Validity Of Contracts Based On Smart Contract Generator (A Comparative Study of Indonesia and France)

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Abstract

This study examines the legal validity of contracts generated by AI-based smart contract generators from the perspective of Indonesian civil law, in comparison with French law. The background lies in the development of Society 5.0, the use of blockchain and AI in contract drafting, and the absence of specific regulations on smart contracts and generators in Indonesia. This research analyses contracts produced by smart contract generators, the legal framework governing the use of smart contract generators in contract formation in Indonesia and France, and the implications of this comparative analysis for strengthening legal certainty regarding smart contract generators in Indonesia. The study is a normative juridical research using statutory and comparative approaches, relying on primary legal materials, namely the Indonesian Civil Code, the Electronic Information and Transactions Act, the French Civil Code and AI regulations, as well as secondary materials on smart contracts, blockchain, and AI. The results show that contracts generated by such tools have the characteristics of automation, immutability, transparency, security, and decentralisation, but from a legal standpoint must still satisfy the general requirements for a valid agreement. In Indonesia, smart contracts can in principle be classified as electronic contracts insofar as they comply with Article 1320 of the French Civil Code, while the generator is viewed merely as a tool owned by the parties, with legal responsibility placed on users and a remaining regulatory gap on technical aspects. In France, smart contracts generated by AI are assessed under the general rules of contract law but are reinforced by the explicit recognition of DLT in financial law and a more developed AI supervision framework. Based on these findings, the study concludes that Indonesia needs to strengthen its national framework through explicit recognition of the contractual function of smart contracts, the adoption of technical standards and liability rules for generator providers, and the development of judicial and sectoral guidelines to ensure legal certainty and protect weaker parties.

Keywords: Artificial Intelligence; Civil Code; Generator; ITE Law; Smart Contract

A. INTRODUCTION

Currently, the world is entering the era of Society 5.0, also known as the super-smart society, a new paradigm in innovation that fully integrates the digital space with the real world.[1] This development has a major impact on various aspects of life and requires humans to learn and utilize innovation in order not to be left behind,[2] including in the field of law. The emergence of advanced technologies such as artificial intelligence (AI), blockchain, and big data analytics requires legal practitioners to adapt quickly,[3] both in understanding evolving regulations and in applying legal practices amid an increasingly complex era of digitalization.

In the legal field, the application of this technology is particularly evident in the contract drafting process, which is a fundamental element in every business relationship. It is therefore essential to draft contracts quickly, accurately, and efficiently, while ensuring that the rights and obligations of all parties involved are clearly formulated.[4] The application of AI, particularly the smart contract generator feature, which produces contracts known as smart contracts, certainly helps legal practitioners achieve the goal of drafting contracts quickly, accurately, and efficiently.

A smart contract is a contract that is drafted using cryptography code and can then be executed automatically on a blockchain network.[5] The use of smart contracts can be an alternative solution for parties involved because the costs incurred are not

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[1] Elias G. Carayannis dan Joanna Morawska-Jancelewicz, "The Futures of Europe: Society 5.0 and Industry 5.0 as Driving Forces of Future Universities," *Journal of the Knowledge Economy* 13, no. 4 (2022): 3445–71, https://doi.org/10.1007/s13132-021-00854-2.

[2] Kaharuddin dan Zul Amirul Haq, *Kecerdasan Buatan: Aspek Perlindungan Hukum di Era Digitalisasi* (Jakarta: Kencana, 2024).

[3] Hukumonline, "Siap Jadi Bagian Revolusi Hukum Digital? Daftar Sekarang di London LegalTechTalk 2025," 2025, https://www.hukumonline.com/berita/a/siap-jadi-bagian-revolusi-hukum-digital-daftar-sekarang-di-london-legaltechtalk-2025-lt67b40ea272e4e/.

[4] Made Warka dan Miranda Damayanti, "Legalitas Hukum Penggunaan Artificial Intelligence (AI) dalam Pembuatan Perjanjian," *Hukum Dinamika Ekselensia* 06, no. 4 (2024), https://journalversa.com/s/index.php/hde/article/view/3440/3930.

[5] Sakirman, Akib Ma'Ruf, dan Wahyudi Umar, "Kepastian Hukum Smart Contract Dalam Perspektif Hukum Perdata Legal Certainty of Smart Contracts in the Perspective of Civil Law," *Rewang Rencang : Jurnal Hukum Lex Generalis* 5, no. 10 (2024): 4–5, https://ojs.rewangrencang.com/index.php/JHLG/article/view/617.

as high as those for conventional contracts due to the absence of third parties.[6] In addition, the use of smart contracts can reduce the possibility of disputes in the future because the contract is executed automatically when the terms and conditions specified in the smart contract are met.[7] This is possible because smart contracts are drafted using cryptographic code to establish the relationship between the parties involved and are executed with if-then statements.[8]

A number of legal practitioners who have recognized technological advances are now showing great enthusiasm in welcoming the potential of smart contracts that can analyze data, predict outcomes, detect fraud, and draw conclusions autonomously while continuously updating their programs independently.[9] The main advantages of smart contracts lie in their efficiency and automation,[10] high level of security due to blockchain technology that cannot be manipulated or hacked, and transparency, where parties can view and verify transactions in real-time.[11]

However, there are still many challenges and questions arising from the use of smart contracts in contract drafting in Indonesia because regulations regarding digital contracts are only regulated in the Indonesian Civil Code and the Electronic Information and Transaction Law, raising questions about the use of smart contract generators in contract drafting and how disputes will be resolved in the event of default due to system failure.

This has happened before between B2C2 Ltd., a British company that actively provides liquidity in the financial market and uses automated programs to buy and sell cryptocurrencies, and Quoine Pte Ltd., a Singaporean company that operates a

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[6] Effrida Ayni Fikri dan Teddy Anggoro, "Penggunaan Smart Contract Pada Teknologi Blockchain Untuk Transaksi Jual Beli Benda Tidak Bergerak," *JISIP (Jurnal Ilmu Sosial dan Pendidikan)* 6, no. 3 (2022): 9965–73, https://doi.org/10.36312/jisip.v6i3.3301.

[7] Desen Kirli et al., "Smart contracts in energy systems: A systematic review of fundamental approaches and implementations," *Renewable and Sustainable Energy Reviews* 158, no. September 2021 (2022): 112013, https://doi.org/10.1016/j.rser.2021.112013.

[8] Muhammad Rizqon Baihaqi, "Tinjauan Yuridis Penerapan Smart Contract di Indonesia sebagai Bentuk Perkembangan Kecerdasan Buatan (Artificial Intelligence)" (Universitas Islam Sultan Agung, 2022), https://repository.unissula.ac.id/26165/1/21301900137_fullpdf.pdf.

[9] Shivani Zoting, "Smart Contracts Market Size and Forecast 2025 to 2034," 2025, https://www.precedenceresearch.com/smart-contracts-market.

[10] Ilham Roni, "Peran Teknologi Smart Contract dalam Ekosistem Cryptocurrency," 2024, https://bis-jkt.telkomuniversity.ac.id/peran-smart-contract-dalam-ekosistem-cryptocurrency/.
[11] *Ibid.*

cryptocurrency exchange platform and runs automated programs, such as Bitcoin (BTC), Litecoin (LTC), Ethereum (ETH), and so on.[12] This case occurred in 2017 when Quoine unilaterally canceled transactions due to a disruption in Quoine's system that violated the terms of the contract and B2C2's trust (breach of trust).[13]

Unlike Singapore, which can adjudicate cases involving contract violations by two companies that are run automatically using smart contracts, Indonesia does not yet have regulations for courts that have the authority to resolve smart contract disputes, resulting in a legal vacuum. Therefore, this research is important to conduct an in-depth analysis of the legal aspects of the validity of smart contracts in Indonesia as regulated in Article 1320 of the Indonesian Civil Code, namely agreement, legal competence, clear object, and lawful cause, and how disputes can be resolved if a dispute arises in the future due to system failure.

B. RESEARCH METHODS

This research is a normative legal study based on the laws applicable in a country[14] with a focus on examining primary and secondary legal materials to find legal instruments, principles, and doctrines to answer the legal issues raised[15] and will be analyzed qualitatively. The approach used is a legislative approach by examining relevant regulations[16] and also a comparative approach in an effort to enrich the information comprehensively.[17]

C. RESULTS AND DISCUSSIONS

Characteristics of Contracts Generated by Smart Contract Generators

A smart contract generator is an artificial intelligence-based system, specifically for large language models (LLMs) such as Generative Pre-trained Transformer 4 (GPT-4) and,[18] which has been adapted and designed to translate contract specification inputs in natural language or simple templates into smart contract programming code that is

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[12] Allianz Indonesia, "Memahami Apa Itu Cryptocurrency Beserta Kelebihan dan Kekurangannya," 2021, https://www.allianz.co.id/explore/memahami-apa-itu-cryptocurrency-beserta-kelebihan-dan-kekurangannya.html.

[13] Judgement of B2C2 Ltd v Quoine Pte Ltd (2019).

[14] Dwi Aryanti Ramadhani et al., "Analisis Kasus Wanprestasi Dalam Transaksi Jual Beli Secara 'Online,'" *Media Hukum Indonesia* 2, no. 2 (2024).

[15] Kristiawanto, *Memahami Penelitian Hukum Normatif* (Jakarta: PrenadaMedia Group, 2022).

[16] Djulaeka dan Devi Rahayu, *Buku Ajar: Metode Penelitian Hukum* (Surabaya: Scopindo Media Pustaka, 2021).

[17] Munir Fuady, *Metode Riset Hukum: Pendekatan Teori dan Konsep* (Depok: RajaGrafindo Persada, 2018).

[18] Alfred Kuhlman dan Arya Wicaksana, "AI Generation of Smart Contract for Decentralized Autonomous Applications," *Journal of Wireless Mobile Networks, Ubiquitous Computing, and Dependable Applications* 16, no. 1 (2025): 457, https://doi.org/10.58346/JOWUA.2025.I1.027.

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ready to be implemented on a blockchain platform.[19] In other words, a smart contract generator is a software system designed to translate human requirements in contract creation, such as parties, rights and obligations, payment mechanisms, and penalties, into code that can be executed on a blockchain platform.

This technology can be found in platforms such as ChainGPT, which provides an overview of contracts for Decentralized Finance (DeFi), Non-Fungible Tokens (NFTs), or Decentralized Autonomous Organizations (DAOs) was generated by the generator.[20] This system makes it easier for non-programmers to create smart contracts because users only need to provide prompts or commands regarding their needs in structured natural language, which makes smart contract creation faster, more consistent, and reduces the risk of technical errors and inconsistencies between contract documents.[21]

The main function of the smart contract generator is evident in its role in drafting contracts. Users will first draft the contract structure in the form of a process model,[22] form, or structured description by specifying the parties, objects, performance requirements, time frame, and termination conditions in the form of commands. Next, the generator will translate these commands into code components, such as functions, state variables, and events, based on a set of tested mapping rules and templates,[23] so that the resulting contract not only reflects the desired business logic but also follows safe and efficient programming patterns in the blockchain environment.[24] After that, users will review the contract results in the form of code and visual display, make adjustments if necessary, then deploy the contract to the blockchain network so that it can be used immediately.

The final result of the contract generated by the smart contract generator is a smart contract clause, which is a program stored on the blockchain in the form of

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[19] *Ibid,* p.458.

[20] ChainGPT, "AI Smart-Contract Generator," 2025, https://docs.chaingpt.org/ai-tools-and-applications/ai-smart-contract-generator.

[21] Xuling Ye et al., "Smart Contract Generation and Visualization for Construction Business Process Collaboration and Automation: Upgraded Workflow Engine," *Journal of Computing in Civil Engineering* 38, no. 6 (2024): 3, https://doi.org/10.1061/jccee5.cpeng-5938.

[22] Christian Liu, Peter Bodorik, dan Dawn Jutla, "Transforming Automatically BPMN Models to Smart Contracts with Nested Trade Transactions (TABS+)," *Distributed Ledger Technologies: Research and Practice* 3, no. 3 (2024): 3, https://doi.org/https://doi.org/10.1145/3654802.

[23] Hao Luo et al., "Guiding LLM-based Smart Contract Generation with Finite State Machine," *IJCAI '25: Proceedings of the Thirty-Fourth International Joint Conference on Artificial Intelligence*, 2025, 5869–77, https://doi.org/10.24963/ijcai.2025/653.

[24] Sadaf Azimi et al., "A Systematic Review on Smart Contracts Security Design Patterns," *Empirical Software Engineering* 30, no. 4 (2025): 4, https://doi.org/10.1007/s10664-025-10646-w.

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instructions and conditions. Smart contracts themselves have very distinctive characteristics, namely:

1. Automatic execution or automation

Smart contract automation runs because the system is designed using if-then logic that is triggered when certain conditions agreed upon by the parties are met, such as payment, delivery, warranty, and force majeure[25] is programmed as a condition that, if met, will automatically activate certain functions, such as transferring funds, transferring ownership of digital assets, or triggering penalties without requiring additional approval.

2. Immutable

The contents of a smart contract cannot be changed because the code and historical data that connect the parties cannot be altered after being deployed in the blockchain and validated by the network.[26] This ensures that the contents of the agreement remain intact and cannot be modified unilaterally, except through an update mechanism that has been agreed upon from the outset.

3. Transparent

Contracts created in the form of smart contracts are highly transparent because the contents of the contract and its execution records can be accessed and audited.[27] With this principle, access can be public on permissionless blockchains or permissioned blockchains. Permissionless examples include networks such as Bitcoin or Ethereum, which allow anyone to view transactions and contract logic.[28] Permissioned blockchains, on the other hand, are networks that can only be accessed by parties that have been granted permission, such as certain companies or institutions.[29] This approach helps reduce the opportunity for manipulation and prevents situations where one party has significantly more information than the other.

4. High security

Smart contract programs can be considered very secure because the contracts are programmed in infrastructure that utilizes cryptography, hash functions, and network agreement mechanisms,[30] making data falsification or attacks much more difficult than in centralized systems. This condition makes contracts more effective as risk-sharing

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[25] Kenny Gilbert Tanumihardjo dan Made Aditya Pramana Putra, "Penggunaan Smart Contract Di Indonesia," *Jurnal Kertha Wicara* 11, no. 2 (2022): 437–47, https://ojs.unud.ac.id/index.php/kerthawicara/article/view/84481.

[26] Fitri Ariani Saputri, "Regulating The Use of Smart Contract in Indonesia," *Jurnal Hukum dan Keadilan (JHK)* 1, no. 2 (2024): 43, https://jurnalhafasy.com/index.php/jhk/article/view/84/33.

[27] *Ibid*.

[28] Christine V. Helliar et al., "Permissionless and Permissioned Blockchain Diffusion," *International Journal of Information Management* 54 (2020): 3, https://doi.org/10.1016/j.ijinfomgt.2020.102136.

[29] *Ibid*, p.4.

[30] Fabio Bassan dan Maddalena Rabitti, "From Smart Legal Contracts to Contracts on Blockchain: An Empirical Investigation," *Computer Law & Security Review: The International Journal of Technology Law and Practice* 55 (2024), https://doi.org/10.1016/j.clsr.2024.106035.

and enforcement tools, because parties who want to violate them will be hindered, both by legal consequences and by technical limitations on manipulating transactions.

5. Distributed (decentralized)

Once the smart contract code is deployed in the blockchain, the system will be distributed across various networks. In other words, each activity executed will be validated by a number of nodes or devices connected to the smart contract network, rather than just by a single centralized server.[31] In this case, the generator must produce code that is compatible with the network agreement rules, take into account distributed computing costs, and anticipate the risks of execution that cannot be unilaterally canceled by one of the parties.

With these characteristics, smart contract generators are a response to the need for efficiency in the Society 5.0 era, especially for users who do not have expertise in creating computer-based programs, such as legal practitioners or business people, to produce a smart contract simply by entering prompts or commands into the generator.

Laws Governing the Use of Smart Contract Generators in Contract Creation in Indonesia and France

1. Indonesia

From the perspective of Indonesian civil law, the use of smart contract generators in contract creation is problematic because there are no specific regulations regarding the legal status of AI generators. However, in principle, contract creation in Indonesia must meet the validity requirements stipulated in the Indonesian Civil Code, namely agreement and competence of the parties, the existence of an object, and a lawful cause.[32] Referring to these provisions, Indonesian regulations confirm that smart contracts executed on a blockchain network are agreements as referred to in Articles 1313 and 1320 of the Indonesian Civil Code. This is based on Law No. 11 of 2008 concerning Electronic Information and Transactions, which also recognizes electronic contracts made by the parties through electronic systems,[33] and constitutes a means of proof and an agreement that binds the parties as long as it meets the general requirements of an agreement.

The flexible definition of electronic contracts in Indonesia opens up room for innovation in the medium of agreements,[34] including the use of platforms that automatically execute code-based agreement clauses, as long as the parties' statements of intent can still be traced and are made consciously and free from defects of intent. At a minimum, in the creation of a contract, the parties must: (1) do so consciously without coercion or fraud,[35] in other words, the parties who wish to bind themselves must mutually agree that the contract that will bind them is created with the help of a

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[31] *Ibid*, p. 11.
[32] Article 1320 of the Indonesian Civil Code
[33] Article 1 point 17 of ITE Law
[34] Jecelyn Amanda Dethan dan Yerica Evadne Giraldani Irianto, "Analisis Keabsahan Smart Contract dalam Perjanjian Bisnis di Indonesia," *UNES Law Review* 7, no. 1 (2024): 466, https://review-unes.com/law/article/view/2291/1888.
[35] Article 1321 of the Indonesian Civil Code

generator; (2) the parties acting must be competent to perform legal acts; (3) the subject matter of the agreement must be clear, and; (4) the subject matter of the agreement must not be contrary to law, morality, and public order.[36]

In contract drafting, there are also principles known as freedom of contract, consensualism, pacta sunt servanda, good faith, and personality. However, of these five principles, the principles of freedom of contract and pacta sunt servanda are most closely related to contract drafting.[37] The principle of freedom of contract is a principle that gives the parties the freedom to: (1) make or not make an agreement; (2) enter into an agreement with anyone; (3) determine the content, implementation, and requirements of the agreement; and (4) determine the form of the agreement. Meanwhile, the pacta sunt servanda principle or the principle of legal certainty is a principle that states that every agreement made by the parties must be complied with and implemented with full responsibility based on the agreement that has been mutually agreed upon.[38] In the case of smart contracts, when a contract is deployed in a blockchain after being agreed upon by the parties, this strengthens the binding nature of the agreement because the contract runs automatically.

Based on Article 1320 of the Indonesian Civil Code, the generator as the contract creator is not a legal entity, so it cannot be a party to the agreement. Therefore, a contract created by a generator will only be considered valid if the generator is regarded as a tool belonging to a certain party, where the legal responsibility and intent are directed to the owner or user of the generator. This is in line with the principle of vicarious liability as stipulated in Article 1367 of the Indonesian Civil Code, whereby if there is an error in a smart contract generated by a generator that causes loss to another party, the contract maker who uses the generator may be held legally liable. This step can be taken if there is a bug, specification error, or failure in the smart contract code created through the generator and causes losses to one of the parties.

In addition, creating smart contracts with generators can lead to risks of information asymmetry and informational inequality between parties who understand how generators work and those who are unfamiliar with the technology.[39] Therefore, smart contract generators should be viewed as tools whose use remains under the supervision and responsibility of human professionals, such as lawyers, notaries, or parties who draft contracts,[40] and ensure that the resulting contracts can still be

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[36] Jajang Nurzaman dan Dwi Fidhayanti, "Keabsahan Kontrak Yang Dibuat Oleh Artificial Intelligence Menurut Hukum Positif Di Indonesia," *Al' Adl: Jurnal Hukum* 16, no. 1 (2024).

[37] Salim HS dan Abdullah, *Perancangan Kontrak & Memorandun of Understanding (MoU)*, 1 ed. (Sinar Grafika, 2007).

[38] Willy Tanjaya, Heriyanti, dan Ega Triwi Wijaya, "Tinjauan Hukum Tentang Penerapan Asas Pacta Sunt Servanda Dalam Hukum Bisnis Terhadap Penyelesaian Kasus Wanpestasi," *UNES Journal of Swara Justisia* 9, no. 2 (2025): 261–67, https://doi.org/https://doi.org/10.31933/rynrzt05.

[39] Niksen Manalu, Pristika Handayani, dan Emy Hajar Abra, "Hukum Perjanjian dalam Integrasi Kecerdasan Buatan Dan Perlindungan Data di Era Bisnis Digital," *Jurnal USM Law Review* 8, no. 2 (2025): 983, https://journals.usm.ac.id/index.php/julr/article/view/11999/6479.

[40] Willa Wahyuni, "AI dan Penyusunan Kontrak Hukum jadi Peluang Baru di Era Digital," Hukumonline, 2025, https://www.hukumonline.com/berita/a/ai-dan-penyusunan-kontrak-hukum-jadi-peluang-baru-di-era-digital-lt6798903c43606/.

considered contracts produced by the will of the humans who use them and fulfill the elements of consensus, good faith, and balance between the parties.

Therefore, regulations are needed that can accommodate generators, the characteristics of smart contracts, including automation and immutability, technical regulations that bridge blockchain technology with civil law principles to regulate the design, audit, technical security standards of smart contracts, and dispute resolution mechanisms in order to provide legal certainty for parties using smart contracts in their transactions.

2. France

In France, the use of smart contract generators falls within the scope of conventional contracts governed by the French Civil Code, a specific blockchain framework, and emerging AI regulations in the European Union. Based on existing regulations, smart contracts in France are still defined as contracts under the French Civil Code, namely agreements whereby one or more persons bind themselves to one or more other persons to deliver, perform, or refrain from performing something.[41] In addition, the French Civil Code also recognizes the existence of electronic contracts. Based on these two points, smart contracts generated by a generator do not alter their validity, as the validity is still determined by the agreement, object, and lawful cause. Essentially, a contract is only considered a contract once the parties have agreed to it in accordance with the consent mechanism recognized by the French Civil Code.

French regulations explicitly recognize blockchain and its use in transactions, especially in the financial sector. This can be seen in Law No. 2019-486 on the Plan d'Action pour la Croissance et la Transformation des Entreprises or PACTE law, which recognizes the use of *dispositif d'enregistrement électronique partagé* (DLT) or shared electronic recording system in the Code Monétaire et Financier as a legal means for recording certain financial instruments,[42] so that transactions conducted through smart contracts in the blockchain network can be recognized as a legal means of exercising financial rights and obligations. On the other hand, the French Civil Code recognizes the conclusion of contracts through electronic media, as long as the requirements regarding pre-contractual information, clarity of clauses, and acceptance mechanisms are met and can be understood by the parties. Therefore, from this perspective, it can be said that the generator for drafting contracts is merely a drafting technique or tool, while the outcome of the contract must still be approved by the parties, which can be proven by a click or electronic signature.

In addition, France also actively operates a French Data Protection Authority to examine ethical and legal issues related to AI, monitor cases involving its use, publish tools and resources to improve understanding of AI, and manage related risks as part of

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[41] Article 1101 of the French Civil Code.

[42] Catherine Barreau, "Regulating smart contracts and the regulator ' s smart contracts Smart contracts as a subject of regulations," *Réalités Industrielles*, no. Agustus (2017): 2, https://www.annales.org/ri/2017/english/RI17_17Barreau.pdf.

its authority under Law No. 2016-1321 on the Digital Republic.[43] This enables the French Data Protection Authority to continue to play a major role in AI regulation in France after the passage of the European Union Artificial Intelligence Act (EU AI Act)[44] by developing sectoral guidelines and requiring transparency in the use of AI in certain areas. In other words, if an AI generator produces clauses that violate the law or harm one of the parties, liability can be imposed on the party operating the system.

In addition to national regulations, France, as a member of the European Union, is also affected by regulations issued by the European Union, one of which is the EU AI Act, which regulates the use of AI in everyday life. In practice, the AI Act framework applies a risk-based approach to AI systems, including those used for legal and contractual purposes. Therefore, it can be concluded that the use of generators in the creation of smart contracts in France is legal as long as it meets the legal requirements contained in the French Civil Code with supervision by the French Data Protection Authority.

Implications of the Comparison between Indonesian and French Law for Strengthening the Legal Certainty of Smart Contract Generators in Indonesia

France can serve as an example of how sectoral legal recognition of blockchain helps clarify the legal function of smart contracts. Through the PACTE Law and amendments to the Code Monétaire et Financier, France recognizes DLT as a legitimate means of recording and transferring certain financial instruments, thereby establishing a legal basis for the use of smart contracts on the blockchain in the context of capital markets and crypto assets. In other words, blockchain in France is beginning to be integrated as part of the legal infrastructure and not merely as private technology, especially in the development of French authorities' guidelines on tokenization and digital asset services. On the other hand, Indonesia currently only implicitly recognizes blockchain through the Electronic System Operator (PSE) framework and explicitly through Government Regulation No. 28 of 2025 as digital infrastructure. When compared to France, Indonesia can link this recognition to contractual functions, for example, by providing a clear legal basis that the recording and execution of contractual rights through smart contracts on the blockchain network are equivalent to the recording and execution of agreements in certain sectors, such as finance, capital markets, or digital collateral.

France systematically regulates the relationship between smart contracts, conventional contracts, and AI, by placing generators in the creation of smart contracts as tools to assist in the drafting process, so that the resulting smart contracts are still tested against the general criteria contained in Article 1101 of the French Civil Code, while issues such as information asymmetry are addressed through the strengthening of transparency obligations and compliance by design in AI systems. In this regard, Indonesia should at least enrich its systematic analysis of the impact of generators in causing bugs or errors, so that judges and policymakers have a reference when dealing with contract disputes whose drafting process uses generators.

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[43] Jean-Luc Juhan et al., "Artificial Intelligence Law: France," 2024,
https://www.lw.com/admin/upload/SiteAttachments/Lexology-In-Depth-Artificial-Intelligence-Law-France.pdf.
[44] *Ibid*.

In addition, France demonstrates a model of gradual integration in which smart contracts and blockchain are based on the French Civil Code and the Code monétaire et financier, while AI systems are supervised through the AI Act framework and data protection authorities with obligations of transparency, risk management, and accountability, thus providing an example for Indonesia to bridge contract law, namely the Civil Code and the ITE Law, with PSE regulations through sectoral guidelines, such as those from the Financial Services Authority (OJK), Bank Indonesia, or the Ministry of Communication and Information Technology (Kominfo) regarding the use of AI generators, ex ante standards related to design, auditing, and security, as well as regulations on the allocation of responsibility if the generator's output causes losses. All of this can be developed without having to wait for one big "Smart Contract Law," but rather through explicit recognition of the role of smart contracts in certain sectors, judicial and administrative interpretation guidelines for automated contracts, as well as technical standards and regulations on the responsibilities of smart contract generator developers and users to ensure that the principles of freedom of contract ( ) and legal certainty are upheld in AI-based digital practices.

D. CONCLUSION

Smart contract generators, as AI systems that translate contract specifications into code on the blockchain, produce contracts with characteristics of automation, immutability, transparency, high security, and decentralization, so that their functioning and form differ from conventional written contracts but can still contain all the elements of the parties' agreement. In Indonesian law, the validity of contracts generated by generators is still measured by Article 1320 of the Civil Code and the electronic contract framework of the ITE Law, while generators are positioned only as tools belonging to the parties, so that legal intent and responsibility remain attached to the individuals or legal entities that use them, with new risks in the form of bugs, system failures, and information asymmetry that have not been specifically regulated. In French law, smart contracts from AI generators are treated as ordinary contracts and/or electronic contracts under the French Civil Code, but are reinforced by explicit recognition of DLT in the Code monétaire et financier and the AI oversight framework (French Data Protection Authority and EU AI Act), so that the legal function of smart contracts and generator governance are more clearly integrated into the positive legal system.

A comparison of the two systems shows that Indonesia can strengthen the legal certainty of smart contract generators by linking the recognition of blockchain within the framework of the PSE and PP 28/2025, particularly in terms of contractual functions, establishing technical standards and responsibilities for AI generator

providers, and developing guidelines for the interpretation of automated contracts that uphold the principles of freedom of contract, good faith, and protection of vulnerable parties.

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