

# ARTIFICIAL INTELLIGENCE AS A CO-LEGISLATOR: THE IDEA OF HARMONIZING LAWS AND REGULATIONS TOWARDS SMART LAWMAKING

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Article	Abstract
<p><b>Article History:</b> Submitted: August 2025 Reviewed: January 2026 Accepted: April 2026 Published: April 2026</p> <p><b>Keywords:</b> <i>Artificial Intelligence; Co-Legislator; Legal Harmonization; Smart Lawmaking.</i></p>	<p><i>The rapid advancement of Artificial Intelligence (AI) presents new opportunities within legal systems, particularly in the harmonization of laws and regulations, which has long been challenged by complexity, regulatory overlaps, and normative disharmony. This article introduces the concept of AI as Co-Legislator, positioning AI not merely as a technical instrument but as a strategic partner in the process of lawmaking and regulatory harmonization. Through the capabilities of machine learning and natural language processing, AI can analyze thousands of regulations, detect potential normative conflicts, and provide data-driven recommendations to accelerate the creation of effective, efficient, and coherent legal frameworks. This idea aligns with the paradigm of smart lawmaking, which envisions adaptive, responsive, and technology-based legislation that upholds the principles of legal certainty, justice, and utility. The research employs a normative-juridical method with a conceptual approach, combining legal analysis with technological innovation perspectives. The findings suggest that while employing AI as a co-legislator has significant potential to enhance the quality of legal harmonization, ethical, juridical, and institutional challenges must be addressed, including issues of legitimacy, accountability, and data protection. Therefore, integrating AI into the harmonization of laws should be positioned as an innovative step toward building a smart legal system without diminishing the sovereignty of human legislators.</i></p>

## A. Introduction

The Indonesian legal system continues to face serious challenges in maintaining consistency and harmony among laws and regulations. One of the most persistent problems is regulatory obesity, namely the excessive growth of regulations across different levels of government, which has contributed to overlapping norms, inconsistency, and legal uncertainty. Studies on Indonesian legislation note that hyper-regulation occurs across ministerial, presidential, governmental, and regional regulations, and that this condition burdens the process of synchronization and harmonization of laws and regulations. In this context, the problem is not merely the number of regulations, but also their fragmentation and lack of coherent integration within the national legal system.<sup>1</sup> This condition reflects the gap between

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<sup>1</sup> Muhamad Azhar, "Omnibus Law sebagai Solusi Hiperregulasi Menuju Sinkronisasi Peraturan Per-Undang-undangan di Indonesia", *Administrative Law and Governance Journal* 2, no. 1 (2019): 170–178, <https://doi.org/10.54629/jli.v19i3.879>.

the hierarchical design of the legislative system and the practice of regulation formation which tends to be sectoral and fragmentative.

The phenomenon of legal disharmony not only has an impact on legal certainty, but also has implications for the effectiveness of government administration and public trust in the law. Overlapping regulations are often a barrier to investment, bureaucracy, and public services because they give rise to confusing double interpretations.<sup>2</sup> The use of artificial intelligence (AI) in the harmonization of laws and regulations is often associated with increased efficiency and analytical capacity. However, it is important to acknowledge that AI does not automatically guarantee better legislative outcomes. AI systems depend heavily on the quality of data, algorithmic design, and institutional oversight. In several cases, AI may also produce algorithmic bias, lack transparency due to “black box” decision-making processes, and potentially replicate existing legal or social inequalities embedded in historical data.<sup>3</sup> Therefore, the implementation of AI in legal harmonization should not be viewed as a purely technological solution, but rather as a complementary tool that must operate under human supervision and ethical governance frameworks.

The development of artificial intelligence (AI) has brought significant changes in various sectors, but its use in the legal realm in Indonesia is still limited and has not touched on the legislative aspect comprehensively. The practice that has developed so far tends to focus on the implementation of e-court. In fact, theoretically and technically, AI has great potential to be used in the early stages of law formation, especially in the harmonization of laws and regulations. Through machine learning and natural language processing capabilities, AI can process thousands of legal documents, identify redundancies, and find inconsistencies between rules quickly and accurately. The fact that this potential has not been widely explored in both academic studies and institutional practice confirms the need for research as well as innovation in the reform of the Indonesian legal system.<sup>4</sup>

Practical implementation of legislative harmonization in Indonesia involves the government through the Ministry of Law and Human Rights and the legislature through the House of Representatives and the Regional Representative Council, which can lead to

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<sup>2</sup> Firman Freaddy Busroh,, Fatria Khairo, and Putri Difa Zhafirah, “Harmonisasi Regulasi di Indonesia: Simplikasi dan Sinkronisasi untuk Peningkatan Efektivitas Hukum”, *Jurnal Interpretasi Hukum* 5, no. 1 (2024): 699–711, <https://doi.org/10.55637/juinhum.5.1.7997.699-711>.

<sup>3</sup> Farzana Khan, “Data Justice and Algorithmic Bias: Understanding the Social, Ethical, and Legal Implications of Algorithmic Decision-Making and Its Impact on Marginalized Communities”, *Frontiers in Multidisciplinary Studies* 2, no. 1 (2025): 54–65, <https://fmsjournal.com/index.php/journal/article/view/17>.

<sup>4</sup> Atiyah, *et al.*, “Digitalisasi Legal Drafting melalui Artificial Intelligence: Peluang dan Tantangan Masa Depan Dokumen Hukum di Indonesia”, *Indonesian Journal of Islamic Jurisprudence, Economic and Legal Theory* 3, no. 2 (2025): 1283–1299, 10.62976/ijjel.v3i2.1113.

differences in interpretation regarding the scope and timing of harmonization. Empirical and doctrinal studies also show that the harmonization process still faces a number of institutional and procedural problems, including coordination gaps, inconsistencies in implementation, and the non-binding nature of some harmonization outcomes. These conditions indicate that regulatory harmonization in Indonesia still requires a stronger institutional design and more effective mechanisms to ensure procedural conformity and substantive coherence among legal norms.<sup>5</sup>

Some countries have taken progressive steps in integrating artificial intelligence in the lawmaking process, albeit on a different scale and orientation. For example, the United Arab Emirates (UAE) is a global pioneer with the idea of making AI as *co-legislator* in the legislation process. The UAE government through the Regulatory Intelligence Office seeks to leverage AI to process legal and government data, track the effects of regulations, and periodically provide recommendations for legislative updates.<sup>6</sup> However, the success of such initiatives cannot be directly generalized to the Indonesian context. Differences in legal culture, institutional capacity, digital infrastructure, and governance structures must be carefully considered before adopting similar approaches. Therefore, the comparison with other jurisdictions should be understood as a source of conceptual inspiration rather than as direct justification for immediate implementation in Indonesia.

Various previous studies have explored the integration of artificial intelligence in the legal realm, but it is still very limited and has not targeted the aspect of harmonization of regulations holistically. First, the study "Law Informs Code" by John J. Nay presents a legal informatics approach to align AI with social values through embedding legal knowledge into artificial intelligence systems.<sup>7</sup> However, this study is conceptual in nature and focuses more on legal follow-up than its application in the process of drafting concrete legal norms. Second, research on regulatory adaptation and ethical considerations of AI in the legal realm in identifying challenges such as algorithmic bias, accountability, and privacy,<sup>8</sup> but it is still

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<sup>5</sup> M. Jeffri Arlinandes Chandra, *et al.*, "Standardization Harmonization, Consolidation, and Refinement of Draft Laws in DPR and DPD", *The Indonesian Journal of International Clinical Legal Education* 5, no. 2 (2023): 169–194, 10.15294/iccle.v5i1.36605.

<sup>6</sup> Parth Singh, and Aman Garg, "AI, Machine Learning & Big Data Laws and Regulations 2025 – UAE", (2025), <https://ssrn.com/abstract=5282529>.

<sup>7</sup> John J. Nay, "Law Informs Code: A Legal Informatics Approach to Aligning Artificial Intelligence with Humans", *Northwestern Journal of Technology and Intellectual Property* 20 (2022): 309, <https://scholarlycommons.law.northwestern.edu/njtip/vol20/iss3/1/>.

<sup>8</sup> Irina Negut, and Anita Ioana Visan, "Regulatory Compliance and Ethical Considerations in Integration Artificial Intelligence", *Artificial Intelligence in Chemical Engineering* (2026): 627–650, 10.1016/B978-0-443-34076-5.00025-0.

centered in the context of the use of AI in the judicial system, not in the harmonization of legal products. Third, a comparative study of AI regulation in Indonesia, the European Union, the United States, and China focusing on ethical and structural regulatory frameworks,<sup>9</sup> without highlighting the role of AI as a collaborative actor of legislators in the harmonization of laws and regulations. Thus, this research is present as an innovative breakthrough by developing the concept of "AI as *Co-Legislator*" towards Smart Lawmaking" which fills the gap in previous research through a direct focus on the harmonization of law with the role of collaborative, substantive, and adaptive AI.

Challenges that need to be considered in the application of AI as a *co-legislator* include issues of legal legitimacy, public trust, and data protection in the use of AI algorithms. In addition, there is also a risk of algorithmic bias that can affect the results of harmonized analysis.<sup>10</sup> In other words, while AI promises efficiency and precision in regulatory harmonization, there are risks that must be anticipated through human oversight, technological regulation, and strict ethical standards. This critical analysis is important so that the idea of smart lawmaking is not trapped in technological determinism, but remains rooted in the principle of a democratic and human-centered state of law.

In the academic context, this research offers novelty in two main aspects. First, this study shifts the paradigm of AI study in law from the realm of judicial technology (prediction of judgments and e-court) to the realm of legislative technology, especially regulatory harmonization. Second, this study introduces the conceptual framework of "AI as *Co-Legislator*" as an innovative model in law formation in Indonesia. Thus, this research not only adds to the treasure of legal literature on the use of technology, but also opens up new discussion space on legitimacy, accountability, and ethics in the application of AI in the legislative process. It is important to emphasize that the use of AI in law is not just a technical issue, but also concerns the basic principles of the state of law and democracy.

Based on this background, this study seeks to formulate the idea of Artificial Intelligence as a *Co-Legislator* in harmonizing laws and regulations towards smart lawmaking. The focus of the research lies on normative-conceptual analysis of how AI can play a role in overcoming the problem of legal disharmonization, what are its juridical and ethical implications, and how

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<sup>9</sup> Francisca Romana Nanik Alfiani, and Faisal Santiago, "A Comparative Analysis of Artificial Intelligence Regulatory Law in Asia, Europe, and America", *SHS Web of Conferences* 204 (2024), <https://doi.org/10.1051/shsconf/202420407006>.

<sup>10</sup> Masinton Pasaribu, "Penerapan Kecerdasan Buatan (Artificial Intelligence) dalam Proses Legislasi dan Sistem Peradilan di Indonesia", *Jurnal Hukum dan Bisnis (Selisik)* 10, no. 2 (2024): 163–181, <https://doi.org/10.31004/joecy.v6i1.8004>.

AI can be positioned as a strategic partner without diminishing the authority of human legislators. By offering this new perspective, the research is expected to make an academic and practical contribution in developing Indonesia's legal system towards a smart-legal system that is more adaptive, responsive, and sustainable.

## **B. Method**

This study uses a normative juridical method with a conceptual approach and a statute *approach*. The normative juridical method was chosen because the research focuses on the analysis of legal norms as well as theoretical ideas regarding the use of artificial intelligence in the formation of laws and regulations. The legislative approach is used to examine the legal provisions that govern the procedures for the formation, harmonization, and evaluation of regulations, as stipulated in Law Number 12 of 2011 and its amendments and related regulations. Meanwhile, a conceptual approach is used to explore the concept of *AI as Co-Legislator* and smart lawmaking within the framework of modern legal development. Research data is obtained through literature studies in the form of regulations, books, scientific articles, and relevant institutional reports. Data analysis is carried out qualitatively by interpreting, comparing, and constructing new ideas regarding AI integration in the harmonization of laws and regulations.

## **C. Analysis and Discussion**

### **1. Disharmony of Regulation and the Concept of AI as a Co-Legislator**

Regulatory fragmentation is one of the chronic problems in the national legal system. Many laws and regulations overlap, are out of sync between levels and sectors, and trigger normative conflicts at the implementation level.<sup>11</sup> The phenomenon of judicial review that continues to increase in the Constitutional Court and the Supreme Court is a concrete indicator of the crisis of legal harmonization. Laws, Government Regulations, Presidential Regulations, and Regional Regulations often regulate similar objects with different or even contradictory normative approaches. This disharmony not only hinders legal certainty, but also lowers the quality of governance. In the midst of this complexity, the conventional

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<sup>11</sup> Fairuz Abdul Haq, *et al.*, "Desentralisasi dan Harmonisasi Kebijakan: Rekonstruksi Pembagian Kewenangan Antara Pemerintah Pusat dan Daerah dalam Negara Kesatuan", *Qanuniya: Jurnal Ilmu Hukum* 2, no. 2 (2025): 17–30, <https://doi.org/10.15575/qanuniya.v2i2>.

legislation system has proven inadequate to solve the problem of structural and massive regulatory disharmony.<sup>12</sup>

In Indonesia, our legal system still faces a series of challenges, such as convoluted bureaucracy, traffic jams in the preparation of legal documents, and the potential for human error that can affect the validity and enforceability of these documents.<sup>13</sup> Therefore, optimizing the series of drafting laws and regulations through AI technology is considered an innovative solution that can escalate the efficiency and effectiveness of the Indonesian legal system, especially in the context of harmonization between laws and regulations. With AI's capabilities in analyzing legal data, understanding legal language, and producing documents that are consistent and in line with applicable regulations, it is hoped that the series of legal document preparation can be accelerated, without sacrificing quality.

Disharmony in the legal system occurs vertically and horizontally, which then leads to overlapping regulations, inconsistent policies, and confusion in the application of legal norms in the field.<sup>14</sup> Vertical disharmony usually occurs when there is a misalignment between legal norms at the top level, such as the Constitution, and lower regulations, such as laws, government regulations, or local regulations. Meanwhile, horizontal disharmony occurs when there is a clash between laws that are at the same level, generally due to weak coordination and lack of communication between authorized agencies in the regulatory formation process.<sup>15</sup> This situation arises due to weak consistency in formulating legal norms or ineffective monitoring mechanisms for the legislative process at each level. As a result, derivative rules often do not reflect the substance or spirit of higher legal norms, making it difficult to apply.

Artificial Intelligence (AI), especially those based on Natural Language Processing (NLP), Machine Learning (ML), and big data, offers significant technological potential in answering the challenges of modern legislation. NLP technology allows machines to read,

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<sup>12</sup> Puteri Chintami Oktavianti, "Hambatan Regulasi dan Teknis Terkait Implementasi Cyber Notary di Indonesia", *Jurnal Pembangunan Hukum Indonesia* 6, no. 2 (2024): 243–259, <https://doi.org/10.14710/jphi.v6i2.243-259>.

<sup>13</sup> Endang Try Setyasih, "Reformasi Birokrasi dan Tantangan Implementasi Good Governance di Indonesia", *Jurnal Kelola: Jurnal Ilmu Sosial* 6, no. 1 (2023): 48–62, <https://doi.org/10.54783/jk.v6i1.671>.

<sup>14</sup> Nesti Rahmadani, *et al.*, "Disharmonisasi Peraturan Bupati Tanah Datar Nomor 10 Tahun 2021 tentang Pedoman Teknis Peraturan di Nagari dengan Peraturan Daerah Provinsi Sumatera Barat Nomor 7 Tahun 2018 tentang Nagari", *JISRAH: Jurnal Integrasi Ilmu Syariah* 4, no. 1 (2023): 86–94, <http://dx.doi.org/10.31958/jisrah.v4i1.9356>.

<sup>15</sup> Ida Surya, and Abdul Wahab, "Harmonisasi Peraturan Perundang-Undangan dalam Mewujudkan Pemerintahan Yang Baik", *Jurnal Kompilasi Hukum* 8, no. 2 (2023), <https://doi.org/10.29303/jkh.v8i2.142>.

understand, and interpret documents at scale, even beyond human capabilities.<sup>16</sup> With the ability to learn from previous regulatory data, AI can identify normative conflict patterns, detect recurrences, and warn of possible overlapping norms. Meanwhile, ML can classify regulations based on themes, forming authorities, and levels of legal hierarchy. This technology has been developed in several developed countries to support data-driven policymaking, including in legal digitalization projects that aim to simplify and synchronize legal systems nationally and across countries.<sup>17</sup>

AI's ability to process legal data simultaneously and precisely creates opportunities for the integration of this technology into the legislative process, not just as a technical tool, but as a *co-legislator*. This idea drives the shift of AI's role from a passive machine to an analytical actor that contributes to the conceptual stage of regulatory formation. AI can be positioned as a partner that supplies information, editorial alternatives, and projected normative impact of a regulation to be formed. While the final decision remains in the hands of humans, the existence of AI can improve the quality of legislation through increased accuracy, consistency, and efficiency in regulatory drafting. It is a crossroads between technological sophistication and the need for a legal system that is intelligent, adaptive, and responsive to evolving social complexities.<sup>18</sup>

It is important to affirm that the concept of AI as a *co-legislator* does not mean giving legislative power to non-human entities, but adopting AI as a conceptual partner in the data-driven legislative process and legal analytics.<sup>19</sup> In this approach, AI does not only perform administrative functions or process legal texts, but also plays a role in helping law drafters to understand the legal implications systemically and thoroughly. Collaboration between humans and machines allows for the exploration of a variety of normative scenarios before a draft rule is passed. This approach addresses the challenges of future legislation that require

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<sup>16</sup> Deden Juansa Putra, "Revolusi Digital dalam Studi Al-Qur'an: Menggali Wawasan Baru dengan Artificial Intelligence (AI)", *Manarul Qur'an: Jurnal Ilmiah Studi Islam* 24, no. 2 (2024): 68–92, <https://doi.org/10.24042/wf0ck981>.

<sup>17</sup> Dhea Gupta, "Optimasi Pemanfaatan Machine Learning sebagai Upaya Penanggulangan Overregulation Guna Menjamin Kedayagunaan Peraturan Perundang-undangan di Indonesia", *Journal of Studia Legalia* 5, no. 2 (2024), <https://studialegalia.ub.ac.id/index.php/studialegalia/article/view/117>.

<sup>18</sup> Mochamad Adli Wafi, and Muhammad Machshush Bill Izzi, "Integrating Electronic Participation in the Legislative Process to Optimize the Fulfillment of Meaningful Participation", *Jurnal Konstitusi* 21, no. 4 (2024): 518–541, 10.31078/jk2141.

<sup>19</sup> Guzyal Hill, *et al.*, "From Pen to Algorithm: Optimizing Legislation for the Future with Artificial Intelligence", *AI & Society* 40, no. 4 (2025): 3075–3086, <https://doi.org/10.1007/s00146-024-02062-3>.

speed and precision in responding to societal dynamics, without sacrificing the principles of justice, certainty, and legal usefulness.<sup>20</sup>

Strengthening the position of AI as a *co-legislator* has a logical basis in the spirit of modernizing the legal system, namely utilizing technological innovations to improve the structural weaknesses of legislation. In the context of legal harmonization, AI is able to compile a map of the relationship between norms based on the hierarchical structure of laws and regulations and the principles of *lex superior derogat lex inferior*, *lex posterior derogat lex anterior*, and *lex specialis derogat lex generalis*. Through this mapping, AI not only reads normative content literally, but also analyzes normative interactions systemically and suggests necessary adjustments.<sup>21</sup> The results of this analysis are the basis for regulatory designers to avoid redundancy and normative contradictions. This means that AI is an instrument of preventive supervision against legal fragmentation from the regulatory planning stage, something that is difficult to do manually due to limited time, human resources, and institutional capacity.

The capacity of AI in legal processing can also be expanded through training in algorithmic models based on legal ontology, which is the structure of conceptual relationships between legal terms that are arranged hierarchically and semantically. With this approach, AI can understand legal terms not only as text, but as part of a legal framework of thinking that has context, function, and connectedness. For example, when the AI reads the word "permission," the system is able to recognize that the term is closely related to authority, restrictions, and administrative sanctions. With this ability, AI can suggest improvements to norms that are not in line with the general principles of administrative law, while also alerting to potential conflicts with other norms that have different contexts. This shows that AI not only works statistically, but is capable of being invited into the legal dialectic space.<sup>22</sup>

The idea of AI as a *co-legislator* also reflects a paradigm shift in law formation, from a legalistic approach to a smart lawmaking paradigm. In this article, smart lawmaking refers to a model of lawmaking that integrates digital technology, data analysis, and artificial intelligence to support a legislative process that is more evidence-based, adaptive, efficient,

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<sup>20</sup> Sunny Ummul Firdaus, and Putri Anjelina Nataly Panjaitan, "Reformulasi Hukum untuk Mewujudkan Sistem Perundang-undangan Adaptif dan Responsif", *Proceeding APHTN-HAN*, Vol. 2, No. 1, (2024): 355–382, <https://doi.org/10.55292/2thnr771>.

<sup>21</sup> Hermawan Prasajo, "Inovasi Kolaboratif dalam Pembentukan Peraturan Perundang-Undangan: Optimalisasi Teknologi untuk Meningkatkan Partisipasi Publik dalam Legislasi", *Jurnal Hukum & Pembangunan* 54, no. 4 (2024): 669–688, <http://doi.org/10.21143/jhp.vol54.no4.1683>.

<sup>22</sup> Luciano Floridi, "The European Legislation on AI: A Brief Analysis of Its Philosophical Approach", *Philosophy & Technology* 34, no. 2 (2021): 215–222, <https://doi.org/10.1007/s13347-021-00460-9>.

and responsive, while still preserving democratic accountability and human control over normative decision-making. This understanding is in line with recent scholarship that views AI as a potential tool for improving legislative technique, legislative process, and legislative monitoring, as well as with studies on data-driven policymaking that emphasize the growing role of digital technologies throughout the policy cycle, including regulation and rulemaking.<sup>23</sup>

In several international experiments, the presence of AI in the legislative process has shown promising results. In the European Union, the AI4PublicPolicy project shows that AI can be used to synchronize regulations between member states by analysing editorial differences and legal substance between national systems.<sup>24</sup> Meanwhile in Estonia, KrattAI's technology was developed to integrate digital public services related to access to legal information and interaction with the judicial system.<sup>25</sup> Although they have not been formally made into legislative actors, these projects are proof that AI has begun to play a functional role in the legal ecosystem. This indicates that the adoption of AI in legislation is not just a futuristic discourse, but has entered the realm of praxis, which needs to be responded to immediately by developing countries with strategic and anticipatory steps.

However, the application of AI in the legislative process should not ignore the sociological and ideological context of the legal system. Law is not just a normative logical device, but also an expression of people's political values and wills. Therefore, AI cannot and should not replace humans in terms of value determination, interpretation of justice, and affirmation of vulnerable groups.<sup>26</sup> AI's position as *a co-legislator* must be understood as a technocratic partner that strengthens the intellectual and administrative functions of humans in designing better laws. This conceptualization rejects technological determinism and encourages ethical collaboration between humans and machines. This is precisely where the position of the law is maintained as a product of human will, but facilitated by artificial intelligence to be more structured, efficient, and contextual.

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<sup>23</sup> A. Drahmann, and A. Meuwese, "AI and Lawmaking: An Overview", in *Law and Artificial Intelligence: Regulating AI and Applying AI in Legal Practice*, ed. B. Custers and E. Fosch-Villaronga (The Hague: T.M.C. Asser Press, 2022), 433–449, [https://doi.org/10.1007/978-94-6265-523-2\\_22](https://doi.org/10.1007/978-94-6265-523-2_22).

<sup>24</sup> Andi Muhammad Farid Fausan Bate, and Andi Pajolloi Bate, "AI and Public Policy Process: Between Efficiency and Ethical Challenges", In *World Conference on Governance and Social Sciences*, Vol. 2, (2024), <https://journal.unhas.ac.id/index.php/wcgss>.

<sup>25</sup> Richard Dreyling, Tanel Tammet, Ingrid Pappel, and Keegan McBride, "Navigating the AI Maze: Lessons from Estonia's Bürokratt on Public Sector AI Digital Transformation", (2024), <https://doi.org/10.2139/ssrn.4850696>.

<sup>26</sup> Inyoung Cheong, *et al.*, "Is the US Legal System Ready for AI's Challenges to Human Values?", *arXiv* (2023), 10.48550/arXiv.2308.15906.

In a juridical framework, AI's position as a partner in legislation requires clear normative legitimacy. The presence of AI in the legislative space has not been explicitly regulated in laws and regulations in many countries, including Indonesia. In fact, when AI is used in the public policy design process, especially in the function of legal harmonization, the validity of its analysis and recommendations becomes an important part of the democratic legislation process.<sup>27</sup> Without an adequate legal basis, the use of AI risks creating black box legislation, which is decisions that appear objective, but cannot be tracked in a transparent logic and source. The law must ensure that the use of AI remains under the control of a constitutional democratic system that respects the principles of the rule of law, checks and balances, and public involvement.<sup>28</sup>

Philosophically, the idea of collaboration between humans and machines in the process of legislation also challenges the classical construction of legal sources. The positive legal tradition has placed human beings through the legislative institution as the only subject authorized to set legal norms. However, in the context of the digitalization of the legal system, AI is beginning to play a role in compiling normative structures through the provision of relevant legal information, evaluation of existing policies, and projections of potential norm conflicts.<sup>29</sup> In this position, AI is not a law-maker, but a facilitator of legal knowledge that enables humans to formulate regulations more fully. This shifts the top-down approach in legislation toward a more participatory, data-driven, and interactive process. Therefore, it is important to develop a new legal philosophy that is responsive to the algorithmic era without losing the basic values of humanity and justice.<sup>30</sup>

The idea of AI as a *co-legislator* must be understood as part of an adaptive, technology-based, and still rooted in the principles of a democratic state of law.<sup>31</sup> Legal harmonization through AI is not just a digitalization or administrative efficiency project, but a foundation for building a legal system that is intelligent, integrated, and responsive to the challenges of

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<sup>27</sup> Nicoletta Rangone, "Artificial Intelligence Challenging Core State Functions: A Focus on Law-Making and Rule-Making", *Revista de Derecho Público: Teoría y Método* 8 (2023): 95–126, 10.37417/RDP/vol\_8\_2023\_1949.

<sup>28</sup> Thomas Wischmeyer, *Artificial Intelligence and Transparency: Opening the Black Box In Regulating Artificial Intelligence*, (Cham: Springer International Publishing, 2019), 78.

<sup>29</sup> Francesco Cotini, "Artificial Intelligence and the Transformation of Humans, Law and Technology Interactions in Judicial Proceedings", *Law, Technology and Humans* 2 (2020): 4, 10.5204/lthj.v2i1.1478.

<sup>30</sup> Rida Aryani, et al., "Dampak Penggunaan Teknologi Informasi terhadap Kualitas Legal Drafting", *Indonesian Journal of Islamic Jurisprudence, Economic and Legal Theory* 3, no. 2 (2025): 1357–1367, 10.62976/ijjel.v3i2.1123.

<sup>31</sup> Tri Suhendra Arbani, and Aulia Hasanah Putri, "Legal Evaluation Strategy to Bridging the Regulatory Gap in Facing Technological Developments and Globalization in Indonesia", *Jurnal Rechts Vinding: Media Pembinaan Hukum Nasional* 13, no. 3 (2024): 405–418, <http://dx.doi.org/10.33331/rechtsvinding.v13i3.1911>.

the times. Nevertheless, AI must not be detached from the ethical, legal, and political controls that guarantee that technology serves to strengthen, not replace, the will of the people represented by legislators. Therefore, collective awareness is needed among lawmakers, academics, and technocrats to jointly formulate a future legal architecture that opens up space for collaboration between artificial intelligence and human wisdom in the spirit of a fair smart legal system .

## 2. Prospects and Challenges of AI as a Co-Legislator in Realizing Smart Lawmaking

The presence of artificial intelligence (AI) in the legislative process poses ethical and juridical dilemmas that cannot be ignored.<sup>32</sup> One of the fundamental issues is the legitimacy of the law. In classical legal theory, lawmakers must have political accountability and legal responsibility that cannot be imposed on algorithmic entities.<sup>33</sup> AI has no legal subject status and cannot be held normatively accountable. So, even if AI is capable of analyzing thousands of legal documents and social data, the legal products it generates will lose legitimacy if they are not legalized and controlled by humans. This suggests that AI can only play a role as an auxiliary tool, not a major normative actor in legislation.

The next problem is accountability. In the context of legislation, accountability is not only about who is responsible for the content of regulations but also about the transparency of the process of making them.<sup>34</sup> AI that works with machine learning or deep learning often creates black box-based decisions and the results are observable, but the internal logic is not fully explainable to the public. This condition is dangerous if applied in legal proceedings, because every legal product must be publicly and rationally testable. If legislative decisions are drafted based on an algorithm that cannot be explained, then the principle of due process of law is in danger of being violated. The integration of AI in the legislation process requires a transparent algorithmic governance model that can be audited by an independent authority to ensure that the results remain accountable.<sup>35</sup>

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<sup>32</sup> Masinton Pasaribu, *Loc. Cit.*

<sup>33</sup> Muldan Halim Pratama, *et al.*, “Politik Hukum Pembentukan Undang-Undang yang Berkelanjutan di Indonesia Ditinjau dari Desain Masa Jabatan Lembaga Pembentuknya”, *Asy-Syir'ah: Jurnal Ilmu Syari'ah dan Hukum* 54, no. 2 (2020): 389–420, <https://doi.org/10.14421/ajish.v54i2.927>.

<sup>34</sup> Nabila Fitri Amelia, *et al.*, “Implementasi Artificial Intelligence (AI) dalam Pembentukan Peraturan Perundang-Undangan di Indonesia”, *Eksekusi: Jurnal Ilmu Hukum dan Administrasi Negara* 2, no. 1 (2024): 56–70, <https://doi.org/10.55606/eksekusi.v2i1.789>.

<sup>35</sup> Zahra Kamila, “Pengaturan Hukum dan Prospek Penggunaan Artificial Intelligence dalam Era Digitalisasi Sistem Peradilan di Indonesia”, *Jurnal Riset Multidisiplin Edukasi* 2, no. 3 (2025): 16–36, 10.71282/jurmie.v2i3.172.

Algorithmic bias is also a serious threat in the application of AI in the field of legislation. Although often considered neutral, AI algorithms are formed from historical data full of social, political, and legal inequities. When AI is trained on such data without adequate corrective mechanisms, it will replicate and reinforce existing structural biases. In the Indonesian context, where the law is often influenced by power and identity politics, this risk becomes even greater. AI could make legislation that systematically favors certain groups or ignores the rights of minorities.<sup>36</sup>

In addition, the use of AI in legislation touches on the issue of privacy and personal data protection. In processing the bill, AI may access and analyze community data on a large scale to understand public needs, trends, or aspirations. If not strictly regulated, this has the potential to violate citizens' privacy rights guaranteed in Article 28G paragraph (1) of the 1945 Constitution and Law No. 27 of 2022 concerning Personal Data Protection.<sup>37</sup> AI-based legislation must ensure that the data used has gone through an anonymization process, is taken only from legitimate sources, and its use is proportionately limited and relevant to legal purposes.

Transparency of the legislative process is a crucial principle that must be maintained in the context of AI integration. Public information disclosure is the foundation of participatory democracy that allows the public to supervise and criticize every policy that is drafted. When AI is used to draft regulations, the public must be given access to understand the processes, data, and algorithmic parameters used. Without this openness, AI will actually widen the gap between lawmakers and society which will create public distrust of the legislative process.<sup>38</sup> Therefore, it is necessary to design a digital system of legislation based on open source and open data, so that AI can be a collaborative tool that strengthens public involvement in regulation-making, not replacing their role.

The solution to these problems is not to reject the existence of AI absolutely, but to design a collaborative model between humans and AI in the legislative process. AI should function as an *intelligent assistant* that helps analyze data, compile legal comparisons,

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<sup>36</sup> Desy Kristiane, and Sitti Nurkhaerah, "Analisis Pemanfaatan Artificial Intelligence dalam Pelayanan Publik Menurut Prinsip Fikih Siyāsah", *Qaumiyah: Jurnal Hukum Tata Negara* 6, no. 1 (2025): 23–48, 10.24239/qaumiyah.v6i1.206.

<sup>37</sup> Akhmad Zaki Yamani, "Analisis Tantangan dalam Penyusunan Rancangan Undang-Undang di Era Transformasi Digital: Antara Regulasi, Inovasi, dan Perlindungan Hak", *Journal of Law and Nation* 4, no. 2 (2025): 312–324, <https://jolin.my.id/index.php/jolin/article/view/211>.

<sup>38</sup> Loso Judijanto, and Rabith Madah Khulaili Harsya, "Etika dan Hukum dalam Penggunaan Artificial Intelligence terhadap Privasi Digital di Indonesia", *Sanskara Hukum dan HAM* 3, no. 3 (2025): 141–149, <https://doi.org/10.58812/shh.v3i03.543>.

identify regulatory overlaps, or detect norm conflicts. However, the authority to decide the substance of the law must still be in the hands of humans, in this case legislators, legal experts, and the public through public participation. This model is known as Human in the loop (HITL), which puts humans as the primary decision-makers in every stage of the process. This concept is in accordance with the principle of deliberative democracy, in which the collective rationality of human beings remains the basis of legal legitimacy.<sup>39</sup>

To support such collaborative models, AI governance in legislation must be framed in comprehensive and adaptive regulation. This governance needs to include an ethical framework for the use of AI, limits on the authority of digital systems in decision-making, and a mechanism to monitor the social impact of AI recommendations. Legislative institutions need to establish a special unit that oversees the use of digital technology in the legislation process, including drafting standard protocols for the use of AI, screening technology providers, and evaluating the accuracy and bias of the algorithms used. This is a kind of AI Ethics Committee in the parliamentary environment, whose task is to oversee so that digital transformation in legislation does not erode the precautionary principle, but instead strengthens the integrity of the law and the protection of democratic values.<sup>40</sup>

One of the urgent juridical problems in the application of AI in the field of legislation is the legal certainty that regulates the involvement of technology in the creation of legal norms. Most legal systems today do not have normative instruments that can verify and validate the legitimacy of AI's role in the legislation process, especially regarding the creation of academic manuscripts, the preparation of draft bills, and regulatory impact assessment. Without a clear legal instrument, any role of AI in legislation has the potential to face delegitimization of the resulting legal products.<sup>41</sup> Therefore, new regulations or revisions to relevant laws and regulations are needed to ensure that the role of AI is recognized and legally protected, while ensuring that AI does not act as an autonomous actor, but rather as an assistant subject to human control.

Meanwhile, from an ethical perspective, the presence of AI in legislation invites debate about who should bear responsibility when the system produces errors or regulatory biases. AI does not have moral *accountability* like humans, so it cannot be held normatively

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<sup>39</sup> Atiyah, *et.al.*, *Loc.Cit.*

<sup>40</sup> Nabila, "Hukum dan Etika Penggunaan AI di Era 4.0", *Politika Progresif: Jurnal Hukum, Politik dan Humaniora* 2, no. 2 (2025): 184–192, 10.62383/progres.v2i2.1746.

<sup>41</sup> Muh Sanjaya Sakti, and Laode Muhammad Ismail Farid, "Kepastian Hukum dalam Penggunaan Teknologi Kecerdasan Buatan Indonesia", *Jurnal Hukum Egalitaire* 3, no. 1 (2025): 1–12, <https://doi.org/10.31004/jerkin.v4i1.2488>.

accountable. If a bill is drafted based on an algorithm that suggests problematic or discriminatory substance, the burden of responsibility becomes unclear. This emphasizes the urgency of building a governance system that not only regulates the authority to use AI, but also clearly defines *liability boundaries*.<sup>42</sup>

The application of the precautionary principle is an important foundation in responding to these challenges. This principle demands that any decision-making related to AI adoption in the legislation process be made with long-term impacts and potential harms that are not yet fully predictable. This principle is commonly applied in environmental law, but it is particularly relevant to the complex and evolving digital legal context. In this context, prudence means not rushing to adopt technology just because of its efficiency, but weighing constitutional values, participatory democracy, and protection of vulnerable groups.<sup>43</sup> The integration of AI in legislation should strengthen, not replace, human sovereignty in legal decision-making.

Therefore, the rule of law and the sovereignty of the people are the main principles that should not be compromised by the euphoria of digitalization. AI does offer efficiency, accuracy, and speed in processing legislative information. But without strict supervision and a strong ethical-regulatory framework, this technology can become an instrument of technocracy that actually erodes the public deliberative space. Therefore, AI-based digital legislation must be framed in collaborative governance that places humans as the main actors, while technology plays the role of a supporter who is subject to the principles of law, ethics, and democracy. Thus, AI will be a strategic partner, not a substitute for human authority in fair and inclusive lawmaking.

#### **D. Conclusion**

The presence of artificial intelligence (AI) in the legislative process presents transformational opportunities, but at the same time poses significant ethical and juridical challenges. Problems of legitimacy, accountability, algorithmic bias, privacy, and transparency are crucial points that must be anticipated. Therefore, the integration of AI in the legislative process cannot be done recklessly, but must be based on the principles of prudence, the rule of law, and human sovereignty as the main decision-maker. Human–AI collaborative models need to be built with ethical, participatory, and adaptive governance to democratic dynamics. For

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<sup>42</sup> Shofika Hardiyanti, Qurrahman, “Kedudukan dan Konsep Pertanggungjawaban Artificial Intelligence dalam Hukum Positif Indonesia”, *Unes Law Review* 6, no. 4 (2024), <https://doi.org/10.31933/unesrev.v6i4.2108>.

<sup>43</sup> Masinton Pasaribu, *Loc. Cit.*

this reason, it is necessary to establish an algorithm supervision institution, a transparent and auditable digital legislation system, and a strong and responsive regulatory framework. Going forward, it is important to position AI as a deliberative tool, not a determinative actor. AI regulation in legislation must continue to be refined to maintain an open, inclusive, and equitable political deliberation space.

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