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## Reforming Arbitration Rules For The Digital Age: Towards A Unified Framework For E-Contract Disputes

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### **Abstract: -**

The rapid digitalization of commercial transactions has revolutionized contract formation and dispute resolution, giving rise to new forms of electronic contracts e.g. click-wrap, browse-wrap, e-signature agreements, and smart contracts operating on blockchain platforms. As technology increasingly becomes central to contractual relationships, arbitration traditionally valued for its flexibility and efficiency must adapt to this evolving digital landscape. In the Indian context, while the Arbitration and Conciliation Act, 1996 and the Information Technology Act, 2000 provide a basic framework for recognizing electronic contracts and digital signatures, several gaps and ambiguities persist. Challenges range from enforceability of arbitration clauses in standard-form digital contracts to procedural uncertainties in virtual hearings, e-signature validity, and jurisdictional complexities in cross-border e-contracts.

This article critically examines the intersection of e-contracting and arbitration under Indian law, supported by judicial precedents such as *Trimex International v. Vedanta*, *Shakti Bhog Foods v. Kola Shipping*, and *Texco Marketing v. TATA AIG*. It identifies key legal ambiguities—including inconsistent treatment of digital vs. electronic signatures, lack of clarity on consent in adhesion contracts, and enforceability issues with smart contracts. Further, it evaluates the Draft Arbitration and Conciliation (Amendment) Bill, 2024, which attempts to modernize the arbitration framework by recognizing virtual hearings and digital arbitration agreements.

Drawing on comparative international practices and model laws like UNCITRAL, the paper advocates for a unified, technology-neutral arbitration framework. It calls for legislative and procedural reforms that define the scope of e-signatures, regulate digital arbitration platforms, ensure procedural fairness, and promote cross-border enforceability. A future-ready arbitration regime is vital not only for enhancing commercial confidence but also for ensuring equitable access to justice in the digital age.

**Keywords:** -E-contract disputes, Digital arbitration, Electronic signatures, Arbitration clause in digital contracts, Legal enforceability of e-contracts.

## **Introduction: -**

Arbitration has long been regarded as a reliable alternative to litigation, appreciated for its adaptability, confidentiality, and procedural efficiency. Over time, it has evolved to meet the changing demands of commercial entities, industries, and international legal systems. One of the most significant developments in recent years has been the incorporation of digital technologies into arbitral practices. Innovations such as virtual hearings, online filings, digital evidence management, and AI-powered tools have revolutionized traditional arbitration, enhancing its accessibility, speed, and cost-efficiency.

However, this digital transformation brings with it several opportunities and challenges. While technology enhances access, reduces costs, and expedites dispute resolution, it also raises concerns over cybersecurity, confidentiality, procedural fairness, and enforceability of arbitral awards.<sup>1</sup> Furthermore, technological disparities between parties, particularly between those from developed and developing regions, present significant obstacles to achieving equitable outcomes. This paper critically examines the evolution of arbitration in the digital era. It analyses the opportunities offered by technological advancements, the legal and procedural challenges that arise, and the adaptations made by arbitral institutions and jurisdictions worldwide. Finally, it assesses the future trajectory of arbitration in a world increasingly shaped by digital innovation.

## **E-Contact under Legal Framework in India: -**

A contract is a legally enforceable agreement, as defined under Section 2(h) of The Indian Contract Act, 1872 (herein referred to as "ICA, 1872"). In simple words, it is an agreement that gives rise to a legal obligation to perform an act as promised by the promisor (the person who makes a promise) in return for consideration provided to him by the promisee (the person to whom the promise is made). An electronic contract, commonly referred to as an e-contract, is a legally enforceable agreement formed through electronic means. It is drafted, negotiated and executed digitally, and hence it is completely digital in nature. The term "e-contract" or "electronic contract" has not been defined under The Indian Contract Act, 1872 or The Information Technology Act, 2000 (herein referred to as the "IT Act, 2000"), but the IT Act, 2000, talks about the validity of contracts formed through electronic means. It is mentioned under Section 10A of the IT Act, 2000, that if communication, acceptance or revocation of proposals is expressed in electronic form or by

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1. Thomas Schultz, Information Technology and Arbitration: A Practitioner's Guide, 4 J. Int'l Arb. 31 (2003)

means of any electronic record, then such a contract is deemed to be enforceable. Under Sections 5 and 10 of the Information Technology Act, 2000 ("IT Act"), 'electronic signatures' have been identified as being both legally recognised and for the Central Government to make requisite rules as manner and format of the same, etc. Further, as per section 65B of the Indian Evidence Act, 1972 ("Evidence Act"), contracts containing digital signatures can be submitted as evidence<sup>2</sup>.

The main advantage of e-contracts is that they are not paper-based and parties to the e-contract can enter into it even if the promisor and the promisee happen to be in different places, i.e., an in-person meeting is not required for signing the contract. Instead, the parties can enter into the contract by means of a digital signature. A digital signature is a valid digital replacement or alternative to a hand-written signature. It is defined under Section 2(1)(p) of the IT Act, 2000. Section 3 of the IT Act, 2000, provides for the authentication of electronic records by affixing the digital signature of a person. Indian Courts have recognized the enforceability of

e-contracts in cases like *Trimex International v. Vedanta*, holding that email exchanges can themselves constitute a binding contract when the parties manifest assent<sup>3</sup>.

### **Judicial Precedents and Doctrinal Developments:-**

- *Trimex International FZE v Vedanta Aluminium Ltd*<sup>4</sup>: In the case of *Trimex International FZE Ltd. Dubai vs Vedanta Aluminium Ltd. India*, the Supreme Court of India held that a binding and enforceable contract can be concluded through electronic communications such as emails, even in the absence of a formally signed agreement. The dispute arose when Trimex, a Dubai-based company, arranged for the shipment of bauxite ore to Vedanta based on mutually agreed terms exchanged via email, including an arbitration clause. Vedanta later refused to accept the shipment, arguing that no formal contract existed. The Court found that the essential elements of a valid contract under Section 10 of the Indian Contract Act, 1872 offer, acceptance, consideration, and intention to create legal relations were fulfilled. It emphasized that the parties' intention, as evidenced through their correspondence, indicated a concluded contract. The arbitration clause was deemed valid and enforceable, having been incorporated by reference, and the matter was referred to arbitration under Section 45 of the Arbitration and Conciliation Act, 1996. This judgment affirmed that e-contracts and arbitration agreements formed through electronic means are legally recognized and enforceable in India.

2. The Blockchain Arbitral Order: An Indian Perspective - Arbitration & Dispute Resolution - India
3. <https://blog.iplayers.in/all-you-need-to-know-about-e-contracts>
4. (2010) 3 SCC 1

- *Vidya Drolia v Durga Trading Corporation*: Key decision that reinforced that validity of arbitration agreement depends on satisfying both the Arbitration Act's requirements and the Contract Act's essentials.<sup>5</sup>
- *Shakti Bhog Foods Limited v Kola Shipping Limited*,<sup>6</sup> ("Shakti Bhog") the Apex Court gave a purposive interpretation to Section 7 of Arbitration Act, and held that an inference has to be drawn from exchange of e-mails, letters or fax even if the agreement was not signed by the parties. In view of the ratios laid down in *Trimex* and *Shakti Bhog* cases, it can be inferred that if an electronic arbitration agreement fulfils the rigours of Arbitration Act, then the same can be considered valid and will be enforceable.

There are decisions that have up-held arbitration clauses even in standard form contracts, click-wrap etc., provided there is clear consent, reasonable notice, and likelihood of assent. (Though specifics are less well developed in Indian jurisprudence compared to some other jurisdictions.)

### **Validity and enforceability of Arbitral Clause in electronic standard form of contracts: -**

Standard form of contracts are "take it or leave it contracts", which leave the other party with almost no bargaining power. Such contracts are also known as adhesion contracts. Parties belonging to various sectors such as non-banking financial companies (NBFCs), software companies, banks, etc. require their customers

to sign the standard form of contracts. These contracts are even made through electronic mode and give more power to one party over the other. Recently, in *M/S Texco Marketing Pvt. Ltd. v. TATA AIG General Insurance Company Ltd. & Ors.*<sup>7</sup> ("Texco"), the Apex Court has taken a critical view of the standard form of contracts and has observed that "*freedom to contract*" is lost in such cases. This problem aggravates when such contracts are executed in electronic form and contains an arbitral clause. In such cases, the validity of arbitral clause is also questioned when it stipulates for a unilateral appointment of sole arbitrator or for the want of proper consent or signature by the party. When a challenge is based on the ground of unilateral appointment of arbitrator, the courts have mostly set aside the arbitral awards in such cases. In *Envirad Projects Pvt. Ltd. v. NTPC Ltd.*<sup>8</sup>, the Hon'ble Delhi High Court held that unilateral appointment of arbitrator is non-est. The Apex Court has also reprimanded the practice of unilateral appointment of arbitrator in *Perkins Eastman Architects DPC v. HSCC (India) Ltd.*<sup>9</sup>

5. AIR ONLINE 2020 SC 929
6. AIR 2009 SUPREME COURT 12
7. CIVIL APPEAL NO. 8249 OF 2022 [Arising out of SLP (Civil) No. 25457 of 2019]
8. (2022) SCC Del 151
9. 2019 SCC OnLine SC 1517

and *Voestalpine Schienen GmbH v. Delhi Metro Rail Corporation Ltd.*<sup>10</sup>. Such clauses exist in electronic adhesion contracts. Enforceability becomes difficult where electronic adhesion contracts give more power to one party to appoint arbitrators because it fails to fulfil the equitable and legal principles of a valid contract as enshrined under the Arbitration and Conciliation Act, 1996 and Indian Contract Act, 1872.

## **Legal Ambiguities and Operational Challenges in E-Contracting: -**

### **1. Ambiguities in Signature Requirements:-**

Although Indian law acknowledges the validity of contracts formed through electronic means, there remains significant ambiguity regarding the sufficiency and type of digital signatures required, particularly in arbitration agreements. Section 10A of the Information Technology Act, 2000, and Section 7 of the Arbitration and Conciliation Act, 1996, permit agreements in electronic form, but neither law explicitly outlines whether mechanisms like Aadhaar-based eSign or simple typed names suffice as signatures in all contexts. In standard form e-contracts especially in browse-wrap or passive assent scenarios—whether user interaction amounts to a valid “signature” or consent under Indian contract and arbitration law remains judicially underdeveloped.

### **2. Distinction Between Electronic and Digital Signatures:-**

Another legal uncertainty lies in the inconsistent treatment of “electronic signatures” and “digital signatures.” While the IT Act, 2000 recognizes both under different sections (notably Sections 2(p) and 2(ta)), the legal and technical standards differ particularly regarding security features like authentication, encryption, hashing, and non-repudiation. Despite this, legislation and judicial practice sometimes use the terms interchangeably, causing confusion over the enforceability of arbitration clauses executed through less-secure or unauthenticated forms of e-signatures.

### **3. Legal Challenges with Smart Contracts and Blockchain Arbitration:-**

Smart contracts self-executing agreements embedded in code, introduce novel complexities into the legal framework. These include questions around party identification, attribution of consent, the legal recognition

of coded “terms,” and the treatment of bugs, glitches, or reliance on external data (oracles). Moreover, integrating arbitration clauses into blockchain-based contracts raises issues concerning compliance with formal arbitration law such as the requirement for agreements to be “in writing,” signed, and the admissibility of evidence and final awards. The Arbitration and Conciliation Act, 1996, currently does not provide sufficient guidance for disputes arising from decentralized and autonomous systems.

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10. (2017) 4SCC 665

#### **4. Procedural Concerns in Virtual Arbitration:-**

While proposed reforms including the Draft Arbitration and Conciliation (Amendment) Bill, 2024 seek to formally recognize arbitration conducted through video conferencing and other digital platforms, practical and doctrinal resistance persists. Courts have expressed caution regarding the integrity of virtual hearings, particularly in the areas of cross-examination, due process, confidentiality, and the service of documents. Variability in judicial attitudes, along with uneven technological readiness, hampers uniform acceptance of online dispute resolution (ODR) mechanisms, despite their increasing necessity.<sup>11</sup>

#### **5. Formality, Writing, and E-Stamping Issues:-**

A key issue in domestic arbitrations is the applicability of stamp duties to electronically rendered arbitral awards. Section 36 of the Arbitration and Conciliation Act refers to the enforceability of awards that are “in writing,” yet the Indian Stamp Act, 1899, has not been comprehensively updated to account for digital documents or e-stamping processes in arbitration.<sup>12</sup> This gap creates uncertainty regarding whether electronic awards without physical signatures or physical stamp paper are enforceable, or whether they could be challenged for non-compliance with statutory formalities.

#### **6. Power Imbalances and Consumer Protection in E-Contracts:-**

E-contracts, especially in consumer transactions, frequently embed mandatory arbitration clauses within standard form contracts, often without clear disclosure or informed consent. These clauses are sometimes buried in terms of service that users rarely read or understand. Concerns arise over whether such agreements truly reflect voluntary submission to arbitration, particularly when the consumer has no meaningful choice, cannot negotiate terms, or is bound to a distant or inconvenient venue. The absence of adequate statutory safeguards for fairness in such e-contract arbitration scenarios remains a critical challenge.

#### **7. Cross-Border Enforcement and Conflicts of Law:-**

The enforceability of arbitration agreements executed electronically across jurisdictions raises significant concerns under international law. Differences in the recognition of electronic signatures, methods of execution, and procedural standards can affect whether an arbitration agreement or award is upheld in foreign courts. While the New York Convention provides a broad framework for the enforcement of foreign arbitral awards, practical enforcement may be undermined by conflicting domestic laws on digital contract validity and evidentiary standards.

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11. ([https://www.sconline.com/blog/post/2024/12/10/future-of-arbitration-in-india-decoding-the-draft-arbitration-and-conciliation-amendment-bill-2024/?utm\\_source=chatgpt.com](https://www.sconline.com/blog/post/2024/12/10/future-of-arbitration-in-india-decoding-the-draft-arbitration-and-conciliation-amendment-bill-2024/?utm_source=chatgpt.com))

12. <https://articles.manupatra.com/article-details/STAMPING-OF-ARBITRATION-AGREEMENTS-UNRAVELLING-THE-ENFORCEABILITY-SAGAS-FINAL-VERDICT>

## **8. Infrastructure and Institutional Readiness:-**

India's arbitration ecosystem continues to face structural hurdles in adapting to digital processes. These include the availability and reliability of ODR platforms, the technological infrastructure needed for secure and confidential hearings, and awareness among litigants, arbitrators, and institutions. Moreover, uneven internet access, procedural costs, and the absence of robust regulatory frameworks or accreditation for online arbitral platforms contribute to hesitation in adopting digital arbitration methods. Judicial attitudes also vary, with some courts being more conservative in their interpretation of virtual procedure requirements, which affects consistency in enforcement and procedural guidance.

## **Judicial Divergence on Consent and Validity of Arbitration in E-Contracts:-**

The Indian Supreme Court has adopted varying approaches in assessing the validity of arbitration clauses within the context of electronic and informal agreements, as seen in the decisions of *MS Tea Estates Pvt. Ltd. v. Chandmari Tea Company Pvt. Ltd.*<sup>13</sup> and *M/S Texco Marketing Pvt. Ltd. v. TATA AIG General Insurance Company Ltd.* (Civil Appeal No. 8430 of 2019).

In the former, the Court held that a mere reference to arbitration in exchanged communications or unsigned drafts did not satisfy the requirement of a valid arbitration agreement under Section 7 of the Arbitration and Conciliation Act, 1996. The Court emphasized that mutual and unequivocal consent to arbitrate must be clearly established in writing, and in the absence of a formally concluded agreement, arbitration could not be compelled. By contrast, in *Texco Marketing*, the Court acknowledged the evolving nature of digital contracting and upheld an arbitration clause embedded in an insurance policy issued electronically. Relying on Section 10A of the Information Technology Act, 2000, which affirms the validity of electronic contracts, the Court recognized that the insured's acceptance of the e-policy even without a physical signature was sufficient to establish binding consent. This divergence highlights the judiciary's growing recognition of electronic modes of contracting while maintaining the core requirement of clear consent. It also underscores the need for consistent legal standards to accommodate digital contract formation and arbitration enforcement within India's statutory framework.

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13. MANU/SC/0836/2011

## **Recent Law Reform Proposals: Draft Arbitration and Conciliation (Amendment) Bill, 2024: -**

A number of significant amendments are introduced in the Draft Arbitration and Conciliation (Amendment) Bill, 2024, with the goal of modernizing arbitration in India and bringing it into line with the reality of digital and electronic contracting. In order to properly legitimize virtual hearings and online arbitration processes, one of the important recommendations is to change Section 2(1)(a) to specifically recognize "*arbitration conducted through audio-video electronic means*". In order to bring the Arbitration Act more closely in line with the provisions of the Information Technology Act of 2000, the draft law also aims to give legislative legitimacy to arbitration agreements executed using digital signatures.<sup>14</sup>

In light of the Mediation Act, 2023, which now regulates conciliation and related ADR procedures independently, another noteworthy revision is the proposed removal of the term "conciliation" from the Arbitration and Conciliation Act, 1996. In keeping with the Act's pro-arbitration position, the bill also attempts to minimize judicial involvement in arbitral procedures and makes vague references to altering the definition of "court."

Although the proposed amendments reflect a forward-looking legislative approach, several critical components remain insufficiently addressed. The draft bill does not clearly delineate which types of digital signatures would be deemed legally acceptable within the arbitration context, nor does it provide comprehensive procedural guidance to ensure the reliability, integrity, and evidentiary admissibility of arbitration agreements executed through electronic means. Furthermore, there is an absence of well-defined procedural rules for conducting virtual arbitration hearings particularly regarding notice requirements, mechanisms for cross-examination, protection of data privacy, and equitable access to legal counsel. This lack of specificity may hinder the consistent and effective application of digital arbitration, potentially leading to divergent judicial interpretations and challenges to procedural fairness.

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14. <https://www.sconline.com/blog/post/2024/12/10/future-of-arbitration-in-india-decoding-the-draft-arbitration-and-conciliation-amendment-bill-2024/>

### **Conclusion: -**

India's legal framework has made meaningful strides toward accommodating electronic contracts and digital dispute resolution, especially with the recognition of electronic records and digital signatures under the Information Technology Act, 2000 (Sections 4, 5, and 10A), and the inclusive interpretation of "arbitration agreements" under Section 7 of the Arbitration and Conciliation Act, 1996. The judiciary has also contributed to this evolution most notably in *M/S Texco Marketing Pvt. Ltd. v. TATA AIG General Insurance Co. Ltd.* (2019), where the Supreme Court held that arbitration clauses contained in e-mailed insurance policies could be binding, thereby affirming the enforceability of arbitration agreements formed via electronic means. Despite these developments, the legal regime still faces several unresolved challenges that risk undermining the legitimacy and inclusivity of e-arbitration. For instance, the lack of uniform standards for electronic and digital signatures leads to confusion in the enforcement of arbitration agreements, particularly in "click-wrap" or "browse-wrap" contracts, where user consent is implied rather than explicit. While Section 10A of the IT Act validates electronic contracts, the requirements under Section 7(4)(b) of the Arbitration Act that an arbitration agreement must be evidenced through an exchange of electronic communications continue to generate interpretative ambiguity, as highlighted in *M/s. Tea Estates Pvt. Ltd. v. Chandmari Tea Co. Pvt. Ltd.*<sup>15</sup>, where the Court denied enforcement due to lack of clear mutual consent in unsigned exchanges.

Further, the shift toward virtual arbitration brings data protection, jurisdictional, and due process concerns to the forefront. The absence of comprehensive data privacy legislation in India, despite the recent Digital Personal Data Protection Act, 2023 poses challenges when data is transmitted or stored across jurisdictions, especially on foreign-hosted arbitration platforms. In terms of procedural integrity, issues such as the efficacy of virtual cross-examination, confidentiality, and the digital divide affecting parties in remote areas necessitate both statutory safeguards and institutional preparedness. The proposed Arbitration and Conciliation (Amendment) Bill, 2024 is a positive step toward addressing some of these lacunae. It aims to formally recognize arbitral

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15. MANU/SC/0836/2011

proceedings conducted via electronic means, arbitral awards in digital form, and other technological aspects of arbitration.

However, for these reforms to be effective, they must be accompanied by binding procedural rules, capacity-building within arbitral institutions, and judicial sensitization to new modes of contracting and dispute resolution. Therefore, achieving a truly unified and future-ready arbitration framework requires a combination of doctrinal clarity, statutory precision, and technological infrastructure. Reforms should aim to (i) define the scope and validity of e-signatures in arbitration agreements, (ii) regulate smart contracts and blockchain-based arbitration, (iii) ensure fair and secure virtual hearings, and (iv) provide safeguards for consumer and weaker party protection in standard-form e-contracts. Harmonization with international instruments like the UNCITRAL Model Law on Electronic Commerce (1996) and the New York Convention, 1958, is also essential for ensuring cross-border enforceability. India stands at a critical juncture. If the legal, procedural, and infrastructural reforms are implemented holistically, India can emerge as a leading jurisdiction for digitally-enabled, efficient, and fair arbitration. Such a transformation is not just timely it is essential for ensuring legal certainty, commercial confidence, and access to justice in the digital age.

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