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Automated Contracting and the Principle of Freedom of Contract: Rethinking Consent, Responsibility, and Legal Certainty in AI-Driven Transactions

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Abstract: *The rapid deployment of artificial intelligence (AI) in commercial transactions has moved automation from the mere transmission of human declarations to the generation of contractual actions by systems that select counterparties, negotiate terms, and execute performance with minimal human review. This development places sustained pressure on the principle of freedom of contract, which presupposes that binding obligations arise from the free and informed will of autonomous parties. This article examines how consent, responsibility, and legal certainty should be reconceived when contracts are formed and performed by deterministic and non-deterministic automated systems. Using normative juridical research with statutory, conceptual, and comparative approaches, the study analyses the Indonesian Civil Code and the Electronic Information and Transactions Law alongside the UNCITRAL Model Law on Automated Contracting (2024), the European Union Artificial Intelligence Act, and recent scholarship published between 2021 and 2026. The findings show that classical consent doctrine remains serviceable only if consent is relocated from the individual transaction to the moment of deployment, so that a party's will is expressed through the design, parameters, and supervision of the system it chooses to use. The study further finds that responsibility should follow attribution to the user of the system, tempered by a reasonable-expectation exception for unexpected actions and backed by non-avoidance, transparency, and auditability duties. The article proposes a model of "deployment-based consent" and "structured responsibility" as a basis for reforming Indonesian electronic contract law and securing legal certainty without sacrificing contractual autonomy.*

Keywords: Automated Contracting; Freedom Of Contract; Algorithmic Consent; Attribution; Legal Certainty; Artificial Intelligence.

INTRODUCTION

Contract law has always been shaped by the technologies through which people communicate their promises, from the written instrument and the telegraph to electronic data interchange and the online click-wrap agreement. Each of these transitions forced legal systems to ask whether a familiar doctrine could absorb a new medium without losing its normative core. The present transition is different in kind rather than merely in degree, because artificial intelligence does not simply carry a human declaration from one party to another but increasingly produces the declaration itself. Automated systems now generate offers, evaluate counter-offers, adjust prices in real time, and trigger performance through code without any natural person reviewing the individual action. As a result, the question is no longer whether an electronic message can bind a party, but whether an output that no human specifically intended can still be treated as an expression of that party's contractual will.[1]

[1]Eliza Mik, "Much Ado about Artificial Intelligence or: The Automation of Contract Formation," *International Journal of Law and Information Technology* 30 (2023): 484–506, https://doi.org/10.1093/ijlit/eaad004.

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At the centre of this question lies the principle of freedom of contract, which in civil law systems is commonly expressed through the doctrine of party autonomy and the binding force of agreements. In Indonesia, Article 1338 paragraph (1) of the Civil Code (*Burgerlijk Wetboek*) declares that every agreement lawfully made binds the parties as if it were law, while Article 1320 conditions validity on consent, capacity, a certain object, and a lawful cause.[2] Both provisions presuppose a human subject who forms an intention, communicates it, and is accountable for its consequences. Freedom of contract therefore contains two inseparable dimensions, namely the liberty to decide whether, with whom, and on what terms to contract, and the responsibility to bear the obligations that such liberty creates. When an AI system performs the deciding, both dimensions are destabilised at once, because the liberty appears to migrate to the machine while the responsibility remains with a human or corporate actor who may not have foreseen the outcome.[3]

Recent scholarship has approached this tension from several directions, and the literature has expanded markedly since 2022. One strand argues that existing doctrine is largely adequate, treating automated systems as sophisticated tools whose outputs are attributable to the persons who deploy them, much as a vending machine's acceptance is attributable to its owner.[4] A second strand insists that the autonomy and opacity of machine-learning systems create genuine gaps in the theory of consent, requiring either new categories such as "algorithmic consent" or a reconstruction of the theory of the juridical act.[5] A third strand shifts attention from formation to the communicative function of AI, suggesting that reliance on AI as a communication tool may push contract law beyond consent as a mere formality toward richer models of consent.[6] A fourth strand, focused on regulation, emphasises consumer protection, data governance, and fundamental rights as external limits that contract law alone cannot supply.[7] These strands are not mutually exclusive, yet the literature has rarely integrated them into a single framework that links consent, responsibility, and legal certainty as interdependent variables.

The practical scale of the phenomenon makes these theoretical questions urgent rather than speculative. E-commerce platforms routinely use dynamic pricing algorithms that adjust offers to individual users within milliseconds, while procurement systems in large enterprises automatically issue purchase orders when inventory falls below predefined thresholds. Financial institutions deploy algorithmic trading systems that conclude thousands of binding transactions per second, and insurers use automated underwriting tools to accept or reject applications and to set premiums. More recently, conversational AI agents have begun to negotiate on behalf of consumers and businesses, booking services, comparing offers, and accepting terms through interfaces designed for human users. In each of these settings, the contract that ultimately binds the parties is the product of a decision-making

[2]Kitab Undang-Undang Hukum Perdata (*Burgerlijk Wetboek*) [Indonesian Civil Code], arts. 1320 and 1338(1).

[3]Tiffany Sillanpää, "Freedom to (Smart) Contract," *IALS Student Law Review* 7, no. 2 (2020), https://doi.org/10.14296/islr.v7i2.5203.

[4]Mik, "Much Ado about Artificial Intelligence."

[5]"¿Es el consentimiento algorítmico una figura transformadora de la teoría del negocio jurídico y del contrato?," *Inciso* 28, no. 1 (2026), https://doi.org/10.18634/incj.28v.1i.1598; Jorge Andrey Cáceres Malagón, "¿Sueñan las máquinas con contratar? Un estudio sobre smart contracts y consentimiento algorítmico," *Revista de Derecho Privado*, no. 46 (2024): 155–85, https://doi.org/10.18601/01234366.46.07.

[6]Cristina Poncibò, "Artificial Intelligence as a Communication Tool in Contract Law," *European Review of Private Law* 31, no. 2/3 (2023): 239–60, https://doi.org/10.54648/erpl2023012.

[7]Mireia Artigot Golobardes, "Algorithmic Personalization of Consumer Transactions and the Limits of Contract Law," *Journal of Law, Market & Innovation* 1, no. 1 (2022): 18–46, https://doi.org/10.13135/2785-7867/6672.

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process that neither party reviewed in its particulars, which is precisely why the doctrinal foundations of contract law must be re-examined.[8]

The international legal landscape changed significantly in July 2024, when the United Nations Commission on International Trade Law (UNCITRAL) adopted the Model Law on Automated Contracting, later commended to States by the General Assembly in Resolution 79/119 of 4 December 2024.[9] The Model Law establishes that a contract shall not be denied validity solely because no natural person reviewed or intervened in its formation, provides rules on the attribution of actions carried out by automated systems, and offers an optional rule on unexpected actions. It is grounded in the principles of technology neutrality, non-discrimination against automation, and party autonomy, and it is designed to supplement rather than replace existing electronic transactions laws. Commentators have noted that the Model Law deliberately avoids the term "artificial intelligence" while ensuring that its definition of an automated system captures both deterministic and non-deterministic operation.[10] At the same time, the European Union adopted Regulation (EU) 2024/1689, the Artificial Intelligence Act, which imposes transparency obligations on systems that interact with natural persons and thus indirectly shapes the conditions under which consent is given in automated transactions.[11]

Indonesia occupies a distinctive position within this landscape. The Electronic Information and Transactions Law (Law No. 11 of 2008, as amended by Law No. 19 of 2016 and Law No. 1 of 2024) already recognises the "electronic agent" as a device of an electronic system created to perform actions automatically, and Article 21 allocates the legal consequences of transactions carried out through such agents.[12] The 2024 amendment added Article 18A on international electronic contracts using standard clauses, reflecting a growing awareness that platform-drafted terms can undermine the bargaining equality assumed by freedom of contract. However, Indonesian law has not yet addressed the specific problems of non-deterministic AI, such as unexpected outputs, opaque decision-making, and the distribution of responsibility among users, operators, and developers. Indonesian scholarship has begun to examine smart contracts and AI-based agreements, generally concluding that such agreements can satisfy Article 1320 of the Civil Code but that the subjective requirements of consent and capacity remain the most problematic.[13] This gap matters greatly for a jurisdiction whose digital economy is among the fastest growing in Southeast Asia

[8]Martin Ebers, Cristina Poncibò, and Mimi Zou, eds., *Contracting and Contract Law in the Age of Artificial Intelligence* (Oxford: Hart Publishing, 2022), https://doi.org/10.5040/9781509950713.

[9]United Nations Commission on International Trade Law, *UNCITRAL Model Law on Automated Contracting with Guide to Enactment* (Vienna: United Nations, 2025); United Nations General Assembly, Resolution 79/119, *Model Law on Automated Contracting*, A/RES/79/119 (4 December 2024).

[10]Milan Mitić, "Artificial Intelligence in UNCITRAL Model Law on Automated Contracting," in *XXII International Scientific Conference "Legal Days – Prof. Slavko Carić": Law and Justice* (2025), https://doi.org/10.5937/pdsc25605m.

[11]Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 laying down harmonised rules on artificial intelligence (Artificial Intelligence Act), *Official Journal of the European Union* L, 12 July 2024, art. 50.

[12]Undang-Undang Nomor 11 Tahun 2008 tentang Informasi dan Transaksi Elektronik, as amended by Undang-Undang Nomor 19 Tahun 2016 and Undang-Undang Nomor 1 Tahun 2024 [Electronic Information and Transactions Law, hereinafter "ITE Law"], arts. 1 point 8 and 21.

[13]Muhammad Karim Benzema and Diky Dikrurahman, "Legal Liability of AI-Based Digital Agreements in Indonesian Contract Law," *Jurnal Smart Hukum* 5, no. 1 (2026), https://doi.org/10.55299/jsh.v5i1.1916; Eni Arfianti and Salim HS, "Legal Challenges of Smart Contract Integration in Indonesian Notarial Practice," *Jurnal Private Law* 6, no. 2 (2026): 368–82, https://doi.org/10.29303/ypf1ek02.

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and whose consumers increasingly transact with automated platforms.

The problem examined in this article can therefore be stated precisely. If the binding force of contract rests on the free and informed consent of the parties, and if AI systems increasingly generate contractual actions that no human specifically reviewed or intended, then contract law must either locate consent somewhere other than the individual transaction or accept that some automated contracts bind parties without consent in the classical sense. Each alternative carries consequences for responsibility, because the person to whom an action is attributed must bear its legal effects, and for legal certainty, because counterparties need to know when they can rely on an automated output. Existing studies tend to address only one of these dimensions, for example by analysing liability without revisiting consent, or by defending the validity of automated contracts without explaining how unexpected outputs should be treated.[14] The absence of an integrated account leaves legislators and courts without a coherent basis for reform. This article responds to that gap by treating consent, responsibility, and legal certainty as three faces of a single normative problem.

Accordingly, this article addresses two research questions. First, how should the requirement of consent under the principle of freedom of contract be reconceived when contracts are formed through AI-driven automated systems? Second, how should responsibility for automated contractual actions be allocated so as to secure legal certainty for all parties, particularly within the Indonesian legal framework? The novelty of the study lies in three contributions that distinguish it from previous work. It develops the concept of "deployment-based consent," which relocates the contractual will from the individual output to the informed decision to deploy, configure, and supervise an automated system, and it reads this concept against Article 1320 of the Indonesian Civil Code and the UNCITRAL Model Law simultaneously. It also proposes a model of "structured responsibility" that combines attribution, a reasonable-expectation exception, non-avoidance, and transparency duties, and it translates that model into concrete recommendations for amending the ITE Law and its implementing regulations.

The remainder of the article proceeds as follows. Section 2 sets out the research method, including the legal materials, approaches, and analytical techniques employed. Section 3 presents the results and discussion in two parts, the first reconstructing consent and freedom of contract in AI-driven contract formation and the second addressing the allocation of responsibility and the conditions of legal certainty. Section 4 concludes by summarising the findings and their implications for law reform. Throughout, the analysis draws on recent scholarship published between 2021 and 2026 together with the primary legal instruments that govern automated transactions in Indonesia and at the international level.

METHODOLOGY

This study employs normative juridical research, a method that treats law as a system of norms and seeks to identify, interpret, and evaluate legal rules, principles, and doctrines in order to answer a legal problem. Normative research is appropriate here because the research questions concern the meaning and adequacy of legal concepts, namely consent, attribution, responsibility, and legal certainty, rather than the empirical behaviour of contracting parties. The study does not test hypotheses through quantitative data, but it

[14]Satish Kumar, "Doctrine of Free Consent in Automated E-Contracts: Re-Evaluating Indian Contract Law in the Age of Algorithmic Negotiation," *International Journal of Civil Law and Legal Research* 5, no. 1 (2025), https://doi.org/10.22271/civillaw.2025.v5.i1b.131; Eyad Moaied Daoud Al-Khateeb et al., "Artificial Intelligence in Commercial Contracting under Jordanian Law: Contract Formation, Attribution and Civil Liability," *International Journal of Law* 12, no. 3 (2026), https://doi.org/10.66856/ijl.2026.12.3.12286.

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does rely on systematic reasoning to assess whether existing norms can coherently govern AI-driven transactions. Its output is prescriptive in character, because it proposes how legal rules ought to be interpreted or reformed. This orientation is consistent with the dominant methodology in comparative private law scholarship on automated contracting.[15]

Three approaches are combined in the analysis. The statutory approach examines the relevant provisions of the Indonesian Civil Code, the ITE Law as amended in 2024, Law No. 8 of 1999 on Consumer Protection, Law No. 27 of 2022 on Personal Data Protection, Government Regulation No. 71 of 2019 on the Operation of Electronic Systems and Transactions, and Government Regulation No. 80 of 2019 on Trading Through Electronic Systems. The conceptual approach analyses doctrinal constructs such as the declaration of will, the theory of reliance, the electronic agent, attribution, and mistake, drawing on the philosophical foundations of party autonomy. The comparative approach places Indonesian law alongside the UNCITRAL Model Law on Automated Contracting, the United Nations Convention on the Use of Electronic Communications in International Contracts (2005), and the European Union Artificial Intelligence Act, together with doctrinal developments reported in Jordanian, Indian, Latin American, and European scholarship. The combination of these approaches allows the study to identify both the internal coherence of Indonesian law and its alignment with emerging international standards.

The legal materials consist of primary, secondary, and tertiary sources. Primary materials are the statutes, regulations, and international instruments identified above, which were read in their official texts. Secondary materials comprise peer-reviewed journal articles, scholarly books, and conference proceedings, collected primarily from a curated reference set exported from an academic database in RIS format and supplemented by independently verified sources indexed in Google Scholar. To maintain currency, the secondary literature was restricted predominantly to works published between 2021 and 2026, with a small number of earlier foundational studies retained where they remain indispensable to the doctrinal debate on smart contracts. Tertiary materials, such as legal dictionaries and official guides to enactment, were used to clarify terminology and legislative intent.

The analysis was conducted through qualitative prescriptive techniques in four stages, as summarised in Figure 1. In the first stage, legal materials were inventoried and classified according to whether they concern formation, attribution, liability, or regulatory transparency. In the second stage, the provisions were interpreted using grammatical, systematic, and teleological methods, with particular attention to the purpose of freedom of contract and legal certainty. In the third stage, Indonesian norms were compared with the UNCITRAL Model Law and the European framework to identify convergences, gaps, and conflicts. In the fourth stage, the findings were synthesised into a normative model and translated into recommendations for interpretation and legislative reform.

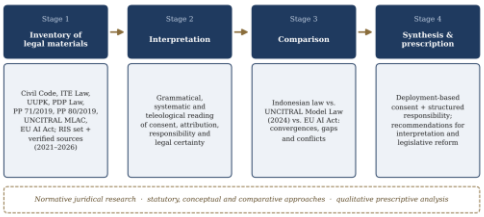


Figure 1. Research design and analytical flow of the study

RESULTS AND DISCUSSION

Reconstructing Consent and Freedom of Contract in AI-Driven Contract Formation

The first finding of this study is that the classical model of consent, built on the meeting of two contemporaneous and individually formed wills, cannot be applied literally to transactions concluded by AI systems. In the classical model, offer and acceptance are understood as declarations through which each party externalises an internal intention, and the

[15]Ebers, Poncibò, and Zou, *Contracting and Contract Law in the Age of Artificial Intelligence*.

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contract arises at the moment these declarations correspond. Article 1320 of the Indonesian Civil Code reflects this model by placing agreement (*sepakat*) as the first condition of validity, while Article 1321 provides that consent is not valid if given by mistake, obtained by duress, or procured by fraud.[16] When an automated system generates an offer, the human party typically has no awareness of the specific counterparty, the specific price, or the specific moment of conclusion. Treating such an output as a declaration of will in the literal sense would therefore be a legal fiction, and scholars have rightly warned that fictions of this kind can conceal the true allocation of power and risk in automated markets.[17]

It is important, however, to distinguish between types of automated systems, because the doctrinal difficulty grows with the degree of unpredictability. The UNCITRAL Model Law defines an automated system as a computer system capable of carrying out actions without the necessary review or intervention of a natural person, and it expressly states that such systems may operate in a deterministic or non-deterministic manner.[18] A deterministic system always produces the same output from the same input, so its behaviour can be fully anticipated by the person who programs or deploys it. A non-deterministic system, by contrast, pursues predefined objectives through stochastic processes, so that its particular outputs can be predicted only within a range of probabilities. For deterministic systems, the traditional analogy of the vending machine or the standing offer works reasonably well, because the deploying party has effectively pre-formulated every possible declaration. For non-deterministic systems, the analogy weakens, and this is precisely the domain in which the most serious questions about consent arise.[19]

Several doctrinal responses to this difficulty have been proposed, and each offers partial insight while also revealing limitations. The first response treats the AI system as a mere tool or communication channel, so that its outputs are simply the declarations of its user; this approach has the virtue of simplicity and is broadly consistent with the position that automated systems possess no independent will.[20] The second response draws on agency law, treating the system as a constructive or quasi-agent whose authority derives from the principal's mandate, an idea that has gained renewed attention in debates on AI agents.[21] The third response proposes conferring some form of legal personality on advanced AI, an option that most contemporary scholarship and the UNCITRAL Model Law itself reject because it would allow human actors to externalise risk onto entities without assets or moral agency. The fourth response, which this study develops, accepts the tool characterisation but relocates the relevant act of will from the individual output to the earlier and more deliberate decision to deploy and configure the system. This fourth response retains the human-centred foundation of contract law while explaining why the user may be bound by outputs it did not specifically foresee.

The concept of "deployment-based consent" rests on a simple but significant shift in the object of consent. Under this concept, a party consents not to each particular contract generated by its system, but to a class of contracts defined by the system's objectives, parameters, constraints, and operating environment. The declaration of will is expressed through design choices, such as price ranges, counterparty filters, budget limits, and stop conditions, and through the decision to

[16]Indonesian Civil Code, arts. 1320 and 1321.

[17]Bagus Anggara Putra and Muhammad Asrul Maulana, "Legal Ambiguity of Electronic Consent in the Formation of International Electronic Contracts for Artificial Intelligence-Based Digital Business Transactions," *West Science Business and Management* 4, no. 3 (2026), https://doi.org/10.58812/wsbm.v4i03.3049.

[18]UNCITRAL, *Model Law on Automated Contracting*, art. 1(1)(a) and (2).

[19]X. Zhai, "Autonomous Systems: How Should Contract Law Treat Such Autonomy?," *Information & Communications Technology Law* (2026), https://doi.org/10.1080/13600834.2026.2624924.

[20]Mik, "Much Ado about Artificial Intelligence."

[21]Noam Kolt, "Governing AI Agents," *Notre Dame Law Review* 101 (2026): 335.

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place the system into operation in a particular market. This view is consistent with the Guide to Enactment of the UNCITRAL Model Law, which observes that a person's state of mind regarding automated actions may be manifested in how the system is programmed and in the circumstances in which it is put into operation.[22] It also echoes the communicative account of AI in contract law, which treats the system as a medium through which a party externalises its contractual preferences rather than as an independent contracting subject.[23] Deployment-based consent thus transforms the classical moment of agreement into a continuum that begins with configuration and continues through supervision.

Reading deployment-based consent against Article 1320 of the Indonesian Civil Code demonstrates that the four conditions of validity can be satisfied without a radical rewriting of the Code. Consent (*sepakat*) is satisfied when the user knowingly deploys the system to contract within defined parameters and the counterparty accepts through its own declaration or system, provided that the resulting contract falls within the range of outcomes reasonably anticipated at deployment. Capacity (*kecakapan*) is assessed in relation to the natural or legal person who deploys the system, not the system itself, which removes the conceptual obstacle of treating software as a contracting party. The certain object (*suatu hal tertentu*) can be satisfied even when terms are determined dynamically, because the object is determinable by reference to objective parameters, a point reinforced by the Model Law's recognition that contracts may incorporate information from data sources that change periodically or continuously.[24] The lawful cause (*sebab yang halal*) remains subject to Article 1337 of the Civil Code, so that automated contracts that violate statute, morality, or public order are void regardless of how they were generated.[25]

This reading is supported by the structure of the ITE Law, which already presumes that transactions may be concluded through automated means. Article 18 paragraph (1) provides that electronic transactions set out in electronic contracts bind the parties, and Article 20 paragraph (1) states that, unless otherwise agreed, an electronic transaction occurs when the offer sent by the sender has been received and approved by the recipient.[26] Article 1 point 8 defines an electronic agent as a device of an electronic system made to perform an action on certain electronic information automatically, operated by a person. The phrase "operated by a person" is significant because it confirms that the law views the agent as an instrument of a human or corporate actor rather than as an autonomous subject. Indonesian scholarship has similarly concluded that smart contracts and AI-based agreements can fulfil the requirements of Article 1320, while cautioning that the subjective requirements of consent and capacity require careful interpretation.[27]

Deployment-based consent, however, must not become a device for legitimising outcomes that no reasonable user could have anticipated. If consent is located at deployment, its scope is necessarily bounded by what the deploying party could reasonably foresee in light of the system's design and operating environment. Outputs that fall far outside this range, for example a pricing algorithm that sells inventory at a small fraction of its market value because of a data feed error, cannot plausibly be described as falling within the class of contracts to which the user consented. Here the doctrine of mistake under Articles 1321 and 1322 of the Civil Code becomes relevant, since mistake may vitiate consent when it concerns the

[22]UNCITRAL, *Model Law on Automated Contracting with Guide to Enactment*, paras. 69–70.

[23]Poncibò, "Artificial Intelligence as a Communication Tool in Contract Law."

[24]UNCITRAL, *Model Law on Automated Contracting*, art. 6(2)–(3).

[25]Indonesian Civil Code, art. 1337.

[26]ITE Law, arts. 18(1) and 20(1).

[27]Benzema and Dikrurahman, "Legal Liability of AI-Based Digital Agreements in Indonesian Contract Law"; E. Priyono, O. Akinrinde, and Muhamad Azhar, "Digital Transformation of Contract Law: Legal Certainty and Human Rights Protection in AI-Based Contracts," *Jurnal Suara Hukum* 8, no. 1 (2026): 132–66, https://doi.org/10.26740/jsh.v8n1.p132-166.

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substance of the object of the agreement.[28] Yet classical mistake doctrine was designed for errors in the human mind, and its application to machine errors is uncertain, particularly when the counterparty is itself an automated system that cannot "know" of the mistake. This uncertainty is one of the main reasons why a specific rule on unexpected actions, discussed in Section 3.2, is needed to complement deployment-based consent.

The standard of reasonable foreseeability that bounds deployment-based consent requires further specification if it is to provide guidance to courts and parties. Several factors are relevant in determining what a deploying party could reasonably have anticipated at the moment of deployment. These include the nature of the system and whether it operates deterministically or stochastically, the documentation and performance specifications supplied by its developer, the testing undertaken before deployment, the market environment in which the system operates, and the safeguards, such as price limits or human review thresholds, that the deploying party chose to configure. A party that deploys a non-deterministic system without any limits in a volatile market can reasonably be expected to foresee a wider range of outcomes than a party that deploys a tightly constrained system with robust safeguards. This factor-based approach mirrors the objective assessment of reasonable expectations adopted in the Guide to Enactment of the UNCITRAL Model Law, which refers to the nature and purpose of the contract, the type of transaction, trade usages, and information on the design and operation of the system.[29] It also creates incentives for careful configuration, because the more precisely a party defines the parameters of its system, the more clearly it delimits the contracts to which it has consented.

A further dimension of the problem concerns the asymmetry between parties who deploy sophisticated systems and parties who merely interact with them. Freedom of contract assumes, at least formally, that both parties possess a meaningful opportunity to understand and negotiate terms. In AI-driven consumer markets, however, one party may use algorithms to personalise prices and terms on the basis of extensive behavioural data, while the other party interacts through a simple interface without knowing that it is dealing with an automated system at all.[30] Scholars have shown that such information asymmetries erode the autonomy that freedom of contract is meant to protect, and that the consent obtained in such conditions may be formally valid but substantively hollow.[31] Recent work on "hypernudges" goes further, arguing that algorithmic manipulation of choice architecture calls for a standard of algorithmic loyalty grounded in objective good faith.[32] Deployment-based consent, therefore, describes the will of the deploying party but does not by itself guarantee the quality of the counterparty's consent.

For this reason, the reconstruction of consent must be two-sided. On the side of the deploying party, consent is located at deployment and bounded by reasonable foreseeability. On the side of the interacting party, particularly a consumer, consent must be protected through transparency, disclosure, and the ability to correct errors before a contract becomes binding. The European Union Artificial Intelligence Act provides one model, requiring that natural persons be informed that they are interacting with an AI system unless this is obvious from the context.[33] The UNCITRAL Model Law takes a more restrained approach, preserving rather than creating information requirements, but its Guide to Enactment identifies notification of interaction with an automated system as an example of information relevant to enhancing

[28]Indonesian Civil Code, arts. 1321 and 1322.

[29]UNCITRAL, *Guide to Enactment*, para. 81.

[30]Artigot Golobardes, "Algorithmic Personalization of Consumer Transactions and the Limits of Contract Law."

[31]John Linarelli, "Artificial Intelligence and Contracts, Information Asymmetries, Autonomy and Consent," in *Contracting and Contract Law in the Age of Artificial Intelligence*, ed. Martin Ebers, Cristina Poncibò, and Mimi Zou (Oxford: Hart Publishing, 2022).

[32]Fernando A. Ramos-Zaga, "Hypernudges y consentimiento sustantivo: bases para un estándar jurídico de lealtad algorítmica," *Civilistica.com* 15, no. 2 (2026), https://doi.org/10.5281/zenodo.22217091.

[33]Artificial Intelligence Act, art. 50(1).

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transparency and legal certainty.[34] Indonesian law already contains a partial mechanism in Article 22 of the ITE Law, which requires certain electronic agent operators to provide features that allow users to change information while a transaction is still in process.[35]

The Indonesian Consumer Protection Law adds a further layer that is directly relevant to the substantive quality of consent. Article 18 of Law No. 8 of 1999 prohibits business actors from including standard clauses that, among other things, shift the business actor's responsibility onto the consumer or subject the consumer to new or additional rules made unilaterally during the period of use.[36] In automated contracting, platform terms frequently contain clauses that disclaim responsibility for algorithmic errors or reserve the right to adjust terms dynamically through automated systems. Such clauses must be scrutinised under Article 18, and where they allocate the risk of algorithmic malfunction entirely to the consumer, they should be treated as null and void. This approach aligns with the argument that smart contracts and automated systems in consumer markets should function as "servants, not masters," so that the efficiency of automation does not override the protective rules of consumer law.[37] Freedom of contract, properly understood, is therefore not weakened but completed by these protective limits.

The Personal Data Protection Law also intersects with consent in AI-driven transactions in an important and often overlooked way. Article 10 of Law No. 27 of 2022 grants data subjects the right to object to decisions based solely on automated processing, including profiling, that produce legal effects or significantly affect them.[38] Because the conclusion of a contract and the setting of its price are decisions with legal effects, this provision gives consumers a statutory foothold to contest certain fully automated contracting decisions. It also implies that a deploying party relying on personal data to personalise contract terms cannot treat the consumer's click of acceptance as the end of the inquiry into consent. In this sense, data protection law supplies a public-law guarantee of the private-law value of autonomy, complementing the doctrinal reconstruction offered by deployment-based consent. Taken together, these instruments show that Indonesian law already possesses many of the elements needed for a coherent two-sided model of consent, although they remain scattered across different statutes.

The analysis of smart contracts adds a final perspective on the relationship between automation and freedom of contract. Smart contracts are computer programs that automate the performance of contractual obligations, often on distributed ledgers, and they are frequently described as "self-executing" or "code is law" arrangements. Critics have pointed out that the rigidity of code may prevent parties from exercising the flexibility that contract law ordinarily allows, such as renegotiation, suspension of performance, or reliance on equitable defences.[39] Others have argued that smart contracts should be understood as a form of legal conduct whose meaning is shaped by the surrounding legal order rather than by code alone.[40] The integration of AI oracles into smart contracts compounds the difficulty, because an external AI system may supply the data that triggers

[34]UNCITRAL, *Model Law on Automated Contracting*, art. 9; UNCITRAL, *Guide to Enactment*, para. 86.

[35]ITE Law, art. 22(1).

[36]Undang-Undang Nomor 8 Tahun 1999 tentang Perlindungan Konsumen [Consumer Protection Law], art. 18.

[37]M. Durovic and C. Willett, "A Legal Framework for Using Smart Contracts in Consumer Contracts: Machines as Servants, Not Masters," *The Modern Law Review* (2023), https://doi.org/10.1111/1468-2230.12817.

[38]Undang-Undang Nomor 27 Tahun 2022 tentang Pelindungan Data Pribadi [Personal Data Protection Law], art. 10(1).

[39]Robert Herian, "Smart Contracts: A Remedial Analysis," *Information & Communications Technology Law* 30 (2021): 17–34, https://doi.org/10.1080/13600834.2020.1807134.

[40]Jake Goldenfein and A. Leiter, "Legal Engineering on the Blockchain: 'Smart Contracts' as Legal Conduct," *Law and Critique* 29 (2018): 141–49, https://doi.org/10.1007/s10978-018-9224-0.

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automatic performance without either party being able to verify it.[41]

These insights confirm that freedom of contract in the age of automation must include the freedom not to be locked into irreversible outcomes generated by systems one cannot control. The UNCITRAL Model Law recognises this point implicitly through its principle of party autonomy, which protects the freedom to use or not to use automated systems and to regulate their use by agreement.[42] Article 1339 of the Indonesian Civil Code reinforces this conclusion by providing that agreements bind not only to what is expressly stipulated but also to what is required by propriety, custom, or law according to the nature of the agreement.[43] Read together with the good faith requirement in Article 1338 paragraph (3), this provision allows courts to imply duties of reasonable configuration, monitoring, and correction into automated contracts even where the code is silent. Freedom of contract thus emerges from this analysis not as a purely negative liberty but as a structured liberty that includes procedural safeguards for meaningful choice.

The first part of the findings can therefore be summarised as follows. Consent in AI-driven transactions should be reconceived as deployment-based consent, located in the informed decision to deploy, configure, and supervise an automated system and bounded by what the deploying party could reasonably foresee. On the counterparty side, consent must be protected through transparency, correction mechanisms, consumer protection limits on standard clauses, and data protection rights against solely automated decisions. This two-sided model preserves the human-centred foundation of freedom of contract and avoids both the fiction that machines consent and the conclusion that automated contracts bind without consent. It also prepares the ground for the second question of this study, because the boundaries of consent define the boundaries within which responsibility for automated actions can legitimately be imposed.

Allocating Responsibility and Securing Legal Certainty in Automated Transactions

The second finding of this study is that responsibility for automated contractual actions should be allocated through a structured model that begins with attribution but does not end there. Attribution answers the threshold question of whose action a particular system output is, while responsibility answers the subsequent question of who must bear the legal consequences of that output. The two concepts are often conflated in the literature, yet they serve different functions and must be kept analytically distinct. The UNCITRAL Model Law draws this distinction explicitly by providing that its attribution rule does not affect any rule of law governing the legal consequences of attributing an action to a person.[44] Keeping attribution and responsibility separate allows the law to maintain a clear default rule for reliance while still adjusting the ultimate burden of loss in cases of error, malfunction, or third-party interference.

The Model Law's attribution rule operates in two stages that are instructive for Indonesian reform. As between the parties to a contract, an action carried out by an automated system is attributed in accordance with any procedure agreed to by the parties, such as a framework agreement or platform rules.[45] If no such procedure exists, the action is attributed to the person who uses the system for that purpose, and attribution may not be denied on the sole ground that the outcome was unexpected.[46] The Guide to Enactment explains that the fallback rule aims to identify the person with the strongest link to the action, taking into

[41]Vasiliki Papadouli and V. Papakonstantinou, "A Preliminary Study on Artificial Intelligence Oracles and Smart Contracts: A Legal Approach to the Interaction of Two Novel Technological Breakthroughs," *Computer Law & Security Review* 51 (2023): 105869, https://doi.org/10.1016/j.clsr.2023.105869.

[42]UNCITRAL, *Model Law on Automated Contracting*, art. 4; UNCITRAL, *Guide to Enactment*, para. 15.

[43]Indonesian Civil Code, art. 1339.

[44]UNCITRAL, *Model Law on Automated Contracting*, art. 7(4); UNCITRAL, *Guide to Enactment*, para. 71.

[45]UNCITRAL, *Model Law on Automated Contracting*, art. 7(1).

[46]Ibid., art. 7(2)–(3).

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account factors such as who deployed the system, who controlled its operational parameters, who derived benefit from the action, the nature and purpose of the contract, and relevant trade usages. This multi-factor approach is consistent with deployment-based consent, because the person who deploys and controls the system is ordinarily the person whose will the system expresses. It also confirms that automated systems are tools without independent will or legal personality, so that their outputs must always be traced back to human or corporate actors.[47]

Indonesian law contains an attribution and responsibility rule that is both similar to and different from the Model Law. Article 21 paragraph (2) of the ITE Law provides that legal consequences of electronic transactions conducted personally are the responsibility of the transacting parties, those conducted through a power of attorney are the responsibility of the principal, and those conducted through an electronic agent are the responsibility of the operator of the electronic agent.[48] Paragraph (3) adds that losses caused by the failure of an electronic agent due to a third party's direct action against the system are borne by the operator, while paragraph (4) places losses caused by the service user's negligence on the user. This framework is significant because it allocates responsibility not to the "user" in the Model Law's sense but to the "operator" (*penyelenggara*) of the electronic agent, which may be a platform provider distinct from the contracting party. In multi-actor AI ecosystems, where a business uses a third-party AI service hosted by yet another provider, this difference may produce uncertainty about who bears the consequences of an unexpected output. The Indonesian rule thus requires clarification so that the operator concept is reconciled with the reality of layered AI supply chains.

Judicial practice in other jurisdictions has already begun to apply attribution logic to AI-generated communications in a way that supports this analysis. In *Moffatt v. Air Canada*, the British Columbia Civil Resolution Tribunal held an airline responsible for inaccurate information about bereavement fares provided by a chatbot on its website, rejecting the argument that the chatbot was a separate entity responsible for its own statements.[49] Although the case concerned negligent misrepresentation rather than contract formation in the strict sense, its reasoning reflects the principle that a business which chooses to deploy an automated system to communicate with customers must bear the consequences of that system's outputs. The decision also illustrates why reliance protection matters, since the customer had no means of knowing that the chatbot's statement departed from the airline's actual policy. For Indonesian courts, the case offers a persuasive illustration of how Article 21 of the ITE Law and the general principle of good faith could be applied to automated communications. It confirms, in short, that the tool characterisation of AI is not merely a theoretical preference but a practically workable basis for allocating responsibility.

Comparative scholarship confirms that this problem is not unique to Indonesia. Studies of Jordanian law have found that civil codes built on the human-will model struggle to attribute AI-generated declarations and to allocate civil liability among developers, operators, and users.[50] Research on Islamic economic law has identified a similar dilemma in determining liability for technical errors in autonomous smart contracts, where the classical requirement of mutual consent (*taradin*) sits uneasily with fully automated execution.[51] Analyses of Indian contract law have likewise concluded that the doctrine of free consent must be re-evaluated when

[47]UNCITRAL, *Guide to Enactment*, paras. 61 and 66.

[48]ITE Law, art. 21(2).

[49]*Moffatt v. Air Canada*, 2024 BCCRT 149 (British Columbia Civil Resolution Tribunal, 14 February 2024).

[50]Al-Khateeb et al., "Artificial Intelligence in Commercial Contracting under Jordanian Law."

[51]Sabir Al-Mezel et al., "Contemporary Islamic Economic Law: Autonomous Smart Contracts and the Legal Dilemma of Liability for Technical Errors," *MILRev: Metro Islamic Law Review* 5, no. 1 (2026), https://doi.org/10.32332/milrev.v5i1.13661.

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negotiation is conducted algorithmically.[52] Scholarship from Eastern Europe has characterised these issues as "old problems" of contract formation that acquire new urgency in the context of AI.[53] Taken together, these studies indicate a convergent need for rules that combine a clear default attribution with a fair mechanism for handling unexpected outcomes.

The treatment of unexpected actions is the crucial element that distinguishes a fair allocation of responsibility from a merely mechanical one. Article 8 of the UNCITRAL Model Law, offered as an optional provision, provides that, unless otherwise agreed, a party is not entitled to rely on an action attributed to the other party if the latter could not reasonably have expected the action and the relying party knew or could reasonably be expected to have known that the action was not expected.[54] This rule begins from the principle that a party using an automated system bears the risk of its outputs, but it mitigates that principle where the counterparty acts in bad faith or with constructive knowledge of an obvious error. The Guide to Enactment explains that unexpected actions refer to outcomes where the party would not have concluded the contract, or would have done so only on fundamentally different terms, had it been aware of the action from the outset.[55] The rule thus operationalises the boundary of deployment-based consent identified in Section 3.1, translating reasonable foreseeability into a test of reliance.

Lessons from algorithmic trading on financial markets demonstrate how such a test can function in practice. Financial markets have long experience with high-speed automated contracting and have developed mechanisms such as error-trade policies, circuit breakers, kill switches, and the cancellation of clearly erroneous transactions under exchange rules.[56] These mechanisms show that legal certainty in automated environments does not require that every output be irrevocably binding. On the contrary, certainty is enhanced when market participants know in advance the conditions under which an obviously erroneous output can be disregarded. The Guide to Enactment acknowledges this experience by noting that Article 8 preserves solutions under agreed frameworks, such as rules of an algorithmic trading platform that reverse erroneous transactions.[57] Indonesian law could draw on this experience by recognising, in its implementing regulations, the validity of platform rules that provide transparent error-correction procedures.

A responsibility model also requires a rule preventing parties from using automation as an excuse for non-compliance with the law. Article 10 of the UNCITRAL Model Law provides that, unless otherwise provided by law, a party shall not be relieved from the legal consequences of its failure to comply with a rule of law on the sole ground that it used an automated system.[58] This non-avoidance principle is essential to preserving the integrity of freedom of contract, because it prevents the liberty to automate from becoming a liberty to escape obligations. It ensures, for example, that a business cannot avoid consumer protection rules, data protection obligations, or contractual performance duties by arguing that its AI system acted independently. In Indonesian law, a functionally similar result could be reached through Article 1365 of the Civil Code on unlawful acts and Article 1367 on liability for persons and things under one's supervision, but an express statutory rule would provide far greater certainty.[59] An express non-avoidance

[52]Kumar, "Doctrine of Free Consent in Automated E-Contracts."

[53]N. Filatova-Bilous, "Contract Formation Using Algorithms: Old Problems and New Challenges in the Context of AI Application," *Problems of Legality*, no. 171 (2025), https://doi.org/10.21564/2414-990x.171.338051.

[54]UNCITRAL, *Model Law on Automated Contracting*, art. 8(1).

[55]UNCITRAL, *Guide to Enactment*, para. 81.

[56]M. Schmidt-Kessen, Helen Eenmaa, and Maya Mitre, "Machines That Make and Keep Promises: Lessons for Contract Automation from Algorithmic Trading on Financial Markets," *Computer Law & Security Review* 46 (2022): 105717, https://doi.org/10.1016/j.clsr.2022.105717.

[57]UNCITRAL, *Guide to Enactment*, para. 83.

[58]UNCITRAL, *Model Law on Automated Contracting*, art. 10.

[59]Indonesian Civil Code, arts. 1365 and 1367.

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clause would also signal clearly to developers and deployers that automation does not dilute accountability.

Responsibility in automated transactions extends beyond the contracting parties to developers and providers of AI systems, raising the question of how contractual and extra-contractual liability interact. The UNCITRAL Model Law deliberately confines itself to the relationship between contracting parties and does not regulate the liability of third-party service providers, leaving that matter to other law.[60] In Indonesia, a contracting party that bears the consequences of an unexpected output under Article 21 of the ITE Law should be able to seek recourse against a developer or operator whose defective design or inadequate testing caused the output. Such recourse can be grounded in contract where a service agreement exists, or in tort under Article 1365 of the Civil Code where it does not. Scholarship on AI agents emphasises that conventional solutions to agency problems, such as incentive design, monitoring, and enforcement, may be less effective when agents make uninterpretable decisions at speed and scale, which strengthens the case for clear recourse rules and new governance infrastructure.[61] A layered model of responsibility, in which the user bears primary responsibility toward the counterparty and enjoys recourse against upstream actors, reconciles reliance protection with fairness.

Legal certainty, the third concept examined in this study, depends on predictability, transparency, and verifiability in the operation of automated systems. In Indonesian constitutional law, legal certainty is protected as a fundamental right under Article 28D paragraph (1) of the 1945 Constitution, which guarantees fair legal certainty for every person. In the context of automated contracting, legal certainty requires that parties know when a contract has been formed, on what terms, with whom, and with what consequences if the system errs. Opacity undermines each of these elements, because neither party may be able to reconstruct why the system produced a particular output. Scholars examining AI-based contracts in Indonesia have therefore linked legal certainty with the protection of human rights, arguing that transparency and accountability are preconditions for the legitimacy of automated transactions.[62] Without mechanisms that make automated decision-making traceable, the formal certainty of a binding contract may coexist with substantive uncertainty about its fairness.

Transparency and auditability therefore form the infrastructure of legal certainty in AI-driven transactions. Three types of information are particularly important, namely information that a party is dealing with an automated system, information identifying the person deploying the system, and operation logs that record how a particular output was generated. The Guide to Enactment of the UNCITRAL Model Law identifies each of these as examples of information that can enhance transparency, explainability, and traceability.[63] In Indonesia, Government Regulation No. 71 of 2019 already imposes reliability and security obligations on electronic system operators and contains provisions on electronic agents, providing a regulatory basis for requiring logging and auditability in automated contracting.[64] Government Regulation No. 80 of 2019 on Trading Through Electronic Systems similarly regulates the content of electronic contracts and the obligations of business actors toward consumers in online trade.[65] Building on these instruments, logging requirements could be calibrated to the risk of the transaction, with stricter duties for high-value or consumer-facing automated contracting. Such calibration would prevent transparency duties from

[60]UNCITRAL, *Guide to Enactment*, para. 62.

[61]Kolt, "Governing AI Agents."

[62]Priyono, Akinrinde, and Azhar, "Digital Transformation of Contract Law."

[63]UNCITRAL, *Guide to Enactment*, para. 86.

[64]Peraturan Pemerintah Nomor 71 Tahun 2019 tentang Penyelenggaraan Sistem dan Transaksi Elektronik [Government Regulation on the Operation of Electronic Systems and Transactions].

[65]Peraturan Pemerintah Nomor 80 Tahun 2019 tentang Perdagangan Melalui Sistem Elektronik [Government Regulation on Trading Through Electronic Systems].

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becoming a disproportionate burden on small enterprises that use simple automation.

Transparency also has a decisive evidentiary function in disputes arising from automated transactions. Article 5 of the ITE Law recognises electronic information, electronic documents, and their printouts as valid legal evidence, which means that system logs can in principle be presented before Indonesian courts.[66] In practice, however, the party seeking to prove that an output was unexpected, erroneous, or caused by a defect in design will often lack access to the relevant logs, which remain under the control of the deploying party or a third-party provider. This informational imbalance can render the reasonable-expectation exception and recourse rules illusory, because a right that cannot be proven is a right that cannot be enforced. Courts should therefore be prepared to draw adverse inferences where a party that controls an automated system fails to preserve or produce its logs without justification. Legislators might go further by introducing a rebuttable presumption of fault where a deployer of a high-risk automated contracting system fails to comply with logging obligations, a solution that would align evidentiary burdens with control over information.

The role of trusted intermediaries also deserves attention as a mechanism for securing legal certainty. Indonesian scholarship has proposed conceptualising the notary as a "digital gatekeeper" who bridges the immutable logic of automated code with the qualitative requirements of civil law, such as free will and lawful cause.[67] While notarial intervention is neither necessary nor practical for routine automated transactions, it may be valuable for high-stakes contracts in which the authenticity of the deed and the verification of the parties' will are legally required. The 2024 amendment to the ITE Law also introduced a requirement that high-risk electronic transactions use electronic signatures secured by electronic certificates, which can be understood as an analogous mechanism for anchoring automated transactions to verified identities.[68] Such gatekeeping mechanisms illustrate that legal certainty can be enhanced not only through substantive rules but also through institutional design. A proportionate approach would reserve stronger verification for transactions where the risks to the parties and to third parties are greatest.

Table 1 synthesises the comparison between the Indonesian framework, the UNCITRAL Model Law, and the European Union approach across the key dimensions examined in this study. The comparison reveals that Indonesia already recognises the validity of automated transactions and allocates responsibility to the operator of an electronic agent, but it lacks an explicit rule on unexpected actions, a non-avoidance clause, and a transparency obligation tailored to AI-generated contractual actions. The UNCITRAL Model Law provides clear attribution and unexpected-action rules but defers transparency and liability questions to other law. The European framework, by contrast, emphasises transparency and risk regulation but does not itself regulate contract formation. These complementary strengths suggest that Indonesian reform should draw selectively on each source rather than transplanting any single model wholesale.

Table 1. Comparative synthesis of consent, attribution, responsibility and transparency rules in automated contracting

Dimension	Indonesia (Civil Code; ITE Law as amended by Law No. 1 of 2024)	UNCITRAL Model Law on Automated Contracting (2024)	European Union (AI Act, Regulation 2024/1689)
Validity of automated contracts	Electronic contracts bind the parties (art. 18(1) ITE Law); validity tested under art. 1320 Civil Code	No denial of validity solely because no natural person reviewed or intervened (art. 5); contracts in code	Not regulated by the AI Act; left to Member State contract law

[66]ITE Law, art. 5.

[67]Arfianti and Salim HS, "Legal Challenges of Smart Contract Integration in Indonesian Notarial Practice."

[68]ITE Law, art. 17(2a).

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		recognised (art. 6)	
Attribution	Consequences of transactions via electronic agents borne by the agent operator (art. 21(2) ITE Law)	Agreed procedure first; otherwise the person who uses the system (art. 7(1)–(2))	Not addressed as a contract-law rule
Unexpected actions	No specific rule; general mistake doctrine (arts. 1321–1322 Civil Code)	Optional rule: no reliance on an action the user could not reasonably expect, if the other party knew or should have known (art. 8)	No specific rule
Non-avoidance	No express rule; partial basis in arts. 1365 and 1367 Civil Code	Automation is no excuse for non-compliance with law (art. 10)	Obligations attach to providers and deployers irrespective of autonomy
Transparency	Error-correction features for certain agents (art. 22 ITE Law); right to object to solely automated decisions (art. 10 PDP Law)	Preserves disclosure duties under other law (art. 9)	Persons must be informed that they interact with an AI system (art. 50)
Weaker-party protection	Prohibited standard clauses (art. 18 Consumer Protection Law); Indonesian law for certain international standard-form e-contracts (art. 18A ITE Law)	Defers to consumer and other mandatory law (art. 2(2))	Risk-based obligations; consumer law applies in parallel

Source: Author's analysis of the legal materials cited in this article.

Based on these findings, this study proposes a model of "structured responsibility" composed of five interlocking elements. First, attribution should follow the agreed procedure between the parties or, failing that, the person who uses the system, consistent with Article 7 of the Model Law and harmonised with the operator concept in Article 21 of the ITE Law. Second, a reasonable-expectation exception should allow a party to disavow an unexpected action where the counterparty knew or should have known that the action was not expected, mirroring Article 8 of the Model Law. Third, a non-avoidance rule should prevent any party from invoking automation to escape legal obligations, mirroring Article 10 of the Model Law. Fourth, transparency and logging duties should be imposed on deployers of automated systems, proportionate to the risk of the transaction and aligned with data protection and consumer protection law. Fifth, recourse rules should allow the party bearing primary responsibility to recover from developers and operators whose fault caused the loss, thereby distributing risk along the AI value chain.

The implementation of structured responsibility in Indonesia can be achieved through a combination of interpretation and targeted legislative reform. In the short term, courts can interpret Article 1320 of the Civil Code in light of deployment-based consent, apply Articles 1321 and 1322 on mistake to obviously erroneous automated outputs, and use Article 1339 together with the good faith requirement in Article 1338 paragraph (3) to imply duties of reasonable configuration and supervision. In the medium term, the government can amend Government Regulation No. 71 of 2019 to clarify the relationship between users and operators of electronic agents, to introduce logging requirements, and to recognise platform error-correction procedures. In the longer term, a further amendment to the ITE Law, or a dedicated chapter on automated contracting, could incorporate the Model Law's provisions on attribution, unexpected actions, and non-avoidance while preserving Indonesia's existing protective rules. This staged approach would allow Indonesia to modernise its electronic contract law without disrupting established doctrine.

It must be acknowledged that structured responsibility involves trade-offs that

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legislators and courts will need to manage carefully. A broad reasonable-expectation exception could encourage strategic disavowal of unfavourable outcomes, undermining the reliance on which automated markets depend. Conversely, a narrow exception could impose excessive risk on small businesses and consumers who use AI tools they do not fully understand. Excessive transparency obligations could burden innovation and conflict with trade secret protection, while insufficient obligations could leave parties without the evidence needed to prove error or fault. These tensions cannot be eliminated entirely, but they can be mitigated through risk-based calibration, sector-specific guidance, and the development of judicial practice over time, as the literature on AI and contract law consistently recommends.[69]

The second part of the findings can be summarised by returning to the relationship between freedom and responsibility in the principle of freedom of contract. Freedom of contract has never meant freedom from consequences, and the deployment of AI does not change that foundational premise. A party that chooses to automate its contractual decisions exercises its contractual freedom at the moment of deployment and must accordingly bear the consequences of the outputs its system generates within the range of reasonable foreseeability. Where outputs exceed that range and the counterparty knows or should know it, the law should allow the output to be disregarded, thereby protecting both the integrity of consent and the fairness of reliance. Legal certainty, in turn, is secured not by making every automated output irreversible, but by making the rules for attribution, error, and accountability clear in advance and verifiable after the fact.

CONCLUSION

This article has shown that the principle of freedom of contract can survive the transition to AI-driven transactions only if its core concepts are carefully reconstructed rather than either abandoned or applied mechanically. Consent should be understood as deployment-based consent, located in the informed decision to deploy, configure, and supervise an automated system and bounded by what the deploying party could reasonably foresee, while the counterparty's consent must be protected through transparency, error-correction features, consumer protection limits on standard clauses, and data protection rights against solely automated decisions. Responsibility should be allocated through a structured model that combines attribution to the agreed procedure or to the user of the system, a reasonable-expectation exception for unexpected actions, a non-avoidance rule, proportionate transparency and logging duties, and recourse against developers and operators whose fault causes loss. For Indonesia, the Civil Code and the ITE Law already provide a workable foundation, since Article 1320 can accommodate deployment-based consent and Article 21 already assigns the consequences of electronic agent transactions, but the absence of rules on unexpected actions, non-avoidance, and AI-specific transparency leaves a gap that undermines legal certainty in multi-actor AI ecosystems. The study therefore recommends a staged reform beginning with judicial interpretation of existing Civil Code provisions, continuing with amendments to Government Regulation No. 71 of 2019, and culminating in a dedicated statutory framework on automated contracting that incorporates the core provisions of the UNCITRAL Model Law on Automated Contracting. Future research should test this model empirically through analysis of platform terms and dispute resolution practice, and should examine how sector-specific regimes in finance, health, and public procurement ought to adapt structured responsibility to their particular risks.

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