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Viksit Bharat 2047, Technology and Access to Justice: Building an Efficient and Inclusive Legal System.

By - Nitika Pahwa & Arjeet Singh Kunwar

Introduction

As India marches towards the future of its independence in 2047, the vision of a "Viksit Bharat" curtails not only economic development but also the strengthening of democracy and guaranteeing the dignity, equality, and justice for every Indian. Among these, the justice and the judgment occupy a central place. The Indian constitution express access to justice as a fundamental promise through Article 14 (equality before the law), Article 21 (protection of life and personal liberty), and Article 39A (free legal aid and equal justice)[1]. But still, we live in the reality where millions reflect a vast difference between the hope of justice and its judgment. Currently, there are over five crore cases pending across the nation's courts, delays and inaccessibility continue to ruin the faith of the public in the judicial system.[2]

As currently, technology has emerged as both as a tool and a facilitator for reform. The COVID-19 pandemic demonstrated the reality of virtual court, e-filing, and online hearings, which allowed continuity of justice even in the middle of the crisis as a physical lockdowns.[3] Initiatives such as the e-Courts Project,[4] The Supreme Court's AI-driven tool SUPACE (Supreme Court Project For Assistance in Court Efficiency),[5] and online provided service like NALSA (National Legal Services Authority) here shown that digital solutions can reduce barriers of cost, geography, and time. However, realizing the vision of *Viksit Bharat 2047* requires more than gradual adoption; it calls for systemic transformation where technology delivers justice that is both smoothened and uniform manner.

The challenge is to ensure that technology does not increase the digital divide, but instead stops the inequalities. A villager in Bihar or a tribal community in the Northeast must have the same access to justice as a corporate litigant in Delhi. By 2047, India must envision a legal system where AI may help in judicial decision-making, blockchain secures judicial records, online dispute resolution (ODR) resolves everyday judicial problem, and

[1] INDIA CONST. arts. 14, 21, 39A.
[2] Press Release, Ministry of Law & Justice, Govt. of India, *over 5 Crore Cases Pending in Courts Across the Country* (July 2024)
[3] Supreme Court of India, Virtual Court Hearings During COVID-19 Pandemic (2020)
[4] e-Committee, Supreme Court of India, *e-Courts Mission Mode Project Phase II* (2015)
[5] Krishnadas Rajagopal, Supreme Court launches AI system 'SUPACE' to assist judges

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multilingual AI machine learning provide building legal awareness among the general public. Therefore, the debate is not whether technology should transform justice, but how it should be implemented-ethically, inclusively, and sustainably. The path of *Viksit Bharat 2047* is not complete without a legal system that fulfils the constitutional mandate of justice, enabled by judicious use of technology.

Current Landscape

India's justice or judicial system today stands at a crucial point between traditional and transformation. While the courts remain overburdened with a pendency of over **5 crore cases**,[6] the judiciary has simultaneously embraced a wave of technological interventions aimed at streamlining processes, enhancing transparency, and increasing access.

The e-Courts Project

Launched under the National e-Governance Plan, the e-Courts Mission Mode Project is the way that introduce of judicial digitization. Phase II (2015–present) has facilitated e-filing, e-payment, and case status tracking through the National Judicial Data Grid (NJDG).[7] as of 2024, more than 18,000 District and Subordinate Courts have been digitized, making judicial data accessible to litigants and lawyers.[8]

Virtual Courts and COVID-19 Transformation

The COVID-19 pandemic help in the transformation toward technological development in access to justice, forcing courts to adopt **video conferencing hearings** on platforms like Webex and Zoom. Between March 2020 and October 2021, the Supreme Court alone conducted over **3.2 million virtual hearings**, ensuring continuity of justice despite the lockdown.[9] The Delhi High Court's decision in *National Federation of the Blind v. Union of India* reflected this adaptation, holding that even digital hearings must remain **accessible to persons with disabilities**.[10]

Artificial Intelligence in Judicial Work

In 2021, the Supreme Court launched **SUPACE** (Supreme Court Portal for Assistance in Court Efficiency), an AI-driven tool designed to assist judges by sifting through case files

[6] Press Release, Ministry of Law & Justice, Govt. of India, *Over 5 Crore Cases Pending in Courts Across the Country* (July 2024)
[7] e-Committee, Supreme Court of India, e-Courts Mission Mode Project Phase II (2015)
[8] National Judicial Data Grid, Case Status and Pendency Reports (2024)
[9] Supreme Court of India, *Annual Report 2021-22* (2022)
[10] *National Federation of the Blind v. Union of India*, W.P.(C) 564/2012, Delhi High Court (2020).

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and legal precedents[11] While SUPACE does not provide the judgment of the cases, it reduces judicial workload by automating research. Additionally, high courts have begun the testing with AI for **transcription, translation, and cause list management**.

Online Dispute Resolution (ODR)

Closure to the traditional courts, India has seen the rise of **ODR platforms** such as Sama, Presolv360, and CADRE. These platforms use digital mediation and arbitration to resolve disputes particularly consumer, family, and commercial cases at lower costs and within shorter time period.[12] In 2021, NITI Aayog issued a policy paper advocating ODR as a tool to complement the formal judiciary, especially in easing commercial disputes that deter investment.[13]

National Legal Services Authority (NALSA) and Digital Legal Aid

NALSA has adopted online platforms to provide **tele-law services**, enabling citizens in rural and remote areas to connect with panel lawyers through Common Service Centres (CSCs). As of 2023, over **50 lakh beneficiaries** have availed these services, reflecting how digital platforms can expand legal aid outreach.[14]

Remaining Gaps

Despite this growth, challenges still exist. **Disparities in digital competence, lack of regional language interfaces, poor rural connectivity, and cybersecurity risks** create issues in universal adoption. Moreover, technology has largely been used as a fill the gap tool rather than as part of a system-side justice overhaul.

Challenges in Access to Justice

Despite India's progress in adopting technological reforms, significant barriers continue to undermine meaningful access to justice, especially for marginalized groups.

Judicial Capacity Constraints & Pendency

India faces one of the highest judicial baggage in the world, with over **5 crore cases pending** across all courts as of 2024.[15] The judge-to-population ratio remains very low, at about **21 judges per million people**,[16] far below the international standard recommended

[11] Krishnadas Rajagopal, Supreme Court launches AI system 'SUPACE' to assist judges, *The Hindu* (Apr. 6, 2021)
[12] Pranjal Kishore & Sidhant Chandalia, *The Future of Online Dispute Resolution in India*, 12 NUJS L. Rev. 45 (2022).
[13] NITI Aayog, *Designing the Future of Dispute Resolution: The ODR Policy Plan for India* (2021)
[14] National Legal Services Authority (NALSA), *Annual Report 2022-23* (2023)
[15] Press Release, Ministry of Law & Justice, Govt. of India, Over 5 Crore Cases Pending in Courts Across the Country (July 2024)
[16] Law Commission of India, Report on Judicial Manpower Planning (1987), No. 120.

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by the Law Commission. Persistent judicial vacancies and improper infrastructure in subordinate courts make matters worse problem. Procedural delays-such as frequent adjournments and misuse of appeals slowing down the system.[17]

The Digital Divide

The promise of technology in justice delivery is weakened by India's pronounced **digital divide**. Despite having one of the world's largest internet user bases, nearly **50% of Indians remain offline**, particularly in rural and economically disadvantaged regions.[18] The digital gap is not just infrastructural but also educational: digital literacy remains limited, and only about **3% of rural Indians are English literate**, compared to nearly **88% in urban areas**.[19] This disparity prevents large populations from benefiting from e-courts, online legal aid, and virtual hearings.

Language and Accessibility Barriers

Technology in Indian courts has largely been implemented in English, alienating vast segments of society. Although the Supreme Court's **SUVAS (Supreme Court Vidhik Anuvaad Software)** initiative has started providing translations of judgments into regional languages,[20] accessibility remains limited. Similarly, video-conferencing hearings often fail to accommodate persons with disabilities, as highlighted in *National Federation of the Blind v. Union of India*, where the Delhi High Court stressed that digitization must remain inclusive.[21]

Governance and Implementation Gaps

Legislative and policy measures to enhance grassroots justice remain under-implemented. For example, the **Gram Nyayalayas Act, 2008** envisaged over **5,000 village courts**, yet fewer than **250 are operational**.[22] Similarly, while digitization projects like **Phase II of the e-Courts Mission Mode Project** have succeeded in infrastructure-building, rural courts still face inadequate internet connectivity and staff training.[23]

Cybersecurity and Data Privacy Risks

As courts increasingly rely on digital systems, concerns about **data security and privacy**

[17] Abhinav Chandrachud, An Empirical Study of Litigation in India: The Problem of Delay (2019) 54(2) Econ. & Pol. Wkly. 59.
[18] Telecom Regulatory Authority of India, *The Indian Telecom Services Performance Indicators* (Dec. 2023).
[19] Priya Sreenivasan, *Judicial Innovation and Digital Divide: Promoting Access to Justice amidst Rising Inequality*, SCC Online Blog (July 3, 2023)
[20] Supreme Court of India, *SUVAS: AI-based Translation Tool* (2021)
[21] *National Federation of the Blind v. Union of India*, W.P.(C) 564/2012, Delhi High Court (2020).
[22] Gram Nyayalayas Act, No. 4 of 2009, § 3 (India).
[23] e-Committee, Supreme Court of India, *e-Courts Mission Mode Project Phase II* (2015)

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intensify. Court records, e-filing systems, and video hearings all generate sensitive personal data. In the absence of a comprehensive data protection regime (the **Digital Personal Data Protection Act, 2023** is still in its early phase of implementation),[24] litigants remain vulnerable to breaches and unauthorized surveillance. Without strong safeguards, technology could undermine trust in the justice system.

Comparative Global Perspectives

The challenges of accessibility, efficiency, and inclusivity in justice delivery are not unique to India. Around the world, governments and judiciaries have turned to technology to strengthen the rule of law and expand access to justice. Comparative study offers valuable insights, particularly from jurisdictions that have pioneered digital courts, AI integration, and online dispute resolution.

Estonia: The Model of Digital Justice

Estonia is often cited as the global leader in digital governance. Since the early 2000s, Estonia has implemented **e-governance platforms** that include **digital identity cards, e-signatures, and online portals for judicial proceedings**.[25] The Estonian judiciary is fully integrated with the government's digital ecosystem, enabling litigants to file cases, access judgments, and track proceedings online. Court hearings can even be conducted virtually, with secure digital signatures ensuring authenticity.

One key feature is the **X-Road platform**, a secure data exchange layer that links courts, police, and other public agencies.[26] This allows real-time verification of evidence and criminal records, reducing delays. India can draw from this model by ensuring interoperability between courts, police databases, land registries, and government records, particularly through blockchain-backed platforms.

China: AI-Powered "Smart Courts"

China has pioneered the use of **artificial intelligence in judicial decision-making** through its "smart courts" initiative. Since 2017, courts in cities like Hangzhou and Beijing have integrated **AI-driven case analysis, blockchain-based evidence management, and online litigation platforms**.[27] The Hangzhou Internet Court, for instance, specializes in disputes arising from e-commerce and intellectual property. Parties submit claims digitally, evidence is authenticated via blockchain, and judgments are

[24] Digital Personal Data Protection Act, No. 22 of 2023, Gazette of India (2023).
[25] Republic of Estonia, Ministry of Justice, *e-Justice in Estonia* (2020)
[26] e-Estonia, *X-Road: The Backbone of e-Estonia* (2023)
[27] Supreme People's Court of China, *White Paper on Smart Courts* (2019).

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delivered online.

China also uses **AI-powered virtual judges** for minor cases. These systems can analyze contracts, summarize arguments, and propose recommendations, with final oversight by human judges.[28] While such automation raises ethical concerns, it demonstrates how AI can address high-volume, low-value disputes an area where India too faces significant backlog.

Singapore: Institutionalizing Online Dispute Resolution (ODR)

Singapore has established itself as a global hub for dispute resolution by embedding technology into its judicial framework. The **Singapore International Arbitration Centre (SIAC)** and the **Singapore International Mediation Centre (SIMC)** leverage digital hearings and ODR to resolve cross-border disputes efficiently.[29] The **State Courts of Singapore** also operate an ODR platform for small claims and community disputes, using automated negotiation tools before escalating to mediation or adjudication.

Singapore's success stems from its **government-backed legal-tech ecosystem**, where courts, private platforms, and academia collaborate. For India, the lesson is clear: ODR must move from pilot projects to mainstream justice delivery, particularly for consumer, family, and commercial disputes.

United Kingdom: Digital Courts and Cybersecurity Safeguards

The United Kingdom has advanced its **Her Majesty's Courts and Tribunals Service (HMCTS) reform programme**, aimed at digitizing court procedures.[30] Online claim portals for civil disputes, virtual hearings for immigration and asylum cases, and AI-assisted document review systems are central features. Importantly, the UK places strong emphasis on **cybersecurity and data protection**, embedding judicial digitization within broader national cybersecurity strategies.

For India, where data protection concerns remain critical, the UK model underscores the need for a **Judicial Cybersecurity Framework**, integrated with the **Digital Personal Data Protection Act, 2023**.

Kenya: Technology for Grassroots Justice

In Africa, Kenya has demonstrated how technology can empower grassroots justice. The **Kenya e-Judiciary programme** provides mobile-friendly case-tracking systems and

[28] Mimi Zou, *China's Smart Courts and the Future of Dispute Resolution* (2021) 48 J. Comp. L. 207.
[29] Singapore International Arbitration Centre, *Annual Report 2022* (2023)
[30] HM Courts & Tribunals Service, UK Ministry of Justice, *Reforming the Courts and Tribunal Service* (2019).

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SMS-based updates for litigants in remote areas.[31] These low-cost innovations are particularly relevant to India's rural and tribal populations, where smartphone penetration is higher than broadband access.

By adopting **mobile-first legal aid apps** in vernacular languages, India can replicate Kenya's success in bridging its urban-rural justice gap.

Lessons for India

From these international experiences, India can adopt several lessons:

- **Integration and Interoperability** (Estonia): Link courts with government databases through secure, interoperable systems.
- **AI for Volume Cases** (China): Use AI in traffic, tax, and small claims disputes to reduce backlog.
- **Mainstreaming ODR** (Singapore): Institutionalize ODR as a first step in dispute resolution.
- **Cybersecurity Protocols** (UK): Embed robust cybersecurity frameworks in e-court infrastructure.
- **Mobile-First Access** (Kenya): Prioritize mobile platforms and SMS-based systems for rural justice delivery.

These global innovations demonstrate that while India must tailor reforms to its constitutional framework and socio-economic diversity, **international best practices can accelerate progress toward Viksit Bharat 2047**.

Role of Technology in India

Technology has emerged as the most transformative instrument in addressing the structural inefficiencies of India's justice delivery system. While not a substitute for judicial independence and institutional reform, it provides the means to achieve the constitutional promise of **"equal justice for all"** under Article 39A.[32]

Digitization of Courts and Case Management

The **e-Courts Mission Mode Project**, launched in 2005, remains the cornerstone of India's judicial digitization. Its **National Judicial Data Grid (NJDG)** hosts over **22 crore**

[31] Judiciary of Kenya, *Strategic Plan 2019–2023: Sustaining Judiciary Transformation* (2019).
[32] INDIA CONST. art. 39A.

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case records, enabling litigants to access case status and orders online.[33] By integrating e-filing, digital payments, and automated cause list generation, the system has reduced administrative bottlenecks. In states like Kerala and Maharashtra, e-filing has already become mandatory in certain courts, showing scalability potential.[34]

Virtual Hearings and Hybrid Courts

The COVID-19 pandemic demonstrated the potential of **video-conferencing** to ensure judicial continuity. Between 2020–2022, Indian courts conducted over **3 crore virtual hearings**.[35] Today, several High Courts (Delhi, Bombay, Karnataka) have institutionalized **hybrid hearings**, giving parties the option of appearing either physically or virtually. This has reduced travel costs, allowed participation from remote areas, and facilitated appearances of undertrial prisoners from jails via video-link, cutting logistical expenses.[36]

Artificial Intelligence and Legal Research

Artificial Intelligence (AI) is increasingly being deployed to enhance judicial efficiency. The Supreme Court's **SUPACE (Supreme Court Portal for Assistance in Court Efficiency)** assists judges by analysing case files and suggesting precedents.[37] Similarly, the **SUVAS (Supreme Court Vidhik Anuvaad Software)** initiative uses machine learning to translate judgments into regional languages.[38] AI chatbots such as those piloted by NALSA can guide citizens through basic legal queries, reducing dependency on lawyers for preliminary advice. If expanded nationwide, such tools could help bridge the gap created by India's shortage of legal aid providers.

Online Dispute Resolution (ODR)

Technology also plays a pivotal role in promoting **alternative dispute resolution mechanisms**. ODR platforms like Sama, Presolv360, and CADRE use video conferencing, secure portals, and AI-assisted mediation to settle disputes efficiently. NITI Aayog's 2021 policy paper endorsed ODR as a means to resolve small-value, consumer, and commercial disputes at scale, freeing up courts to focus on complex litigation.[39] Multinational corporations and fintech companies have already partnered with ODR providers to resolve disputes, highlighting the trust-building capacity of digital

[33] National Judicial Data Grid (NJDG), *Case Statistics and Data Reports* (2024)
[34] e-Committee, Supreme Court of India, *e-Filing User Manual* (2023)
[35] Supreme Court of India, *Annual Report 2021-22* (2022)
[36] Delhi High Court, *Standard Operating Procedures for Hybrid Hearings* (2021)
[37] Krishnadas Rajagopal, Supreme Court launches AI system 'SUPACE' to assist judges, *The Hindu* (Apr. 6, 2021)
[38] Supreme Court of India, *SUVAS: AI-based Translation Tool* (2021)
[39] NITI Aayog, *Designing the Future of Dispute Resolution: The ODR Policy Plan for India* (2021).

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mechanisms.

Blockchain for Record-Keeping and Evidence

Blockchain technology offers secure, tamper-proof storage of judicial records, land titles, and contracts. Pilot projects in Telangana and Andhra Pradesh have tested blockchain-based land registries, reducing fraud and duplication.[40] In the judicial context, blockchain could preserve digital evidence and ensure the authenticity of filings, particularly in commercial disputes and cybercrime cases.

Expanding Legal Aid and Awareness

Technology can democratize legal knowledge. Through the **Tele-Law Programme**, citizens in rural areas access legal advice from lawyers via **Common Service Centres (CSCs)**. As of 2023, the program has assisted over **50 lakh beneficiaries**.[41] Expanding these services with AI-driven legal literacy modules in vernacular languages could make justice accessible at the grassroots. Mobile apps offering simplified explanations of rights, complaint mechanisms, and case status tracking could further empower citizens.

Predictive Analytics and Policy Planning

Judicial data analytics can help identify patterns in litigation, pendency, and judicial delays. For instance, the NJDG's real-time pendency dashboard already allows policymakers to track bottlenecks.[42] In the future, predictive algorithms could forecast case durations, helping judges, lawyers, and litigants plan better. This could transform India's "justice delayed is justice denied" paradigm into a "justice within timeframes" reality.

Technology, Justice, and Economic Development

Economic development and access to justice are deeply interlinked. A nation aspiring to become a **$30 trillion economy by 2047** cannot afford a judicial system plagued by inefficiency, backlog, and unpredictability. For businesses, investors, and ordinary citizens alike, the rule of law and enforceability of rights are essential to economic confidence. Technology, therefore, is not only a tool for delivering justice but also an instrument for creating a secure and attractive environment for growth.

Rule of Law as a Driver of Economic Growth

The World Bank's **Doing Business Index** consistently emphasized that effective contract

[40] Government of Telangana, *Blockchain Pilot for Land Records* (2018)
[41] National Legal Services Authority (NALSA), *Annual Report 2022-23* (2023)
[42] National Judicial Data Grid, *Dashboard for Case Pendency* (2024)

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enforcement directly influences a country's investment climate.[43] India ranked poorly in the **Enforcing Contracts** indicator due to long delays in dispute resolution averaging **1,445 days** for a commercial case in 2020.[44] Such inefficiency inflates transaction costs, discourages foreign direct investment, and impedes the ease of doing business.

Technology can drastically reduce these inefficiencies by digitizing filings, enabling virtual hearings, and introducing ODR mechanisms. Faster enforcement of contracts directly translates into greater investor confidence and a more vibrant economy.

Online Dispute Resolution (ODR) and Commercial Efficiency

India's commercial growth has brought with it a rise in small-value disputes in **e-commerce, fintech, and digital payments**. Traditional courts are poorly equipped to handle these cases. **ODR platforms** such as Sama, Presolv360, and CADRE have already partnered with private companies to resolve disputes at scale, often within weeks instead of years.[45]

Recognizing its potential, **NITI Aayog's 2021 ODR Policy Plan** highlighted ODR as a key reform for commercial efficiency.[46] Institutionalizing ODR, particularly in sectors like insurance, banking, and consumer protection, could save billions in litigation costs and unclog formal courts. Singapore's example of embedding ODR within its judicial system underscores the economic dividends of such reform.[47]

Arbitration, India's Aspiration, and Technology

India has long aspired to be a global hub for arbitration. The **Srikrishna Committee Report on Institutional Arbitration (2017)** stressed that predictable and technology-friendly arbitration processes are essential for India to compete with hubs like Singapore and London.[48] By integrating **digital arbitration portals, AI-assisted evidence review, and blockchain-secured filings**, India can attract cross-border commercial disputes. This not only enhances India's reputation but also contributes to service exports and the legal economy.

Technology Reducing Transaction Costs

Judicial delays often act as an **"informal tax"** on economic activity. Litigants spend years

[43] World Bank, *Doing Business 2020: Enforcing Contracts Indicator* (2020)
[44] Id.
[45] Pranjal Kishore & Sidhant Chandalia, *The Future of Online Dispute Resolution in India*, 12 NUJS L. Rev. 45 (2022).
[46] NITI Aayog, *Designing the Future of Dispute Resolution: The ODR Policy Plan for India* (2021).
[47] Singapore International Arbitration Centre (SIAC), *Annual Report 2022* (2023)
[48] B.N. Srikrishna Committee, *Report of the High-Level Committee on Institutional Arbitration in India* (2017), Ministry of Law & Justice, Govt. of India.

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in uncertainty, while businesses bear the costs of prolonged disputes. Studies show that reducing pendency by even **10%** could increase GDP growth by **0.5–1% annually** by freeing locked resources.[49]

By automating administrative tasks, streamlining documentation, and enabling predictive analytics, technology reduces these transaction costs. For example, predictive case management tools can alert judges when cases exceed expected timelines, preventing indefinite adjournments.

Formalizing the Informal Economy

A large portion of India's workforce operates in the informal sector, often excluded from formal dispute resolution. Digital legal services particularly mobile-based applications in vernacular languages can provide workers with access to legal remedies in cases of wage disputes, contract violations, or workplace harassment. The **Tele-Law Programme**, which has assisted over **50 lakh citizens** through Common Service Centres,[50] is a prime example of how digital legal aid also facilitates economic inclusion.

By formalizing rights and providing access to dispute resolution, technology can gradually shift informal economic activity into the formal economy, widening the tax base and contributing to national development.

Investor Confidence and Cross-Border Trade

In a globalized economy, predictability of dispute resolution is a decisive factor in investment decisions. Multinational corporations require not only favorable policies but also a judiciary capable of resolving disputes quickly and fairly. **Digital arbitration and ODR hubs** could position India as a leader in international dispute resolution, similar to Singapore and Hong Kong.[51]

For India, aspiring to be a **manufacturing and services hub by 2047**, establishing itself as a **trustworthy dispute resolution forum** is critical. This will reduce reliance on foreign jurisdictions for arbitration and ensure that capital remains within the country.

Inclusive Growth and Social Stability

Finally, the economic benefits of justice reform extend beyond businesses. By reducing delays in criminal cases, digitization of evidence, and ensuring transparency in governance, technology can strengthen public trust in institutions. This contributes to

[49] Vidhi Centre for Legal Policy, *Pendency and the Economy: Unlocking Growth through Judicial Reform* (2019).
[50] National Legal Services Authority (NALSA), *Annual Report 2022-23* (2023)
[51] Gary Born, *International Commercial Arbitration* (3d ed. 2021).

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social stability, which is itself a prerequisite for long-term economic growth. As Amartya Sen observed, **development is freedom** and without access to justice, economic freedom remains incomplete.[52]

Roadmap to 2047: Building an Efficient and Inclusive Legal System

The vision of *Viksit Bharat 2047* requires a justice delivery system that is not only faster and more efficient but also inclusive, transparent, and future-ready. Achieving this will demand a **phased roadmap**, integrating institutional reforms with technological innovations.

Short-Term Goals (2025–2030): Building Digital Foundations

a. Universal Digitization of Courts

- Complete digitization of all district and subordinate courts under **Phase III of the e-Courts Mission Mode Project**.[53]
- Standardize e-filing, e-payment, and hybrid hearings nationwide to reduce pendency.

b. Bridging the Digital Divide

- Expand **Bharat Net** and ensure high-speed internet in rural areas, prioritizing courts in semi-urban and tribal belts.[54]
- Conduct nationwide training programs for judges, lawyers, and court staff to ensure digital literacy.

c. Vernacular and Inclusive Access

- Integrate **SUVAS translation tools** in all High Courts, making judgments available in all 22 official languages.[55]
- Ensure accessibility features (screen readers, sign language interpretation, simplified legal language) in all digital platforms.

Medium-Term Goals (2030–2040): Intelligent and Accessible Justice

a. AI-Enabled Judicial Assistance

- Scale up **AI-powered case management** systems like SUPACE to all High Courts for automatic precedent suggestion, document summarization, and research.[56]

[52] Amartya Sen, *Development as Freedom* 152–54 (1999).
[53] e-Committee, Supreme Court of India, *Vision Document Phase III of the e-Courts Project* (2022)
[54] Department of Telecommunications, Govt. of India, *BharatNet Progress Report* (2023)
[55] Supreme Court of India, *SUVAS: AI-based Translation Tool* (2021)

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- Introduce **predictive analytics** to estimate case durations and alert judges on excessive adjournments.

b. Strengthening Online Dispute Resolution (ODR)

- Institutionalize ODR as a mandatory first step for small-value disputes, consumer complaints, and family matters.[57]
- Partner with fintech companies, banks, and insurance firms to mainstream ODR for commercial disputes.

c. Blockchain-Based Records

- Expand blockchain pilots in Telangana and Andhra Pradesh to nationwide court record-keeping.[58]
- Ensure secure and tamper-proof storage of evidence, land records, and contracts, reducing fraud and manipulation.

Long-Term Goals (2040–2047): Predictive, People-Centric, and Global

a. AI–Human Hybrid Judicial Ecosystem

- Develop AI-powered judicial assistants capable of handling routine cases (traffic challans, minor civil disputes) under judicial supervision.
- Free up judges to focus on constitutional, criminal, and complex commercial matters.

b. Predictive Justice and Policy Feedback Loops

- Use big data analytics from the **National Judicial Data Grid** to identify systemic bottlenecks and predict potential dispute hotspots (e.g., land disputes, environmental conflicts).[59]
- Develop proactive justice mechanisms where disputes are mediated or resolved before litigation.

c. Universal Justice Access

[56] Krishnadas Rajagopal, Supreme Court launches AI system 'SUPACE' to assist judges, *The Hindu* (Apr. 6, 2021)
[57] NITI Aayog, *Designing the Future of Dispute Resolution: The ODR Policy Plan for India* (2021).
[58] Government of Telangana, *Blockchain Pilot for Land Records* (2018)
[59] National Judicial Data Grid, *Dashboard for Case Pendency* (2024)

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- By 2047, ensure that every citizen has **justice access via smartphone**: filing cases, tracking proceedings, accessing judgments in their language, and obtaining free preliminary legal advice through AI chatbots.
- Build India as a global hub for **digital arbitration and ODR**, attracting cross-border dispute resolution work, thereby linking legal reform with economic growth.[60]

Safeguards in Technology-Enabled Justice

While technology has the potential to transform India's justice system, its unregulated or inequitable adoption may threaten constitutional guarantees of fairness, privacy, and equality. Therefore, the transition to a technology-driven judiciary must be anchored in robust safeguards.

Data Protection and Privacy

Digital courts generate vast amounts of sensitive information: personal details of litigants, evidence records, and financial data. In the absence of safeguards, this data is vulnerable to misuse. The enactment of the **Digital Personal Data Protection Act, 2023** marks a foundational step toward ensuring privacy and accountability in data handling.[61] However, judicial data often contains sensitive information beyond the scope of ordinary data protection law. Courts must therefore develop **judicial data protection protocols** including encryption, anonymization, and access-control mechanisms to preserve litigants' trust.

Algorithmic Transparency and Accountability

Artificial Intelligence (AI) systems like **SUPACE** and machine translation tools such as **SUVAS** are valuable aids but remain prone to **bias, opacity, and error**.[62] If judicial actors rely excessively on AI without transparency, it may lead to discriminatory outcomes. The European Union's **AI Act, 2024**, classifying judicial AI as "high-risk,"[63] offers a comparative model. India must adopt similar safeguards by:

- Mandating **explainability** in AI decision-support tools.
- Requiring regular **bias audits** of judicial algorithms.

[60] Srikrishna Committee, *Report on Institutional Arbitration in India* (2017), Ministry of Law & Justice, Govt. of India.
[61] Digital Personal Data Protection Act, No. 22 of 2023, Gazette of India (2023).
[62] Krishnadas Rajagopal, Supreme Court launches AI system 'SUPACE' to assist judges, *The Hindu* (Apr. 6, 2021)
[63] European Union, *Artificial Intelligence Act*, Regulation (EU) 2024/1689 (2024).

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- Ensuring that **final decision-making authority always rests with a human judge**.

Bridging the Digital Divide

Without corrective measures, technology may deepen inequalities in justice delivery. Rural litigants, economically weaker groups, and persons with disabilities remain disproportionately excluded. Safeguards must include:

- Expanding **BharatNet connectivity** to all courts and villages.[64]
- Incorporating **vernacular language interfaces** in court portals.[65]
- Adopting **universal design principles** to make virtual courts accessible to persons with disabilities, consistent with the mandate of the **Rights of Persons with Disabilities Act, 2016**.[66]

Judicial Training and Capacity-Building

Technology is only as effective as its users. Judges, lawyers, and court staff require structured digital literacy training to ensure effective implementation. The **National Judicial Academy** and **State Judicial Academies** must integrate modules on AI ethics, cybersecurity, and e-court functioning in their curricula.[67] Without such measures, technology risks becoming a symbolic reform rather than a substantive tool of justice.

Cybersecurity Infrastructure

E-filing systems and video hearings are vulnerable to hacking, phishing, and ransomware attacks. The Indian judiciary must implement **end-to-end encryption, secure cloud storage, and multi-factor authentication** across all platforms. Lessons can be drawn from the **UK Judiciary's Digital Courts initiative**, which incorporated national-level cybersecurity frameworks.[68] Establishing a **Judicial Cybersecurity Cell** under the Supreme Court's e-Committee could provide uniform protection and rapid response protocols for data breaches.

Ethical Use of Emerging Technologies

Finally, the integration of advanced tools like **predictive analytics, blockchain, and AI-based dispute resolution** must respect constitutional principles. Technologies should enhance not replace the human element of empathy, discretion, and fairness that forms the

[64] Department of Telecommunications, Govt. of India, *BharatNet Progress Report* (2023)
[65] Supreme Court of India, *SUVAS: AI-based Translation Tool* (2021)
[66] Rights of Persons with Disabilities Act, No. 49 of 2016, Gazette of India (2016).
[67] National Judicial Academy, *Annual Training Calendar 2023-24* (2023)
[68] HM Courts & Tribunals Service, UK Ministry of Justice, *Reforming the Courts and Tribunal Service* (2019).

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bedrock of justice. The judiciary must adopt a **Code of Ethics on Judicial Technology Use**, akin to judicial conduct codes, to ensure ethical deployment of emerging tools.[69]

[69] Srikrishna Committee, *Report on Institutional Arbitration in India* (2017), Ministry of Law & Justice, Govt. of India.