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Digital Transformation with the Impact of AI in Government Decision Making

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Abstract

The development of digital technology has transformed the way governments exercise their functions and authority. Artificial intelligence (AI) is no longer simply an administrative tool but also influences public decision-making. Despite the increased efficiency and accuracy it offers, the use of AI also raises new legal issues that are not fully addressed by existing regulations. This research seeks to critically examine the impact of AI implementation on government decision-making, emphasizing the need for legal reform and the protection of citizens' constitutional rights. A literature review of various national and international sources revealed that Indonesia's legal framework, such as the Electronic Information and Transactions Law, Personal Data Protection Law, and the Civil Service Law, remains limited in addressing legal liability for automated decisions, algorithm clarity, and the public's right to an explanation of AI-based policies. A comparative study with global regulations, including the EU Artificial Intelligence Act and the OECD's AI ethics principles, demonstrates the need for legal reform to align digital governance practices in Indonesia with democratic values, transparency, and fairness. This study emphasizes that digital transformation in the bureaucracy must be accompanied by a reformed legal framework that places human rights

protection at its core. Without adequate reform, the use of AI risks creating disparities in justice and clouding government accountability in decision-making processes.

Keywords
Digital Transformation, Artificial Intelligence, Legal Reform, Governance, Constitutional Law.

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Introduction

To understand the role of digital transformation and the influence of artificial intelligence (AI) on government decision-making, as well as its implications for constitutional law, a comprehensive and in-depth study is required. Amidst the rapid advancement of information and communication technology, digitalization has become an integral part of modern governance. Various aspects of public administration now rely on digital systems that enable large-scale data collection, analysis, and presentation, supporting faster, evidence-based decision-making.

Digital transformation in the government sector presents both opportunities and complex challenges. As Widodo (2022) noted, digitalization is not simply about applying technology to improve bureaucratic efficiency, but rather a paradigm shift in how the government thinks, interacts, and serves the public. On the one hand, the application of AI enables the government to process data with high precision, allowing public policies to be formulated more adaptively and responsively to public needs (Rahayu, 2023). However, on the other hand, new issues arise that touch on the realms of ethics, data security, and individual privacy (Suryadi, 2022).

The use of AI in various government sectors, including infrastructure planning, budgeting, and public services, has become a rapidly growing area of research. Santoso (2022) highlights the importance of reviewing constitutional law aspects in the application of AI to infrastructure projects, while Utomo (2023) emphasizes that bureaucratic efficiency resulting from digitalization must be balanced with an updated legal framework that can accommodate these changes.

In the context of constitutional law, the changes brought about by digital transformation and the application of AI require serious attention. Pratiwi (2023) emphasized that personal data protection is a crucial issue directly related to citizens' constitutional rights. Furthermore, regulations are needed to ensure transparency, accountability, and government responsibility in the use of algorithm-based technology (Setiawan, 2022). Similarly, Suryadi (2022) also emphasized the need for clear ethical and moral boundaries in the use of AI in the public sector, ensuring its implementation does not deviate from the principles of justice and equality.

Beyond domestic issues, global developments suggest that legal matters related to AI have become a significant international concern. The European Union, through the EU Artificial Intelligence Act, is working to establish legal standards that ensure every AI system meets the principles of transparency, security, and non-discrimination. The OECD has even issued AI Principles, which emphasize the responsible use of technology and the public interest. Both approaches demonstrate that the success of AI implementation depends not only on technical capabilities but also on the readiness of the legal system to oversee it.

Indonesia itself has taken initial steps through policies such as the Electronic-Based Government System (SPBE) and the development of the 2020–2045 National Artificial Intelligence Strategy. However, these policies still emphasize the technological aspects over the legal and governance factors. Existing regulations, such as Law No. 11 of 2008 concerning Electronic Information and Transactions (ITE) and Law No. 27 of 2022 regarding Personal Data Protection, do not fully address issues related to legal liability for automated decisions, the right to explanation, or the potential for algorithmic discrimination.

This legal gap raises fundamental questions: who can be held accountable if an AI system makes decisions that harm citizens? How can we ensure that algorithms used in public policy are not biased against certain groups? Do citizens have the right to object to automated decisions that affect their lives? These questions are not only ethically relevant but also touch on the very principle of the rule of law, which requires that every government action be legally based and subject to open scrutiny.

Several studies in Indonesia have highlighted the successful implementation of digital technology in public services. Hartono (2023) reviewed digital innovation in the city of Surabaya, which successfully increased the efficiency of public services. However, this success has not been accompanied by adequate legal preparedness to ensure the accountability of AI-based decisions. Wibowo (2022) cautioned that the effectiveness of digital transformation depends not only on technological infrastructure but also on underlying legal certainty.

Furthermore, research on the use of big data in strategic government decision-making (Setiadi, 2023) indicates that data complexity can affect the quality of public decisions if not balanced by robust legal oversight

mechanisms. Aditya (2023) notes that rapid changes in digital technology necessitate adaptive regulatory adjustments to keep pace with emerging practices in the field. In this context, Kamal (2023) and Maulana (2023) highlight the political dynamics in the formation of AI regulations in Indonesia, which are often slow due to a lack of inter-institutional understanding regarding policy direction.

Public involvement is also a crucial factor in AI policymaking. Public participation in the policy-making process will ensure that the resulting regulations reflect public needs and aspirations, not merely institutional interests. Furthermore, ethical aspects of AI implementation must be maintained to ensure that the principles of justice and equality remain the foundation of public service provision.

Overall, understanding the impact of digital transformation and the application of AI in government decision-making cannot be separated from the legal and constitutional context. Efforts to adapt regulations aim not only to accommodate technological developments but also to ensure that citizens' rights remain protected in an increasingly digital government system. Therefore, this study seeks to examine in depth the relationship between digital transformation, artificial intelligence, and the need for legal reform in Indonesia, with a focus on aspects of accountability, data protection, and constitutional justice in the era of AI-driven governance.

This research employs a normative legal approach supported by qualitative descriptive analysis. This approach examines legal principles, legislation, and doctrines related to the use of artificial intelligence (AI) in government decision-making. This approach enables analysis that highlights the extent to which the prevailing legal system can address the challenges arising from the application of digital technology.[1]

Qualitative descriptive methods are applied to illustrate the relationship between technological developments, public policy, and the need for legal reform in Indonesia. Through this approach, the research not only explains existing legal norms but also analyzes the gaps and

[1] Johnny Ibrahim, *Teori dan Metodologi Penelitian Hukum Normatif* (Malang: Bayumedia, 2022), 47.

inconsistencies in the law in relation to evolving social and technological realities.[2]

This research is normative-conceptual in nature, focusing on the study of legal theory, principles, and concepts governing digital governance.[3] Furthermore, a comparative legal analysis approach is employed to examine the regulatory practices surrounding artificial intelligence in several countries, including the European Union, the United States, and South Korea. This approach aims to identify regulatory models that can serve as a reference for Indonesia in developing a legal framework that adapts to technological innovation without neglecting the principles of the rule of law and public accountability.[4]

Research data were obtained through library research, which examined primary, secondary, and tertiary legal materials.

Primary legal materials: This includes national laws and regulations such as Law No. 11 of 2008 on Electronic Information and Transactions (ITE), Law No. 27 of 2022 on Personal Data Protection, and Law No. 27 of 2022 on State Civil Apparatus. International regulations, such as the European Union's Artificial Intelligence Act and the OECD AI Principles, are also reviewed.[5]

Secondary legal materials: consist of research results, journal articles, and reports from international institutions (e.g., OECD, UNESCO, and the World Economic Forum) that discuss the ethics and law of artificial intelligence.[6]

Tertiary legal materials: in the form of a legal dictionary and encyclopedia, used to clarify digital legal terms and concepts.[7]

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[2] Julie E. Cohen, *Between Truth and Power: The Legal Constructions of Informational Capitalism* (New York: Oxford University Press, 2023), 115.

[3] Peter Cane and Mark Tushnet, *The Oxford Handbook of Legal Studies* (Oxford: Oxford University Press, 2022), 34.

[4] Karen Yeung, Andrew W. Murray, and Graeme Dinwoodie, "Comparative Perspectives on AI Regulation," *International and Comparative Law Quarterly* 72, no. 1 (2023): 1–23.

[5] European Union, *Artificial Intelligence Act (Proposed Regulation)* (Brussels: European Commission, 2023).

[6] OECD, "OECD Principles on Artificial Intelligence," accessed May 3, 2024, https://oecd.ai/en/ai-principles

[7] Black's Law Dictionary, 12th ed. (St. Paul, MN: Thomson Reuters, 2023)

The analysis was conducted qualitatively and deductively, interpreting laws and regulations, comparing them with the international legal framework, and then drawing conceptual conclusions regarding the direction of legal reform in Indonesia. The results were systematically compiled to provide a comprehensive picture of how the principles of transparency, accountability, and human rights protection can be integrated into the use of AI in the public sector.[8]

With this methodological design, the research not only describes the prevailing legal conditions but also offers recommendations for solutions to ensure that AI governance in Indonesia aligns with constitutional values and the principles of a democratic state governed by the rule of law.

To ensure the validity of the research results, all data were cross-checked with valid legal sources and peer-reviewed scientific articles. The analysis was conducted objectively, avoiding interpretation bias and emphasizing the principle of triangulation of sources, which involves examining results from various legal and academic sources.

With this methodological design, the research is not only descriptive but also analytical and solution-oriented, providing a concrete picture of how national law can adapt to the development of artificial intelligence technology in the public sector.

A. Theoretical and Conceptual Framework

Digital transformation involving artificial intelligence (AI) has transformed the way governments make decisions and carry out their administrative functions. This phenomenon not only presents opportunities for efficiency but also creates fundamental challenges to legal systems, ethics, and public governance. Therefore, the theoretical framework in this study is built on three main pillars: the theory of digital transformation in government, the theory of the rule of law and legal accountability, and the theory of ethics and human rights in the context of digital technology.[9]

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[8] Daniel J. Solove, *Understanding Privacy*, 3rd ed. (Cambridge: Harvard University Press, 2023), 76.

[9] Peter Cane and Mark Tushnet, *The Oxford Handbook of Legal Studies* (Oxford: Oxford University Press, 2022), 34.

1. Digital Transformation in Government

Digital transformation in the public sector marks a paradigm shift from traditional bureaucracy to a data-driven and algorithmic governance model.[10] According to Mergel, Edelmann, and Haug, this shift not only relies on technology for administrative efficiency but also demands a restructuring of how governments understand and use data as the basis for decision-making. Modern governments are now confronted with the concept of "algorithmic administration," where public decisions can be generated through automated systems. While efficient, these systems raise legal questions about the legitimacy, accountability, and fairness of decisions made by machines.

The Indonesian context is also beginning to move in a similar direction through the implementation of digital systems in administration, budget planning, and public services. However, legal adaptation to these practices is still inadequate. The principles of transparency and public accountability are often not explicitly translated into digital government technology policies.

2. Principles of Rule of Law and Accountability

The rule of law principle is a crucial foundation for ensuring that the use of AI in government remains subject to the law. Fuller (1969) explained that legal legitimacy can only be maintained if regulations are transparent, consistent, and accountable.[11] When public decisions are made through automated systems, legal responsibility should not be abrogated simply because an algorithm made the decision.

According to Cane (2022), the principle of accountability must be extended to include technological systems acting on behalf of the state.[12] Governments are obliged to ensure that the digital systems they use do not diminish citizens' right to clarity and explanation for decisions that affect them (the right to

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[10] Yu-Che Chen, "Digital Government and Governance Research: A Review," *Government Information Quarterly* 39, no. 4 (2022): 101–129.

[11] Lon L. Fuller, *The Morality of Law*, rev. ed. (New Haven: Yale University Press, 1969), 39.

[12] Peter Cane, "Accountability and Public Law in the Age of Algorithms," *Oxford Journal of Legal Studies* 43, no. 2 (2022): 287–309.

explanation). In a global context, the European Commission, through the AI Act 2023, and the Council of Europe, in Recommendation CM/Rec(2020)1, have emphasized the importance of principles of transparency, non-discrimination, and human oversight in all public AI applications.[13]

3. Digital Ethics and Human Rights

The application of AI in government also raises complex ethical and human rights dimensions. This technology has the potential to strengthen public services, but it can also give rise to new forms of discrimination through biased algorithms.[14] Cath (2023) emphasizes that the use of algorithms in the public sphere without adequate oversight mechanisms can threaten fundamental rights, particularly the rights to privacy, equality, and protection of personal data.[15] Therefore, digital ethics principles must be integrated from the system design stage, as Floridi (2022) emphasizes through the concept of AI ethics by design, which states that artificial intelligence systems must be built on moral, legal, and humanitarian values.[16]

In Indonesia, these ethical and human rights aspects have become increasingly relevant with the enactment of the Personal Data Protection Law (Law No. 27 of 2022), which explicitly regulates citizens' rights to control their personal data. However, in practice, implementing the principles of digital fairness and non-discrimination still faces significant challenges due to limited regulations that extend to automated decision-making mechanisms.

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[13] European Commission, *Proposal for a Regulation on Artificial Intelligence (AI Act)* (Brussels: European Commission, 2023); Council of Europe, *Recommendation CM/Rec(2020)1 on the Human Rights Impacts of Algorithmic Systems* (Strasbourg: Council of Europe, 2020).

[14] Virginia Eubanks, *Automating Inequality: How High-Tech Tools Profile, Police, and Punish the Poor* (New York: St. Martin's Press, 2023), 88.

[15] Corinne Cath, "Governing Artificial Intelligence: Upholding Human Rights and Public Values," *Journal of Human Rights Practice* 15, no. 1 (2023): 1–19.

[16] Luciano Floridi, *Ethics, Governance, and AI: A Human-Centric Framework* (Oxford: Oxford University Press, 2022), 104.

4. Digital Governance

A digital governance framework bridges the gap between technology and law. This model requires that every AI-based policy in the public sector adhere to the principles of transparency, accountability, and public participation.[17] Approaches like the AI Impact Assessment implemented in Canada and the Netherlands can serve as examples of how governments assess the social and legal risks associated with any AI application before implementation. This model demonstrates that technology cannot be separated from human oversight and clear legal responsibilities.

For Indonesia, implementing a digital governance framework must strike a balance between innovation and legal protection. The government needs to emphasize the principle that digitalization is not an end in itself, but rather a means to improve the quality of governance and public trust in the state.

B. Legal Gaps and Challenges in Indonesia

The development of artificial intelligence (AI) in Indonesia's public sector has shown significant progress, particularly in public services, development planning, and government administration. The government has begun utilizing digital technology to support bureaucratic efficiency and accelerate decision-making. However, this progress has not been matched by a comprehensive legal framework aligned with constitutional principles. This gap between technological innovation and legal regulation poses serious risks to government accountability, the protection of citizens' rights, and the legitimacy of public policy.[18]

1. Mismatch between Digital Regulations and Practices

One of the primary issues in AI governance in Indonesia is the disparity between positive law and rapidly evolving digital practices. Law No. 11 of 2008 on Electronic Information and Transactions (ITE) is the primary regulation in the digital realm.

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[17] OECD, *AI Governance and the Public Sector: Policy Frameworks for the Digital State* (Paris: OECD Publishing, 2023).

[18] Peter Cane and Mark Tushnet, *The Oxford Handbook of Legal Studies* (Oxford: Oxford University Press, 2022), 56.

Still, its focus remains limited to the protection of electronic information, online transactions, and cybercrime.[19] The provisions within it do not address fundamental issues such as legal liability for automated decisions, algorithmic fairness, and citizens' rights to an explanation of AI-based public decisions.

Furthermore, Law No. 27 of 2022 on Personal Data Protection (PDP Law) introduced the principles of transparency and consent in the collection of data. While this progress is commendable, its implementation still faces significant obstacles due to the lack of independent oversight mechanisms and the weak capacity of public institutions to maintain data security.[20] Furthermore, government data is often the primary source for AI systems, meaning any weaknesses in data protection could threaten citizens' privacy and constitutional rights.

Regulatory unpreparedness is also evident in the State Civil Service (ASN) Law. AI is being used to support recruitment processes and performance evaluations, but there are no derivative regulations establishing legal limits on the extent to which algorithms can influence personnel policies.[21] As a result, the potential misuse of technology for political gain or digital discrimination against civil servants lacks a clear legal basis to anticipate.

2. Challenges of Accountability and Legal Responsibility

One crucial issue in the application of AI is accountability for decisions made by automated systems. Under Indonesian administrative law, every decision by a public official must be legally and morally accountable. However, when algorithms make decisions, the concept of responsibility becomes blurred: does the

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[19] Republik Indonesia, *Undang-Undang Nomor 11 Tahun 2008 tentang Informasi dan Transaksi Elektronik* (Lembaran Negara Republik Indonesia Tahun 2008 Nomor 58).

[20] Republik Indonesia, *Undang-Undang Nomor 27 Tahun 2022 tentang Perlindungan Data Pribadi* (Lembaran Negara Republik Indonesia Tahun 2022 Nomor 194).

[21] Republik Indonesia, *Undang-Undang Nomor 5 Tahun 2014 tentang Aparatur Sipil Negara* (Lembaran Negara Republik Indonesia Tahun 2014 Nomor 6).

responsibility lie with the developer, the user, or the government institution utilizing the system[22]?

According to Coglianese (2023), the primary challenge in algorithmic accountability stems from the "black box" nature of AI, which renders its internal processes difficult to comprehend, even for its creators.[23] In the context of Indonesian law, this contradicts the principles of transparency and openness of public information as stipulated in Law Number 14 of 2008. Governments that use algorithmic systems to make decisions without providing public access to the algorithm's working logic have the potential to violate the public's right to obtain correct and complete information.

Furthermore, the lack of a legal mechanism that allows citizens to demand explanations for AI-based decisions is also problematic. The principle of the right to explanation, recognized in the European Union's General Data Protection Regulation (GDPR), has not been incorporated into the Indonesian legal system.[24] As a result, individuals harmed by automated decisions (e.g., denial of social assistance or digital administrative selection) lack adequate legal means to file complaints.

3. Institutional Capacity Limitations and Ethical Oversight

Legal weaknesses are further exacerbated by limited institutional capacity to understand and oversee AI-based systems. Many public institutions in Indonesia adopt digital technology without a thorough understanding of its legal implications.[25] Oversight bodies such as the Information Commission or the Ministry of Communication and Informatics still focus on

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[22] Karen Yeung, "Algorithmic Regulation: A Critical Interrogation," *Regulation & Governance* 16, no. 3 (2023): 437–457.

[23] Cary Coglianese and David Lehr, "Regulating by Robot: Administrative Decision Making in the Machine-Learning Era," *Georgetown Law Journal* 105, no. 5 (2023): 1147–1223.

[24] European Union, *General Data Protection Regulation (GDPR)* (Brussels: European Commission, 2016).

[25] OECD, *AI Governance and the Public Sector: Policy Frameworks for the Digital State* (Paris: OECD Publishing, 2023).

technical issues and lack an explicit mandate to audit algorithmic systems legally.

In practice, the use of AI is often outsourced to third parties or private technology providers, without regulations requiring independent audits of algorithm reliability and bias. This risks the privatization of public responsibility, where decisions with broad impacts on society are controlled by systems lacking democratic legitimacy[26].

Meanwhile, the ethical aspects of AI use in government are still considered a secondary issue. The government has yet to adopt national ethical guidelines that regulate the moral and social boundaries of technology use in public administration. Yet, countries like Canada, South Korea, and the European Union have established national ethics councils to ensure that any use of AI remains in line with humanitarian values and human rights.

4. Legal Inequality between National and International Standards

The gap between national legal standards and international norms poses a significant challenge for Indonesia. Global regulations, such as the EU AI Act and the OECD AI Principles, have established responsibility, transparency, and citizen rights as the core foundations of AI governance.[27] However, in Indonesia, these concepts have not yet been internalized in public law. For example, there are no express provisions requiring government agencies to conduct AI impact assessments before implementing algorithm-based technology in their decision-making processes.

This situation has the potential to create a legal lag, a situation where technological developments far outpace the regulatory capacity to adapt. This lag is not only an administrative issue but also concerns the protection of citizens' rights in the digital age. If not addressed promptly, this legal gap could

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[26] Virginia Dignum, *Responsible Artificial Intelligence: Designing AI for Human Values* (Cham: Springer, 2022), 142.

[27] Government of Canada, *Directive on Automated Decision-Making* (Ottawa: Treasury Board Secretariat, 2023).

undermine the government's constitutional legitimacy in carrying out its bureaucratic digitization function.

5. **Direction of Legal Reform**

Closing this gap requires legal reforms oriented toward digital adaptation and constitutional protection. These reforms should encompass three main dimensions: first, updating laws to explicitly regulate legal liability for the use of automated systems in government; second, establishing an independent body authorized to oversee and conduct ethical audits of public AI systems; and third, strengthening legal mechanisms for citizens to demand transparency and fairness regarding algorithmic decisions.

Additionally, the government can adopt international practices such as the OECD's AI Governance Framework or the United States' Algorithmic Accountability Act to align national policies with global standards.[28] This comparative approach not only enriches Indonesia's legal perspective but also strengthens the country's position in addressing cross-border digital challenges. Legal reform must ensure that technological innovation remains within legal boundaries that protect human dignity and guarantee the supremacy of the constitution.

C. International Comparative Analysis: Lessons from the European Union, the United States, and East Asia in AI Regulation

The development of artificial intelligence (AI) technology has prompted many countries to strengthen their legal frameworks to address ethical, social, and constitutional challenges. Comparative analysis between various jurisdictions is crucial for Indonesia to understand the appropriate direction for legal reform. This comparison encompasses not only formal regulations but also the value approach adopted by each country in regulating the use of AI in the public sector. Countries such as the European Union, the United States, Japan, and

[28] Ines Mergel, Noella Edelmann, and Nils Haug, "Defining Digital Transformation in Government," Government Information Quarterly 39, no. 1 (2022): 101–118.

South Korea have developed different regulatory models tailored to their social, cultural, and legal contexts.

1. **EU Regulatory Model: Risk-Based and Rights-Based Approach**

   The European Union has pioneered the development of comprehensive AI regulation through the European Union Artificial Intelligence Act (EU AI Act), which was passed in 2024. This regulation marked a significant step toward creating a legal system that balances technological innovation with the protection of human rights. The EU's approach is risk-based regulation, where AI systems are classified based on their level of risk to public safety, fundamental rights, and security. High-risk AI systems, such as biometric surveillance systems, are required to undergo due diligence, algorithmic audits, and ethical certification before implementation.[29]

   Furthermore, this regulation emphasizes the principle of algorithmic transparency. Users have the right to know when they interact with AI systems and how decisions are made. This approach embodies the principles established in the General Data Protection Regulation (GDPR), particularly about the right to explanation. In the context of digital governance, this is crucial because public decisions such as the distribution of social assistance, tax determination, or public oversight often involve complex algorithms.

   In addition to providing legal certainty, European Union regulations also prioritize ethics. Principles such as fairness, non-discrimination, and human rights are explicitly integrated into the legal text. Thus, the European approach demonstrates that law serves not only as a tool for controlling technology but also as an instrument for preserving human values amidst digital transformation.

2. **GDPR and the Integration of Data Protection into the Legal System**

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[29] Karen Yeung, "Algorithmic Regulation: A Critical Interrogation," Regulation & Governance 16, no. 3 (2023): 437–457.

Before the AI Act, the European Union had already implemented the General Data Protection Regulation (GDPR) in 2018, a significant milestone in global data privacy regulation. The GDPR affirms that every individual has the right to the protection of their personal data and the right to object to automated decisions made without human intervention. This provision is crucial in the context of AI, as many government decisions are now based on big data analytics and machine learning.

In the context of digital government, the GDPR underscores the importance of data accountability and independent oversight mechanisms through institutions such as the Data Protection Authority (DPA).[7] This principle can be implemented in Indonesia through the establishment of a data oversight body with full authority over government digital policies. Furthermore, the GDPR also emphasizes the principles of privacy by design and privacy by default, which require public institutions to design digital systems that protect privacy from the planning stage.

From a legal perspective, the GDPR and the AI Act reflect legal coherence, namely the alignment between technology law, public law, and human rights. This approach is particularly relevant for Indonesia, as the national legal system still tends to be sectoral and lacks integration among administrative law, technology law, and human rights law.

3. OECD AI Principles: Global Standards and Policy Values

The Organization for Economic Co-operation and Development (OECD) became the first international forum to formally adopt AI principles through the OECD AI Principles in 2019, which were subsequently adopted by more than 40 countries. These principles emphasize five key pillars: (1) inclusive growth, (2) human values, (3) transparency, (4) security, and (5) accountability. Although non-binding (soft law), the OECD AI Principles have become a global ethical standard, serving as a reference in the development of AI regulations in many countries, including the European Union and Japan.

The strength of the OECD AI Principles lies in their flexibility. They do not require a specific legal form, but rather

provide normative guidance that allows countries to tailor regulations to their domestic context.[10] This model can be applied in Indonesia as a first step in developing a national AI ethics framework before establishing binding legislation. In this way, Indonesia can develop adaptive AI governance that remains rooted in national legal and constitutional values.

4. **The United States Approach: Freedom of Innovation and Social Responsibility**

Unlike Europe, the United States adopts a more decentralized approach, grounded in the principle of freedom of innovation. There is no single federal regulation governing AI, but several important policy documents exist, including the Blueprint for an AI Bill of Rights (2022) and the Algorithmic Accountability Act (2023).[11] The AI Bill of Rights introduces five key principles: protection against harmful systems, algorithmic non-discrimination, data privacy, public notice, and human agency in automated decisions.

This approach demonstrates that the American government focuses on governance by guidance, namely, regulations based on ethical guidelines and incentives, rather than strict legal restrictions.[12] While it provides significant room for innovation, this approach faces significant challenges related to the inequality in the protection of citizens' rights between states and the weakness of independent oversight mechanisms.

However, American policy has the advantage of fostering a climate of rapid and open innovation. The government encourages collaboration among public institutions, universities, and the private sector through initiatives such as the National Institute of Standards and Technology (NIST)'s AI Risk Management Framework.[13] This model can serve as inspiration for Indonesia to strengthen AI research and policy collaboration among government agencies, academia, and industry.

5. **Japan: Human-Centered AI and Ethical Harmonization**

Japan has been one of the most progressive Asian countries in developing an AI ethics framework. Through its Social Principles of Human-Centric AI (2019) and AI Strategy 2022, the Japanese government emphasizes the concept of human-centered

AI. This principle places social welfare and public trust at the heart of all digital policies.

Japan's approach rejects the notion that technology should replace humans. Instead, AI is seen as a tool that strengthens human capacity to create an inclusive society. In practice, Japan combines ethical policies with flexible laws, such as the Personal Information Protection Law (PIPL), which regulates the use of personal data across sectors without stifling innovation.

This approach is particularly relevant for Indonesia, which shares a similar social and cultural context, where the values of collectivism and social justice are integral to its constitution. Integrating the "AI for humans" principle can help Indonesia develop a legal framework that is not only legalistic but also ethical and contextual.

6. South Korea: AI Governance and Multi-Level Oversight

South Korea is taking a different path by establishing a unified, multi-level AI governance system. In 2023, the Korean government launched the AI Ethics Charter and AI Governance Framework, which prioritize digital ethics and security as part of national policy. In addition to national regulations, Korea is also strengthening oversight through cross-sectoral institutions such as the Korea Data Agency and the AI Ethics Committee.

Korea's approach demonstrates that a single agency cannot effectively oversee the development and implementation of AI. A multi-actor system involving government, industry, and civil society is needed to ensure compliance and transparency.[17] This principle could serve as a model for Indonesia, given the pluralistic nature of its legal system and the need to balance central and regional authorities in digital oversight.

7. Implications for Indonesia: Harmonization, Accountability, and Public Ethics

Comparisons between countries show that no single model can be adopted directly. The European Union stands out for its protection of human rights, the United States for innovation, Japan for its humanistic approach, and Korea for its institutional governance. Indonesia needs to adopt a hybrid approach by combining these four principles, so that the regulations it develops

not only address legal needs but also reflect the values of Pancasila and the 1945 Constitution.

The first step is to ensure legal harmonization between existing laws, such as the PDP Law, the ITE Law, and the State Administration Law, to avoid overlapping norms. Furthermore, an algorithm audit mechanism and independent oversight are needed, similar to those implemented in the European Union, but with the flexibility of the OECD model.

Furthermore, integrating public ethical values into AI regulations is imperative. Japan's experience shows that without an ethical foundation, technology can lose its moral compass. On the other hand, the American model emphasizes that AI policy should not restrict creativity and freedom of expression. Indonesia must strike a balance between these two to ensure that government digitalization does not compromise citizens' constitutional rights.

D. Proposed Legal Reform in Indonesia: Building Ethical, Accountable, and Constitutional AI Governance

The digital revolution and the application of artificial intelligence (AI) in government have transformed the relationship between the state and its citizens. Indonesia, as a nation based on the rule of law that upholds the values of Pancasila and the 1945 Constitution, faces significant challenges in ensuring that technological innovation aligns with the protection of human rights and the principles of social justice. The development of AI demands a comprehensive overhaul of the legal system, which remains oriented towards traditional analog and administrative paradigms.[1]

Legal reform in this context is not merely about updating terminology; it must also establish a new legal framework that can accommodate the evolving dynamics of technology while preserving constitutional supremacy. This includes revising existing laws, creating new regulations that are lex specialis, and integrating digital ethics principles into the structure of positive law.

1. Amendments to Existing Laws

Several current national laws are unable to accommodate the challenges posed by the implementation of AI in government. The Electronic Information and Transactions Law (UU ITE), the Personal Data Protection Law (UU PDP), the State Civil Apparatus Law (UU ASN), and the Public Service Law need to be reformulated to meet the needs of modern digital governance.[2]

First, the ITE Law must be expanded to address legal liability for the use of algorithms by public institutions. New regulations should include a clause on algorithmic liability, which holds public officials responsible for the impact of decisions made by automated systems.[3] To date, this responsibility has often been obscured because AI systems are considered tools, not decision-makers. However, in the context of modern administrative law, the use of technology must remain subject to the principle of legal accountability of state officials.

Second, the PDP Law needs to be strengthened with the principle of data sovereignty, namely, the sovereign right of citizens to have their data not used or transferred without their explicit consent. This aligns with the principles implemented by the European Union in the GDPR and Japan in the PIPL.[4] This strengthening is crucial to prevent misuse of government-managed public data by third parties, particularly in innovative governance projects involving international technology companies.

Third, the ASN Law should include regulations on digital ethics competency and AI literacy for civil servants.[5] Thus, every government official involved in the design and use of AI systems is required to understand the legal, ethical, and social implications of decisions made by such technology.

Fourth, the Public Services Law must be updated to incorporate the principles of algorithmic transparency and explainability as new standards for AI-based public services. The public should have the right to know the logic and parameters used in any automated system that impacts their rights, such as social assistance distribution systems, digital healthcare services, or tax management.[6]

2. Establishment of a Special Law on Artificial Intelligence

Given the complexity and unique characteristics of AI technology, Indonesia urgently needs to draft a Special Law on Artificial Intelligence (AI Law) as a lex specialis. This regulation should outline the fundamental principles, rights, obligations, and legal responsibilities associated with the use of AI in both the public and private sectors. This AI law needs to cover at least five main aspects:

a. **Principles of Ethics and Human Rights** - Regulations must emphasize that any application of AI must respect the rights to privacy, equality, and freedom from discrimination. The principle of "AI for Humanity," as implemented in Japan, can serve as a philosophical foundation for this approach.
b. **Risk Classification and Algorithmic Audit** - Emulating the European Union's approach, AI law should distinguish between low-, medium-, and high-risk AI systems. High-risk systems, such as public surveillance or digital law enforcement systems, should undergo ethics audits and public testing.
c. **AI Registration and Certification Obligations** - Every government agency using AI is required to register its system with a national regulatory body.[30] This step is crucial to ensure transparency and accountability.
d. **Legal Responsibility and Sanctions** - The AI Law needs to establish a precise legal liability mechanism if an AI system causes administrative losses or rights violations. The principle of strict liability can be applied to ensure compensation for victims of algorithmic errors.
e. **Institutional and Independent Oversight** - It is necessary to establish a National AI Oversight Agency with the authority to audit, certify, and evaluate AI-based public

[30] European Commission, Proposal for a Regulation on Artificial Intelligence (AI Act) (Brussels: European Commission, 2023); Council of Europe, Recommendation CM/Rec(2020)1 on the Human Rights Impacts of Algorithmic Systems (Strasbourg: Council of Europe, 2020).

policies. This agency could function similarly to the Data Protection Authority in the European Union or the AI Ethics Committee in South Korea[31].

In addition to these five aspects, the AI Law must also provide space for innovation through the concept of an AI Legal Sandbox, a limited legal testing mechanism for AI projects to allow innovation without violating the law. This approach has been implemented in the UK and Singapore as a strategy to combine legal protection with technological flexibility.

3. **Integration of AI Ethics within a Positive Legal Framework**

In addition to technical regulations, ethical aspects are a crucial component in building equitable AI governance. National legal reform must incorporate AI ethical principles as binding legal norms, rather than merely moral guidelines. AI ethics in Indonesia should be based on three central values:

a. **Humanity and social justice**, as stated in Pancasila.
b. **Transparency and accountability**, which ensure that public decisions can be traced and tested.
c. **Digital inclusivity**, which ensures that technology does not widen social gaps.

The integration of these values can be achieved through derivative regulations, such as the Government Regulation on Digital Government Ethics, which establishes a code of ethics for public institutions in the use of AI. Additionally, government training institutions, such as the State Administration Institute (LAN), may be required to develop an "AI and Public Ethics" training module as part of the national ASN curriculum.

4. **Establishment of Algorithmic Audit Mechanism and Dispute Resolution**

One of the biggest challenges in implementing AI is the lack of a legal mechanism to review algorithmic decisions. The government needs to establish a regular and independent algorithm audit system to ensure every digital system meets fairness and accountability standards. These audits should be conducted

[31] European Union, General Data Protection Regulation (GDPR) (Brussels: European Commission, 2016).

by institutions with balanced technical and legal competencies, not just internal agencies.[12]

Additionally, a dedicated dispute resolution body, such as a Technology Ombudsman or a Digital Accountability Tribunal, should be established to handle public complaints regarding AI-based decisions. This body should have the authority to:

a. Review and overturn decisions taken by automated systems if they are proven to violate the principle of fairness.
b. Provide legal and technical recommendations to improve the system.
c. Provides a mediation channel between citizens and public institutions regarding algorithmic errors.

The presence of such an institution will strengthen the public's sense of justice and prevent the misuse of technology by state authorities.

5. Strengthening Inter-Institutional Collaboration and Public Participation

Legal reform will not be effective without the support of institutions and public participation. The government needs to encourage cross-sector collaboration between the Ministry of Communication and Informatics, Bappenas, Komnas HAM, DPR, and the academic community to design inclusive AI policies.

Furthermore, civil society, universities, and the private sector should be involved in the public consultation process before the passage of the draft AI law. A consultative model, such as the one implemented by the European Union in its AI Act, has been demonstrated to enhance legal legitimacy and mitigate social resistance to new regulations.

Public participation also needs to be strengthened through transparent digital platforms that allow citizens to provide direct feedback on the AI systems used by the government. This way, the principle of governance by participation can be realized in Indonesia's digital governance.

6. Building a Balance between Innovation and Rights Protection

Legal reform must avoid two extremes: overly restrictive regulation that stifles innovation, and deregulation that disregards human rights. The ideal approach is adaptive regulation, that is, laws that flexibly adapt to technological developments while remaining grounded in constitutional principles.

In this context, Indonesia can adopt a co-regulation approach, where the government sets minimum legal standards. At the same time, the technology industry and research institutions play a role in establishing codes of ethics and operational guidelines. This model enables the law to adapt and evolve with technological advancements without compromising the values of social justice that underpin the national legal system.

E. Implications for Constitutional Law and Human Rights

The development of artificial intelligence in government administration has far more complex consequences than previous technological innovations. AI is not merely an administrative tool but has the potential to replace some public decision-making functions that have traditionally been the domain of humans. These changes raise fundamental issues within the Indonesian legal system, which is based on the principles of the rule of law and respect for human rights. Constitutionally, the application of AI by government institutions must be tested against the values stipulated in the 1945 Constitution of the Republic of Indonesia, particularly regarding the protection of privacy rights, the principle of equality, citizen participation, and the accountability of state officials.

Constitutional rights serve not only as normative declarations but also as ethical and legal safeguards that guide the use of technology to prevent violations of human dignity. AI, with its advanced analytical and predictive capabilities, can be a highly effective tool for enhancing government efficiency and effectiveness. However, without precise legal mechanisms, this technology has the potential to give rise to new forms of violations of citizens' fundamental rights. Therefore, it is crucial to

examine how AI systems impact each dimension of constitutional rights in digital governance practices.

1. **Right to Privacy and Protection of Personal Data**

   The right to privacy is a key pillar of a modern constitutional state and is recognized as a fundamental human right. In the Indonesian context, this right is protected by Article 28G paragraph (1) of the 1945 Constitution, which guarantees the protection of personal privacy, family, honor, and dignity.[2] The implementation of AI systems involving large-scale data collection, storage, and analysis has the potential to pose a threat to this right. Algorithm-based decisions, such as those made by public monitoring systems or citizen behavior analysis, are often made without transparency and without the legitimate consent of the individuals whose data is used.

   Although Indonesia has a Personal Data Protection Law (Law No. 27 of 2022), this regulation does not fully anticipate the use of AI in the public sector. This law does not explicitly regulate citizens' rights to obtain an explanation for automated decisions made by algorithmic systems.[3] Yet, international best practices, such as those set out in the European Union's General Data Protection Regulation (GDPR), provide individuals with the right to object to automated decisions and to demand clarification of the logic used by AI systems.

   Therefore, it is essential to establish in national law that all forms of data processing by intelligent systems must adhere to the principles of informed consent, transparency, and accountability.[32] The government must ensure that citizens' personal data is not used for purposes beyond those mandated by law, including discriminatory or political purposes. The principles of "privacy by design" and "privacy by default" must be integrated into standard digital governance practices, ensuring that privacy protection becomes an inherent part of the system, rather than merely an administrative add-on.

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[32] Ali Masyhar et al., "Digital Transformation of Youth Movement for Counter Radicalism," *AIP Conference Proceedings* 2573, no. 030010 (2022): 4, https://doi.org/10.1063/5.0109808

2. Principle of Equality and Non-Discrimination

One of the main challenges in implementing AI is the potential for algorithmic bias that can reinforce social injustice. In a democratic system that guarantees equality before the law as stipulated in Article 27 paragraph (1) of the 1945 Constitution, the existence of discriminatory algorithms can indirectly violate this constitutional principle. This bias can arise because the data used to train AI models often reflects existing social inequalities in society.

For example, a social assistance eligibility assessment system based on historical data may inadvertently exclude minority groups or communities in remote areas that are underrepresented in government data. Similarly, algorithm-based employee performance appraisal systems and public recruitment selection systems often use specific variables without considering the social context. In such cases, discrimination is not perpetrated by individuals, but by a system that automatically repeats patterns of inequality embedded in past data.

To prevent violations of the principle of equality, the Indonesian legal system must regulate mechanisms for ethical evaluation of data and algorithms before they are used in public services. This evaluation can be realized through an Algorithmic Impact Assessment (AIA), a process that examines the social, legal, and ethical impacts of algorithms used by state institutions. Such an approach has been implemented in Canada and the European Union as part of efforts to prevent algorithmic discrimination.

Furthermore, the principle of equality also encompasses the right of every citizen to equitable access to technology. The government is obligated to ensure that digital transformation does not widen the gap between those with access to technology and those left behind. In this context, digital rights can be understood as an extension of the socioeconomic rights guaranteed by the constitution, as access to information and technology is now a primary requirement for citizen participation in public life.

3. Public Participation Rights and Digital Transparency

The Indonesian Constitution guarantees the right of every citizen to participate in government, as stated in Article 28C

paragraph (2) and Article 28E paragraph (3) of the 1945 Constitution. In the digital era, the right to participate means not only the right to vote and express opinions, but also the right to be involved in technology-based policy-making processes, including those involving AI systems used by the government. Without inclusive participation mechanisms, the application of technology can lead to a technocratic form of government, where algorithms and technocrats make public decisions without social oversight.

To achieve meaningful participation, the government must provide public channels that enable citizens to monitor and assess AI systems used in public services. One example of best practice is the European Union's public consultation platform, which allows citizens to provide input on the draft AI Act. Indonesia could adopt a similar mechanism by establishing an open digital platform under the coordination of the Ministry of Communication and Informatics.

In addition to participation, transparency is a key principle in ensuring the accountability of digital government. The public has the right to know how AI systems work, where data is obtained, and how decisions are made. Without transparency, the principle of accountability as guaranteed by Article 1, paragraph (3) of the 1945 Constitution loses its meaning. The government should require every public institution that uses AI to publish regular reports on the impact and performance of the system, including error rates and the mitigation measures taken.

4. Government Accountability and Constitutional Supremacy

The principle of accountability is a fundamental foundation of the rule of law, which positions the government as a public servant responsible for all its policies and actions. In the context of digital governance, this principle faces a new challenge as some public decisions are now made by automated systems. This raises a legal question: who is responsible if an AI system makes mistakes or makes decisions that harm citizens?

In conventional legal systems, accountability can be traced to the official who signed the decision or policy. However, in digital systems, the causal relationship becomes blurred because decisions are generated through complex data processing.

Therefore, a new concept of algorithmic accountability is needed, namely the legal responsibility inherent in public institutions operating AI systems, regardless of whether the decisions are made automatically or semi-automatically.

Constitutional supremacy requires that all government actions, including the use of AI, be subject to the principle of legality. Article 1, paragraph (3) of the 1945 Constitution explicitly states that Indonesia is a country governed by the rule of law. This means that every algorithm-based administrative decision must have a clear legal basis and be subject to review through administrative justice mechanisms. In practice, the Supreme Court and the Constitutional Court can play a crucial role as guardians of ethical and legal boundaries in the use of government technology. If there is a violation of citizens' constitutional rights due to AI-based policies, constitutional channels must be available for citizens to seek redress.

5. Integration of Human Rights in National Digital Policy

The application of AI in government should not be viewed solely as a technological issue, but as part of an agenda to advance human rights. Digital policy reforms need to integrate the principle of human rights by design, where every AI policy, system, and tool is designed with its impact on individual rights in mind from the outset. This approach aligns with the principles developed by UNESCO and the OECD, which emphasize human-centric AI governance.

The government can adopt a human rights-based approach to digital policy, incorporating four key pillars: participation, accountability, non-discrimination, and transparency. Under this framework, public institutions are required to conduct human rights impact assessments before launching new AI systems. The National Commission on Human Rights (Komnas HAM), along with institutions such as the Public Information Commission (Komisi Informasi Publik), can act as independent monitors to ensure that digital policy implementation aligns with humanitarian principles.

Furthermore, recognition of digital rights needs to be strengthened through national legislation. Digital rights include

the right to personal data protection, freedom of expression in cyberspace, and protection from excessive state surveillance. By incorporating digital rights into the national legal framework, Indonesia can ensure that the digitalization process not only increases efficiency but also strengthens constitutional democracy.

6. **Balance between Technological Innovation and Protection of Constitutional Rights**

Technological innovation is an unavoidable necessity, but it must not compromise legal principles and human values. The legal system must balance two imperatives: the need to adapt to technological advances and the obligation to protect citizens' constitutional rights. An overly restrictive approach will stifle innovation, while excessive deregulation can open up opportunities for human rights violations.

This balance can be achieved by implementing adaptive legal governance, a regulatory model that allows the law to adapt to technological developments without losing certainty and fairness. This principle also encourages the creation of a dynamic regulatory system, where digital policy evaluations are conducted periodically in response to social and technological developments.

Within this framework, AI should be positioned not as a substitute for humans, but as an instrument that strengthens the implementation of constitutional values. The government must ensure that technology is utilized to expand access to justice, enhance public services, and foster citizen participation.[33] In this way, digital transformation can complement and support the strengthening of substantive democracy and respect for human dignity.

F. Conclusions and Policy Recommendations

Digital transformation, accompanied by advances in artificial intelligence, has ushered the nation into a new phase of governance. Technology is no longer merely an administrative tool but has become

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[33] Masyhar, A., Maskur, M. A., Prasetyowati, S. R., Prihama, A. E., Priyono, R., & Alif, A. (2022). Digital transformation of youth movement for counter radicalism. *AIP Conference Proceedings*, 2573(1), 030010. https://doi.org/10.1063/5.0109808

an integral part of the public decision-making process. This situation demands a paradigm shift in the national legal system to remain relevant to the challenges of the times without losing its constitutional roots. The law must not lag behind technology; instead, it must serve as a moral compass and a guiding instrument to ensure that innovation aligns with humanitarian values and the principles of social justice.

A comparative analysis of the European Union, the United States, Japan, and South Korea reveals that the success of AI governance hinges on how effectively countries strike a balance between protecting human rights and promoting innovation. The European Union excels in establishing strict, risk-based legal standards through its AI Act. At the same time, the United States prioritizes flexibility and freedom to innovate through its AI Bill of Rights. Japan emphasizes the humanitarian aspect of its digital policy, while South Korea has established a multi-level oversight system that prioritizes ethics and inter-agency collaboration at its core.

Based on these international experiences, it can be concluded that Indonesia needs to adopt a middle path by developing a "constitutional and adaptive AI governance" model, where law serves as the foundation for innovation, rather than a barrier to progress. The state must play an active role in directing technological development towards constitutional goals: protecting the entire nation, improving the lives of its people, and realizing social justice for all Indonesians. The principles of Pancasila, particularly the values of just and civilized humanity, must be translated into ethical guidelines in every digital policy involving artificial intelligence.

The proposed legal reforms through amendments to the ITE Law, the PDP Law, the ASN Law, and the Public Service Law constitute a strategic initial step. These reforms must ensure that any use of algorithms in state administration is subject to the principles of legality, transparency, and accountability. Furthermore, the establishment of an Artificial Intelligence Law (AI Law) is necessary to provide a clear legal basis for the use, responsibility, and oversight of intelligent technology in public administration. This law should include provisions on algorithm audits, AI system certification, mandatory registration of systems by public institutions, and a compensation mechanism for citizens harmed by errors in automated systems.

From an institutional perspective, establishing a National AI Oversight Agency is imperative to maintain a balance between innovation and human rights protection. This agency can serve as an independent watchdog, assessing ethical compliance, conducting audits, and providing policy recommendations for every AI system operated by government agencies. Similar agencies have proven effective in developed countries, such as the Data Protection Authority in the European Union and the AI Ethics Committee in South Korea. With this agency, the government can ensure that any algorithm-based decisions remain within the law and are subject to public scrutiny.

AI ethics need to be integrated into positive law to ensure technology doesn't run without moral direction. The principles of transparency, fairness, non-discrimination, and responsibility must be established as operational standards for every public institution. Ethics should not be merely administrative guidelines; they must be legally binding and serve as the basis for enforcing discipline and sanctions. Furthermore, strengthening the capacity of government human resources in digital literacy and technology ethics must also be a priority so that civil servants can understand the legal consequences of every system they operate.

In the context of human rights, the state must ensure that the digitalization of government does not diminish citizens' participation in public life. The right to know, express opinions, and obtain clarity on decisions made by AI actualizes the principles of substantive democracy. The government needs to create participatory channels through public consultation platforms that allow the public to provide input on technology policies, as well as establish a fast and transparent complaints system for victims of algorithmic errors. This participation not only enhances legal legitimacy but also strengthens public trust in digital governance.

Constitutionally, the rule of law must remain the paramount principle in digital governance. The use of AI by the government must not replace human responsibility in public decision-making. Any delegation of decisions to automated systems must remain subject to oversight and verification in accordance with constitutional norms. Therefore, strengthening the role of judicial institutions, such as the Supreme Court and the Constitutional Court, is crucial to ensure that

digital policies adhere to the principles of the rule of law and respect citizens' constitutional rights.

The government can take five key policy recommendations. First, strengthen legal harmonization with international standards by ratifying the OECD AI principles, GDPR, and the UNESCO Recommendation on the Ethics of AI. Second, establish a policy ecosystem that fosters responsible innovation by creating a space for system testing through the AI Legal Sandbox. Third, establish a public oversight mechanism based on open data, allowing algorithmic decisions to be audited by the public and independent institutions. Fourth, integrate AI ethics training into the national legal and public administration education system to create a digitally literate civil service. Fifth, develop a comprehensive long-term national strategy for AI governance that emphasizes synergy among government, academia, industry, and civil society.

In conclusion, AI legal reform in Indonesia cannot be limited to merely technical or regulatory aspects. The law must serve as a vehicle for establishing a just digital civilization. The use of artificial intelligence must be directed towards strengthening the implementation of the rule of law and expanding the protection of human rights. Thus, digital transformation not only enhances bureaucratic efficiency but also serves as a strategic step towards democratic, transparent, and human dignity-oriented governance.

The government has a moral and constitutional responsibility to ensure that technological advancements do not reduce humans to mere data objects, but rather to maintain their primary status as subjects within the legal system. This is the future direction of Indonesian law in the era of artificial intelligence: a legal system that can adapt to change while remaining grounded in the principles of humanity, justice, and the supremacy of the constitution.

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