significantly reduced the necessity for physical presence in courts, offering remote participation options for litigants and lawyers. This remote access is particularly beneficial for individuals in rural or low-income regions who face geographical and financial barriers to traditional court attendance, thereby helping to bridge the digital divide. The initiative also aims for improved legal awareness by bringing judicial procedures closer to the common person, directly from reliable sources, thus preventing exploitation by intermediaries and fostering a better understanding of legal rights and remedies. To support this, E-Seva Kendras have been established at High Courts and district courts, complemented by digital and remote helpdesks. These centers and helpdesks provide crucial assistance with e-filing, online payments, inquiries about case status, copies of orders in vernacular languages, and guidance on legal aid, playing a critical role in empowering litigants and lawyers with limited digital access. While these services are still evolving, they represent a conscious effort to ensure effective and equitable access to justice for all citizens.

C. Increased Efficiency and Streamlined Case Management

The e-Courts project has made notable strides in enhancing efficiency and optimizing case management within the Indian judiciary. A fundamental achievement is the automation of routine judicial and administrative tasks, which has significantly streamlined processes. This includes activities such as case filing, scrutiny, registration, and allocation, as well as the computation of court fees and the issuance and online publication of certified copies of orders and judgments. This automation is designed to improve existing physical processes, making them inherently more efficient. These initiatives are crucial for achieving a significant reduction in case pendency and eliminating "dead time" in judicial processes, thereby moving towards a simpler, faster, and more cost-effective justice system. For instance, a process such as warrant expedition, which once consumed two weeks, can now be completed in "thousandths of seconds" due to digitization and computerization, drastically reducing downtime. The project has also focused on Digital Case Management Systems that allow for secure access to digital case files from anywhere, supported by features for authentication and document integrity. This system greatly enhances the ease of searching, tracking, and indexing documents, providing real-time benefits for judges and lawyers in accessing facts and legal

precedents. Furthermore, the establishment of virtual courts has enabled the online adjudication of specific proceedings, such as traffic challans, probate proceedings where no objectors appear, small cause money claims, and mutual consent divorce pleas. This automation reduces the burden on traditional courts and allows for the optimal use of judicial time, particularly for cases that do not require the extensive application of judicial mind in traditional hearings. These efforts collectively aim to enhance judicial productivity both qualitatively and quantitatively, making the justice delivery system more affordable, accessible, and time-bound.

D. Budgetary Allocations

The commitment to e-justice is further evident in the substantial budgetary allocations. Phase I was initially approved with Rs. 442 crore, and later revised to Rs. 935 crore. Phase II received an approval of Rs. 1670 crore. Most recently, Phase III secured an approval of Rs. 7,210 crore over a four-year period beginning in 2023, reflecting a continuous investment in modernizing the Indian judiciary. These funds support the enhancement of justice delivery and the reduction of case backlogs.

Pitfalls and Challenges in E-Justice Implementation

Despite the significant strides made in modernizing India's legal system through e-justice initiatives, the implementation of these technologies has encountered a range of pitfalls and challenges. These obstacles span issues related to digital access, technical operationalization, human and institutional resistance, and inconsistencies in policy and budgeting. Addressing these challenges is crucial for the successful and equitable advancement of digital courts.

A. Digital Divide and Accessibility Barriers

A significant challenge to e-justice implementation is the digital divide and unequal access to technology, particularly in rural India, which can lead to further marginalization of vulnerable populations. While e-courts aim to make the judicial process easier and more efficient, individuals in remote regions with limited internet connectivity find it difficult to engage in virtual court hearings. This disparity in access exacerbates existing inequalities in legal representation. Many litigants, particularly those in poverty or with limited education, lack the digital literacy required to utilize these systems effectively, with only about 6.5% of the Indian population being digitally literate. This highlights a fundamental barrier for a large

segment of the population that is unable to access digital services.

Furthermore, usability issues present significant hurdles for users. Problems such as poor mobile interfaces and difficulties with downloading and re-uploading PDF documents across various platforms make the process time-consuming and cumbersome. For instance, the Electronic Judicial Process (PJE) in Brazil, though in use, has been described by IT managers as "not a friendly system" and difficult to use, pointing to a general challenge in user-friendliness across e-justice platforms. These issues collectively contribute to the exclusion of individuals with limited digital literacy or disabilities, who struggle to navigate complex digital environments, thus denying them effective access to the legal system. While initiatives like e-Sewa Kendras and help desks aim to provide remote digital assistance and support for those with limited digital access, these services are still evolving to bridge the gap.

B. Technical and Operational Hurdles

E-justice systems in India also face considerable technical and operational hurdles. A primary concern is data quality, characterized by missing section numbers, statute titles, inconsistent case classification, and erroneous data input. This is largely attributed to a lack of systematic reviews and consistent capacity building. The absence of standardization and uniformity across different High Courts in administrative rules, processes, and forms further complicates matters, as each High Court often devises its own customized forms and procedures. This federal structure, while allowing autonomy, results in diverse practices and hinders the development of a unified data system capable of cross-court analysis. Even basic classification of cases remains rudimentary, with most data distinguishing only between civil and criminal cases, limiting deeper insights into pendency.

Technical glitches and system maturity concerns are also prevalent. The Case Information System (CIS), while a significant advancement, has proven expensive and difficult to adapt to evolving user needs without disrupting existing services, often leading to delayed revisions. Similarly, in Brazil, despite 15 years of operation, the PJE system is still considered to be lacking maturity and requiring improvements to meet user expectations. These technical problems, including server outages and network issues, pose a risk to the seamless operation of court processes.

Integration challenges with other components of the justice system, such as police, prisons,

and legal aid authorities, represent another significant obstacle. The four pillars of the "Technology for Justice Initiative" (e-Police, e-Prosecution, e-Courts, and e-Prisons) have not yet been seamlessly linked, preventing the full realization of benefits from data reconciliation across these databases. Establishing these interlinkages requires complex bureaucratic and institutional coordination, which has been slow to materialize.

Finally, the persistence of manual processes and printing requirements continues to render e-justice systems less effective and more costly. In many Indian courts, registry officials still maintain physical registers, and lawyers are often required to file physical copies of their e-filed cases. Indonesia's e-court experience illustrates this challenge vividly, where all electronically generated documents must be printed as hardcopy backups, placing a significant and often inadequate budgetary burden on the courts. This requirement for extensive printing undermines the efficiency and cost-effectiveness that digital systems are intended to provide, preventing a truly paperless environment.

C. Human and Institutional Resistance

The implementation of e-justice is also met with considerable resistance from both humans and institutions. Judges, lawyers, and court staff, accustomed to traditional methods, often exhibit resistance to change, which acts as a significant hindrance to the adoption of innovation. Older professionals, in particular, may exhibit greater resistance to change. The judiciary itself is often characterized by a conservative structure and a risk-averse approach, presenting significant barriers to innovation. This resistance is reflected in procedural delays, such as frequent adjournments, which cause a waste of time and hinder case disposal, suggesting a reluctance to embrace new scheduling mechanisms. The Bar has also expressed reservations about the transition to digital systems.

Furthermore, insufficient training and capacity building for all stakeholders hinder optimal adoption and use of e-court systems. There is a recognized lack of adequate training and skilled operators to use the new software effectively. The task of training judges and the judiciary, particularly at the district level, is identified as a major challenge. While the vision for Phase III includes establishing bodies like the National Judicial Technology Council (NJTC) to provide guidelines and support for personnel, the current deficiency in training remains a significant barrier to the effective use of digital tools.

Concerns regarding data security and privacy are also a critical issue. The electronic storage and transmission of sensitive case and litigant data raise fears of vulnerabilities to hacking, cyberattacks, and misuse of confidential information. While policy documents acknowledge the need for secure connectivity and authentication, they often lack concrete, tangible measures for robust data protection. The risk of compromising the integrity of the legal system through security breaches or privacy violations underscores the need for clear guidelines, robust cybersecurity protocols, access controls, and data protection policies, including encryption and multi-factor authentication. Moreover, the e-Courts project has led to sub-optimal use of judicial time, as judges are often burdened with IT implementation and administrative tasks that extend beyond their core judicial functions. Tasks such as overseeing hardware procurement, inventory management, and vendor selection consume a significant amount of judicial time, as each High Court must make similar decisions. This administrative load diverts judicial officers from their primary role of adjudication.

Ultimately, the absence of organized feedback loops and stakeholder engagement has resulted in alienation and lower adoption rates among users. Phases I and II had limited mechanisms for structured feedback, which hindered the ability to monitor progress, refine system design, and assess the effectiveness of implementation. This absence of a feedback loop and insufficient engagement with end-users has adversely affected the adoption of e-court services, leading to a disconnect between system developers and the actual needs and experiences of judges, lawyers, and litigants.

D. Policy and Budgetary Inconsistencies

Several policy and budgetary inconsistencies have plagued the e-justice implementation journey. A notable issue is the short-sightedness of policy planning and the inability to forecast problems accurately. Policymakers have struggled to anticipate critical issues, which has hampered the coordination of planned activities across various stakeholder groups. Despite risks such as "unavailability of pre-existing software," "lack of dedicated in-house technical support," and "cost overruns" being identified as early as 2005, little was done to mitigate them effectively. This short-sightedness in policy formulation, coupled with an inability to mitigate foreseeable risks, has been a predominant driver of delays.

Inaccurate budgeting has been a persistent concern, characterized by repeated revisions, significant underspending, and unclear cost distribution. The budget for Phase I, initially

approved at INR 4.42 billion, was revised to INR 9.35 billion, more than double the original amount. This suggested a failure by policymakers to reasonably estimate project costs. Subsequent budgetary documents revealed discrepancies in reporting estimates, revisions, and actual spending, indicating a lack of coordination and effective communication among ministries. Despite increased allocations, actual spending has often been lower than sanctioned provisions, with uneven expenditure patterns and non-utilization of funds evident since at least 2013-14. This imprecision in budgeting risks stakeholders losing confidence and could lead to further reductions in future project allocations.

Delayed implementation and lack of coordination among stakeholders have marred the project at every stage. Delays have been observed in obtaining approvals, budgetary sanctions, sourcing materials from vendors, and the timely delivery of envisioned services. The original five-year timeline for the e-Courts project was deemed overambitious, and even revised timelines have often been vague, making accountability difficult to enforce. The fragmentation of tasks and a lack of clear devolution of responsibilities have made it challenging to identify the primary drivers of delay, although data suggests that tasks pending with the judiciary across High Courts have been significantly higher than with other entities like the National Informatics Centre (NIC) or vendors. This lack of coordination extends to communication among different ministries, especially regarding budgetary particulars.

Lastly, low adoption rates for some digital services and mobile applications remain a challenge. The project has not been able to fully harness technology due to mindset barriers and a lack of awareness among litigants and lawyers regarding the available services. Only 48% of litigants and a mere 17% were aware of the national e-Courts portal, with many lawyers also preferring Judicial Service Centres over online portals due to a lack of awareness or computer literacy. Mobile applications developed for accessing case information have also seen low installation rates, indicating a gap in user engagement and uptake of digital services.

The Path Forward: Recommendations and Future Directions

The journey of e-justice in India has been marked by significant progress, yet it stands at a critical juncture where accumulated learnings from initial phases must inform a more transformative path forward. The vision for Phase III of the e-Courts project aims to propel the Indian judiciary towards a truly "digital" system, moving beyond mere digitization to re-engineer and transform judicial processes fundamentally. This future relies on an "ecosystem"

approach, strategic technological interventions, and a robust institutional framework, drawing valuable insights from international experiences.

A. Refining the Vision for Phase III: Towards Transformative "Digital Courts"

The core of Phase III involves a fundamental shift from simply digitizing paper-based processes to transforming them for a digital environment. This means reimagining how judicial processes operate, leveraging technology to make them inherently more efficient, accessible, and equitable, rather than just replicating old methods digitally. The aim is to create a judicial system that is natively digital, improving existing physical processes while prioritizing digital solutions. Such a transformative approach emphasizes the elimination of redundant steps, reduction of costs and time, and the delivery of services previously unimaginable.

Central to this refined vision is the adoption of an "ecosystem" approach, which supports scale, speed, and sustainability in justice delivery. This approach acknowledges the diverse and evolving needs of various users, litigants, lawyers, the registry, civil society, and other public and private actors. It seeks to design technology and processes that facilitate their collaborative participation. Instead of the judiciary developing all solutions in isolation, Phase III aims to create an environment where solutions emerge rapidly from this broader ecosystem, fostering innovation and achieving a multiplier effect for change. This strategy is designed to break down silos between justice delivery institutions like courts, investigation agencies, and prosecution, enabling seamless data sharing and eliminating duplication of efforts.

To facilitate this ecosystem, it is critical to establish a foundational digital infrastructure with open APIs, standards, and specifications. This infrastructure will act as the technological backbone, providing capabilities (rather than just end-user services) upon which an infinite number of additional services and solutions can be rapidly developed and scaled. These foundational capabilities include a digital case registry, machine-readable documents, intelligent scheduling, and interoperable criminal justice systems. Standards, specifications, and certifications will ensure interoperability, quality, and trust among diverse actors building solutions, allowing for a unified yet flexible system that can be configured to local needs without demanding uniformity.

B. Key Goals and Strategic Interventions

The strategic interventions for Phase III are designed to address the persistent challenges while capitalizing on technological advancements to create a more effective and inclusive justice system.

A paramount goal is to establish robust data governance and security frameworks that effectively balance the principle of open courts with the imperative of privacy and security. This involves designing the digital infrastructure with privacy and security "by design," minimizing the capture of sensitive data, storing it anonymously, and displaying only relevant attributes. Crucially, there is a need for codified regulations for data access, storage, and anonymization, explicitly defining categories of information, access permissions for different actors (judges, lawyers, litigants, investigating officers, witnesses), and the data rights of individuals. These regulations must also specify case types where privacy is more stringent, such as cases under the Protection of Children from Sexual Offences Act or matrimonial cases. Implementing technologies like encryption, digital signatures, and blockchain is vital to secure court records from tampering and ensure their integrity and authenticity. Clear rules outlining the consequences of data breaches and privacy violations must also be established to foster trust and confidence.

Phase III aims to leverage advanced technologies to enhance judicial efficiency and decision-making. Artificial Intelligence (AI) is envisioned for intelligent scheduling, recommending optimized hearing schedules by coordinating the availability and time of different actors (judges, lawyers). AI can also support case analysis and decision-making by aiding in the search for legal precedents and jurisprudence, allowing judges more time for complex cases. This includes the ability to identify patterns in cases to help avoid or contain disputes. Furthermore, making documents machine-readable through technologies like Optical Character Recognition (OCR) and smart forms will significantly reduce the manual data entry workload for registry officials and facilitate better data analysis. Machine-readable documents also enable the generation of data to identify formulaic pleadings, which can simplify processes for litigants through templates or even dematerialized applications.

To bridge the digital divide and ensure equal access to justice, Phase III prioritizes accessibility and inclusivity through user-centric design. This means creating simple, intuitive interfaces (UI/UX) that are optimized for mobile usage and minimize friction,

making e-court systems user-friendly for all, including those with limited digital literacy or disabilities. A key component is multi-lingual access, providing services and information in all official languages, potentially through built-in translation tools. To bridge the digital divide, initiatives like e-Sewa Kendras and help desks will offer remote digital assistance to litigants unfamiliar with digital tools or those in remote areas without internet access. This assistance will provide information, filing support, and even physical copies of orders in vernacular languages via postal mail. These physical access points, including kiosks in court complexes and police stations, are crucial for reaching those at the margins of digital connectivity.

The success of digital transformation relies on strengthening feedback loops and monitoring mechanisms. Phase III will implement continuous feedback mechanisms from all stakeholders, including judges, lawyers, court staff, and litigants, accounting for language and access barriers, and complementing digital feedback with community-level interactions. This ensures that systems are user-centric and evolve based on actual user experiences. Key Performance Indicators (KPIs) and real-time dashboards will be developed to monitor the adoption and impact of the digital platform and its services, providing transparency and aiding in decision-making and accountability.

Recognizing that technology alone cannot drive change, capacity building and training for all stakeholders are crucial. Comprehensive and ongoing training programs for judges, court staff, and lawyers on new systems and technologies are essential to overcoming resistance to change and ensuring optimal adoption. This includes frequently updating training curricula to keep pace with technological developments. Additionally, recruiting experienced and qualified personnel, such as law clerks, technology officers, and dedicated technical support staff, will be vital to support IT functions, manage vendor contracts, and ensure optimal use of judicial time for core adjudicatory functions.

A robust institutional and governance framework is foundational for realizing the vision of Digital Courts. Phase III proposes a new structure, including the National Judicial Technology Council (NJTC) as a permanent statutory body for long-term strategic direction, design, and standards across India. In the short term, a Digital Courts Technology Office (DCTO) will be established to design the blueprint, including principles, architecture, building blocks, and standards, and manage implementation and vendor contracts. This framework emphasizes

judicial independence by empowering the judiciary to make decisions governing its functioning while interacting with other arms of the justice system. It also promotes functional specialization, bringing in technical expertise to handle IT-related tasks, thereby freeing judicial officers for their primary adjudicatory roles. High Court Computer Committees (HCCCs) and newly established Technology Offices at High Courts will play a crucial role in local implementation, configuring the Digital Infrastructure to unique state needs, and developing additional solutions.

C. Comparative Insights for India's Path Forward

Drawing lessons from global experiences can further refine India's e-justice strategy. America's PACER application offers a model for secure e-filing and data protection, with robust security features like encryption and user notifications for unsafe web pages. This highlights the importance of incorporating strong cybersecurity measures in India's e-filing systems. Singapore's E-Litigation system demonstrates a highly integrated and comprehensive approach to case management. Its features, such as electronic document recording (EFS), case information repositories (CIR), e-service for inter-firm document transfer, and automated notifications via SMS/email, provide valuable insights for enhancing India's digital case management and communication systems.

Malaysia's E-Syariah system showcases the potential for specialized e-justice modules, including a case management application (SPKMS), a sharia lawyer management system (SPPS), audio text records (E-talk), online inheritance calculation (E-faraidh), and online payment systems like E-Nafkah for various fees beyond case costs. This suggests India could explore developing more tailored digital services for specific legal domains.

Brazil's Electronic Judicial Process (PJE), while achieving nationwide adoption with a high percentage of electronic cases, also illustrates the challenges of system maturity. Despite 15 years of operation, PJE is still considered by many users to be lacking in maturity and user-friendliness, and its centralized development often restricts local adaptation. This underscores the importance of continuous feedback loops and flexible, modular architecture in India's Phase III to ensure systems can evolve and adapt to user needs.

Finally Indonesia's experience underscores the practical challenges of integrating traditional practices with digital systems. The requirement to print all electronically generated

documents as hardcopy backups places a significant and often inadequate budgetary burden on courts, rendering the e-litigation system less effective and efficient. This highlights the crucial need for India to fully transition to paperless processes to achieve the intended efficiencies and cost savings of e-justice.

Conclusion

The Indian judiciary has embarked on a significant journey of modernization through its e-justice initiatives, most notably the e-Courts project, which began in 2005. This ambitious endeavor has yielded substantial progress in digitizing judicial administration processes across approximately 19,000 courts, establishing vital infrastructure such as Wide Area Network (WAN) connectivity and solar energy backups, and deploying core systems like the Case Information System (CIS) and the National Judicial Data Grid (NJDG). Achievements include the successful implementation of e-filing, e-payment, and e-summons services, which streamline litigant processes, along with the development of unique identifiers like the Case Number Record (CNR) and Judicial Officer Code (JO Code). These advancements have considerably enhanced transparency and accessibility by providing public access to case information, reducing the need for physical presence, and fostering greater efficiency through the automation of routine tasks and the potential for significant reductions in case pendency. However, this transformation has been concurrently marked by persistent challenges, including a significant digital divide and accessibility barriers, particularly in rural areas, coupled with usability issues that exclude less digitally literate populations. Technical and operational hurdles such as poor data quality, lack of standardization, system maturity concerns, and integration challenges with other justice system components like police and prisons continue to impede optimal functioning. Furthermore, human and institutional resistance to change, insufficient training, concerns over data security and privacy, and the persistence of manual processes underscore the complexity of fully embracing digital courts. These are compounded by policy and budgetary inconsistencies, characterized by short-sighted planning, inaccurate budgeting, and delayed implementation, which have hindered the project's overall effectiveness and adoption rates.

The forthcoming Phase III of the e-Courts project is envisioned as a transformative leap, moving beyond mere digitization to fundamentally re-engineer and transform judicial processes for a natively digital environment. This future demands an "ecosystem" approach

that fosters collaboration among diverse actors, including litigants, lawyers, civil society, and other public and private entities, built upon a foundational digital infrastructure with open APIs, standards, and specifications. Key strategic interventions for this phase include establishing robust data governance and security frameworks that balance open court principles with privacy by design, leveraging advanced technologies such as Artificial Intelligence (AI) for intelligent scheduling and machine-readable documents, and prioritizing user-centric design to ensure accessibility and inclusivity for all citizens. Strengthening feedback loops, implementing continuous capacity building and training programs, and reforming the institutional and governance framework through bodies like the National Judicial Technology Council (NJTC) are critical to achieving sustained adoption and effective oversight. By drawing insights from international experiences, such as America's PACER for data protection, Singapore's E-Litigation for integrated case management, and learning from Brazil's experience with system maturity challenges, India aims to build a fair, fast, simple, and low-cost judiciary. Ultimately, the successful evolution of e-justice in India depends on continuous adaptation, rigorous monitoring, and stakeholder-centric research, not only to clear existing backlogs but also to ensure that the justice delivery system remains equitable, efficient, and truly accessible to all its citizens, potentially serving as a model for other nations.

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