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## “ENFORCEABILITY OF E-CONTRACTS IN THE AGE OF GENERATIVE AI”

~Viraj Kumar

### ABSTRACT

The quick development of generative artificial intelligence has started to impact the way contracts are formed, negotiated, and enforced. What was initially an easy move from paper-based to electronic agreements, has transitioned into a paradigm in which AI tools can draft, interpret, and even agree to contract terms autonomously. This paper looks at the enforceability of e-contracts in that AI-derived setting, and particularly examines the threat that generative AI poses to foundational principles of the law of contract--namely, consent, intention, and liability.

For context in India, we can refer to the Indian Contract Act, 1872 and the Information Technology Act, 2000, which provide a base for e-contracts, but do nothing to discuss AI's autonomous role in contract formation. By exploring these gaps, the analysis highlights uncertainty over authorship, attribution, and jurisdiction in AI mediated agreements.

While traditional doctrines provide a starting point, the complexity of AI use pushes the boundaries of reliance on age-old principles. The paper ends with a pathway forward. Through legislative change to underpin the goals of fairness, accountability and enforceability, an empirical examination of reliability and the development of trust through authentication, capacity development of judiciary and countries cooperating on contract law at a more global level with anchoring principles, we can protect contract law in this time of intelligent automation.

**Keywords:** E-Contracts, Generative Artificial Intelligence, Information Technology Act 2000, Indian Contract Act 1872, Digital Consent, Algorithmic Contract Formation, Cyber Law in India.

### 1. INTRODUCTION

Contracts are essential to any legal system, providing the rights and obligations that govern relationships between people, businesses, and even governments. As the internet has evolved, contracts have made a slow transition from paper to electronic contracts (e-contracts). Courts and legislatures around the world, including India, have accepted roles for e-contracts and recognised the validity of electronic signatures. This transition was only the first stage of this evolution. We are now in another stage where contracts are not just drafted electronically and signed electronically, but created, negotiated, and accepted by artificial intelligence systems.

The rise of generative AI programs that can write text, interpret complex directions, and even replicate negotiation processes raise serious issues for contract law. If an AI chatbot agrees to terms for a user, is that valid consent? If an AI tool enters into an agreement on behalf of two businesses, can we be sure the parties intended to enter into legal relations? If an AI drafts an agreement that contains errors, who is legally responsible the developer, the deploying company, or the user? These issues are not mere hypotheticals. Businesses are already using AI-powered platforms to automate the management of run-of-the-mill contracts, e-commerce websites use automated systems to accept contracts, and blockchain technology allows for companies to execute smart contracts without human involvement.

The core concepts of traditional contract law are offer, acceptance, consideration, intention, and consent, were developed with human parties in mind. The emergence of AI changes the requirements of each one of these governing laws. Legal systems are now faced with the reality of determining whether existing paradigms for enforceability are appropriate and sufficient, or whether there needs to be a preparatory model of contract law for AI convened contracts. This article argues that current doctrine supplies the building blocks of law, but when we consider enforceability of e-contracts based on generative AI, some concepts such as consent, intention and liability need to be considered in a new light. This holds true in India as well as globally.

## **2. EVOLUTION OF E-CONTRACTS**

Traditionally, contracts have been based upon consensus where one party makes an offer, one accepts it, and both agree to be bound by the terms assuming there is consideration and an intention that is legal. For centuries, this was limited to paper documents, signed in ink, and human presence. By the end of the 20th century, the digital revolution began to shift all of these assumptions. The development of the internet also completely changed the way contracts were formed, communicated, and enforced.

The earliest acceptance of electronic contracts (e-contracts) was based upon the presumption that a contract does not lose its validity simply because it is not by way of paper. This principle was solidified with the enactment of the Information Technology Act, 2000, which gave legal force to electronic records and electronic signatures. The provision of Section 10A of the IT Act<sup>1</sup>, which explicitly states that contracts created electronically is not on the basis which it is for instance a form or a lack of it by way of a signed paper document, perhaps is a turning point to which then India started to align itself towards both the UNCITRAL Model Law on Electronic Commerce (1996)<sup>2</sup> and the UNCITRAL Model Law on Electronic Signatures (2001)<sup>3</sup>.

The judicial system swiftly adapted as well. In both India and abroad, courts have upheld contracts made via email, websites, and electronic signatures. For example, in *Trimex International FZE v. Vedanta Aluminium Ltd.* (2010)<sup>4</sup>, the Indian Supreme Court enforced a contract made solely via emails, stating that a party's emails could indicate assent, even without a written document. Likewise, in *ProCD v. Zeidenberg* (1996)<sup>5</sup> and *Specht v. Netscape* (2002)<sup>6</sup>, courts in the United States also began to interpret whether contracts accepted online through “Clickwrap” or “Browsewrap” agreements were enforceable or not.

As e-commerce developed, different models of e-contracts developed. ‘Clickwrap’ agreements, in which users either click on or activate a box saying “I agree” to signal their acceptance of the contract, are normally enforced by courts. ‘Shrinkwrap’ agreements, found in software packaging, are accepted by courts but with some challenges of enforceability in certain instances. ‘Browsewrap’ agreements rarely reach courts with a ruling in favor of violations of the terms since courts often determine the violator did not give assent to the terms, typically because it was shown through a violation of the terms, but did not indicate that the user had given acceptance based on the event.

These different models represent how the law struggles to balance the tension of getting consent through the ease and speed of transaction and the principles of true knowledgeable consent.

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<sup>1</sup>The Information Technology Act, 2000, No. 21 of 2000, §10A (India).

<sup>2</sup>United Nations Commission on International Trade Law (UNCITRAL), Model Law on Electronic Commerce with Guide to Enactment 1996, U.N. Doc. A/RES/51/162 (1997).

<sup>3</sup> UNCITRAL Model Law on Electronic Signatures, 2001, U.N. Doc. A/56/17.

<sup>4</sup> *Trimex International FZE Ltd. v. Vedanta Aluminium Ltd.*, (2010) 3 SCC 1 (India).

<sup>5</sup> *ProCD, Inc. v. Zeidenberg*, 86 F.3d 1447 (7th Cir. 1996) (U.S.).

<sup>6</sup> *Specht v. Netscape Communications Corp.*, 306 F.3d 17 (2d Cir. 2002) (U.S.).

Accordingly, the development of e-contracts illustrates how contract law has broadened its scope to respond appropriately to technology. From the use of paper to the acceptance of electronic signatures and then from negotiations that occur in person to a unique form of automated acceptance, the law has pursued the constant of consent, intention and enforceability. Now, as we move to an era of AI contracting, the adequacy of these standards is being challenged as never before.

### **3. GENERATIVE AI AND THE TRANSFORMATION OF CONTRACT FORMATION**

The rise of generative artificial intelligence (AI) has brought contracts to a new level. With previous digital tools, there was only an environment for human parties to negotiate and capture an agreement. Generative AI systems exist that can now draft, evaluate, and even negotiate the terms of a contract. Tools such as ChatGPT, automated negotiation bots, and AI-based contract management tools are being used in a range of industries from e-commerce to finance. If these tools are used in the future, it is possible that a contract could be established, modified, or accepted by an AI system without any human expressly reading or approving every clause.

To see the transformation more clearly, consider some examples. Businesses are increasingly relying on AI contract review systems, which not only alert companies to risks in contracts but also propose redrafted clauses. E-commerce platforms are now using automated agents which can dynamically accept or reject terms based on fixed parameters. Likewise, smart contracts on blockchain have always executed obligations when clearly defined digital triggers occurred. With AI, smart contracts may not only execute, but also be created or modified dynamically.<sup>7</sup>

This change leads to the idea of "autonomous offer and acceptance." We expect that one party makes an offer that another party accepts with the intent and ability to be bound legally. But is it consent when AI accepts terms? If two AI agents are negotiating with each other, for example, a seller's algorithm and a buyer's algorithm, who is consenting? The human behind the agent may not even know that a transaction has taken place until after it happens.

This dilemma is described by legal scholars as the agency dilemma. In classical law, an agent like a broker or lawyer can forever bind a principal in a contract. However, AI does not fall precisely into this model. AI is not a human agent. AI also does not possess legal personality.

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<sup>7</sup> Kevin Werbach & Nicolas Cornell, *Contracts Ex Machina*, 67 Duke L.J. 313 (2017).

Even if AI is simply seen as a tool that automates tasks, considering AI in this way becomes increasingly frail as AI becomes more autonomous.

The emergence of generative AI thus raises challenges to the conceptual model of contract formation. It forces us to ask if consent must always be a human act, if intentions can be presumed from pre-configured directives, and if it is fair to hold users liable when the AI system does not act in the anticipated manner. These are not futuristic questions; they are already being raised in disputes about automated trading, algorithmic agreements, and AI-driven procurement systems.

The following chapter reviews how these developments complicate enforceability in connection with consent, capacity, and liability.

#### **4. CHALLENGES IN ENFORCEABILITY**

The questions surrounding the enforceability of e-contracts in the context of generative AI present a multitude of unanswered issues that escape the presumptions underlying traditional contract law. To be sure, courts and legislatures have prescribed rules pertaining to electronic contracts in the broad sense, however generative AI fundamentally changes how contracts are negotiated, interpreted and performed, presenting previously unknowable aspects of legal enforceability.

##### **1. Consent and Intent**

The basis for any enforceable contract is mutual consent. In e-contracts, consent is almost exclusively given through the use of either click-wrap (consent by action) or browse-wrap (consent by use). With generative AI, the nature of intent becomes less clear cut. If a generative AI assistant accepts terms on the users behalf or drafts a an agreement on the user's behalf, can a user claim that they are not bound? Did the user intend to agree to the provisions of the new contract, or was the "agreement" purely a product of AI? Courts will need to determine if an AI-generated acceptance constitutes the level of free and informed consent required by contract law.

##### **2. Capacity to Contract**

A further issue is the legal capacity of the parties. Only individuals or legally recognized entities can contractually bind themselves to enforceable contracts, but generative AI can be deployed of its own accord, generate binding contractual terms, and negotiate terms across multiple

platforms with little or no human supervision. However, AI itself does not have legal standing as an entity, so for example, who bears liability? The developer, the deployer, or the end user? This ambiguous situation makes attribution of liability difficult and raises the question of whether the contract is enforceable.

### 3. Authenticity and Attribution

Proving the validity of e-contracts can rely on digital signatures, electronic records, or other authentication mechanisms. Now, however, this issue has become even harder to enforce. AI tools are completely capable of imitating or duplicating a language, signature, or even a biometric pattern. How do you know for certain, a contract was actually approved, signed, or agreed to by the intended person or entity and not simply fabricated or altered by generative AI? If authorship is questionable, there is lesser enforceability of the contract.

### 4. Jurisdictional Uncertainty

E-contracts face jurisdictional uncertainty as it is not uncommon for parties to be located in different states or countries. To make this issue worse, generative AI operates across borders, often without any clear indications of governing law or jurisdiction. If an AI system in one country automatically concludes a contract with a user in another, which court has authority? Without clarity, enforcement becomes practically unworkable.<sup>8</sup>

### 5. Evidentiary Issues

It is fundamental that parties are able to prove the existence and validity of a contract in litigation. However, AI-generated contracts raise challenging questions of evidence. Parties may need to establish evidence through logs of the AI interactions, the machine output, and other digital footprints. However, if you can fabricate something, you can delete it too. Furthermore, the judge and the lawyers may not have the sufficient technical literacy to actually evaluate such evidence. All these problems will complicate the process of resolving disputes.

### 6. Absence of Regulatory Framework

Contract law frameworks that exist—such as the Indian Contract Act, the UNCITRAL Model Law on E-Commerce, and in statutes like US E-SIGN Act and India's IT Act, 2000—were never meant to account for what role AI systems might have in contract construction. With no legal

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<sup>8</sup> Ayushi Singh & Sukhwinder Singh, *E-Contract in India: Issues and Challenges*, 7 Int'l J. Interdisciplinary Research & Innovations 597 (Jan.–Mar. 2019).

rules or statistics on a very preliminary level, courts are left to improvise the rules of evidence, and this may lead to a great degree of uncertainty. If the enforceability of the AI-generated contracts are uncertain, businesses might hesitate from relying on AI contracting.

## 5. INDIAN LEGAL FRAMEWORK AND GAPS

India has established a fairly robust legal framework for electronic contracts, but the introduction of generative AI has revealed tangible shortcomings in that framework. Although statutes such as the Indian Contract Act of 1872 and the Information Technology Act of 2000 provide foundational support for enforceability, they were framed in an era long before AI-driven contracting was a reality. This is a gap that raises several questions about validity, attribution, and liability in AI-assisted transactions.

### 1. The Indian Contract Act, 1872

The Contract Act is the primary law governing every agreement in India. It identifies the core elements of a contract as offer, acceptance and lawful consideration, capacity, free consent and legality of object. Courts have adopted these principles to e-contracts (electronic contracts), and have upheld the validity of click-wrap and agreements made via email.

- Gap: The Act presupposes human decision making, and does not contemplate contracts being “concluded” by algorithms, or an AI tool acting on behalf of an individual or business. For example, could an acceptance made by software tool, like ChatGPT, be accepted as the user’s acceptance of the contract? The Act is silent on this point.

### 2. The Information Technology Act, 2000

The IT Act recognizes electronic records and digital signatures in a legal sense. Section 10-A<sup>9</sup> refers specifically to contracts concluded electronically, so long as the characteristics of a contract are satisfied.

- Gap: The IT Act has a fairly limited focus on issues of technological recognition (signatures, records, electronic communication), as opposed to the delegation of decision-making to AI systems. The IT Act does not address the question of who is liable in circumstances where AI provides or accepts terms without human interference.

### 3. Evidence Act, 1872

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<sup>9</sup> The Information Technology Act, 2000, No. 21 of 2000, §10A (India).

In accordance with the Evidence Act, electronic contracts can be established as evidenced within Indian courts, as electronic records and signatures are admitted as evidence.

- Gap: AI-generated contracts introduce new uncertainties regarding evidence. How will courts prove whether or not a user genuinely assented to a contract, or did AI simply assent on behalf of the user? Establishing "intent" through machine logs will not always satisfy a court's reliability and standards.

#### 4. Consumer Protection Act, 2019

AI-driven contracts are typically established as consumer transactions from sites such as online shopping or subscription for services. The Consumer Protection Act provides a basis to deal with unfair trade practices and misleading or misleading terms.

- Gap: When AI systems produce terms that are excessively one-sided, it is very difficult to prove unfairness, if all terms were provided by AI, was it the company's intent, or the AI's autonomous drafting? This blurring of accountability creates enforcement problems.

#### 5. Jurisdictional Concerns in Indian Context

Indian courts have inclined toward preferring tests like "cause of action" or jurisdiction clause under e-contracts. Whereas, generative AI platforms function on a global scale. Therefore, if an AI-driven service is contracted by an Indian user, in the U.S. jurisdiction, would Indian courts have jurisdiction? Existing language does not offer clarity on what jurisdiction applies to AI-mediated cross-border transactions.

#### 6. Regulatory Gaps Regarding AI

There is currently no dedicated law around artificial intelligence in India. The Digital Personal Data Protection Act 2023 addresses privacy concerns, however regarding AI in contracting there is no legislative framework. Additionally, the NITI Aayog has published discussion papers around AI governance, however these are advisory in nature.

- Gap: Since there is no legislative framework, Indian courts will look to their own interpretation on whether AI generated contracts are enforceable, without a predictable outcome.

### **6. WAY FORWARD**

The emergence of generative AI compels us to reconsider how we recognize, interpret, and enforce contracts. Although we have a set of existing laws to use as a benchmark, their utility is pretty limited in the world of AI. At a minimum, legal frameworks need to evolve in a way that creates space for the unique contribution of innovative technologies and reinforces the principles of accountability.

1. Clear Attribution of Responsibility: The first step is determining who will be responsible for AI-generated contracts. Legislators may consider implementing policies that make businesses or individuals utilizing AI systems, vicariously liable for contracts put into force via its systems. If there is no attribution of responsibility, we will have murky waters in terms of enforcement.

2. Standards for Informed Consent: To safeguard users, the law will have to guarantee that consent is indeed meaningful in the age of AI contracting.

This could mean the following:

- Requiring the AI system to indicate when it is acting on behalf of a party
- Providing clearly identified summaries to outline key terms of a contract before consenting to it
- Mandating a “human in the loop” for high-value contracts

3. AI-Specific Amendments to the Applicable Laws: Rather than having to rewrite either the Indian Contract Act or the IT Act from scratch, we could likely craft AI specific amendments that clarify:

- If AI can be an agent within this context of contract law
- The evidentiary threshold to prove consent that has been mediated through an AI
- Specific rules regarding automated cross-border transactions

4. Technical Safeguards for Authentication: In order to minimize disputes over authorship, stronger technical options could emerge as a requirement of enforceable electronic contracts (e-contracts), such as blockchain-based smart signatures, audit trails, and AI transparency logs. These tools would provide a court with reliable evidence of intent and attribution.

5 Regulatory Oversight: India may consider modelling its approach on the EU’s AI Act, and establish an independent AI regulator, or at least dedicate a separate wing within an existing regulator. Such a body could provide binding enforceable guidelines on AI generated contracts, thus providing clarity across sectors.

6. **Judicial Capacity Building:** Courts must be ready to take on the complexities involved with AI evidence. This could be done through a variety of initiatives, such as training for judges, dedicated technology benches, and the use of technical experts acting as *amici curiae*, in order to reduce the gap in knowledge between technology and law.

7. **Global Harmonization:** Because AI-driven contracts would often operate in a cross-border way, domestic reforms will not be sufficient. Thus, India has to prepare to participate in global discussions, ideally through UNICTRAL or WTO Digital Trade discussions for international standards on technology and AIs role in contracting.

In conclusion, the enforceability of e-contracts in the generative AI age cannot rest solely on antiquated legal principles. An even-handed mixture of legislative reform, technological protections, and judicial evolution is needed to sustain the ethics of contracts and assure they are fair and aligned with the future.

## **7. CONCLUSION**

The progression of contracts, moving from paper to digital code is proof of how the law adapts to technology; the evolution has jumped to another level with the arrival of generative AI. E-contracts are no longer just a digital version of a contractual agreement; now, intelligent systems are getting involved in the writing, reviewing, and even negotiating of contracts more quickly than any human. This transformation presents challenges to long-agreed upon concepts of consent, intention, and accountability, which are foundations of contract law.

The analysis in this paper indicates that while there is a solid legal basis for recognizing e-contracts in India based on the information technology act, 2000, none of the legal framework was designed for the novel and intricate self-governing purpose of AI. Courts have been able to be flexible and adaptive in interpreting existing laws, but judicial imagination and flexibility cannot fill every legal gap. There will be a need for a focused and reviewed legislative body to describe the position of AI as a legal entity, delineate the standard for consent and liability, and facilitate the technological transparency that is needed.

In the future, legislators, technologists, and legal academics need to come together to develop a framework that promotes enforceable contracts while not limiting, and even more importantly, creating opportunities for innovation. Regulation shouldn't be about limiting technology, but about ensuring that technology upholds fairness, accountability, and trust, values that remain consistent even in a digital world.

Ultimately, the enforceability of e-contracts in the age of generative AI will rely on how lawmakers frame laws, but more importantly, on how society decides to balance human judgement with machine intelligence. That will be the future of contract law.

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