



## **Electronic Contracts and E-Signatures in Indonesia: Legal Framework and Challenges in the Digital Revolution**

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### **Abstract**

This paper explores the legal framework and challenges surrounding the implementation of electronic contracts and e-signatures in Indonesia, particularly in the context of the digital revolution. It delves into the evolving contract law under the influence of digitalization, highlighting the critical aspects of Law No. 11 of 2008 (ITE Law) and Government Regulation No. 71 of 2019. The paper addresses the legal requirements for valid electronic contracts, the role of certified and uncertified e-signatures, and the complexities involved in their enforcement. It also identifies key challenges, such as technology-neutrality, cross-border recognition, and the role of certification authorities, that affect the integration of Indonesia's legal framework with global standards. The findings emphasize the need for further legal reforms to enhance the security, flexibility, and reliability of electronic agreements, supporting Indonesia's digital economy.

**Keywords:** Electronic Contracts, E-Signatures, Digital Agreements



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### **INTRODUCTION**

The digital revolution has fundamentally transformed the way agreements are formed and executed worldwide, and Indonesia is no exception. The traditional reliance on physical documents and handwritten signatures is increasingly giving way to electronic contracts executed through digital means. This shift encompasses a broad spectrum of agreements, ranging from everyday online transactions to complex commercial contracts negotiated and concluded electronically. Indonesia's legal system, rooted in civil law traditions, is challenged to adapt to this new landscape where the medium of agreement is intangible. The country's existing contract laws, historically emphasizing written and signed documents, must evolve to recognize and validate electronic agreements. The enactment of Law No. 11 of 2008 on Electronic Information and Transactions (ITE Law) and its amendments signifies a critical step in this direction, providing a legal basis for electronic contracts and acknowledging their enforceability within the Indonesian legal framework. Despite these legislative advancements, several legal complexities persist. Determining the validity of electronic contracts involves navigating differences between physical and electronic agreements, particularly regarding the fulfillment of legal requirements for contract formation under Indonesian civil law. Questions arise about the sufficiency of electronic signatures, the authentication of parties involved, and the preservation of contractual terms in a digital format.

Moreover, the increasing prevalence of electronic contracts amplifies concerns over fraud and other risks inherent in digital transactions. Cybersecurity threats, identity theft, and fraudulent misrepresentation pose significant challenges to the integrity of electronic agreements. The effectiveness of current regulations in protecting parties from such risks is a critical issue that impacts trust and confidence in the digital marketplace. As Indonesia continues to integrate into the global digital economy, the evolution of its contract law is imperative. Strengthening the legal infrastructure surrounding electronic contracts is essential not only for fostering secure and reliable digital transactions but also for promoting economic



growth and competitiveness in the digital age. Addressing legal challenges and enhancing regulatory frameworks will play a crucial role in ensuring that Indonesia can fully harness the benefits of the digital revolution while safeguarding the interests of all parties involved. By providing a comprehensive analysis of the legal requirements, challenges, and enforcement of electronic contracts in Indonesia, the study seeks to support the development of a robust legal environment. Such an environment is crucial for promoting the seamless execution of digital agreements, protecting parties from risks, and ultimately facilitating Indonesia's continued economic growth in the digital age.

### **Research Questions**

To comprehensively examine the transformation of Indonesian contract law in response to the digital revolution, it is essential to address several pivotal inquiries. This paper focuses on the following research questions:

1. What are the legal requirements for valid electronic contracts under Indonesian civil law?
2. What are the differences in legal requirements between physical contracts and electronic contracts in Indonesia?
3. How does the use of electronic signatures in Indonesia affect the enforceability of contracts in the digital era?
4. What are the challenges in the implementation and application of the regulations governing electronic contracts and signatures in Indonesia?

### **Research Purposes**

Based on the background and the research questions outlined above, this paper is designed to achieve the following purposes:

1. To analyze the legal requirements for valid electronic contracts under Indonesian civil law.
2. To compare the legal requirements of physical and electronic contracts in Indonesia.
3. To examine the impact of electronic signatures on the enforceability of contracts in Indonesia.
4. To identify challenges in the implementation of regulations governing electronic contracts and signatures in Indonesia.

## **RESEARCH RESULTS AND DISCUSSION**

The digital revolution has fundamentally transformed how agreements are formed and executed in Indonesia, with electronic contracts (e-contracts) becoming essential tools across various industries.<sup>1</sup> This shift is driven by the efficiency, cost-effectiveness, and accessibility that e-contracts offer.<sup>2</sup> For instance, e-commerce platforms like Tokopedia and Shopee utilize e-contracts to manage transactions between buyers and sellers, streamlining operations and enhancing user experience. The rise of e-contracts is closely linked to the broader digitalization of business processes and the increasing reliance on internet-based commerce. Technological advancements, such as secure digital signature solutions, have further propelled their adoption. Crucially, government support through legislative measures recognizing the legality of e-contracts has significantly promoted their use, aligning Indonesia's legal framework with the demands of a modern digital economy. However, the increasing prevalence of e-contracts underscores the need for robust regulatory frameworks to ensure their security, transparency, and legal validity. In Indonesia, this is done through the passing of Law No. 11 of 2008 on

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<sup>1</sup> Ikhlashul Sholah Kusuma Wardani, Alya Safirah, and Alfika Salsa Qurrotulaini, "Kontrak Elektronik dalam Mekanisme Hukum di Indonesia," *Review UNES*, Vol. 6, No. 3 (March 2024): 2.

<sup>2</sup> Eri Yanti Nasution et al., "Perkembangan Transaksi Bisnis E-Commerce Terhadap Pertumbuhan Ekonomi Di Indonesia," *Jesya (Jurnal Ekonomi dan Ekonomi Syariah)* 3 (2020): 506.



Electronic Information and Transactions (ITE Law), along with its subsequent amendments.<sup>3</sup> This legal framework establishes the conditions under which e-contracts are considered legally binding, emphasizing voluntary agreement, verifiability, and adherence to specified standards for electronic signatures. As we delve into the specific requirements for valid agreements under Indonesian civil law and the legal status of electronic contracts, it becomes clear how traditional legal principles are being adapted to accommodate the digital age.

### Requirements of a Valid Agreement under Indonesian Civil Law

In the context of Indonesian civil law, the definition of an agreement is outlined in Article 1313 of the Civil Code (known as *perjanjian* in Bahasa Indonesia). It is defined as an act which binds the parties who make it.<sup>4</sup> Additionally, Article 1338 provides that all agreements serve as law for the parties who make them.<sup>5</sup> This legal definition underscores the binding nature of agreements under Indonesian law, emphasizing that once parties enter into an agreement, they are legally obligated to fulfill their respective commitments. For an agreement to be legally binding and enforceable under Indonesian civil law, it must satisfy the following four essential criteria as stipulated in Article 1320 of the Indonesian Civil Code:<sup>6</sup>

1. Consent of the Parties: All parties must willingly agree to the terms without coercion or deceit.<sup>7</sup> A person is said to give their consent or agreement (*Toestemming*) if they genuinely desire what is being agreed upon.<sup>8</sup>
2. Capacity to Contract: Parties must have the legal ability to enter into contracts, typically being of legal age and mentally competent.
3. Certain Object: The agreement must have a specific object, referring to the obligations of the parties, such as giving something, doing something, or refraining from doing something.<sup>9</sup>
4. Lawful Cause: The cause of the agreement must be lawful. A cause is prohibited if it is forbidden by law or if it contradicts morality or public order.<sup>10</sup>

These foundational requirements apply equally to both traditional physical contracts and modern electronic contracts under Indonesian law.<sup>11</sup> The transition to electronic agreements necessitates that digital contracts adhere to the same standards of mutual consent, legal capacity, lawful cause, and definite object to ensure their validity and enforceability. Law No. 11 of 2008 on Electronic Information and Transactions (ITE Law) further supplements the Indonesian Civil Code by providing specific provisions that facilitate the formation and recognition of electronic contracts, thereby integrating digital transactions seamlessly into the existing legal framework.

### Electronic Contracts under Indonesian Law

An electronic agreement, or electronic contract as defined by the ITE Law, is an agreement between parties created through an electronic system.<sup>12</sup> An legally binding electronic contract is formed when a party engages in an electronic transaction or legal act via a computer-based

<sup>3</sup> Rizky Karo Karo, Violent Ester Stefana, Elsa Finelia Kumagap, and Joanne Natasha Sugianto, "Reconstruction of Standard Clauses in Electronic Contracts in Indonesia: The Value Orientation of Dignified Justice," *Tanjungpura Law Journal* 8, no. 2 (July 2024): 131.

<sup>4</sup> Indonesia, Civil Code, art.1313.

<sup>5</sup> Indonesia, Civil Code, art.1338.

<sup>6</sup> Indonesia, Civil Code, art.1320.

<sup>7</sup> Indonesia, Civil Code, art.1321.

<sup>8</sup> Retna Gumanti, "Syarat Sahnya Perjanjian (Ditinjau Dari KUHPerdata)," *Jurnal Pelangi Ilmu* 5 (2012): 4.

<sup>9</sup> Indonesia, Civil Code, art.1234.

<sup>10</sup> Indonesia, Civil Code, art.1337.

<sup>11</sup> Anggun Lestari Suryamizon, Kartika Dewi Irianto, and Mahlil Adriaman, "The Legal Power of Electronic Contracts and as Evidence in Default during the COVID-19 Pandemic in Indonesia," *Indonesian Journal of Law and Policy Studies* 3, no. 1 (May 2022): 42.

<sup>12</sup> Indonesia, Law No. 11 of 2008 on Electronic Information and Transactions ("UU ITE"), art.1(12).



network combined with a communications system that is facilitated by the internet.<sup>13</sup> Electronic transactions can be based on electronic contracts or other contractual forms as a means of agreement between the parties. The validity requirements for electronic agreements are fundamentally similar to those outlined in Article 1320 of the Indonesian Civil Code, which governs the validity of traditional contracts. Essentially, an electronic agreement must satisfy the same four essential conditions to be considered legally valid. Government Regulation No. 71 of 2019 further specifies the requirements for a valid electronic agreement or electronic contract, which include:<sup>14</sup>

- a. Mutual Consent of the Parties: There must be an agreement between the parties involved.
- b. Execution by a Legally Competent Subject or an Authorized Representative: The contract must be executed by individuals or entities with the legal capacity or by authorized representatives in accordance with relevant laws and regulations.
- c. A Specific Matter: The contract must pertain to a specific and definite subject.
- d. Compliance with Laws and Public Order: The transaction object must not contradict existing laws and regulations, public morals, or public order.

Under Indonesian law, an electronic contract must include at minimum the following:<sup>15</sup>

- a. the parties' identification data;
- b. the object and specifications;
- c. the terms and conditions of the Electronic Transaction;
- d. the price and fees;
- e. the procedure in case of cancellation by the parties;
- f. provisions granting the right to the aggrieved party to return goods and/or request a replacement if there are hidden defects; and
- g. the choice of law for resolving the Electronic Transaction.

Electronic contracts under the ITE Law serve as valid legal evidence, as electronic information and/or electronic documents are an extension of legally recognized evidence according to the applicable procedural laws in Indonesia.<sup>16</sup> This includes electronic agreements that can be used as electronic evidence in court if disputes arise between the parties. Based on the provisions of the Indonesian Civil Code and the ITE Law as outlined above, an electronic agreement or electronic contract that meets the validity requirements is deemed valid and possesses the same legal force as conventional agreements that are signed and attended by the parties in person. Similarly, regarding evidentiary strength, electronic agreements have the same evidentiary power as physical agreements directly signed by the parties.

### **Electronic Signatures under Indonesian Law**

One of the key distinctions in the legal requirements between traditional physical contracts and electronic contracts lies in the manner in which consent is expressed and verified. The manifestation of consent in Indonesian contract law has evolved significantly with the advent of electronic contracts. While both traditional physical contracts and electronic contracts must meet the basic consent requirements under Article 1320 of the Indonesian Civil Code, the methods of expressing and verifying consent differ substantially between these two

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<sup>13</sup> David Herianto Sinaga and I Wayan Wiryawan, "Keabsahan Kontrak Elektronik (E-Contract) Dalam Perjanjian Bisnis," *Kertha Semaya: Journal Ilmu Hukum* 8 (2020): 1338.

<sup>14</sup> Indonesia, Government Regulation No. 71 of 2019 on the Implementation of Electronic Systems and Transactions ("**Implementation of Electronic Systems and Transactions**"), art.46(2).

<sup>15</sup> Implementation of Electronic Systems and Transactions, art.47(3).

<sup>16</sup> UU ITE, art 5(1).



formats. Traditionally, handwritten signatures have been a fundamental element in Indonesian legal practice for expressing consent and authenticating agreements. According to the *Kamus Besar Bahasa Indonesia* (KBBI), a signature is a personal identifier, often indicating acceptance or acknowledgment.<sup>17</sup> Handwritten signatures reliably demonstrate an individual's consent to a contract and serve as both an identifier and a marker of their intent to be legally bound.<sup>18</sup>

In legal proceedings, traditional signatures are often used as primary evidence of consent, commonly compared with verified reference samples to ensure authenticity. This is notably enforced through Law No. 24 of 2013 on Population Administration (UU *Administrasi Kependudukan*), which mandates the inclusion of signatures in Electronic Identity Cards (KTP-el) as official identifiers for Indonesian citizens.<sup>19</sup> The signature recorded in the KTP-el is considered a government-verified version, serving as a standardized basis for signature verification in transactions and legal matters. However, the reliance on handwritten signatures in physical form has its limitations. Traditional signatures can be susceptible to fraud, such as forgery or misuse. Moreover, in a globalized and increasingly digital economy, the process of physically signing documents—often requiring the presence of all parties or the mailing of documents for remote signatures—can be time-consuming and inefficient. These challenges highlight the growing need for digital alternatives. With technological advancement and the increasing prevalence of digital transactions, Indonesian law has evolved to recognize electronic signatures as legally equivalent to traditional handwritten signatures. This is formally established through Law No. 11 of 2008 on Electronic Information and Transactions (UU ITE). Under Article 1(12) of UU ITE, an electronic signature is defined as a signature consisting of Electronic Information that is attached to, associated with, or linked to other Electronic Information and is used as a means of verification and authentication.<sup>20</sup> Like traditional signatures, electronic signatures serve the same fundamental purpose of expressing consent and verifying identity especially as evidence in court, but achieve this through secure digital methods.<sup>21</sup> This evolution ensures that electronic signatures are equally enforceable and valid in legal contexts, adapting to the modern requirements of digital agreements and transactions. According to Article 1(12) of UU ITE, electronic signatures must possess certain essential components to be considered valid under Indonesian law. These components include:

- Electronic Information: The signature itself in electronic form;
- Attachment/Association: Must be linked to the document being signed; and
- Verification and Authentication: Serves as a means of proving identity and consent, ensuring that the document is valid.<sup>22</sup>

A conventional image of a physical signature does not contain adequate information for verification and authentication purposes, and thus it cannot be deemed an E-signature.<sup>23</sup> Additionally, according to Article 11(1) of UU ITE, an electronic signature has legal force and legal effect provided it meets the following requirements:<sup>24</sup>

- The electronic signature creation data is uniquely linked to the Signer;

<sup>17</sup> *Kamus Besar Bahasa Indonesia*, s.v. "tanda tangan," accessed October 22, 2024, <https://kbbi.web.id/tanda%20tangan>.

<sup>18</sup> Indonesia, Civil Code, art.1874.

<sup>19</sup> Indonesia, Law No. 23 of 2006 on Population Administration, art.64(1), as amended by Law No. 24 of 2013 on Amendments to Law No. 23 of 2006.

<sup>20</sup> UU ITE, art.1(12).

<sup>21</sup> Enny Agustina and Muhamad Adystia Sunggara, "Legal Aspects of Electronic Signatures in E-Commerce Transactions," *Proceedings of the World Conference on Law*, vol. 3, no. 3 (May 2021): 397.

<sup>22</sup> Nizia Kusuma Wardani and Arie Afriansyah, "Indonesian Legal Challenges Regarding Electronic Contracts in International Trade," *Advances in Economics, Business and Management Research*, vol. 130 (2020): 27.

<sup>23</sup> ABNR Counsellors at Law, "Adoption of Electronic Signatures in Indonesia," 2021, 3, [https://www.legal500.com/guides/&#8203;contentReference\[oaicite:0\]{index=0}](https://www.legal500.com/guides/&#8203;contentReference[oaicite:0]{index=0})

<sup>24</sup> UU ITE, art.1(11).





- b. The electronic signature creation data at the time of electronic signing is solely under the control of the Signer;
- c. Any alterations to the electronic signature made after the signing time can be detected;
- d. Any alterations to the Electronic Information associated with the electronic signature made after the signing time can be detected;
- e. There exists a specific method to identify who the Signer is; and
- f. There exists a specific method to demonstrate that the Signer has given consent to the associated Electronic Information.

Electronic Signatures in Indonesia are classified into two types: certified and uncertified.<sup>25</sup> Certified Electronic Signatures are created using an Electronic Certificate issued by a recognized Electronic Certification Provider (PSrE) that is acknowledged by the Ministry of Communication and Informatics.<sup>26</sup> These signatures meet specific legal requirements and are produced using certified electronic signature creation devices. Certified signatures carry full legal force under Indonesian regulations,<sup>27</sup> ensuring strong authentication and legal validity through a verified and guaranteed process by official institutions. On the other hand, Uncertified Electronic Signatures do not involve a PSrE in Indonesia.<sup>28</sup> While they can still be used in electronic transactions, their validity is not guaranteed by the same verification standards as certified signatures. As a result, their legal enforceability depends largely on the mutual agreement between the parties involved in the transaction. Having outlined the distinction between certified and uncertified electronic signatures, it is important to explore the broader advantages of using certified electronic signatures over traditional signatures. These are some key benefits of using electronic signatures and how they provide a practical and legally robust alternative to traditional methods of signing documents:

- a. **Time Efficiency.** Certified Electronic Signatures significantly reduce the time required to obtain signed documents. Traditional paper-based signatures often involve several days of waiting, especially when documents must be physically delivered across different regions. In contrast, certified electronic signatures enable documents to be signed and transmitted electronically within minutes, regardless of geographic location, whether across islands or even between countries.
- b. **Legal Equivalence to Traditional Signatures.** Certified Electronic Signatures hold the same legal weight as traditional signatures. By using electronic certificates issued by authorized providers (PSrE), they meet all legal and procedural requirements established under Indonesian law, including UU ITE and related government regulations. This ensures that certified signatures provide full legal protection and recognition in electronic transactions.
- c. **Guaranteed Identity Security.** Certified Electronic Signatures offer enhanced security by ensuring the authenticity and privacy of the signer's identity. Using asymmetric cryptography, a unique key pair (public and private keys) is generated for each individual, protecting both the signature and the identity of the signer. The PSrE's high-level security features ensure that any unauthorized changes to documents will invalidate the signature, safeguarding the integrity of the document. Unlike traditional signatures, which can be easily forged or altered, CES provides a verifiable digital trail, making it virtually impossible to impersonate or tamper with. This adds a layer of trust and security that physical signatures cannot guarantee.

<sup>25</sup> Implementation of Electronic Systems and Transactions, art.60(2).

<sup>26</sup> Implementation of Electronic Systems and Transactions, art.60(3)(b).

<sup>27</sup> Implementation of Electronic Systems and Transactions, art.59(3).

<sup>28</sup> Implementation of Electronic Systems and Transactions, art.60(4).



- d. **Cost Efficiency.** The use of certified electronic signatures leads to significant cost savings by eliminating the need for physical materials such as paper and special security printing. For example, in the Indonesian Civil Registry's "Dukcapil Go Digital" program, electronic signatures replaced traditional signatures on vital documents like birth certificates, saving approximately Rp450 billion in 2020 by reducing the use of security-printed paper.<sup>29</sup>
- e. **Environmental Benefits.** Certified electronic signatures contribute to environmental sustainability by reducing paper consumption. Unlike traditional signatures that rely on extensive paper use, electronic signatures allow for digital execution of documents, significantly lowering the demand for physical resources and supporting eco-friendly practices.

### **Challenges in Implementation**

Despite Indonesia's progressive legal framework for electronic contracts and e-signatures, practical challenges undermine their intended benefits of efficiency, cost reduction, and environmental sustainability. Although Law No. 11 of 2008 (ITE Law) and Government Regulation No. 71 of 2019 legitimize digital agreements and signatures, many citizens and businesses face administrative hurdles that require physical copies of these digital documents. These demands contradict the goal of reducing reliance on paper and highlight a gap between policy and practice. One of the key challenges lies in the persistence of traditional administrative norms, where government offices and some businesses still demand original documents or printed versions of electronic contracts. This adherence to physical documentation is deeply ingrained, often driven by mistrust in digital processes or unfamiliarity with the mechanisms of verifying electronic signatures. As a result, the efficiency and cost benefits of e-contracts are diminished, and additional expenses for printing and courier services are incurred, defeating their purpose. Furthermore, the continued reliance on physical copies contributes to environmental degradation, as it negates the eco-friendly promise of digital documentation. The excessive use of paper for tasks that could otherwise be entirely digital not only generates unnecessary waste but also overlooks the cost savings and environmental benefits that digital processes were designed to achieve. This inconsistency between policy intent and operational reality reflects a lack of alignment among stakeholders in Indonesia's digital ecosystem. To bridge this gap, stronger enforcement mechanisms and widespread digital literacy campaigns are necessary. This includes training for government staff and businesses to build confidence in the security and validity of e-signatures, coupled with standardized procedures for accepting digital documents without reverting to physical formats. Without such initiatives, the advantages of Indonesia's forward-looking digital contract laws risk being undermined by outdated practices that perpetuate inefficiencies and increase costs.

### **CONCLUSION**

The adoption of digital contracts and electronic signatures in Indonesia, supported by Law No. 11 of 2008 (ITE Law) and Government Regulation No. 71 of 2019, represents a significant step toward modernizing the country's legal and administrative processes in the digital age. These regulations aim to streamline transactions, reduce costs, enhance efficiency, and promote environmental sustainability by eliminating reliance on physical documentation. However, despite the comprehensive legal framework, the practical application of these digital

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<sup>29</sup> "Keuntungan Pakai TTE Tersertifikasi," Kominfo PSrE, accessed October 22, 2024, <https://tte.kominfo.go.id/blog/60f0f35a7eec0973a8711c38#:~:text=Tanda%20Tangan%20Elektronik%20tersertifikasi%20adalah,oleh%20Kementerian%20Komunikasi%20dan%20Informatika.>



tools remains hindered by outdated administrative practices and a lack of trust in digital systems. The persistence of traditional norms that prioritize physical documentation, such as requiring original copies or printouts of digital contracts, has created inefficiencies and additional costs for businesses and citizens. These practices undermine the primary objectives of digital contracts, including cost-effectiveness and reduced paper waste. Moreover, they contribute to environmental harm by perpetuating unnecessary paper usage, highlighting a disconnect between the intent of digitalization policies and their actual implementation. To fully realize the benefits of digital contracts and e-signatures, Indonesia must address these practical challenges through better enforcement of existing regulations and initiatives to build trust in digital processes. Bridging this gap requires collaboration among government agencies, businesses, and stakeholders to ensure the seamless integration of digital tools into everyday administrative and legal workflows. Without such alignment, the potential of Indonesia's digital economy risks being constrained by outdated practices.

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