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Civil Liability for Artificial Intelligence in Electronic Contracts: A Conceptual Framework in Indonesian Law

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Abstract

The integration of Artificial Intelligence (AI) into electronic contracts introduces new legal challenges, particularly regarding civil liability for losses caused by algorithmic errors or system failures. This study aims to examine the mechanisms for enforcing such liability within the Indonesian legal framework by analyzing both tort-based responsibility and contractual liability arising from electronic transactions. Using a normative juridical method supported by statutory, conceptual, and comparative approaches, this research evaluates the relevant legal provisions, liability principles, and international practices. Under Article 1365 of the Civil Code, parties controlling or benefiting from AI may be held liable if negligence leads to harm. Meanwhile, the electronic information and transactions Law and Government Regulation 71 of 2019 provide the foundation for contractual claims, including obligations related to system reliability, data integrity, and digital audits. The findings show that enforcing liability requires clear causal proof, algorithmic transparency, and the ability to assess both material and non-material losses. Comparative cases such as Deloitte Australia, DoNotPay, and OpenAI demonstrate the global relevance of due diligence, algorithm auditing, and human accountability. This study concludes that Indonesia's existing legal framework offers adaptive mechanisms for addressing AI-related losses, while emphasizing the need to strengthen regulatory clarity and accountability standards in the digital era.

Keywords: *Algorithmic Accountability, Artificial Intelligence; Civil liability; Due Diligence, Electronic Contracts.*

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1. Introduction

The rapid development of digital technology has transformed nearly every aspect of human life, including the economic and legal services sectors. One of the most significant innovations in this transformation is Artificial Intelligence (AI), which is now widely used in electronic transactions, contract automation, risk analysis, and business decision-making.[1] Modern electronic contracts,

[1] Dewi Iriani, "Penal Policy Cybercrime Artificial Intelligence (AI) Era Society 5.0 Presfektif Fiqih Jinayah dan Undang-Undang Nomor 19 Tahun 2016 tentang Informasi dan Transaksi

particularly those based on smart contracts, enable the automation of contractual processes without direct human interaction. AI offers significant advantages, such as efficiency, accuracy, and the ability to process data at scale. However, the adoption of AI also raises legal challenges and risks of loss, particularly when AI systems fail, make algorithmic errors, or act unlawfully.[2]

In the context of Indonesian civil law, liability for losses caused by AI can be analyzed through several legal frameworks. Article 1365 of the Civil Code (*Kitab Undang Undang Hukum Perdata*/KUHPerdata) regulates unlawful acts, which can be applied to actions or omissions that cause losses. Meanwhile, Law Number 11 of 2008 in conjunction with Law Number 19 of 2016 concerning Electronic Information and Transactions (*Informasi dan Transaksi elektronik*/ITE) and Government Regulation Number 71 of 2019 concerning the Implementation of Electronic Systems and Transactions provide the legal basis for assessing the liability of parties utilizing AI in electronic contracts.[3] This combination of regulations emphasizes that liability is not limited to human error but can also arise from technological failures that result in losses for other parties.

International cases demonstrate that the legal risks associated with the use of AI in contracts and professional services are real. For example, Deloitte Australia faced criticism and a AU$440,000 refund after an AI-assisted report was found to contain false citations, misattributed sources, and references to non-existent academic papers.[4] This incident highlights the potential for contract breaches and reputational damage resulting from AI errors. Another example is DoNotPay, a startup offering "robot lawyer" services, which was fined US$193,000 by the Federal Trade Commission (FTC) for practicing law without a license and making misleading claims. It also had to settle a class-action lawsuit related to its

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Elektronik," *El-Dusturie* 3, no. 2 (2024): 188. See too, Sidi Mohammed Settaoui, and Nassima Chikh, "The Necessity of Artificial Intelligence and its Impact on Electronic Transactions," *Law & World* 31 (2024): 54.

[2] Igor Kambovski, "Artificial Inteligence-legal and Ethical Dilemmas," *Legislation and Judicial Practice* 2, no. 1 (2024): 17. See too, Hassen Louati, Ali Louati, Abdulla Almekhlafi, Maha ElSaka, Meshal Alharbi, Elham Kariri, and Youssef N. Altherwy, "Adopting Artificial Intelligence to Strengthen Legal Safeguards in Blockchain Smart Contracts: A Strategy to Mitigate Fraud and Enhance Digital Transaction Security," *Journal of Theoretical and Applied Electronic Commerce Research* 19, no. 3 (2024): 2140.

[3] Adel Salem Allouzi, K. R. I. M. Karima, and Mohammad Abdalhafid AlKhamaiseh, "The Role of Artificial Intelligence and Emerging Technologies in UAE Commercial Transactions Law (2023)," *Research Journal in Advanced Humanities* 5, no. 4 (2024): 158.

[4] Financial Times, "Deloitte report errors spark AU$440,000 refunds," *Financial Times*, September 8, 2025. Retrieved in October 21, 2025 from. https://www.ft.com/content/934cc94b-32c4-497e-9718-d87d6a7835ca?utm.

poor-quality services.[5] Meanwhile, large companies like OpenAI and Anthropic are facing copyright lawsuits with the potential for significant financial losses, including a US$1.5 billion settlement, due to the use of copyrighted content in training their AI models.[6]

Previous studies highlight AI's growing role in electronic transactions and contract law. AI enables intelligent decision-making and efficiency in transactions, but also raises civil liability concerns when systems fail or cause harm. Smart contracts improve security and fraud detection, yet introduce legal complexities.[7] Ethical and legal dilemmas include AI's legal status and autonomous decision-making.[8] Effective risk management is essential to prevent professional liability and service decline.[9] Internationally, adaptive regulations, such as in the UAE, recognize AI as an electronic agent while ensuring accountability for AI actions.[10] These cases highlight that AI in electronic transactions presents not only benefits but also complex legal and financial risks. AI can act as an electronic agent that automatically executes contracts, yet lacks legal personality. This raises a fundamental question: how does civil law assess

[5] The Verge, "Federal Trade Commission fines DoNotPay $193,000 over robot lawyers," *The Verge,* September 25, 2024. Retrieved in October 23, 2025 from. https://www.theverge.com/2024/9/25/24254405/federal-trade-commission-donotpay-robot-lawyers-artificial-intelligence-scams?utm.

[6] Reuters, "OpenAI, Anthropic eye investor funds, settle AI lawsuits: FT reports," *Reuters*, October 8, 2025. Retrieved in October 24, 2025 from. https://www.reuters.com/business/openai-anthropic-eye-investor-funds-settle-ai-lawsuits-ft-reports-2025-10-08/?utm.

[7] Hassen Louati, Ali Louati, Abdulla Almekhlafi, Maha ElSaka, Meshal Alharbi, Elham Kariri, and Youssef N. Altherwy, "Adopting Artificial Intelligence to Strengthen Legal Safeguards in Blockchain Smart Contracts: A Strategy to Mitigate Fraud and Enhance Digital Transaction Security," *Journal of Theoretical and Applied Electronic Commerce Research* 19, no. 3 (2024): 2141. See too, Sidi Mohammed Settaoui, and Nassima Chikh, "The Necessity of Artificial Intelligence and its Impact on Electronic Transactions," *Law & World* 31 (2024): 56.

[8] Igor Kambovski, "Artificial Inteligence-legal and Ethical Dilemmas," *Legislation and Judicial Practice* 2, no. 1 (2024): 18. See too, Lu Sudirman, Antony Antony, Cindy Lie, and Celline Celline, "Implikasi Artificial Intelligence Terhadap Pelayanan Bantuan Hukum Bagi Penyandang Disabilitas," *ADIL: Jurnal Hukum* 14, no. 2 (2023): 115.

[9] Bruno Mascello, "AI in the Legal Market: The Dark Side of the Moon," In *Liquid Legal–Sustaining the Rule of Law: Artificial Intelligence, E-Justice, and the Cloud* (Cham: Springer Nature Switzerland, 2025), 96.

[10] Adel Salem Allouzi, K. R. I. M. Karima, and Mohammad Abdalhafid AlKhamaiseh, "The Role of Artificial Intelligence and Emerging Technologies in UAE Commercial Transactions Law (2023)," *Research Journal in Advanced Humanities* 5, no. 4 (2024): 159. See too, Hari Sutra Disemadi, and Henry Soelistyo Budi, "Enhancing Trade Secret Protection amidst E-commerce Advancements: Navigating the Cybersecurity Conundrum," *Jurnal Wawasan Yuridika* 7, no. 1 (2023): 29.

liability when harm is caused by sophisticated AI systems that still rely on human oversight?

Previous research on AI and law in Indonesia has predominantly focused on criminal aspects, data protection, and regulatory urgency.[11] However, the application of Article 1365 of the Civil Code and the Electronic Information and Transactions Law in AI-related contractual disputes remains underexplored.[12] Scholars have examined AI's risks and comparative legal frameworks, yet they fail to establish how tort and contractual liability can be effectively enforced in AI-related disputes.[13] While extensive literature discusses Artificial Intelligence

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[11] Yuliana Putri Dharmayanti, and Eko Soponyono, "Criminal Law Policy in Efforts to Combat Artificial Intelligence (AI) in Cyber Crime," *Jurnal Hukum Khaira Ummah* 20, no. 2 (2024): 2259. See too, Hari Sutra Disemadi, "Data Ownership In Regulating Big Data In Indonesia Through The Perspective Of Intellectual Property," *Jurisdictie: Jurnal Hukum dan Syariah* 13, no. 2 (2022): 190; Ardina Khoirun Nisa, "The Prospect of AI Law in Indonesian Legal System: Present and Future Challenges," *The Indonesian Journal of International Clinical Legal Education* 6, no. 1 (2024): 27; Agitkarai Sirajuddin Putra, and Lalu Muh Hayyanul Haq, "Tanggung Jawab Hukum Penggunaan Artificial Intelligence Terhadap Pelanggaran Data Pribadi Pada Platform E-Commerce," *Commerce Law* 4, no. 1 (2024): 485; Donovan Typhano Rachmadie, "Regulasi Penyimpangan Artificial Intelligence Pada Tindak Pidana Malware Berdasarkan Undang-Udang Republik Indonesia Nomor 19 Tahun 2016," *Recidive: Jurnal Hukum Pidana Dan Penanggulangan Kejahatan* 9, no. 2 (2020): 130; Nur Aliya Rasyidah, Muhammad Aksay, and Muhammad Firdaus Akmal, "Urgensi Pembuatan Regulasi Penggunaan AI (Artificial Intelligence) Di Indonesia," *Jurnal Penegakan Hukum Indonesia* 5, no. 1 (2024): 46; Linda Permata Sari, and Nur Jannani, "Urgensi Regulasi Artificial Intelligence di Indonesia Perspektif Teori Hukum Responsif dan Sadd Al-Dzariah," *Al-Balad: Journal of Constitutional Law* 5, no. 3 (2023): 100; Gregorius Widiartana, and Vincentius Patria Setyawan, "Prospects of Artificial Intelligence Criminal Liability Regulations in Indonesian Criminal Law," *Jurnal Kewarganegaraan* 7, no. 1 (2023): 326.

[12] Anisa Suci Anjani, "Analisis Yuridis Ingkar Janji Untuk Menikahi Sebagai Perbuatan Melawan Hukum Menurut Kitab Undang-Undang Hukum Perdata," *LEX PRIVATUM* 13, no. 1 (2024): 443. See too, Mendy Cevitra, and Gunawan Djajaputra, "Perbuatan Melawan Hukum (Onrechtmatige Daad) Menurut Pasal 1365 Kitab Undang-Undang Hukum Perdata Dan Perkembangannya," *UNES Law Review* 6, no. 1 (2023): 2725; Miyuki Fattah Rizki, and Abdul Salam, "Pertanggungjawaban Hukum Pengumpulan Data Biometrik Melalui Artificial Intelligence Tanpa Persetujuan Pemilik Data (Studi Kasus Clearview AI Inc. di Yunani dan Inggris)," *Lex Patrimonium* 2, no. 2 (2023): 12; Bing Waluyo, "Kajian Terhadap Perbuatan Melawan Hukum Berdasarkan PadaPasal 1365 Kitab Undang-Undang Hukum Perdata," *Cakrawala Hukum: Majalah Ilmiah Fakultas Hukum Universitas Wijayakusuma* 24, no. 1 (2022): 15.

[13] Muhammad Dafi Akbar, Josua Ferdinand Sihotang, Rendika Purnama, and Taria Hasna, "Pemanfaatan dan Permasalahan Artificial Intelligence Dalam Kehidupan Manusia Serta Pengaturannya Secara Hukum," *Media Hukum Indonesia (MHI)* 2, no. 2 (2024): 80. See too, Hary Abdul Hakim, Chrisna Bagus Edhita Praja, and Sung Ming-Hsi, "AI in law: Urgency of the implementation of artificial intelligence on law enforcement in Indonesia," *Jurnal Hukum Novelty* 14, no. 1 (2023): 125; Saad Misbah, and Inaya Imtiyaz, "AI in Contract Law: Navigating Legal Challenges and Opportunities in the Digital Era," *LawFoyer Int'l J. Doctrinal Legal Rsch.* 2 (2024): 264; Hendry Widjaya Ong, and Windi Afdal. "Perbandingan Pengaturan Sanksi Penipuan Online Berbasis Artificial Intelligence: Indonesia Vs Amerika," *Jurnal Hukum to-ra: Hukum Untuk Mengatur dan Melindungi Masyarakat* 11, no. 2 (2025): 452; Adnasohn Aqilla Respati, "Reformulasi

(AI) from technological, ethical, and regulatory perspectives, few studies examine civil liability mechanisms in Indonesia, particularly concerning AI-induced losses in electronic contracts. This research addresses that gap by conceptually integrating Indonesian civil law principles with international practices.

Therefore, this study aims to analyze the civil liability mechanism for the use of AI in electronic contracts that causes losses. This research focuses on three main aspects: first, the application of the principle of tort to losses caused by AI; second, the emergence of contractual liability within the framework of modern electronic contracts; and third, the legal mechanism in Indonesia to enforce civil liability for losses caused by AI. Thus, this research is expected to provide academic and practical contributions, both in the development of civil law theory and in providing practical guidance for business actors and legal professionals who utilize AI.

Based on the above background, the following questions can be formulated:

1. How does the principle of unlawful acts under Article 1365 of the Civil Code apply to losses caused by the use of Artificial Intelligence (AI) in electroniccontracts?

2. What are the forms and limits of contractual liability that arise when AI is used as part of the process of creating or executing electronic contracts?

3. How can legal mechanisms in Indonesia, particularly under the Electronic Information and Transactions Law and related regulations, be used to enforce civil liability for losses caused by AI in electronic transactions?

2. Research Method

This research employs a normative juridical method with a combination of statutory, conceptual, and comparative approaches. The statutory approach is applied to analyze relevant legal provisions, including Article 1365 of the Civil Code, Law Number 11 of 2008 in conjunction with Law Number 19 of 2016 concerning Electronic Information and Transactions (*Informasi dan Transaksi elektronik*/ITE), and Government Regulation Number 71 of 2019 concerning the Implementation of Electronic Systems and Transactions. This analysis aims to

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UU ITE terhadap Artificial Intelligence Dibandingkan dengan Uni Eropa dan China AI Act Regulation," *Jurnal USM Law Review* 7, no. 3 (2024): 1745; Muh Akbar Fhad Syahril, A. Darmawansya TL, Murdiono Murdiono, and Arini Asriyani, "Artificial Intelligence Dan Hak Asasi Manusia: Kajian Hukum Tentang Potensi Bahaya Di Indonesia," *Jurnal Litigasi Amsir* 11, no. 3 (2024): 360.

assess the legal basis and mechanisms for civil liability for losses arising from the use of Artificial Intelligence (AI) in electronic contracts.

The conceptual approach is used to interpret the concepts of torts and electronic contracts in the context of AI, providing an in-depth understanding of the legal principles applicable to losses resulting from AI failures or errors. Meanwhile, the comparative approach is conducted by examining international legal practice, cases involving companies such as Deloitte, DoNotPay, OpenAI, and Anthropic, and court decisions regarding AI liability, to gain a global perspective and align their relevance to Indonesian law.

The primary data sources for this research include national regulations, law journals, court decisions, and academic literature related to AI and civil law. The analysis was conducted using a qualitative descriptive approach, mapping legal principles, assessing regulatory relevance, and identifying best practices and legal challenges in AI accountability in electronic transactions. The primary legal sources in this research include laws and regulations directly related to civil liability in the use of Artificial Intelligence (AI), such as Article 1365 of the Civil Code, the Electronic Information and Transactions Law (*Undang Undang Informasi dan Transaksi elektronik*/UU ITE), and Government Regulation Number 71 of 2019 concerning the Implementation of Electronic Systems and Transactions, as well as court decisions and official documents from state institutions.

Meanwhile, secondary legal sources include books, legal journal articles, previous research results, reports from international institutions, and academic literature discussing AI, electronic contracts, and the principles of civil liability. Source selection is based on several criteria: relevance to the legal issue being analyzed, the authority or credibility of the author and publishing institution, currency to ensure alignment with the rapid development of AI technology, and analytical depth to provide a strong theoretical and comparative foundation for understanding the mechanisms of civil liability for losses caused by AI.

3. Research Results and Discussion

3.1. Civil Regulation and Liability Based on Unlawful Acts in Indonesia

Indonesian Indonesian civil law provides protection against losses suffered by certain parties due to unlawful acts through the principle of perbuatan melawan hukum (unlawful acts). The primary basis for this principle is Article 1365 of the Civil Code (KUHPerdata), which states: "Every unlawful act that causes harm to another person obliges the perpetrator to compensate for that loss" (KUHPerdata, 1847). This provision emphasizes the responsibility of individuals or corporations to repair losses incurred as a result of unlawful acts, whether active or negligent.[14]

In civil law practice, liability under Article 1365 KUHPerdata can be applied broadly, including losses arising from professional actions, contractual breaches, and modern economic activities. The basic principle is culpa, or negligence, where a party is held liable if they fail to meet a reasonable standard of care, resulting in harm to another party.[15] For example, in a traditional business transaction, a contractor who negligently completes work may be required to compensate the counterparty for financial losses.[16]

Alongside the development of information technology, Indonesia has also established a legal framework governing liability in electronic transactions. Law Number 11 of 2008, amended by Law Number 19 of 2016 (ITE Law), and Government Regulation Number 71 of 2019 (PP 71/2019) regulate the implementation of electronic systems, digital transactions, and the protection of parties harmed by technological errors. Articles 7 of the ITE Law and 15 of PP 71/2019 emphasize the responsibility of system administrators to maintain secure, reliable, and auditable electronic systems.[17]

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[14] Anisa Suci Anjani, "Analisis Yuridis Ingkar Janji Untuk Menikahi Sebagai Perbuatan Melawan Hukum Menurut Kitab Undang-Undang Hukum Perdata," *LEX PRIVATUM* 13, no. 1 (2024): 445. See too, Sri Ayu Astuti, "Literasi Kemanfaatan Teknologi terhadap Cyber Terrorism di Era Disrupsi dengan AI (Artificial Intelligence)," *Indonesian Journal of Criminal Law and Criminology (IJCLC)* 5, no. 3 (2024): 138; Mendy Cevitra, and Gunawan Djajaputra, "Perbuatan Melawan Hukum (Onrechtmatige Daad) Menurut Pasal 1365 Kitab Undang-Undang Hukum Perdata Dan Perkembangannya," *UNES Law Review* 6, no. 1 (2023): 2726; Masnida Malau, Yuniar Rahmatiar, and Muhamad Abas, "Perbuatan melawan hukum atas penyerobotan tanah milik orang lain dihubungkan dengan pasal 1365 KUH Perdata," *Binamulia Hukum* 12, no. 2 (2023): 300; Bing Waluyo, "Kajian Terhadap Perbuatan Melawan Hukum Berdasarkan PadaPasal 1365 Kitab Undang-Undang Hukum Perdata," *Cakrawala Hukum: Majalah Ilmiah Fakultas Hukum Universitas Wijayakusuma* 24, no. 1 (2022): 16.

[15] Mendy Cevitra, and Gunawan Djajaputra, "Perbuatan Melawan Hukum (Onrechtmatige Daad) Menurut Pasal 1365 Kitab Undang-Undang Hukum Perdata Dan Perkembangannya," *UNES Law Review* 6, no. 1 (2023): 2727. See too, Bing Waluyo, "Kajian Terhadap Perbuatan Melawan Hukum Berdasarkan PadaPasal 1365 Kitab Undang-Undang Hukum Perdata," *Cakrawala Hukum: Majalah Ilmiah Fakultas Hukum Universitas Wijayakusuma* 24, no. 1 (2022): 17.

[16] Masnida Malau, Yuniar Rahmatiar, and Muhamad Abas, "Perbuatan melawan hukum atas penyerobotan tanah milik orang lain dihubungkan dengan pasal 1365 KUH Perdata," *Binamulia Hukum* 12, no. 2 (2023): 301.

[17] Muhammad Dafi Akbar, Josua Ferdinand Sihotang, Rendika Purnama, and Taria Hasna, "Pemanfaatan dan Permasalahan Artificial Intelligence Dalam Kehidupan Manusia Serta Pengaturannya Secara Hukum," *Media Hukum Indonesia (MHI)* 2, no. 2 (2024): 82. See too, Hendry Widjaya Ong, and Windi Afdal. "Perbandingan Pengaturan Sanksi Penipuan Online Berbasis Artificial Intelligence: Indonesia Vs Amerika," *Jurnal Hukum to-ra: Hukum Untuk Mengatur dan Melindungi Masyarakat* 11, no. 2 (2025): 454; Agitkarai Sirajuddin Putra, and Lalu Muh Hayyanul

These provisions emphasize that civil liability extends not only to individuals directly causing harm, but also to those who control, design, or operate electronic systems. In this context, unlawful acts can be attributed to negligence in the design, management, or operation of technology, resulting in harm to another party.[18] For example, an electronic system provider who fails to maintain data security, resulting in an information leak, can be held liable for damages based on the principle of culpa, even if the loss was caused by technological factors.

This concept of civil liability becomes relevant when applied to the use of Artificial Intelligence (AI). AI is a technological system capable of automated data processing and decision-making, whether in electronic contracts, risk analysis, or professional services. While AI can improve efficiency and accuracy, its use also carries the risk of harm due to algorithmic errors, process irregularities, or unlawful acts.[19] For example, errors in data processing or algorithm interpretation can cause financial, reputational, or legal harm to another party.

Within the Indonesian legal framework, liability for harm caused by AI does not lie with the AI system itself, as AI is not a legal entity, but rather with the party controlling or utilizing the AI. The Electronic Information and Transactions Law and Government Regulation 71/2019 emphasize that parties who design, operate, or maintain electronic systems, including AI, are liable if their negligence causes harm to another party.[20] The principle of culpa

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Haq, "Tanggung Jawab Hukum Penggunaan Artificial Intelligence Terhadap Pelanggaran Data Pribadi Pada Platform E-Commerce," *Commerce Law* 4, no. 1 (2024): 487; Nur Aliya Rasyidah, Muhammad Aksay, and Muhammad Firdaus Akmal, "Urgensi Pembuatan Regulasi Penggunaan AI (Artificial Intelligence) Di Indonesia," *Jurnal Penegakan Hukum Indonesia* 5, no. 1 (2024): 48; Adnasohn Aqilla Respati, "Reformulasi UU ITE terhadap Artificial Intelligence Dibandingkan dengan Uni Eropa dan China AI Act Regulation," *Jurnal USM Law Review* 7, no. 3 (2024): 1746.

[18] Hassen Louati, Ali Louati, Abdulla Almekhlafi, Maha ElSaka, Meshal Alharbi, Elham Kariri, and Youssef N. Altherwy, "Adopting Artificial Intelligence to Strengthen Legal Safeguards in Blockchain Smart Contracts: A Strategy to Mitigate Fraud and Enhance Digital Transaction Security," *Journal of Theoretical and Applied Electronic Commerce Research* 19, no. 3 (2024): 2143.

[19] Igor Kambovski, "Artificial Inteligence-legal and Ethical Dilemmas," *Legislation and Judicial Practice* 2, no. 1 (2024): 20. See too, Adzhar Anugerah Trunapasha, Pan Lindawaty Suherman Sewu, Dian Narwastuty, and Shelly Kurniawan, "Penyalahgunaan Artificial Intelligence Terhadap Tokoh Masyarakat Dalam Konten Di Media Sosial Berdasarkan Perundang-Undangan Di Indonesia," *VERITAS* 9, no. 2 (2023): 85.

[20] Adel Salem Allouzi, K. R. I. M. Karima, and Mohammad Abdalhafid AlKhamaiseh, "The Role of Artificial Intelligence and Emerging Technologies in UAE Commercial Transactions Law (2023)," *Research Journal in Advanced Humanities* 5, no. 4 (2024): 160. See too, Hendrik Kusnianto, Benhard Kurniawan Pasaribu, and Muhd Syahazizamir bin Sahmat, "Legal Innovation in

remains the basis for assessment, where negligence can arise in several forms, including: (a) predictable and preventable algorithmic errors; (b) violations of the precautionary principle in the supervision or operation of AI; and (c) misuse of AI to deceive or harm another party.[21]

Furthermore, electronic contract law also provides a basis for civil liability for AI losses. In practice, electronic contracts can include clauses on liability, security guarantees, and consumer protection, which serve as risk mitigation mechanisms when AI systems fail to operate as intended.[22] Thus, the combination of the principle of tort, the obligations of electronic system managers, and contractual provisions provides a comprehensive liability framework for the use of Artificial Intelligence in electronic transactions in Indonesia. The application of the principle of civil liability to AI must take into account the interaction between humans and technology. The application of the principle of culpa in Indonesia provides a strong legal basis for holding parties negligent in managing AI accountable, even when losses are caused by algorithmic errors or system automation.

Internationally, the Deloitte Australia case arose when the company used generative AI (Azure OpenAI GPT-4o) to prepare a report for the Australian Department of Employment and Workplace Relations. The report was found to contain numerous errors, including false citations, incorrect academic references, and improper source attribution. While the report's core findings remain unchanged, this incident poses reputational harm to Deloitte and the government, as well as financial risks related to refunds. This case highlights the professional risks that arise when AI is used without adequate oversight, demonstrating that while AI can speed up analytical processes, it also has the potential to produce errors that can cause material and moral harm to others.[23]

Religious Courts: The Potential Utilization of Artificial Intelligence (AI) in Resolving Contemporary Cases," *MILRev: Metro Islamic Law Review* 3, no. 2 (2024): 390.

[21] Saad Misbah, and Inaya Imtiyaz, "AI in Contract Law: Navigating Legal Challenges and Opportunities in the Digital Era," *LawFoyer Int'l J. Doctrinal Legal Rsch.* 2 (2024): 266.

[22] Hassen Louati, Ali Louati, Abdulla Almekhlafi, Maha ElSaka, Meshal Alharbi, Elham Kariri, and Youssef N. Altherwy, "Adopting Artificial Intelligence to Strengthen Legal Safeguards in Blockchain Smart Contracts: A Strategy to Mitigate Fraud and Enhance Digital Transaction Security," *Journal of Theoretical and Applied Electronic Commerce Research* 19, no. 3 (2024): 2144.

[23] Financial Times, "Deloitte report errors spark AU$440,000 refunds," *Financial Times,* September 8, 2025. Retrieved in October 21, 2025 from. https://www.ft.com/content/934cc94b-32c4-497e-9718-d87d6a7835ca?utm.

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Furthermore, the case of DoNotPay, an Artificial Intelligence startup claiming to offer "robot lawyers," provides another example of the risk of harm from misleading claims and ineffective services. The company advertised automated legal services to consumers, but its practices were found to fall short of professional standards. The services provided were deemed low-quality, and the advertising claims often misled consumers. While this case does not emphasize algorithmic error, it demonstrates how Artificial Intelligence can cause financial and legal harm when combined with unethical business practices. The risk here lies in the combination of AI and operator liability, which emphasizes the importance of accuracy, transparency, and due care in the use of technology for public or professional services.[24]

The cases of OpenAI and Anthropic highlight the risk of financial harm arising from the use of AI in the context of intellectual property rights. Both companies used copyrighted data to train their AI models, which subsequently led to lawsuits for copyright infringement. OpenAI faced challenges in obtaining adequate insurance coverage to cover potential liability, while Anthropic agreed to a massive $1.5 billion settlement in a class-action lawsuit. These cases demonstrate that harm from AI extends beyond operational errors to encompass complex legal risks related to the use of third-party data. AI controllers, in this case technology companies, bear financial liability because they are responsible for how the AI processes and uses data.[25]

Overall, these four case studies demonstrate a similar pattern: AI, while capable of increasing efficiency and productivity, lacks legal status as a subject, so responsibility always rests with the human or corporate entity controlling the AI. The risk of loss can arise from professional misconduct (Deloitte), misleading services (DoNotPay), or copyright and intellectual property infringement (OpenAI and Anthropic). These cases also emphasize the need for oversight mechanisms, algorithm audits, robust risk management, and strict legal compliance to minimize potential losses.

The Indonesian context demonstrates that civil liability regulations in Indonesia emphasize the principle of tort, which prioritizes negligence (*culpa*)

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[24] *The Verge,* September 25, 2024. Retrieved in October 23, 2025 from. https://www.theverge.com/2024/9/25/24254405/federal-trade-commission-donotpay-robot-lawyers-artificial-intelligence-scams?utm.

[25] Reuters, "OpenAI, Anthropic eye investor funds, settle AI lawsuits: FT reports," *Reuters*, October 8, 2025. Retrieved in October 24, 2025 from. https://www.reuters.com/business/openai-anthropic-eye-investor-funds-settle-ai-lawsuits-ft-reports-2025-10-08/?utm.

as the basis for liability. The Electronic Information and Transactions Law and Government Regulation 71/2019 extend this principle to the realm of electronic transactions, ensuring that parties designing, operating, and managing electronic systems, including Artificial Intelligence, can be held liable if their negligence results in losses for another party. In the context of Artificial Intelligence, responsibility rests not with the system itself, but with the human or corporate controller, so the culpa principle remains the primary reference. Thus, Indonesia's civil law framework is able to adapt to the challenges of modern technology, including the use of Artificial Intelligence in electronic contracts, while still protecting the injured party.

3.2. Accountability in Modern Electronic Contracts

In Indonesia, contractual liability remains fundamentally based on civil law principles, particularly Article 1238 of the Civil Code, which affirms the obligation of contracting parties to fulfill their obligations, and Article 1365 of the Civil Code, which regulates unlawful acts.[26] In the context of electronic contracts, Law Number 11 of 2008 in conjunction with Law Number 19 of 2016 concerning Electronic Information and Transactions (ITE Law) and Government Regulation Number 71 of 2019 (PP 71/2019) provide an additional legal framework, emphasizing legal certainty, data integrity, electronic system security, and audit mechanisms to ensure the accountability of those managing electronic systems.[27]

Thus, contractual liability in the context of AI in Indonesia lies not only with system or algorithm errors, but also with those who design, operate, or manage the system. For example, if AI is used to execute a smart contract and an error occurs that harms another party, the party controlling the AI may be held liable based on the principle of culpa or negligence, as well as contractual

[26] Mendy Cevitra, and Gunawan Djajaputra, “Perbuatan Melawan Hukum (Onrechtmatige Daad) Menurut Pasal 1365 Kitab Undang-Undang Hukum Perdata Dan Perkembangannya,” *UNES Law Review* 6, no. 1 (2023): 2729. See too, Masnida Malau, Yuniar Rahmatiar, and Muhamad Abas, “Perbuatan melawan hukum atas penyerobotan tanah milik orang lain dihubungkan dengan pasal 1365 KUH Perdata,” *Binamulia Hukum* 12, no. 2 (2023): 303; Bing Waluyo, “Kajian Terhadap Perbuatan Melawan Hukum Berdasarkan PadaPasal 1365 Kitab Undang-Undang Hukum Perdata,” *Cakrawala Hukum: Majalah Ilmiah Fakultas Hukum Universitas Wijayakusuma* 24, no. 1 (2022): 18.

[27] Adel Salem Allouzi, K. R. I. M. Karima, and Mohammad Abdalhafid AlKhamaiseh, “The Role of Artificial Intelligence and Emerging Technologies in UAE Commercial Transactions Law (2023),” *Research Journal in Advanced Humanities* 5, no. 4 (2024): 162. See too,Adnasohn Aqilla Respati, “Reformulasi UU ITE terhadap Artificial Intelligence Dibandingkan dengan Uni Eropa dan China AI Act Regulation,” *Jurnal USM Law Review* 7, no. 3 (2024): 1752.

provisions containing warranties or dispute resolution clauses.[28] Article 15 of Government Regulation 71/2019 emphasizes that electronic system operators are required to ensure the security, integrity, and accountability of the systems they manage, so contractual responsibilities also include risk control and internal audit obligations.[29]

International cases provide concrete examples of the potential risks and losses arising from the use of AI in electronic contracts. Deloitte Australia is a notable example. In October 2025, Deloitte agreed to return AU$440,000 to the government after a report prepared using generative AI was found to contain false citations and misattributed sources, although the report's core findings remained the same (AP News, 2025). This incident highlights the contractual and reputational risks arising from AI errors and highlights the need for human oversight in the use of automated systems.

The case of DoNotPay, an AI startup offering "robot lawyers," illustrates the legal risks of misleading claims and poor-quality services. The company was fined $193,000 by the US Federal Trade Commission (FTC) and settled a class-action lawsuit related to the practice of law without a license.[30] This case highlights that contractual liability arises not only from AI's failure to execute contracts, but also from the delivery of services that do not meet the guarantees made to consumers.

The cases of OpenAI and Anthropic highlight more complex financial risks. Both companies used copyrighted content to train their AI models, resulting in significant lawsuits for copyright infringement. Anthropic agreed to a $1.5 billion class-action settlement, while OpenAI faced challenges in obtaining adequate insurance.[31] In the context of electronic contracts, losses such as these

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[28] Muhammad Dafi Akbar, Josua Ferdinand Sihotang, Rendika Purnama, and Taria Hasna, "Pemanfaatan dan Permasalahan Artificial Intelligence Dalam Kehidupan Manusia Serta Pengaturannya Secara Hukum," *Media Hukum Indonesia (MHI)* 2, no. 2 (2024): 84. See too, Agitkarai Sirajuddin Putra, and Lalu Muh Hayyanul Haq, "Tanggung Jawab Hukum Penggunaan Artificial Intelligence Terhadap Pelanggaran Data Pribadi Pada Platform E-Commerce," *Commerce Law* 4, no. 1 (2024): 488.

[29] Nur Aliya Rasyidah, Muhammad Aksay, and Muhammad Firdaus Akmal, "Urgensi Pembuatan Regulasi Penggunaan AI (Artificial Intelligence) Di Indonesia," *Jurnal Penegakan Hukum Indonesia* 5, no. 1 (2024): 49.

[30] Federal Trade Commision, "FTC Finalizes Order with DoNotPay That Prohibits Deceptive 'AI Lawyer' Claims, Imposes Monetary Relief, and Requires Notice to Past Subscribers," *Federal Trade Commision,* February 11, 2025. Retrieved in October 23, 2025 from. https://www.ftc.gov/news-events/news/press-releases/2025/02/ftc-finalizes-order-donotpay-prohibits-deceptive-ai-lawyer-claims-imposes-monetary-relief-requires.

[31] Reuters, "OpenAI, Anthropic eye investor funds, settle AI lawsuits: FT reports," *Reuters,* October 8, 2025. Retrieved in October 24, 2025 from.

emphasize that AI liability extends beyond algorithmic errors to include violations of third-party laws, which still impose liability on the AI controller.

Additional cases, such as Lehrman & Sage v. Lovo, Inc., highlight the use of AI for unauthorized voice cloning. Although primarily related to intellectual property rights, this case is relevant in the context of electronic contracts because the use of AI without consent could be considered a violation of contractual clauses regarding third-party rights. Similarly, Alabama v. Lunsford demonstrated the legal consequences for lawyers who use AI to create legal documents with false citations, emphasizing the importance of verification and accountability in contracts and legal documents involving AI.

Within the Indonesian legal framework, these international cases provide important lessons. First, the principles of contractual liability and culpa can be applied when AI fails to fulfill contractual obligations or causes harm. Second, the Electronic Information and Transactions Law and Government Regulation 71/2019 provide a basis for holding electronic system managers accountable for both technical errors and human negligence. Third, international case studies demonstrate that AI controllers must implement algorithm audits, human oversight, and legal compliance to mitigate the risk of harm.

The combination of contractual principles, torts, and electronic regulations provides a comprehensive framework for assessing liability in electronic contracts involving AI. For example, if an Indonesian company uses AI to execute a smart contract in an e-commerce transaction, the AI's failure to cause consumer harm could give rise to an obligation to compensate, under Article 1365 of the Civil Code. Meanwhile, the Electronic Information and Transactions Law (*Undang Undang Informasi dan Transaksi elektronik*/UU ITE) and Government Regulation (PP) 71/2019 require companies to ensure system integrity, data security, and auditability to prevent similar losses.

Liability in modern electronic contracts emphasizes the integration of contractual principles, torts, and electronic regulations. In Indonesia, Articles 1238 and 1365 of the Civil Code form the basis for contractual and civil liability, while the Electronic Information and Transactions Law and Government Regulation (PP) 71/2019 extend these principles to the technological realm, including AI. International case studies, such as Deloitte Australia, DoNotPay, OpenAI, Anthropic, Lehrman & Sage v. Lovo, and Alabama v. Lunsford,

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https://www.reuters.com/business/openai-anthropic-eye-investor-funds-settle-ai-lawsuits-ft-reports-2025-10-08/?utm.

highlight the various risks: professional misconduct, misleading claims, and intellectual property infringement, all of which create financial liability for AI controllers.[32]

Thus, AI controllers, both individuals and corporations, must ensure that AI systems are secure, accurate, and thoroughly audited to minimize the risk of harm. The principle of due process of law remains the primary benchmark for accountability, while electronic regulation provides a supplementary legal framework that defines the obligations of system administrators. This integration of civil law principles and technological regulation forms an adaptive legal basis for modern electronic contracts, maintaining legal certainty, data integrity, and protecting injured parties.

3.3. Legal Mechanisms for Enforcing Civil Liability

Civil liability for losses arising from the use of Artificial Intelligence (AI) in electronic contracts is an increasingly relevant issue in the digital era. In Indonesia, although there are no specific regulations directly governing AI liability, civil law mechanisms can be implemented through existing frameworks, namely the principle of tort (Article 1365 of the Civil Code) and contractual liability in electronic contracts, as regulated by Law Number 11 of 2008 in conjunction with Law Number 19 of 2016 concerning Electronic Information and Transactions (*Undang-Undang Informasi dan Transaksi Elektronik*/ITE Law) and Government Regulation Number 71 of 2019 (PP 71/2019).[33]

Article 1365 of the Civil Code stipulates that any unlawful act that harms another party gives rise to an obligation to compensate.[34] In the context of AI,

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[32] Deloitte Australia, "Deloitte report errors spark AU$440,000 refunds," *Financial Times*, September 8, 2025. Retrieved in October 13, 2025 from. https://www.ft.com/content/934cc94b-32c4-497e-9718-d87d6a7835ca?utm.

[33] Adel Salem Allouzi, K. R. I. M. Karima, and Mohammad Abdalhafid AlKhamaiseh, "The Role of Artificial Intelligence and Emerging Technologies in UAE Commercial Transactions Law (2023)," *Research Journal in Advanced Humanities* 5, no. 4 (2024): 163. See too, Nur Aliya Rasyidah, Muhammad Aksay, and Muhammad Firdaus Akmal, "Urgensi Pembuatan Regulasi Penggunaan AI (Artificial Intelligence) Di Indonesia," *Jurnal Penegakan Hukum Indonesia* 5, no. 1 (2024): 50; Syafrinaldi Syafrinaldi, Kim Hyeonsoo, Rani Fadhila Syafrinaldi, and David Hardiago, "Artificial Intelligence, Innovation, and Copyright: Comparing Intellectual Property Law in Indonesia and South Korea," *Lex Scientia Law Review* 8, no. 2 (2024): 1150; Adnasohn Aqilla Respati, "Reformulasi UU ITE terhadap Artificial Intelligence Dibandingkan dengan Uni Eropa dan China AI Act Regulation," *Jurnal USM Law Review* 7, no. 3 (2024): 1745.

[34] Mendy Cevitra, and Gunawan Djajaputra, "Perbuatan Melawan Hukum (Onrechtmatige Daad) Menurut Pasal 1365 Kitab Undang-Undang Hukum Perdata Dan Perkembangannya," *UNES Law Review* 6, no. 1 (2023): 2730. See too, Bing Waluyo, "Kajian

a tort can occur when an AI system failure or algorithmic error causes financial, reputational, or operational losses to another party.[35] For example, if AI used in e-commerce fails to execute a transaction as per the contract and causes harm to consumers, the principle of culpa or negligence remains the basis for liability.[36] Thus, civil liability in Indonesia regarding AI in electronic contracts combines traditional tort principles with modern regulations that ensure system accountability, data security, and audit mechanisms, highlighting the importance of both human oversight and technological governance.[37]

Conceptually, a civil lawsuit for losses caused by Artificial Intelligence (AI) can be filed by emphasizing three main elements. First, the element of the act or action taken, which in the context of AI could include algorithmic errors, negligence in data management, or misuse of the system that results in harm to another party. Second, the element of the resulting loss, whether material such as lost income and fines, or immaterial such as damage to reputation, consumer trust, or moral harm. Third, the element of causality, namely the direct link between the failure of the AI system and the loss suffered by the other party. This element requires clear proof that the actions or negligence of the AI controller were the primary cause of the loss. The greatest challenge lies in the evidentiary process, because unlike traditional civil cases based on physical evidence, disputes involving AI require technical analysis of algorithm code, system activity logs, and digital data that record how and where the system failure occurred. Therefore, digital evidence becomes a key

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Terhadap Perbuatan Melawan Hukum Berdasarkan PadaPasal 1365 Kitab Undang-Undang Hukum Perdata," *Cakrawala Hukum: Majalah Ilmiah Fakultas Hukum Universitas Wijayakusuma* 24, no. 1 (2022): 19.

[35] Muhammad Dafi Akbar, Josua Ferdinand Sihotang, Rendika Purnama, and Taria Hasna, "Pemanfaatan dan Permasalahan Artificial Intelligence Dalam Kehidupan Manusia Serta Pengaturannya Secara Hukum," *Media Hukum Indonesia (MHI)* 2, no. 2 (2024): 85. See too, Mutia Hariati Hussin, and Mutia Hariati Salwa Prilia Ginano, "European Union Cyber Security In Dealing with the Threat Of AI-Cybercrimes: Lessons for Indonesia," *Dinamika Global: Jurnal Ilmu Hubungan Internasional* 8, no. 2 (2023): 198.

[36] Agitkarai Sirajuddin Putra, and Lalu Muh Hayyanul Haq, "Tanggung Jawab Hukum Penggunaan Artificial Intelligence Terhadap Pelanggaran Data Pribadi Pada Platform E-Commerce," *Commerce Law* 4, no. 1 (2024): 489.

[37] Hilarion Hamjen, Vience Mutiara Rumata, and Marudur Padapotan Damanik, "The Trading Robot Regulatory Naratives: AI Implications in Indonesia," In *Handbook of Research on Artificial Intelligence and Knowledge Management in Asia's Digital Economy* (Hershey: IGI Global, 2023), 85. See too, Ardina Khoirun Nisa, "The Prospect of AI Law in Indonesian Legal System: Present and Future Challenges," *The Indonesian Journal of International Clinical Legal Education* 6, no. 1 (2024): 28.

element in modern litigation to ensure the validity of claims and enforce legal liability.[38]

In addition to civil lawsuits, liability mechanisms for the use of Artificial Intelligence (AI) can also be pursued through contractual claims. In this case, the articles governing guarantees, obligations, and dispute resolution in contracts remain applicable, including to electronic contracts executed automatically through smart contracts. Parties integrating AI into electronic contracts have a legal responsibility to ensure that the system used is accountable, secure, and able to minimize potential losses to other parties.

In the regulatory context, the Electronic Information and Transactions Law (ITE Law) and Government Regulation Number 71 of 2019 (PP 71/2019) provide a strong legal basis for the principles of electronic system implementation in Indonesia.[39] First, the principle of data integrity and security, as stipulated in Article 7 of the ITE Law and Article 15 of PP 71/2019, requires electronic system providers to maintain data reliability, accuracy, and protection from potential manipulation or leakage.[40] Second, the principle of system auditing and verification emphasizes that every electronic system must be auditable periodically to assess compliance with procedures, security, and transaction integrity.[41] Third, the principle of legal certainty in electronic transactions recognizes electronic signatures and digital documents as valid evidence in litigation, ensuring enforceability and protection of parties involved.[42]

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[38] Saad Misbah, and Inaya Imtiyaz, "AI in Contract Law: Navigating Legal Challenges and Opportunities in the Digital Era," *LawFoyer Int'l J. Doctrinal Legal Rsch.* 2 (2024): 268.

[39] Ahmad Syarief Amrullah, Amelia Cahyadini, and Tasya Safiranita, "Potensi Artificial Intelligece (AI) Dalam Pelayanan Dan Pengawasan Pajak Di Indonesia Ditinjau Dari UU ITE, PP PSTE Dan UU KUP," *Equality: Journal of Law and Justice* 1, no. 2 (2024): 80. See too, Agitkarai Sirajuddin Putra, and Lalu Muh Hayyanul Haq, "Tanggung Jawab Hukum Penggunaan Artificial Intelligence Terhadap Pelanggaran Data Pribadi Pada Platform E-Commerce," *Commerce Law* 4, no. 1 (2024): 490; Adnasohn Aqilla Respati, "Reformulasi UU ITE terhadap Artificial Intelligence Dibandingkan dengan Uni Eropa dan China AI Act Regulation," *Jurnal USM Law Review* 7, no. 3 (2024): 1749.

[40] Yuliana Putri Dharmayanti, and Eko Soponyono, "Criminal Law Policy in Efforts to Combat Artificial Intelligence (AI) in Cyber Crime," *Jurnal Hukum Khaira Ummah* 20, no. 2 (2024): 2260. See too, Nur Aliya Rasyidah, Muhammad Aksay, and Muhammad Firdaus Akmal, "Urgensi Pembuatan Regulasi Penggunaan AI (Artificial Intelligence) Di Indonesia," *Jurnal Penegakan Hukum Indonesia* 5, no. 1 (2024): 51.

[41] Muhammad Dafi Akbar, Josua Ferdinand Sihotang, Rendika Purnama, and Taria Hasna, "Pemanfaatan dan Permasalahan Artificial Intelligence Dalam Kehidupan Manusia Serta Pengaturannya Secara Hukum," *Media Hukum Indonesia (MHI)* 2, no. 2 (2024): 87.

[42] Hilarion Hamjen, Vience Mutiara Rumata, and Marudur Padapotan Damanik, "The Trading Robot Regulatory Naratives: AI Implications in Indonesia," In *Handbook of Research on*

Contractual claims can therefore be filed if AI fails to fulfill the promised performance in an electronic contract, for example, due to late delivery, pricing errors, or incorrect transaction execution. This mechanism allows the aggrieved party to obtain compensation without having to prove in-depth technical negligence; it is sufficient to demonstrate the breach of contract and its consequences.

In the Indonesian context, institutions such as the Social Security Agency (*Badan Penyelenggara Jaminan Sosial*/BPJS), Bank Indonesia, the Financial Services Authority (*Otoritas Jasa Keuangan*/OJK), or information technology supervisory agencies can serve as references for evaluating AI systems. For example, for e-commerce systems, financial transactions, or public service applications, supervisory agencies can assess the system's suitability, compliance with security standards, and risk mitigation procedures. This evaluation can be used as administrative evidence in litigation to demonstrate whether or not the AI controller has performed due diligence.[43]

Furthermore, internal audits by companies are also crucial. These audit documents, including system activity logs and recordings of automated processes, serve as key digital evidence to prove how the AI executed contracts and why failures occurred. This evidence serves as the basis for courts or arbitration institutions in assessing civil liability. In addition to conventional litigation mechanisms, technology-based alternative dispute resolution methods, such as electronic mediation and online arbitration, are increasingly relevant for handling cases involving Artificial Intelligence (AI). Law Number 30 of 1999 concerning Arbitration and Alternative Dispute Resolution, when combined with the Electronic Information and Transactions Law (ITE Law), can provide the legal basis for the implementation of electronic mediation and arbitration (online dispute resolution). This approach offers several significant advantages, including a faster process compared to court litigation, reduced administrative and transportation costs, and the ability to directly utilize digital evidence through a secure and verified electronic platform.

Artificial Intelligence and Knowledge Management in Asia's Digital Economy (Hershey: IGI Global, 2023), 87. See too, Ardina Khoirun Nisa, "The Prospect of AI Law in Indonesian Legal System: Present and Future Challenges," *The Indonesian Journal of International Clinical Legal Education* 6, no. 1 (2024): 30.

[43] Bruno Mascello, "AI in the Legal Market: The Dark Side of the Moon," In *Liquid Legal–Sustaining the Rule of Law: Artificial Intelligence, E-Justice, and the Cloud* (Cham: Springer Nature Switzerland, 2025), 97.

In practice, the AI system controller or the party responsible for the technology can collaborate with the mediator or arbitrator to technically explain the causes of system failures, risk mitigation mechanisms, and the remedial measures taken. This procedure not only expedites dispute resolution without the need for a formal court decision but also serves as a means to effectively enforce the principle of civil liability in the context of AI use. Thus, electronic alternative dispute resolution is a crucial instrument for creating efficiency, transparency, and fairness in Indonesia's digital legal ecosystem.

However, the effectiveness of this legal mechanism faces significant challenges, particularly in proving losses caused by AI. First, the complex issue of causality is often a major obstacle, as it is difficult to prove a direct link between AI algorithm errors and losses suffered by other parties. Second, the issue of algorithm transparency is also a serious concern, as many AI systems are black box systems, meaning their decision-making processes cannot be clearly explained without in-depth technical analysis. This requires the involvement of technology or digital forensics experts to interpret the system's results.

Third, the challenge arises in determining the roles of humans and machines whether the losses arose from human negligence in operating the AI or from systemic flaws in the algorithm itself. This division of responsibility is crucial in determining who should bear the legal consequences. Fourth, assessing non-material losses, such as reputational damage, loss of consumer trust, and psychological impact, is often difficult to quantify financially, although legally they are still considered civil damages that can be sued.

The concepts of contractual liability and tort can be conceptually developed to address these issues. For example, an AI controller is held liable if it fails to meet a reasonable standard of care, conduct system verification, and follow up on internal audits. This mechanism aligns with the principle of due diligence in international practice, as seen in the cases of Deloitte Australia, DoNotPay, and OpenAI, where the failure of an AI controller to verify the results or content of the AI resulted in financial liability. Furthermore, in this context, electronic mediation and arbitration not only offer procedural efficiency but also serve as adaptive vehicles for Indonesian law to address the complexities of AI-based civil liability. By integrating classical civil law principles with modern technological approaches, the Indonesian legal system has the opportunity to uphold digital justice that is inclusive and responsive to developments in AI.[44]

4. Closing

4.1. Conclusions the findings show that the legal mechanism for enforcing civil liability for the use of Artificial Intelligence (AI) in Indonesia can be implemented through four main channels. First, through a civil lawsuit under Article 1365 of the Civil Code, which regulates the obligation to compensate for unlawful acts. Second, through a contractual claim for breach of electronic contracts, utilizing provisions in the Electronic Information and Transactions Law and Government Regulation 71 of 2019, particularly regarding the obligation to maintain system integrity and data security. Third, through evaluation and audit of Artificial Intelligence systems by a supervisory agency or independent auditor, which can be used as digital evidence in litigation. Fourth, through alternative dispute resolution mechanisms, such as electronic mediation and arbitration, which are more efficient and relevant in the context of digital technology. Conceptually, this approach emphasizes the importance of due diligence, algorithmic transparency, and systemic audits to prove a causal relationship between AI failures and the resulting losses. Although Indonesia does not yet have specific regulations regarding AI liability, the combination of the principles of tort, contractual liability, and electronic dispute resolution mechanisms has formed an adaptive legal framework that can provide protection for injured parties. In addition to civil lawsuit mechanisms and contractual claims for breach of electronic contracts, enforcement of liability for losses caused by AI is also strengthened by obligations under the ITE Law and Government Regulation 71 of 2019, which require electronic system operators to ensure reliability and data security, and record digital activity as evidence. These mechanisms are supported by system audits, security certifications, and electronic evidence that enable judges to assess whether losses stem from a failure to supervise or control AI. Thus, Indonesian regulations provide a clear operational basis for enforcing accountability in electronic transactions involving AI.

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[44] Igor Kambovski, "Artificial Inteligence-legal and Ethical Dilemmas," *Legislation and Judicial Practice* 2, no. 1 (2024): 21. See too, Bruno Mascello, "AI in the Legal Market: The Dark Side of the Moon," In *Liquid Legal–Sustaining the Rule of Law: Artificial Intelligence, E-Justice, and the Cloud* (Cham: Springer Nature Switzerland, 2025), 99.

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