Legal Implications of Using Artificial Intelligence (AI) Technology in Electronic Transactions

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ABSTRACT: The advancement of technology, including the use of Artificial Intelligence (AI) in everyday life, has brought about significant changes and substantial impacts, especially in electronic transactions and law. While the use of AI promises various benefits, it also raises several important legal issues, such as legal responsibility, data privacy, and contract validity. The purpose of this research is to understand the legal framework of AI in the Indonesian legal system and the legal implications of AI utilization, particularly in the context of electronic transactions. This research is of a normative juridical type, employing a conceptual approach and a statute approach. The results of the research indicate that AI is not specifically regulated in its own law but is discussed within the Electronic Information and Transactions Law (ITE Law) and several regulations under it. The legal implications of AI usage can be viewed from two main perspectives. First, AI is regarded as an electronic agent, where all legal responsibilities for AI actions are placed on the electronic system providers. Second, AI is seen as a legal subject, where it is treated as a legal entity or *rechtpersoon*.

KEYWORDS: Artificial Intelligence; Electronic Transactions; Technology.

I. INTRODUCTION

Entering the first quarter of the 21st century, technology has developed rapidly. Recently, we have witnessed the emergence of the Fourth Industrial Revolution (Industry 4.0), and now we are already hearing about the developments of the Fifth Industrial Revolution (Industry 5.0). Historically, the term Industry 4.0 first appeared in 2011 when the German government introduced a strategy for utilizing technology known as Industrie 4.0 (Hofman, 2017). Behind the advancements of Industry 4.0 lies the development of technologies that serve as catalysts for this era, notably artificial intelligence (AI).

In a narrower context, the development of information technology has rendered the world borderless and has induced significant and rapid social changes (Ramli, 2004). The swift pace of technological advancement profoundly impacts human life, bringing both positive and negative effects (Yudoprakoso, 2019). Technology plays a crucial role in simplifying tasks and activities; if a task is challenging for humans, technology can ease its execution (Disemadi, 2021). At a certain point, the advancements and sophistication of tools have allowed technology to replace human roles in various capacities.

However, it is undeniable that the rapid development of technology brings numerous benefits and positive impacts, particularly in supporting complex human activities. Technologies such as blockchain, the Internet of Things (IoT), big data, and notably artificial intelligence (AI) have become integral in this regard (Amboro & Komarhana, 2021). AI, also known in Indonesia as *kecerdasan buatan*, is a technology or system created by humans that can mimic human activities and possess a framework of thinking similar to that of humans in performing various tasks (Fahrudin, 2018).

According to a report published by Deloitte, the use of AI has increased significantly by 79% in 2022, respondents said that they have fully used three or even more types of AI compared to 62% in 2021 which means more than half a percent of the use of this artificial intelligence technology is used by humans. Currently, there are many AIs that can help make human life easier and faster. It cannot be denied that artificial intelligence technology is very far adrift in terms of IQ with human IQ itself, where the average human IQ of 150 is considered a genius, while the IQ of human-made technology can reach up to 700 to 700,000 (Deloitte, 2022) Artificial intelligence (AI) is fundamentally a technological system programmed to solve problems by thinking and acting like a human (Amboro, 2021). The use of AI has become increasingly prevalent in our daily lives. AI applications and programs have become primary guides in determining our daily directions and actions (Pastukhova, 2017). Thus, AI plays an increasingly crucial role in facilitating and directing human life in the digital era.

AI has undergone three stages of evolution: Artificial Narrow Intelligence (ANI), which is considered weak AI; Artificial General Intelligence (AGI), known as strong AI with capabilities comparable to humans; and Artificial Super Intelligence (ASI),

which is designed to surpass human abilities (Ashshidqi, 2019). The influence of AI on human life extends beyond merely easing tasks; it deeply impacts lifestyle and habitual changes (Supriyadi & Asih, 2020).

Moreover, AI has permeated various human activities, including the legal field. Since 2017, China has used AI technology to serve as judges in digital cases, although its implementation is still limited and continues to evolve (Sihombing & Syaputra, 2020). Similarly, in the UK, AI is used in the legal field, especially in the context of civil law regarding product liability, where errors are attributed to the high intelligence embedded in the product (Kerekes, 2023).

The utilization of AI in the legal field is not limited to foreign countries but is also evident in Indonesia. The online legal platform called by "Hukum Online" produce LIA (Legal Intelligence Assistant), which employs AI technology, aims to assist users in obtaining legal information (Sihombing & Syaputra, 2020). One area of law in Indonesia that uses AI is the drafting of contracts through electronic contracts (Kurniawijaya, Yudityastri & Zuama, 2021). Additionally, in a broader context, the field of electronic transactions is closely related to the use of AI.

The use of artificial intelligence (AI) technology in electronic transactions has gone beyond merely being a data analysis tool. AI systems have become integral to various e-commerce platforms, providing tailored product recommendations, managing inventory automatically, and even overseeing payment and shipping processes efficiently. However, along with its potential benefits, the use of AI in electronic transactions also brings several issues that need to be seriously considered. One of the most important issues is the legal implications associated with the use of this technology. In the context of electronic transactions, questions about legal liability, data privacy, fairness, and ethics emerge as major challenges that need to be addressed.

To address these issues, it is essential to have a deep understanding of the legal implications of using artificial intelligence technology in the context of electronic transactions. Comprehensive scientific research will help identify the challenges faced and develop an adequate regulatory framework to ensure fairness, privacy, and security in AI-supported electronic transactions.

Therefore, this background highlights the importance of researching the legal implications of using artificial intelligence technology in electronic transactions. This research will not only provide a better understanding of the related issues but also lay the groundwork for developing appropriate regulations and best practices in the industry. Ultimately, it is hoped that this research will make a valuable contribution to the development of an innovative and sustainable electronic transaction ecosystem.

II. RESEARCH METHOD

This study employs normative juridical research (legal research), which involves the use of written regulations or other normative legal materials. This type of research is also known as library research because it focuses on collecting documents and library data (Soekanto, 2006). Normative juridical legal research examines legal doctrines that are socially constructed and the principles contained within literature and legal science (Ali, 2016). This study utilizes a statute approach and a conceptual approach.

In this research, the author uses legal materials derived from documents. The secondary data used consists of materials sourced from documents rather than from informants, in line with the nature of normative research (Suteki, 2020). The sources of legal materials employed include both primary and secondary legal materials. The primary legal material used in this study is Law Number 1 of 2024 in conjunction with Law Number 19 of 2016 concerning Amendments to Law Number 11 of 2008 on Information and Electronic Transactions (hereinafter referred to as the ITE Law). Meanwhile, secondary legal materials include draft laws, books, journals, and opinions of legal experts (Muhaimin, 2020). The collection of legal materials is conducted through a literature study. Data analysis adopts a qualitative descriptive-analytical method using a deductive logical approach.

III. RESULT AND DISCUSSION

Regulation of the Use of Artificial Intelligence (AI) in Indonesia

Indonesia, as a nation, continues to face increasingly complex challenges, one of which is the development of Artificial Intelligence (AI). Essentially, AI should not be prohibited but needs to be restricted to ensure access by the appropriate groups (Michael, 2023). Therefore, the prudent use of AI technology is crucial to avoid potential risks. Prudent use requires a deep understanding of how AI works and awareness of its impacts. Additionally, adequate regulations and legislation are necessary to ensure that AI is used properly and responsibly. By understanding the benefits and risks and implementing AI wisely, society can optimize the technology's advantages and mitigate potential hazards (Misnawati, 2023). The use of AI can be likened to driving a car; while it facilitates reaching destinations quickly, it can cause significant harm if driven without brakes.

The challenge of organizing AI is not only an individual issue but also a societal one. President Joko Widodo has expressed concerns about the threats posed by new technological advancements in various forums, including the opening of the Indonesia Science Expo (ISE). During the National Work Meeting of the Agency for the Assessment and Application of Technology (BPPT) in March 2021, it was conveyed that Indonesia is amidst a global AI race. Hence, Indonesia needs to enhance its vigilance and develop AI that can benefit both society and the world (FHUI, 2022). Addressing the development of AI requires mature and comprehensive national regulations, given the complexity of the challenges at hand.

Semuel A. Pangerapan who serves as Director General of Information Applications of the Ministry of Communication and Information Technology of the Republic of Indonesia at the workshop "Artificial Intelligence for Economic Growth and Social

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Good in The Digital Era" said "the application of Artificial Intelligence can be exemplified in several developed countries as a special basic consideration in the development of regulations and policies". With this statement, the Indonesian state needs policies and regulations that can adapt to current technological developments, namely Artificial Intelligence (Chairani, 2022).

As the government's response to the AI issue, the Agency for the Study and Application of Technology (BPPT) was formed which then published the National Strategy for Artificial Intelligence for Indonesia 2020-2045. In this document, the government provides an illustration that AI is basically closely related to developments in the fields of Health, Bureaucratic Reform, Education and Research, Food Security and Mobility and Smart Cities. At a deeper level, AI is also directly related to the issue of Electronic Transactions, the regulation of which is further regulated in a Law. However, in general the discussion structure in this document is still at the broad policy direction stage and does not regulate in detail. On the other hand, in fact, many companies have developed and implemented AI technology in their production processes in Indonesia. No half-hearted, the business sectors that apply AI are generally strategic sectors such as banking, e-commerce and health.

AI in the development of law in Indonesia is actually still not regulated in laws and regulations. Legal acts related to technology and information are currently regulated in Law Number 1 of 2024 junto Law Number 19 of 2016 concerning Amendments to Law Number 11 of 2008 concerning Information and Electronic Transactions (hereinafter referred to as the ITE Law). In this ITE Law, it is regulated at least regarding electronic agents, electronic systems, electronic transactions, domain names, intellectual property rights, and as protection of personal rights in the scope of information and electronic transactions. In this case, AI is defined as an electronic agent, which is defined as an electronic system device made to perform an action on electronic information created to perform an action on certain electronic information organized automatically by a person.

This means that the AI device provider assumes all legal obligations and legal responsibilities of the electronic agent. From a utility perspective, AI technology is regulated in Presidential Regulation no. 95 of 2018 concerning updating the government's work plan for 2021, as well as the Making Industry 4.0 document published by the Ministry of Industry. As a supporter of the application of artificial intelligence, his party refers to the rules regarding one Indonesian data in Government Regulation Number 39 of 2019. On the other hand, the use of artificial intelligence (AI) in Indonesia has spread in various fields. Although there are no specific records regarding the number of companies or institutions that use AI technology in Indonesia, from the document "Proceedings of the Indonesian Artificial Intelligence Use Case" published by the National Research and Innovation Agency (BRIN), it is known that there are 9 fields that apply AI, including research industry, defense and security, public services, health, smart cities and disasters, food security, and maritime affairs.

One of the crucial aspects in the use of AI is the protection of personal data, which is regulated in Law Number 27 of 2022. This regulation is closely related to the regulation of the use of AI in Indonesia, because AI is an electronic agent capable of processing personal data automatically. The use of AI in Indonesia must meet several conditions regulated in this law. These requirements are contained in Article 1 paragraph (7), which explains that AI is artificial intelligence technology that is able to imitate humans in processing personal data. In addition, Article 3 paragraph (2) outlines the principles of personal data protection which include the principles of accountability, transparency, proportionality, non-discrimination, fairness, security, openness, purpose, consent, accuracy, minimization, limitation, usefulness, storage limits, and wholeness.

In the context of consumer protection, there has not been a legal umbrella that specifically regulates AI-based crimes when referring to Law Number 8 of 1999. However, Government Regulation in Lieu of Law (Perppu) Number 2 of 2022 concerning Work Copyright provides regulations regarding personal data protection. This Perppu emphasizes that every individual has the right to protection of their personal data which is processed electronically by business actors, the government or local governments. Personal data protection includes the right to obtain compensation for losses resulting from violations of personal data processing and the right to file civil or criminal charges for violations of personal data processing.

The articles governing personal data protection in this Perppu focus on the principles of fair, ethical and responsible artificial intelligence. For example, Article 5 paragraph (1) letter e stipulates that the processing of personal data must take into account the principles of fair, ethical and responsible artificial intelligence. In addition, Article 6 paragraph (2) letter c states that certain personal data, including biometric data, is often used by AI. Article 20 paragraph (1) letter c regulates that the processing of personal data must be based on a valid legal basis, including the consent of the personal data subject, except for the purposes of law enforcement, national security, or other purposes determined by law. Article 21 paragraph (1) emphasizes that the personal data subject's consent must be given voluntarily, specifically, informedly and without coercion.

Apart from government regulations, non-governmental organizations and the private sector have also taken initiatives to regulate the use of AI in Indonesia. Several large technology companies have developed codes of conduct and guidelines of practice governing the use of AI in their products and services. Although it does not have generally binding legal force, this initiative can be an important guideline in maintaining fairness and ethics in AI-powered electronic transactions.

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Artificial Intelligence is a technology designed as a machine that is able to imitate human behavior, developed based on human thinking, and can carry out human thinking procedures (Ririh, 2020). AI technology that is made to imitate human activities, today

causes a lot of unrest in society, especially because AI has the ability to perform actions or legal deeds that are usually done by humans. Therefore, regulation regarding the status, existence and position of AI is an important thing in order to know the Legal Implications of all legal actions that AI does.

In the context of the study of AI in the legal system in Indonesia, there are two different big views. The first glance sees AI as an electronic agent in accordance with current legislation. The second view argues that AI should be considered as a legal subject on par with other legal subjects, so that AI can perform legal acts independently.

A. First Perspective: AI as an Electronic Agent

Referring to the perspective that views AI as an electronic agent in electronic transactions in Indonesia refers to Article 21 of Law Number 11 of 2008 concerning Electronic Information and Transactions (ITE Law). This article highlights the regulation regarding electronic agents during the execution of electronic transactions. In the context of the ITE Law, electronic agent operators are basically considered as electronic system operators. Thus, electronic agents can be viewed as a form of electronic system implementation. From this perspective, the rights and obligations that apply to the operator of the electronic system automatically also apply to the operator of the electronic agent.

The legal implication of this first perspective is that any legal consequences arising from actions carried out through electronic agents, including AI, are the responsibility of the organizers of electronic agents. However, this is with a note that the failure or operational error of the electronic system is not the result of user negligence. This perspective bases its construction on the assumption that the implementation of AI (Electronic Agent) in Indonesia can only be carried out by individuals, state entities, business entities, and the community. Thus, by law, the responsibility will be borne by the operator of the electronic system providing AI services.

Given this perspective, it is important for electronic system operators to ensure that the AI systems they provide operate properly and in accordance with established standards. In addition, they must also ensure that the use of AI does not violate applicable legal provisions and does not cause harm to other parties. It emphasizes the need for careful supervision and management of the use of AI in electronic transactions to prevent potential legal risks and protect the rights of consumers and other stakeholders.

Law Number 11 of 2008 concerning Electronic Information and Transactions (ITE Law) and Government Regulation Number 71 of 2019 (PP 71/2019) as derivatives have regulated the limits of obligations and responsibilities of Electronic Agent operators comprehensively. Among other things, Electronic Agent operators are required to provide features that allow users to make changes to information that is still in the transaction process. In addition, the responsibilities of electronic agents also include the obligation to keep data confidential, control users' personal data, guarantee user privacy, and convey information related to the system used so as not to harm users (Mahardika, 2021).

Based on the stretch of argumentation above, the position of AI as an electronic agent is actually not positioned as a legal subject but only as a legal object, which of course artificial intelligence (A.I) itself is a technology operated by humans in its implementation, associated with positive law, artificial intelligence (A.I) is operated by electronic system operators, this is in accordance with what is explained in Government Regulation Number 71 of 2019 concerning the Implementation of Electronic Systems and Transactions (PP 71/2019). The electronic system operator in this case is responsible as a legal subject for the implementation of the electronic system it organizes, except in force majeure.

In a commercial law perspective, AI can be viewed as an electronic agent with reference to the general concept of "Agent" or "Intermediary Trader". The legal implication is that AI acts as a recipient of power, so the main premise states that AI is one of the parties given the power to administer the device of an electronic system made to perform actions on a particular Electronic Information automatically (Article 1 of the ITE Law). In this case, the person who organizes the electronic agent acts as the power of attorney (agent) of the owner of the electronic information (principal) who indirectly gives permission for his electronic information to be processed by the agent.

Thus, from a commercial law perspective, the rights and obligations of an agent can be equated with those of a power of attorney holder. Article 1800 of the Indonesian Civil Code (KUHPerdata) asserts that the duty of an agent is to execute the mandate, while the principal bears responsibility unless there is negligence. However, it is important to note that in this context, negligence cannot be accommodated if referring to the first perspective governing the responsibility of electronic agents.

B. Second Perspective: AI as a Legal Subject

In contrast, the second perspective posits that AI can indeed be considered a legal subject. The theoretical foundation for this stems from two theories of legal subjectivity: the natural law theory and the positive law theory. The natural law theory is based on the principle that human rights and existing laws must be grounded in the very essence of humanity. This theory asserts that every individual has equal rights that cannot be revoked by other forces or interests. Within this framework, humans are considered the primary legal subjects, and the law must recognize and protect their rights.

Meanwhile, positive law subject theory focuses on the view of law as a product of the state or ruler. In this theory, a legal subject is defined as a person or entity recognized as a legal subject by positive law or applicable legislation. That is, a legal subject is a person or entity recognized by positive law and granted rights and obligations related to their legal status.

In the context of AI's legal position, if in one condition AI is treated as a Legal Subject in laws and regulations, it also attaches to it a right, obligation, and responsibility along with all its derivative legal implications. As justification for this second perspective, some expressed their opinions, such as Prof. Joanna Bryson, a professor at the Hertie School who has researched AI, Ethics, and Collaborative Cognition proposed that AI should have the status of an "agent" in law that is treated like any other legal subject, such as a company or other legal entity. This opinion is based on the argument that AI can act autonomously and make decisions that can affect human life and the environment.

According to Saldi Isra, one of Indonesia's legal experts who is also a Constitutional Court Judge, AI should be considered as a legal subject that has the same responsibilities and rights as humans. This view is based on the principle that AI can act independently and have a large impact on society and the environment. Meanwhile, if it refers to the view that the development of Artificial Intelligence will create a new era that greatly impacts human life. Then the law becomes one of the very important instruments in the life to come. According to Satjipto Raharjo, a legal scholar and legal reformer in Indonesia in the theory of progressive law that "Progressive law is a law that liberates, both in the way of thinking and the way of acting in law, so that it is able to let the law flow to complete its task to serve humans and humanity" (Rahardjo, 2009).

A country that has embraced this second perspective is Saudi Arabia, which at one time in 2017, Riyadh, the capital of Saudi Arabia granted Saudi Arabian citizenship to a beautiful, human-worthy robot named Sophia. Or in the same year, a robot named Shibuya Mirai through special regulations obtained a residence permit from the Japanese government. (Kerekes, 2023) With the acceptance of Artificial Intelligence in human life, it has provided the possibility that Artificial Intelligence can be accepted as part of the legal subject.

The legal implication of this second perspective is that whenever AI is viewed as a legal subject, it can be treated like a legal entity (*rechtpersoon*). So that all the implications of legal entity provisions that currently apply in Indonesia, will also apply to AI. That is, as a *rechtpersoon*, AI will be given certain rights and burdened with certain obligations that it must fulfill. This includes AI's ability to participate in legal proceedings, own property, and take responsibility for the actions it takes. This arrangement will create a clear legal foundation for the use of AI in various sectors, including in electronic transactions, thus providing legal certainty for all parties involved.

Meanwhile, in the context of Indonesian positive law, a legal entity is a separate legal subject whose position is regulated in laws and regulations, such as Limited Liability Companies regulated in Law No. 40 of 2007 concerning Limited Liability Companies, then Cooperatives whose position is regulated in Law No. 17 of 2012 concerning Cooperatives, then Foundations regulated in Law No. 16 of 2001 concerning Foundations, and so on. Thus, Artificial Intelligence can also be likened to the application of a separate Artificial Intelligence special law, as a other legal entity can then act as a legal subject.

Among the theories about AI as a legal entity are based on fiction theory and concession theory (Hastono, 2023). Fiction theory basically departs from Van Saviny's thought which states that a legal entity is an abstraction, not something concrete (Saputra, 2023). While the concession theory departs from Gierke's thought which states that legal entities in the State do not have legal personality unless given by the State itself. (Hatrik, 2017).

Thus, the regulation of AI as a legal subject can be called a supporter of rights and obligations that can carry out legal actions or legal acts. The implication is that this will release the responsibility of the organizer, creator or creator of the AI, but AI itself will have rights and responsibilities, including when carrying out an electronic transaction as further stipulated in laws and regulations.

That is, if an AI enters into an electronic contract (e-contract), which is a contract or agreement of the parties made through an electronic system, it will be considered valid because AI as likened to a legal entity (rechtpersoon) is also valid to enter into an agreement. Meanwhile, the requirements for the validity of an electronic contract are based on Article 47 paragraph (2) of PP No. 82 of 2012, namely the agreement of the parties; carried out by legal subjects who are capable or authorized to represent in accordance with the provisions of laws and regulations; There are certain things, and the object of the transaction must not contradict the laws and regulations, decency, and public order. The implication of the validity of an electronic contract carried out by AI implies that, in the event of a default, then like a legal entity, AI must also provide compensation in the form of costs, losses and interest as stipulated in article 1239 of the Civil Code (*KUH Perdata*).

Although the recognition of AI as a legal subject offers various advantages, the challenges in its implementation cannot be ignored. One of the key challenges is ensuring that AI can operate in accordance with applicable legal principles. This includes ensuring that AI can understand and comply with complex and dynamic legal regulations. In addition, surveillance and enforcement mechanisms against AI need to be developed to ensure that AI is held accountable for the actions it takes.

Technical arrangements regarding AI's legal responsibilities should be specifically regulated in new laws or new articles in existing laws. These regulations should include the definition and recognition of AI as a legal subject, accountability mechanisms, and oversight of the implementation of AI responsibilities. It aims to ensure that AI can fulfill its legal obligations and operate in accordance with applicable legal principles.

Thus, based on this second perspective, the legal implication arising from regulating AI as a legal subject is to give AI rights as a rechtperson and impose AI on the obligations it must fulfill. This creates a clear legal mechanism and ensures that the use of AI in various sectors, including electronic transactions, runs with legal certainty and protection for all parties involved.

CONCLUSIONS

Artificial Intelligence (AI) in Indonesia basically has not been specifically regulated in laws and regulations. However, Law Number 1 of 2024 junto Law Number 19 of 2016 concerning Amendments to Law Number 11 of 2008 concerning Electronic Information and Transactions, describes AI as an electronic agent. In addition, Presidential Regulation No. 95 of 2018, Government Regulation No. 39 of 2019, Making Industry 4.0 document issued by the Ministry of Industry, and the Indonesian National Strategy for Artificial Intelligence 2020-2045 document by the Agency for the Assessment and Application of Technology (BPPT) pay attention to the development of AI as part of government policy.

Regarding the legal implications of using AI in everyday life, it can be seen from two perspectives, namely AI as an electronic agent and AI as a legal subject. As an electronic agent, legal responsibility for all AI actions is placed on the operator of the electronic system. On the other hand, as a legal subject, AI will be treated like a legal entity or rechtpersoon, based on fiction theory and concession theory. The legal implications arising from the regulation of AI as a legal subject are to grant AI rights as a rechtpersoon and also impose AI on the obligations it must fulfill.

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