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CODE, COURTS AND CONGESTION

Espousal of Blockchain-based Alternate Dispute Resolution in the Indian Judicial System

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Abstract

In spite of the higher judicial capacity and disposal rates, procedural delay is one of the characteristic elements of the Indian justice delivery system. Alternative Dispute Resolution (ADR) including arbitration, mediation and conciliation is aimed at reducing the docket load and expanding access to justice. However, ADR is often a reflection of the procedural inadequacies of litigation, including poor management of evidence, lengthy enforcement, lack of transparency, and limited technological adoption. The paper examines the possibility of blockchain-enabled ADR as structural intervention to procedural delay. It uses institutional measures of repetitive procedural failures, based on post-pandemic statistics of National Judicial Data Grids, to shed light on some of the usual problems. It argues that evidentiary integrity, continuity of the process, minimisation of delays, and high-quality enforcement can be achieved by the main properties of blockchain, namely immutability, decentralised verification, and programmable smart contracts. Tackling both the procedural and normative insinuations that constitutional and regulatory restraint causes, this discourse arrives at the conclusion that judicious usage of blockchain technology in the Alternative Dispute Resolution processes can give rise to a more efficient, transparent, and progressive paradigm of justice in India. In line with this it argues that the effect of such integration is re-engineering of the evidence integrity, continuity of procedures and an increased efficiency in enforcement without derailing the invaluable power of the courts.

Introduction

Delays have remained a persistent feature in influencing the operation of the Indian justice delivery system, exposing the strains between the constitutional commitment to timely delivery of justice and the challenges of reality as they are practised in the procedure. Despite the improvement in disposal rates, other problems like congestion in procedures, recurring adjournments, and delays at the execution level are still a major concern. These limitations have contributed to the growing reliance on the use of the Alternative Dispute Resolution (ADR) mechanisms that have been developed as supplementary mechanisms into components of dispute resolution. Although the empirical evidence suggests that only a significant percentage of civil conflicts are now being solved by ADR, they still exist within the procedural ethic of the formal court system.

The delay that exists in the ADR proceedings proves that it is not a purely adversarial issue but a flaw of the system design. The problems of lost or unverifiable documentation, piecemeal evidentiary systems, substitution of parties at a manual level, unavailability of witnesses, resistance to enforcement and an ability to engage in procedural abuse remain plaguing both litigation and ADR. Although digitisation plans have helped to enhance access, they have simply taken the same paper-based inefficiencies and updated them with technology¹, digitised without any corresponding structural redesign.

This is where the blockchain technology deserves serious judicial consideration. In contrast to conventional digital systems, blockchain functions as a decentralised, unalterable, and verifiable registry that is able to record transactions and events without a central controlling force. Its fundamental characteristics (immutability, transparency, distributed verification and maximising programmability using smart contracts) introduce the prospect of fundamentally overhauling the process of dispute-resolution. Instead of speeding up the already existing processes, blockchain allows redesigning them by integrating legal processes directly into the technological infrastructure².

The paper posits the question of whether blockchain-facilitated ADR can be used in structural

¹ Ethan Katsh & Orna Rabinovich-Einy, *Digital Justice: Technology and the Internet of Disputes* 21–23 (Oxford Univ. Press 2017)

² Kevin Werbach, *Trust, But Verify: Why the Blockchain Needs the Law*, 33 Berkeley Tech. L.J. 487, 502–05 (2018)

remedy to systemic latency in the Indian justice delivery system. It focuses on distributing the distributed ledger technology as a solution to frequent causes of procedural stagnation noted by judicial statistics, such as evidentiary failure, execution bottlenecks, witness management, and strategic delay. Through the analysis, blockchain is not placed as a substitute to the judicial power, but an institutional means that can help supplement ADR tools without losing relevance to the constitutional values and procedural fairness.

The paper following a doctrinal and analytical course, initially places ADR in the empirical background of judicial adjudications and latitude. It subsequently analyses critical procedural areas of pain that blockchain integration can bring about observable efficiency benefits. Lastly, it considers normative issues that are associated with due process, regulatory control, and the interpretation of law and legitimacy of technologies, recognizing both its potentials and the constraint of technological intervention in law. Therefore, the paper discusses blockchain as a structural remedy to procedural delay in ADR.

Addressing blockchain-based ADR as a structural change and not a technological supplement, this paper will be relevant to the current discussions of judicial modernisation, legal technology, and access to justice. It states that the only way reform has practical value is to unite those approaches to dispute resolution which are less predisposed to time wastage, misuse of procedure and institutional frailty.

Current research regards blockchain in dispute resolution as an improvement of technology, but not a redesign of procedural architecture. This article postulates that blockchain-based ADR serves as a re-engineering mechanism within a systemic delay causation that was found in NYDG data. The paper provides an institutional blueprint that can be emulated, not a conjectural project by tracing particular failures in the implementation of procedures to blockchain capabilities in the constitutional and legislative structures of India.

Alternative Dispute Resolution

Alternative Dispute Resolution (ADR) is a term used in reference to a set of mechanisms that are intended to settle conflicting disputes out of the traditional court system. It encompasses negotiation, mediation, arbitration, conciliation as well as modern hybrid and online models. ADR has become an efficient alternative to the traditional litigation which in most cases is lengthy, expensive and adversarial. ADR is critical in the current age of swelling judicial

backlog to help in providing swift, cost-effective and mutually-satisfactory resolution of disputes as well as facilitating access to justice. The essence behind ADR is to resolve a dispute within a more relaxed and collaborative setting.

As opposed to litigation, ADR is focused on consensus, flexibility, and party autonomy. Because of these benefits, ADR is not only significant to lawyers, but also to businesses, community leaders, and individuals who need a peaceful resolution of a conflict.

The constitutional values of access to justice and fairness in the process also normatively support ADR in India. *Article 14 and 21* of the Constitution assure equality before law and right to life and personal liberty whereas in the *Directive Principles of State Policy, Article 39-A* emphasizes equal justice and free legal assistance. These constitutional principles are in line with the philosophy of ADR, which aims at achieving fairness, equity and accessibility in the resolution of disputes. The outcomes of ADR have been given a statutory effect by means of legislations like the *Arbitration and Conciliation Act, 1996*, which enable the aids of ADR to be enforced by the court.

ADR is defined in a number of aspects. It is voluntary, i.e. parties opt to do it. It is informal and has flexible and open dialogues. ADR is also affordable and time-saving and can result in faster solutions. Mediators, arbitrators, and conciliators are neutral third parties that make sure that the process is fair and just.

ADR has become not only a subsidiary in India, but a structural part of civil justice by way of, on the one hand, court-referred mediation and arbitration under the CPC and special acts, and on the other hand, the merit of arbitration and mediation through the specialised statutes.

There are four principal forms of ADR mechanisms which are negotiation, mediation, arbitration, and conciliation. The easiest one is negotiation, which includes a face-to-face conversation between the sides. The process of mediation entails the use of a neutral mediator who assists in communication but does not dictate. Arbitration is more legal, in which an arbiter makes a binding decision. Conciliation is much like mediation with the difference that the conciliator is free to propose solutions. Moreover, media-arb, arb-med, as well as Online Dispute Resolution (ODR) are hybrid, up-and-coming models that employ various techniques and apply them to settle disputes effectively, particularly in cross-border and e-commerce

issues.

Blockchain technology

Blockchain is a decentralised digital registry where the transactions are stored as cryptographically interconnected blocks and confirmed by the consensus of the network.

Historical Development

The origin of blockchain technology can be traced back to the end of the 1970s when a computer scientist known as Ralph Merkle patented the Hash trees or Merkle trees. Stuart Haber and W. Scott Stornetta applied Merkle trees to build a system where document timestamps could not be altered in the late 1990s. The case was the historical one with blockchain.³

There have been three generations of blockchain the initial generation started in 2008 with the launch of Bitcoin by an anonymous person known as Satoshi Nakamoto; his principles remain fundamental to blockchain in the present day. The second generation was more than the cryptocurrency, with the platforms like Ethereum that made the transfer of assets possible and Smart Contracts were introduced. The third generation is an extension of technologies and is concerned with the development of smart contracts, greater immutability, and a difference between permissioned and public access.

Blockchain Network types⁴

Public - Public blockchain networks have networks in which parties are not specified, permissionless and accessible to all. Each party has the right to cheque and attaches the transactions in accordance with the consensus.

→ They are mostly used to extract and trade cryptocurrencies, including Bitcoin, Ethereum, Litecoin, etc.

Private - Private blockchain networks are closed networks, which allow only certain individuals who are members of the transaction under work to be handled by one organization, also known as managed blockchains. In this case, the authority is the determinant of members of the network and their rights in the network.

³ Stuart Haber & W. Scott Stornetta, How to Time-Stamp a Digital Document, 3 J. Cryptology 99 (1991)

⁴ World Econ. Forum, Blockchain Deployment Toolkit for Legal Systems 11–15 (2020)

→ An example of a private (permissioned) blockchain which organisations use to conduct secure transactions is Hyperledger Fabric.

Hybrid - These are the type of blockchains that integrates the feature of both the public and private blockchain networks. They regulate the access to certain data stored in the blockchain keeping other data publicly accessible. To enable the members of the public to verify whether private transactions are done, they utilize smart contracts.

→ Providing an example, hybrid blockchains may provide access to digital currency to the masses but make bank-owned currency private.

Consortium - Consortium blockchain networks are associated with networks that are managed by a group of preselected organizations which actively shares the burden of maintaining the blockchain. Such organizations decide on the individuals who are allowed to put in transactions and access data.

→ An example, in the energy sector, is the sharing of information regarding power consumption and distribution, between the energy producers and consumers.

The Contemporary Reality of the Indian Justice Landscape

This part contends that blockchain-based Alternate Dispute Resolution can provide a structural solution to the Indian problem of systemic judicial delays by redesigning fundamental processes, and not only providing marginal assistance to the existing courts.

The NJDG statistics are not considered as quantitative evidence of causation but as institutional indicators of the points of consistent procedural failure, which makes it possible to map doctrinal-technical rather than econometric inference. The numbers presented below are based on post-pandemic civil disposal data of NJDG (2021-2023).

❖ Empirical Situation of ADR in Judicial Disposals

According to recent post-pandemic judicial statistics, Alternate Dispute Resolution (ADR) has already stepped out of the archaic view of a peripheral tool. ADR was the sixth most commonly used dispute settlement method with a total of **3,75,582** cases conclusively settled via the ADR mechanisms. Further under the broad classification of civil case disposal, 7,14,491 cases or about 18.1% of all 40,30,975 disposed civil cases, were resolved under ADR related

processes.⁵

These numbers highlight two important issues. To begin with, ADR is already operating at the scale large enough to have systemic effects on docket management.⁶ Second, the judiciary has indirectly recognised the need to have parallel dispute resolution avenues to control the amount and nature of contemporary litigation. The practical data therefore puts ADR in a place of an experimental supplement, and not an operationally inbuilt part of the Indian justice system.

❖ The Judicial Paradox

Nevertheless, in spite of the large volumes of disposal per year, the Indian judiciary is still overwhelmed by structural delays. According to the National Judicial Data Grid (NJDG) the most common causes⁷ of delay in civil and criminal cases are missing records, inaccessibility of witnesses, around-the-clock stays, incomplete replacement of court representatives, excessive interlocutory requests, execution-stage delay, and infructuous cases because of disinterest by parties.

This paradox, the disposal of the masses and stagnation at the same time, tells us that delay is not so much a symptom of adjudicatory incapacity, as a symptom of process failure.⁸ Although ADR reduces the congestion in the adversarial system, it still functions within this paper-intensive, manually administered system that causes these inefficiencies. In the absence of redesign, ADR may end up inheriting the pathologies it tries to avoid.

❖ Re-engineering Evidences and Archives with Blockchain

A prevailing type of delay is associated with waiting until documents and record are availed, a sign of undermining of the archival integrity and evidentiary management. In traditional systems, the loss of or damaged files often lead to low-turn up and procedure stalemates.

One solution to this shortcoming is a blockchain-based architecture of an ADR system, which transforms all key case documents, including pleadings, exhibits, interim orders, and final awards, into cryptographic hash references on a permissioned distributed registry controlled by the courts and certified ADR entities. The integrity and existence of every document can be independently verified meaning continuity even during local system failure or even by physical

⁵ Nat'l Judicial Data Grid, Civil Case Disposal Statistics (Gov't of India)

⁶ Marc Galanter, *The Vanishing Trial: An Examination of Trials and Related Matters in Federal and State Courts*, 1 J. Empirical Legal Stud. 459 (2004)

⁷ PRS Legislative Research, *Judicial Pendency in India 6–9* (2023)

⁸ Nick Robinson, *A Quantitative Analysis of the Indian Supreme Court's Workload*, 10 J. Empirical Legal Stud. 570 (2013)

loss.

In the case of ADR processes, this provides a single evidentiary base available to mediators, arbitrators and Online Dispute Resolution (ODR), which considerably decreases the number of adjournments that can be explained by insufficient documentation.

❖ Party Substitution and Procedural Continuity Automation

The other significant cause of delay is procedural imposition post death, insolvency, or transfer of rights, which prove that legal representatives should be replaced. These incidents currently cause a sequence of manual applications, notices and judicial orders which can take months to accomplish.

The automation of party substitution is subject to the judicial confirmation and the procedural protection. The ADR facilitated by blockchain allows the re-conceptualization of disputes into smart legal objects, in which the status of a party is a mutable attribute on a ledger. Relevant changes in civil registration, land-records, or corporate databases can automatically be flagged by checking interoperability, which triggers substitution workflows by initiating smart contracts. The system can incorporate deadlines, a notification, and procedural consequences and make substitution less of an open-ended bureaucratic experience and more of a digital protocol directed by determinism.

❖ Decree Performance and the Performance Gap

The most apparent breach of adjudicatory results and real-life enforcement is seen through execution-stage delays. Judgment-debtors are often a drag to execution by hiding their assets, abusing registry inefficiencies, or putting service of process into their recurring challenges.

ADR settlements and awards on a permissioned blockchain, where tokenisation is done, interoperable with land, corporate and banking registries, presents a partial solution. The post-finality activities might automate to some degree post-award compliance processes, which will be supervised by the courts and enforced by the statutory means. The assets management provided by the blockchain-based ADR directly addresses one of the most intractable causes of judicial delay by substituting the paper-driven enforcement with the ledger-based management⁹.

❖ Witness Management and Dependability of the Evidence

⁹ Max Raskin, *The Law and Legality of Smart Contracts*, 1 Geo. L. Tech. Rev. 305, 321–24 (2017)

Failure to obtain the availability of material witnesses has continued to be one of the major contributors to delays in both civil and criminal cases. Online ADR already addresses this difficulty by ensuring remote participation and allowing increased use of documentary evidence.

The inclusion of blockchain also reinforces this model as the testimony of witnesses (collected with the help of a secure video or signed and hashed on the ledger using a digital signature) turns into an unchangeable piece of evidence. This minimises conflict of testimony, the necessity to issue summons more than once, and promotes judicial confidence in evidence produced by ADR processes.

❖ The Strategic Delay and Infructuous Litigation

Some types of delay, e.g. excessive interlocutory applications, extended stays and disinterest by a party are symptomatic of strategic behaviour and not procedural incapacity. An analytical detection of abuse patterns can be made possible by a blockchain-based case ledger that documents each act of the procedure as a state transition.

Case management rules implemented as smart-contracts can also restrict redundant filings, require mediation when delay-seeking behaviour has been observed, or cause a process of automated closure in the situations where no action has taken place in the long run. Within this paradigm, ADR is no longer a voluntary alternative, but an algorithmically biased default towards disputes that show the signs of procedural abuse or obsolescence.

❖ Normative Implications of Judicial Modernisation

The empirical effectiveness of ADR, used in conjunction with the blockchain-based process re-engineering, suggests a dual-track justice model where the traditional litigation is supplemented with the technologically boosted ADR. Conflicts are digital, documents are irrevocable, hearings are safely computerised and settlements are smoothly incorporated into enforcement systems.

Jurisdictions which institutionalise such systems will not only enjoy enhanced clearance rates, they also will have the advantage of setting world standards of digital adjudication and cross-border enforcement. On the other hand, the danger of sticking with failure risks is that it would solidify inefficiencies that would destroy judicial credibility as well as interoperability of the international legal system.

The essence of the above, thus, boils down to being that, the suggested reforms consist of a

dual track justice architecture, under which blockchain-enabled ADR engrosses the lengthy and heavy disputes, strengthens enforcement, and restores confidence in a modern, interoperable Indian judiciary.

Relevance of Blockchain to Legal Processes

Nowadays, it is required to keep up with the changing processes and networks. Blockchain is important to legal procedures since it alters the ways of making, proving, and enforcing agreements in the digital environments. Smart contracts on blockchain have the potential to be automated in terms of performing agreed-upon terms, when coded conditions are fulfilled.¹⁰ Currently, immutable and timestamped records may make documents, transactions and registers more authentic, ensuring chain-of-custody, and blockchain records¹¹ may already be considered evidence in some jurisdictions. To a larger extent, the blockchain is also investigated by the courts and justice systems to operate e-filing, case management and safe data-sharing in a more transparent manner. In ADR, blockchain assists in ensuring secure ODR¹² platforms, which have tamper-proof logs, smart-contract escrow, and on-chain arbitration schemes, but it also creates regulatory problems in recognition, jurisdiction, and data security.

Indian Legal Framework on Blockchain-based Alternate Dispute

Resolution

Current ADR Laws in India

❖ *The Arbitration and Conciliation Act, 1996 (as amended in 2015, 2019 and 2021)*

In order to make blockchain an ADR facilitating system, a dispute, a possible or existing dispute, should be submitted under *Section 7* arbitration agreements, using a defined legal relationship, whether contractual or non¹³, consistent with Information Technology Act, 2000. Any court order could be enforced by the tribunal under any section. Parties may negotiate procedure under, *Section 19*¹⁴, otherwise under tribunal with evidence discretion, and place under circumstances, and/or party convenience, under, *Section 20*, under flexible meetings and hearings/documents and may negotiate under, *Section 24*, with notice/communication

¹⁰ Max Raskin, The Law and Legality of Smart Contracts, 1 Geo. L. Tech. Rev. 305, 308–12 (2017)

¹¹ Kevin Werbach, Trust, But Verify: Why the Blockchain Needs the Law, 33 Berkeley Tech. L.J. 487, 492–95 (2018)

¹² OECD, Online Dispute Resolution for Consumers 18–21 (2019)

¹³ Arbitration and Conciliation Act, 1996, Section 7 (India)

¹⁴ Arbitration and Conciliation Act, No. 26 of 1996, § 19 (India); *Fuerst Day Lawson Ltd. v. Jindal Exports Ltd.*, (2011) 8 S.C.C. 333 (India)

requirements.¹⁵ *Section 11* allows consented nationality of arbitrators and arbiter procedure with failure of three-arbitrator panel, with court/institution intervention when there is no agreement through identified graded bodies authorizing disclosures, qualification, and technology-based efficiency guarantee. *Section 12* obliges independence, impartiality, or devotion of time arbiter disclosures, and challenges regarding it are questionable, qualification missing or post-appointment determinations, and recommends just blockchain-based tribunals.¹⁶

In this regard, although the Act permits the utilisation of blockchain instruments as auxiliary infrastructure, it does not empower or suggest blockchain-based tribunals, and these applications must not interfere with the principles of fairness, autonomy of the parties, and judicial oversight.

❖ *The Mediation Act, 2023*

The Mediation Act 2023 has provided a statutory backup of mediation in India and has a technology-neutral position. Even though it does not directly consider blockchain-based mediation, it allows the digital facilitation based on its open procedural structure.

The Act acknowledges mediation agreements that address future or existing disputes that are based on either contractual or non-contractual relationships which have been reduced in writing, including electronic communications. This supports the online and technology-based mediation framework, such as blockchain-based documentation and authentication.

Mediated settlement agreements made under the Act are binding as judgments, except to limited statutory appeal, on grounds such as fraud, corruption, impersonation, or where the subject matter of the mediation is itself not fit. Enforcement is not thus similar to a decree under the Code of Civil Procedure, but is governed by a different statutory way.

It is open to parties to select any national boursbons as the mediators and the Act mandates disclosure to guarantee independence and lack of conflict of interest. It maintains confidentiality, it does not necessarily follow the Code of civil Procedure and the Evidence Act, and it allows mediation process to take place in a more convenient location to parties (even virtually). Time restrictions are set but the mediation period is not predetermined towards limitation purposes other than those stipulated in statutes.

Although blockchain can be applied to keep records, timestamps, or settlement documentation, secure, the Act does not require or support such technology.

¹⁵ Id. Sections 19, 20, 24

¹⁶ Id. Sections 11–12

❖ ***The Code of Civil Procedure (CPC), 1908***

To enable courts to make use of arbitration, conciliation, mediation, or judicial settlement where resolution seems possible, the Code of Civil Procedure, 1908, empowers courts under *Section 89*¹⁷ to refer a dispute to arbitration, conciliation, mediation, or judicial settlement, where such formulations are codified as enforceable decrees under *Order XXIII Rule 3*, which is why enabling blockchain-based ADR to help efficiently resolve contractual or non-contractual disputes.¹⁸ *Section 9* does not block the jurisdiction of the courts except where specifically stated, which is also supported by *Order X Rule 1A* advising the parties to ADR alternatives and in relation to transfers (*Sections 24-25, Order XXI*) and inherent powers (*Section 151*) to aid the virtual platforms. The case of *Afcons Infrastructure Ltd. v. Nagpur Metro Rail Corporation Ltd.* (2022) 11 SCC 161 and *Salem Advocate Bar Assn. v. Union of India* (2005) 6 SCC 344, justifies the need to have party consent to referrals through case law as these cases promote procedural flexibility in technology-enabled fair courts.^{19,20}

❖ ***The Legal Services Authorities Act, 1987***

The Legal Services Authorities Act, 1987 is the main contributor to the provision of ADR via Lok Adalats and Permanent Lok Adalats, which assist in integrating blockchain to make the process of dispute settlement secure and hard to tamper with. The significant ADR's aspects of this Act incline towards digital solutions like blockchain to be used as safe evidence and automated settlements. In *Sections 19 - 22*, Lok Adalats are granted the civil court-like jurisdiction in regards to pending or pre-litigation disputes, and the procedures are less rigid, and the final decree is more apt to transparent records of blockchain. *Part 22A-22E* allow Permanent Lok Adalats of immutable fast on-chain no-appeal public utility conciliation. *Section 4(f)* promotes arbitration or conciliation via National Legal Services Authority, by fitting smart contracts, and *Section 7(b)* commands State-run Lok Adalats on remote, blockchain-secured systems.

Any form of blockchain integration would thus be peripheral, aimed at transparency or record integrity instead of decision-making.

¹⁷ Code of Civil Procedure, No. 5 of 1908, § 89 (India); *Afcons Infrastructure Ltd. v. Cherian Varkey Construction Co.*, (2010) 8 S.C.C. 24 (India)

¹⁸ Code of Civil Procedure, 1908, Section 89 (India)

¹⁹ *Salem Advocate Bar Ass'n v. Union of India*, (2005) 6 S.C.C. 344 (India)

²⁰ *Afcons Infrastructure Ltd. v. Cherian Varkey Constr. Co.*, (2010) 8 S.C.C. 24 (India)

❖ *The Commercial Courts Act, 2019*

The Commercial Courts Act, 2015 (revised, dubbed 2019 after consolidation) enhances blockchain in ADR through pre-institution mediation and electronic records of safe, tamper-proof digital dispute resolution of commercial disputes. Section 12A, says that non-urgency commercial suits worth over 3 lakhs shall be pre-institutionally mediated and subject to the settlements like arbitral awards. It reconstructs eye blockchain ODR, smart contracts, e-venues and signatures. The act considers the disclosure/inspection of e-records, the printouts of which are favourable in the establishment of blockchain evidence in the IT/Evidence Act Section 65B. Depending upon the jurisdiction, admissibility of the electronic records in the commercial courts is subject to usual practises of Evidence Act. This enables tamper resistant ledgers which help generate self-executing contracts to minimize arrears. Although blockchain can help to keep electronic records or traces of evidence tamper-resistant, blockchain-based ADRs are not identified by the Act and not under its regulation.

❖ *The Indian International Arbitration Centre Act, 2019*

In direct relation, the India international arbitration centre act of 2019 creates a framework of arbitration based on institutions but does not refer to blockchain. Nonetheless, technical areas about facilities, training, and efficiency allow the introduction of blockchain through rules. *Section 14-15* discusses admin assistance to arbitration, conciliation, or mediation, research and facilities that are just ideal in blockchain-safe records. *Section 28* establishes a Chamber of arbitrator empanelment and regulations that may have blockchain as a means of transparency/smart contracts. *Section 29* establishes an Academy on Arbitration to research/train, which provides room to revise ADR processes towards blockchain. Rules on ADR (e.g., amended 15(a)) to embrace digital tools are permitted by *Section 30-31*, and *Section 2* accommodates 1996 Act where amended *Section 7* legalises electronic agreements such as blockchain smart contracts as electronic records. No requirements, but lenient towards innovation.

No direct Indian case laws interpret the Act in the context of blockchain but PASL Wind Solutions Pvt. Ltd. v. GE Power Conversion India Pvt. Ltd. (2021) 7 SCC 1 made it clear that Indian-seated arbitrations were permissible, even though it did not discuss blockchain, digital assets, or technology-based tribunals. Such inference would therefore be speculative.

❖ *Bharatiya Sakshya Adhinyam, 2023*

The Bharatiya Sakshya Adhinyam of 2023 substitutes the Indian Evidence Act of 1872 and

regulates the admissibility of electronic evidence in the Indian courts. Section 63, which is in line with the previous Section 65B regime, subjects the certification requirements on electronic records.

Any evidence that is based on blockchain is presumptively inadmissible unless it meets these statutory requirements, especially the need that there be a certificate defining the electronic record, how it is produced, and what device or system produced it.

Role of Information Technology Act, 2000

Information Technology Act, 2000 (IT Act) lays the backbone of electronic governance, digital transactions, and cybercrimes in India, and electronic records and signatures are the key components of digital dispute resolution with the acknowledgment of electronic contracts that precondition the blockchain mechanisms in agreements and evidence.

Section 4 identifies the electronic records as the paper records before the law. *Section 5* provides a legal equivalence of digital signatures. *Section 10A* clearly ratifies agreements made through electronic means, which directly give support to smart contracts on blockchain as long as they comply with the necessary requirements of the Indian Contracts Act.²¹

Alternative Dispute Resolution (ADR) via blockchain takes advantage of provisions of IT Acts that guarantees a record that is impossible to tamper with and automated smart contracts, minimizes intermediaries in arbitration or mediation, and makes electronic arbitration agreements enforceable in ODR of stuff such as crypto scams. The difficulties in evidentiary presumptions continue in the *Indian Evidence Act 65B* where the hashes of blockchain must meet the standards in the IT Act.

In *Trimex International FZE Ltd. v. Vedanta Aluminium Ltd.*²², the Supreme Court considered email communications as a legitimate written arbitral contract, which is consistent with the fact that the Arbitration Act does not contradict the electronic records established by the IT Act. While in *Nirod Kumar Das v. State of Odisha*²³, the Orissa High Court, clarified that the illegality of a given Ponzi scheme did not necessarily correspond with the legal status of cryptocurrency in general, and that digital asset is not illegal under the Indian law in itself.

²¹ Information Technology Act, 2000, Sections 3A, 4–5, 10-A (India)

²² *Trimex Int'l FZE Ltd. v. Vedanta Aluminium Ltd.*, (2010) 3 S.C.C. 1 (India)

²³ *Nirod Kumar Das v. State of Odisha*, 2024 SCC OnLine Ori 1375 (India)

Policy Recommendations

To realise blockchain-based ADR in India, reform must be carried out in a well-planned institutional structure and not haphazard changes in technological implementation. To begin with, a regulatory sandbox must be provided with collective oversight of the judiciary, NITI Aayog, and accepted ADR institutions and be used as a pilot in relation to permissioned blockchain platforms focusing on arbitration and mediation. Second, the procedural provisions of the Arbitration and Conciliation Act, 1996 and the Mediation Act, 2023 need to be complemented by the delegated legislation formally admitting blockchain-secured records and smart contract-based case management, as well as hashed evidentiary logs, with the stringent due process protection. Third, the interoperability standards should also be formulated to ensure a safe connexion between blockchain ADR platforms and court registries, land records, and corporate databases to ensure the easier enforcement of arbitration results. Lastly, the judicial officers, arbitrators, and mediators should get specific training on legal-technical literacy to prevent the technology obscurity and efficiency advantages should not be at the cost of fairness, transparency and constitutional accountability.

Conclusion

The current paper examines judicial delay in India as a phenomenon that is structural and is caused by the design of the procedure instead of the inability to judge. The study proves that Alternate Dispute Resolution (ADR) is not only a peripheral mechanism but also a part of the process of resolving civil disputes in India based on the analysis of the disposal statistics and institutional practises. However, even with the growth, ADR has not been able to realise the systemic efficiency of which it boasts, implying that delay continues not because of a lack of avenues to resolve disputes but by inherited procedural flaws.

The analysis affirms the fact that judicial delay is essentially a process- failure issue. Through the National Judicial Data Grid data, the research determines that sources of delay such as loss or manipulation of records, absence of continuity in the evidence presented, lack of availability of witnesses, execution bottlenecks, and strategic misuse of the procedures are recurrent throughout the litigation process and alternative dispute resolution. These failures have in common the use of paper and hand-administered and systemically discontinuous mechanisms. In this vein, ADR, when overlaid onto the same procedural framework, is therefore likely to repeat the same inefficiencies that it is said to avoid.

It is within this institutional context that the study hypothesises blockchain-based ADR as a paradigm of procedural re-engineering and not procedural digitisation. It proves that the key distinguishing features of the blockchain technology immutability, verifiability, distributed consensus, and programmable automation are what agree with the procedural vulnerabilities that form the basis of delay. At the level of procedure, the integration of blockchain is able to maintain evidentiary integrity, maintain chronological continuity, reduce the chance of strategic hindrance, and reduce the gap between adjudication and implementation.

Notably, the paper does not promote blockchain as an alternative to the court or discretion and constitutional adjudication. Instead, it introduces blockchain to the viewpoint of an institutional scaffold which strengthens procedural discipline without in any way compromising on the principles of due process and judicial independence. The focus is all through on augmentation, as opposed to replacement, and structural correction, as opposed to technological experimentation.

The topicality of the research is explained by the circumstances related to the Indian justice system being faced by an unprecedented backlog of unsolved cases, a decisive period of institutional digitisation, and the formalisation of the utilisation of decentralised digital infrastructure in the context of the governance of the populace. The analysis provided in a context where efficiency-driven changes run the risk of institutionalising current procedural weaknesses when they are not dealt with structurally, provides a paradigm in which technological capacity is matched with procedural discipline. Placing blockchain-enabled ADR in this convergence, the research serves an imminent institutional requirement as opposed to a hypothetical future, thus suggesting a structurally informed channel of reform in a point where the system is most open.

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