

# Electronic Contracts: Legal Validity and Enforcement in the Digital Age

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**Abstract** - "Electronic contracts (e-contracts) have become integral to modern commerce, facilitating transactions in the digital age. This paper examines the legal validity and enforcement of e-contracts, focusing on their formation, essential elements, and practical implications. It explores frameworks governing e-contracts in different jurisdictions, and discusses key challenges and opportunities in their implementation. By examining case studies and emerging trends, this research sheds light on the evolving landscape of electronic contracting and provides insights for policymakers, businesses, and legal practitioners navigating this complex terrain."

**Keywords:** e-contracts, electronic contracts, contract law, digital transactions, legal validity, formation process, enforcement mechanisms, challenges, opportunities, blockchain, smart contracts, artificial intelligence, data security, dispute resolution.

**Introduction** - In an age characterized by digital transformation and technological innovation, the landscape of commerce has undergone a profound shift. Central to this evolution is the emergence of electronic contracts (e-contracts), which have become the cornerstone of modern business transactions<sup>1</sup>. E-contracts, formed, executed, and enforced through electronic means, represent a departure from traditional paper-based agreements, offering unparalleled efficiency, accessibility, and convenience in the digital realm.

The proliferation of e-contracts across diverse sectors, from e-commerce platforms and cloud computing services to mobile applications and digital marketplaces, underscores their importance in facilitating commercial interactions in the digital age. However, with this transition from pen and paper to pixels and bytes comes a myriad of legal considerations, challenges, and opportunities. The primary aim of this research paper is to provide a comprehensive examination of the legal framework, practical implications, and future trends of e-contracts. By delving into the intricacies of e-contracting, we seek to unravel the complexities surrounding their legal validity, formation processes, essential elements, enforcement mechanisms, and dispute resolution mechanisms in the digital realm.

At the heart of any contract, electronic or otherwise, lie certain fundamental elements that must be satisfied for the agreement to be legally binding. These elements, including offer, acceptance, consideration, and intention to create legal relations, form the bedrock of contract law and

play a pivotal role in the formation and interpretation of e-contracts. However, the electronic manifestation of these elements introduces novel challenges and considerations that require careful examination. Furthermore, the formation process of e-contracts presents unique considerations, such as the role of electronic signatures, automated systems, and the use of standard terms and conditions. While technological advancements have streamlined the contracting process, they have also raised questions regarding consent, authentication, and contract formation, necessitating a nuanced understanding of these issues.

In addition to formation, the enforcement of e-contracts poses its own set of challenges, including jurisdictional issues, electronic evidence admissibility, and cross-border enforcement. As e-contracts transcend geographical boundaries and traditional legal frameworks, there is a pressing need for robust enforcement mechanisms that can effectively address disputes arising from electronic transactions.

By examining these key aspects of e-contracts, this research paper seeks to provide valuable insights for legal practitioners, businesses, policymakers, and scholars navigating the complex landscape of electronic contracting. Through a critical analysis of existing legal frameworks, case studies, and emerging trends, we aim to contribute to the ongoing dialogue surrounding the evolution of contract law in the digital age. In conclusion, as we embark on this journey through the intricate terrain of e-contracts, it is essential to recognize the transformative potential of digital technology while acknowledging the legal challenges and

opportunities it presents. By illuminating the legal complexities of e-contracts, we can empower stakeholders to navigate the digital landscape with confidence, ensuring the efficient and secure conduct of commercial transactions in the 21st century.

**Historical Background:** The evolution of contracts traces back to ancient civilizations where verbal agreements and simple written records governed transactions. Over time, formalized contract laws emerged, establishing principles of offer, acceptance, and consideration. With the advent of the printing press, contracts became standardized and more widely accessible. The digital revolution of the late 20th century marked a significant turning point, introducing electronic communication and commerce. As businesses embraced the internet, electronic contracts began to proliferate, challenging traditional notions of contract formation and enforcement. Legal frameworks adapted to accommodate these changes, with landmark cases and legislative efforts establishing the validity of electronic signatures and transactions. Today, electronic contracts are ubiquitous, facilitating global commerce and shaping the way individuals and organizations engage in commercial activities.

In the digital age, the proliferation of electronic contracts has been accelerated by advancements in technology, such as the widespread adoption of computers, smartphones, and the internet. These technological innovations have facilitated the creation, transmission, and storage of electronic documents, making it easier than ever for parties to enter into agreements remotely and across vast distances. As a result, the traditional barriers to contract formation, such as physical presence and paper documentation, have been overcome, paving the way for a new era of electronic commerce.

Moreover, the globalization of markets and the rise of digital platforms have further fueled the growth of electronic contracts, transcending geographical boundaries and enabling businesses to engage in transactions on a global scale. This interconnectedness has not only accelerated the adoption of electronic contracts but has also raised complex legal questions regarding jurisdiction, applicable law, and cross-border enforcement. As businesses continue to embrace digital transformation and consumers increasingly conduct transactions online, the role of electronic contracts in shaping the future of commerce is likely to expand even further, necessitating ongoing legal and regulatory adaptation to ensure the integrity and enforceability of electronic transactions.

**E-Contract Overview:** In the contemporary digital landscape, electronic contracts (e-contracts) have become integral to modern commerce, enabling parties to enter into agreements through electronic means. This section provides an overview of e-contracts, including their definition, various forms, and methods of formation.

**Meaning of E-Contracts:** E-contracts refer to contractual

agreements formed, executed, and enforced through electronic means, such as the internet, email, and electronic data interchange (EDI). These contracts eliminate the need for traditional paper-based documentation and enable parties to conduct transactions efficiently and securely in the digital realm. E-contracts are governed by the same legal principles as traditional contracts, including offer, acceptance, consideration, and intention to create legal relations, but are executed using electronic communication and authentication methods.

#### **Forms of E-Contracts:**

**1. Clickwrap Agreements:** Clickwrap agreements are commonly used in online transactions, where users are required to click on a button or checkbox to indicate their acceptance of the terms and conditions presented. By clicking "I agree" or a similar prompt, users signify their consent to be bound by the terms of the contract. Clickwrap agreements are prevalent in e-commerce platforms, software installations, and online services.

**2. Browsewrap Agreements:** Browsewrap agreements are terms and conditions that are posted on a website or platform and are accessible via a hyperlink. Unlike clickwrap agreements, browsewrap agreements do not require users to actively acknowledge their acceptance of the terms. Instead, users are deemed to have agreed to the terms by merely accessing or using the website or platform. Browsewrap agreements are commonly used in website terms of service and privacy policies.

**3. Shrinkwrap Agreements:** Shrinkwrap agreements are associated with software products and typically involve the acceptance of terms and conditions enclosed within the product packaging. When users open the shrinkwrap packaging or break the seal, they are deemed to have agreed to the terms of the contract printed inside. Shrinkwrap agreements often include license agreements and end-user agreements for software products.

**4. E-Mail Contracts:** E-mail contracts are formed through electronic communication exchanged between parties via email. While the formalities of contract formation may vary, the essential elements of offer, acceptance, and consideration must be present for a valid contract to be formed. E-mail contracts are common in business transactions, negotiations, and informal agreements.

**5. Electronic Data Interchange (EDI):** Electronic Data Interchange (EDI) involves the electronic exchange of business documents, such as purchase orders, invoices, and contracts, between trading partners. EDI facilitates the automation of business processes and transactions, allowing parties to conduct transactions electronically without the need for paper-based documentation. EDI contracts are governed by specialized legal frameworks and industry standards.

**Formation Of E-Contracts:** In the digital age, the formation of electronic contracts (e-contracts) involves unique considerations and mechanisms. This section explores the

key aspects of e-contract formation, including electronic signatures, automated systems, and the use of standard terms and conditions.

**1. Electronic Signatures:** Electronic signatures play a pivotal role in the formation of e-contracts, serving as a digital equivalent to handwritten signatures. The use of electronic signatures allows parties to indicate their consent to the terms of a contract without the need for physical presence or paper documentation. Various forms of electronic signatures exist, ranging from simple scanned signatures to advanced cryptographic techniques.

**Types of Electronic Signatures:**

- **Simple Electronic Signatures:** These are basic electronic representations of a person's signature, such as typing one's name or using a stylus to sign on a touchscreen device.
- **Advanced Electronic Signatures (AES):** AES are more sophisticated and secure forms of electronic signatures that use cryptographic techniques to verify the identity of the signer and ensure the integrity of the signed document.
- **Qualified Electronic Signatures (QES):** QES are a specific type of advanced electronic signature that meets certain legal requirements and is granted a higher level of legal recognition and presumption of validity.

**Legal Recognition of Electronic Signatures:**

- Many countries have enacted legislation or adopted international conventions to provide legal recognition and validity to electronic signatures. For example, in the United States, the Electronic Signatures in Global and National Commerce Act (ESIGN) and the Uniform Electronic Transactions Act (UETA) establish the legal equivalence of electronic signatures with handwritten signatures in most transactions.

**2. Automated Systems and Contract Formation:** In some cases, contracts may be formed through automated systems or processes without direct human involvement. Automated contract formation mechanisms, such as online platforms, chatbots, and smart contracts, enable parties to negotiate, agree to, and execute contracts in a streamlined and efficient manner.

**Key Aspects of Automated Contract Formation:**

- **Algorithmic Decision-Making:** Automated systems may use algorithms to generate contract terms, assess risks, and facilitate negotiations between parties.
- **Conditional Logic:** Smart contracts, powered by blockchain technology, can execute predefined actions automatically based on predefined conditions or triggers, such as payment upon delivery of goods or completion of services.
- **Legal and Ethical Implications:** The use of automated systems in contract formation raises important legal and ethical questions, including issues related to accountability, transparency, and the potential for algorithmic bias or discrimination.

**3. Standard Terms and Conditions:** Many e-contracts incorporate standard terms and conditions that govern the rights and obligations of the parties. Standard terms are pre-drafted provisions that are typically included in contracts by one party and presented to the other party on a take-it-or-leave-it basis. These terms often cover a wide range of issues, including payment terms, delivery arrangements, dispute resolution mechanisms, and liability limitations.

**Challenges and Considerations:**

- **Unilateral Nature:** Standard terms are often drafted by one party and may contain terms that are more favorable to that party's interests, raising concerns about fairness and inequality of bargaining power.
- **Readability and Accessibility:** Standard terms are sometimes lengthy and complex, making them difficult for parties to understand fully. Ensuring that standard terms are presented in a clear and accessible manner is essential to promoting transparency and informed decision-making.
- **Enforceability:** Courts may scrutinize standard terms for unconscionability or unfairness, particularly if they are found to be oppressive or one-sided. Drafting standard terms that are reasonable and conscionable can enhance their enforceability and validity.

**LEGAL REGULATION OF E-CONTRACTS:** The legal regulation of electronic contracts (e-contracts) in India is governed by a combination of statutes, including the Indian Contract Act, 1872, the Information Technology Act, 2000, and the Indian Evidence Act, 1872. This section explores the provisions and implications of these laws in the context of e-contracts.

**1. Indian Contract Act, 1872:** The Indian Contract Act, 1872 (ICA) is the primary legislation governing contracts in India, including electronic contracts. While the ICA predates the digital era, its provisions are applicable to e-contracts, subject to certain adaptations and interpretations in light of technological advancements.

**Key Provisions Relevant to E-Contracts:**

- **Offer and Acceptance (Sections 2 and 7):** The ICA defines the essentials of a valid contract, including offer and acceptance. In the context of e-contracts, communication of offer and acceptance through electronic means is considered valid, provided it meets the requirements of the law.
- **Consideration (Section 25):** Consideration is a fundamental requirement for the validity of a contract. In e-contracts, consideration may take various forms, including monetary payments, goods, or services exchanged electronically.
- **Capacity (Sections 10 and 11):** The ICA specifies the capacity of parties to enter into contracts, including minors, persons of unsound mind, and those disqualified by law. While electronic contracts are generally enforceable regardless of the medium of communication, issues of capacity may arise in certain cases.
- **Legality (Section 23):** Contracts that are unlawful or

against public policy are void. E-contracts must comply with the legal requirements and regulations applicable to the subject matter of the contract.

**2. Information Technology Act, 2000:** The Information Technology Act, 2000 (IT Act) is the principal legislation regulating electronic transactions and e-commerce in India. It provides legal recognition and validity to e-contracts and electronic signatures and establishes mechanisms for their enforcement.

#### Key Provisions Relevant to E-Contracts:

- **Legal Recognition of E-Contracts (Section 10A)<sup>3</sup>:** The IT Act recognizes electronic contracts formed through electronic means as legally valid and enforceable, subject to certain conditions. These include the use of electronic signatures and compliance with prescribed procedures for authentication.
- **Electronic Signatures (Sections 2(1)(ta) and 3)<sup>4</sup>:** The IT Act provides for the legal recognition and validity of electronic signatures, including digital signatures. It establishes the Controller of Certifying Authorities (CCA) to regulate the issuance and management of digital certificates for electronic signatures.
- **Electronic Records (Section 2(1)(t))<sup>5</sup>:** E-contracts are deemed to be electronic records under the IT Act. This provision ensures that electronic records have the same legal status as paper-based records in legal proceedings.
- **Liability of Intermediaries (Section 79)<sup>6</sup>:** The IT Act provides a safe harbor for intermediaries, such as internet service providers and e-commerce platforms, from liability for the content or actions of users. This provision promotes the growth of e-commerce and electronic transactions by shielding intermediaries from legal risks.

**3. Indian Evidence Act, 1872:** The Indian Evidence Act, 1872 (IEA) governs the admissibility and proof of electronic records and electronic contracts in legal proceedings.

#### Key Provisions Relevant to E-Contracts:

- **Admissibility of Electronic Records (Section 65B):** Section 65B<sup>7</sup> of the IEA specifies the conditions for the admissibility of electronic records as evidence in court. It requires electronic records to be accompanied by a certificate issued by a person in charge of the electronic record, confirming its authenticity and integrity.
- **Presumption as to Electronic Signatures (Section 85A):** Section 85A<sup>8</sup> of the IEA creates a presumption that electronic signatures appearing on electronic records are genuine and have been affixed by the person by whom they purport to have been affixed. However, this presumption is rebuttable, and the authenticity of electronic signatures may be challenged in court.

In various legal proceedings, courts have addressed different aspects of e-contracts, setting precedents and introducing new perspectives on this matter. For instance, in the case of **Bhagavandas Kedia vs. Girdharilal**<sup>9</sup>, the Supreme Court of India, drawing from the judgment in **Entores vs. Miles Far East Corporation**<sup>10</sup>, established

that a contract reaches completion only when the offeror receives acceptance of their offer.

Similarly, in **Quadricon Pvt. Ltd. vs. Bajarang Alloys Ltd.**<sup>11</sup>, the Bombay High Court equated fax communication to Telex, ruling that the contract is finalized only upon the offeror's receipt of the acceptance.

#### INTERNATIONAL CONVENTIONS ON E-CONTRACTS:

In the globalized digital economy, electronic contracts (e-contracts) are increasingly prevalent, transcending national borders and facilitating cross-border transactions. To address the legal challenges and promote harmonization in the regulation of e-contracts, several international conventions and initiatives have been established. This section explores key international conventions on e-contracts and their implications for international commerce.

##### 1. United Nations Commission on International Trade Law (UNCITRAL):

UNCITRAL has played a central role in developing international conventions and model laws to promote the harmonization and modernization of international trade law, including the regulation of e-contracts. The following UNCITRAL instruments are relevant to e-contracts:

- **UNCITRAL Model Law on Electronic Commerce**<sup>12</sup>: Adopted in 1996 and subsequently amended in 2001, the Model Law provides a comprehensive legal framework for electronic commerce, including the formation and validity of e-contracts, electronic signatures, and the admissibility of electronic records as evidence in legal proceedings. The Model Law serves as a guide for countries seeking to harmonize their laws governing e-commerce and electronic transactions.

##### ● **UNCITRAL Model Law on Electronic Signatures:**

Adopted in 2001, the Model Law on Electronic Signatures complements the Model Law on Electronic Commerce by providing specific rules and standards for the use of electronic signatures in electronic transactions. The Model Law promotes the legal recognition and validity of electronic signatures and establishes mechanisms for their authentication and verification.

##### 2. Hague Conference on Private International Law

The Hague Conference on Private International Law has developed international conventions addressing various aspects of private international law, including jurisdiction, recognition, and enforcement of judgments, and the use of electronic documents in international trade. The following Hague Conventions are relevant to e-contracts:

##### ● **Hague Convention on the Law Applicable to Certain Rights in Respect of Securities Held with an Intermediary:**

Adopted in 2006, the Convention addresses conflict-of-law issues arising from the use of intermediaries in electronic securities transactions. It provides rules for determining the applicable law governing the rights and obligations of parties in cross-border securities transactions involving intermediaries.

##### 3. International Chamber of Commerce (ICC):



International Chamber of Commerce (ICC) has developed guidelines, rules, and standards to facilitate international trade and commerce, including the use of electronic contracts and electronic signatures. The following ICC instruments are relevant to e-contracts:

- **ICC Model Contract for the Sale of Goods (ICC Model):** The ICC Model Contract provides a standardized framework for the sale of goods in international transactions, including provisions related to electronic communications, electronic signatures, and the formation and enforcement of e-contracts. The Model Contract is widely used by businesses and legal practitioners to facilitate international trade and mitigate risks in cross-border transactions.

**Case Studies And Examples:** This section delves into real-world examples and case studies that demonstrate the practical application of electronic contracts (e-contracts) across different industries. By examining these cases, we can gain insights into the challenges, opportunities, and legal considerations involved in e-contracting practices.

**1. E-Contracting in E-Commerce Platforms:Case Study: Amazon's Terms of Service:** Amazon, one of the world's largest e-commerce platforms, relies heavily on electronic contracts to govern its relationships with customers and third-party sellers. Amazon's Terms of Service, accessible to users during account registration and checkout, constitute a binding e-contract that outlines the rights, obligations, and dispute resolution mechanisms for parties engaging with the platform. By analyzing Amazon's e-contracting practices, we can explore the role of standard terms and conditions, clickwrap agreements, and dispute resolution mechanisms in the context of online transactions.

**2. E-Contracts in Software Licensing:Case Study: Microsoft End-User License Agreement (EULA)<sup>13</sup> :** Software companies often use electronic contracts to license their products to end-users. Microsoft's End-User License Agreement (EULA) is a prominent example of an e-contract governing the use of software applications such as Microsoft Office and Windows operating systems. By examining the terms and conditions of Microsoft's EULA, including provisions related to licensing, intellectual property rights, and limitations of liability, we can analyze the legal and practical implications of e-contracts in the software industry.

**3. E-Contracting in Financial Services:Case Study: Online Banking Agreements:** Financial institutions increasingly rely on electronic contracts to facilitate banking services, including online banking, mobile banking, and electronic funds transfers. Online banking agreements, presented to customers upon account opening or through digital channels, govern the terms of use, security procedures, and liability provisions for online banking services. By studying online banking agreements from leading financial institutions, we can explore the legal and regulatory requirements, security protocols, and consumer protection measures associated with e-contracting in the

financial services sector.

**4. Legal Cases and Precedents:Case Study: ProCD, Inc. v. Zeidenberg (1996): ProCDInc. v. Zeidenberg<sup>14</sup>** is a landmark U.S. legal case that established the enforceability of shrinkwrap agreements, where the terms and conditions of a contract are presented to the buyer inside the product packaging. In this case, the court held that by opening the shrinkwrap packaging of a software product, the buyer implicitly agreed to the terms of the license agreement printed inside, thereby forming a binding contract. This case illustrates the judicial recognition of e-contracts and their enforceability, setting a precedent for future cases involving electronic transactions.

**Proposed Regulatory Framework :** Given the dynamic nature of E-Contracts and their growing impact on various sectors, a forward-looking regulatory framework is essential. The following recommendations offer a roadmap for policymakers:

**i. Dynamic Regulatory Adaptation:** Regulators should adopt a dynamic approach, continuously reassessing and adapting regulations to keep pace with technological advancements. Regular dialogues between regulatory bodies, industry stakeholders, and technological experts can foster a responsive regulatory environment.

**ii. International Collaboration:** Recognizing the cross-border nature of E-Contracts, international collaboration is imperative. Harmonizing regulatory standards and fostering cooperation among regulatory bodies can create a unified approach, minimizing regulatory arbitrage and promoting global acceptance.

**iii. Privacy and Data Protection Guidelines:** As E-Contracts increasingly involve personal and sensitive data, comprehensive guidelines for privacy protection should be established. Regulators should work in tandem with technologists to strike a balance between data privacy and the transparency inherent in blockchain technology<sup>15</sup>.

**iv. Consumer Education and Protection:** Given the complexity of E-Contracts, consumer education initiatives are crucial. Regulators should invest in awareness programs to empower users with the knowledge required to navigate and engage safely with E-Contracts. Simultaneously, robust consumer protection measures should be implemented to address potential risks<sup>16</sup>.

**v. E-Contract Audits:** Implementing mechanisms for E-Contract audits can enhance security and reduce vulnerabilities. Regulators can encourage or mandate independent audits of E-Contracts before deployment, fostering a safer and more reliable ecosystem<sup>17</sup>.

**Conclusion:** The research paper has provided a comprehensive exploration of electronic contracts (e-contracts) and their legal implications in the modern digital landscape. Through an examination of the historical background, jurisprudential aspects, legal regulation, international conventions, and practical considerations surrounding e-contracts, several key findings and insights

have emerged. Firstly, the evolution of contracts from traditional paper-based agreements to electronic transactions highlights the transformative impact of technology on commercial interactions. E-contracts have emerged as essential tools in facilitating global commerce, offering efficiency, accessibility, and convenience to businesses and individuals alike. Secondly, the legal framework governing e-contracts encompasses a complex interplay of statutes, regulations, case law, and international conventions. In jurisdictions around the world, laws such as the Indian Contract Act, 1872, the Information Technology Act, 2000, and international instruments like the UNCITRAL Model Law on Electronic Commerce provide the legal basis for the formation, validity, and enforcement of e-contracts. Thirdly, the jurisprudential aspects of contract law, including rights and duties, theories of contract, and the validity of agreements, shape the interpretation and application of e-contracts in legal practice. Understanding these foundational principles is essential for ensuring fairness, equity, and legal certainty in electronic transactions. Furthermore, international conventions such as those developed by UNCITRAL, the Hague Conference on Private International Law, and the International Chamber of Commerce play a crucial role in promoting harmonization and legal certainty in cross-border transactions, contributing to the growth and development of global e-commerce.

In conclusion, while e-contracts offer numerous benefits in terms of efficiency and accessibility, they also present unique challenges and legal considerations that must be addressed. By navigating the complexities of e-contracts with a nuanced understanding of the legal framework, practical implications, and international standards, businesses, legal practitioners, and policymakers can harness the full potential of electronic transactions while ensuring compliance with legal requirements and safeguarding the integrity of commercial relationships in the digital age.

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