Strengthening the Use of Artificial Intelligence Through Sustainable Economic Law Development in the Digital Era

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Abstract. Artificial Intelligence (AI) development is a necessity that tends not to be avoided in the middle of globalization. Therefore, Indonesia needs not to turn off the technology but to protect it by law. Strengthening the economic law can be carried out through a legal reform such as determining a corporate model that uses an efficient and authoritative dispute resolution mechanism. This needs to be performed within the framework of sustainable economic development. Additionally, there is no legal vacuum during the massive development of AI.

Keywords: Artificial Intelligence · Digital Era · Economic Law

1 Introduction

President Jokowi launched the 100-year Merdeka program to answer the pessimism of several circles towards achieving Indonesia's 2030 vision. As mandated by the Constitution, this program aims to make the country a developed and prosperous one. The government's optimism is to create a road map to ensure Indonesia becomes superior in 2045. Based on innovation, research, and design, this road map changes the orientation of an economy. Indonesian banks predicted that the future economy will be controlled by the internet, Big Data, and Artificial Intelligence (AI) [1].

In 1956, AI was first introduced by John McCarthy who attempted to model human thought processes and design machines to imitate their behavior [2]. This is because civilization helps in promoting a substance to become fast, effective, and efficient. In the digital economy era, it changes corporate behavior by creating robots filled with AI to facilitate human activities. Meanwhile, AI has the potential to harm people when there is a malfunction or system error. AI is mostly created because its decisions are only based on facts and not on emotions or other considerations outside the context. Furthermore, AI helps people to easily disseminate knowledge and reduce wasted time.

AI has the potential to cause loss of life when there are system errors or malfunctions. For instance, the worker's murder case in the automotive company Volk Wagen in Germany [3]. Also, the case of a Volvo with a driverless car in 2015 showed that AI can lead to criminal acts. According to Matthew Scherer, very few laws regulate all problems AI causes in developed countries such as America and Europe. For instance,

there are no American courts that have developed specific standards on who is legally responsible for the criminal offense. This causes the rapid development of digital and its usefulness in economic activities to bring about the legal vacuum caused by AI [4].

In the industrial sector, the use of AI needs to be addressed through legal and economic system reforms. Legal reform is directed at sustainable law development, while the economic system reform aims to increase the nation's competitiveness, regulate the company, and create investment certainty, particularly law enforcement and protection [5]. Therefore, this research aims to examine the use of AI in economic activities because it helps in making Indonesia a developed and prosperous country. Several strategies of economic law including (1) legal education, (2) reform of legal substance, (3) authoritative and efficient dispute resolution mechanisms, (4) empowerment of business ethics, (5) fostering a nationalist spirit in legislators, and (6) the commitment of the president as well as vice president continuously support each other [5]. This research specifies the strength of legal reform and efficient dispute resolution as a relevant strategy that needs to be developed. Therefore, the use of AI is no longer considered a threat but a challenge and opportunity for modern society.

2 Discussion

2.1 Strategy to Strengthen AI Utilization Through Legal Substance Reform

In the automotive company, the use of AI tends to have a more significant impact than APIs, the Internet of Things, or Blockchain. Chinese electric vehicle start-up Xpeng Motors claimed to have created the world's first electric car to adopt an AI microchip [6]. Also, several giant automotive companies have invested by using robots as car skeletons and embedding AI in the steering systems.

Uber's case with a Volvo XC90 that hit a cyclist to death in 2018 became a hot topic in Arizona. It was discovered that Uber had modified a Volvo-made car into a self-driving by embedding AI. Uber's delinquency continued by reducing lidar which is a major component of a driverless car. As of March 6, 2018, the California State Department of Motor Vehicles noted that there were 59 reports of traffic accidents involving self-driving cars. Apart from the Uber case, the worst driverless accident occurred when an active Tesla Model S car caused Joshua Brown to die on May 7, 2016, in Williston, Florida, USA [7]. The German automotive company Volk Wagen also suffered an unfortunate fate when one of the robots that made car skeletons malfunctioned and killed its workers. Therefore, this research makes a special note of whom to be criminally held responsible when the AI used by corporations in their economic activities malfunctions.

In this research, the corporation is commonly used by criminal law experts to refer to a "legal entity" in civil law (*rechtspersoon*; legal entities; corporation). The term "legal entity" help to distinguish it from humans who are the main subject [8]. In the dynamics of criminal responsibility, corporations become a tangible manifestation of the consequences arising from social modernization. According to Satjipto Rahardjo, social modernization become complex when there is an advanced civilization [9].

Based on the principle of concordance, the French Criminal Code is enforced in Indonesia by the Dutch. According to Article 59 of the Criminal Code, legislators believe that only humans (individuals) can become legal subjects of a criminal act. This is

indicated by how the offense is formulated with the phrase "*hij die*", which means "whoever" [10]. In civil law, legislators consider that humans sometimes take actions within or through organizations. Therefore, there are arrangements for corporations as legal subjects in criminal law [11].

In the digital era, the urgency of regulating criminal liability is because AI usage becomes a necessity in Indonesia. Also, there tends to be a substantial regulation of potential problems such as in the cases of Uber and Tesla. The concepts used in criminal cases committed by corporations include: [10]

1. Strict liability doctrine, where the perpetrator can charge criminal liability without requiring any men's rea. It is sufficient to prove that there is an actus reus.
2. Vicarious liability is the criminal offense superiors committed when the subordinates carried out the activities based on their authority's scope.
3. Delegation doctrine is almost similar to vicarious liability, but the difference is that there is a delegation of authority between superiors and subordinates.
4. Identification doctrine such as criminal liability against corporations is carried out by identifying the most decisive party (directing mind).
5. Aggregation doctrine is a corporate responsibility that is requested through a combination of mistakes by people attributed to the corporation's interests.

In AI malfunction cases, the complexity of corporate criminal liability is emanated due to several parties involved. Therefore, the Aggregation doctrine can be a model for reforming legal substances related to the use of AI. This research proposes the importance of creating a legal concept that regulates AI. It creates a liability system where designers, producers, corporations, and sellers of certified AI programs become the subject of limited lawsuits in the corridor of Pancasila values.

2.2 Strategies for Strengthening the Use of AI Through an Authorized and Efficient Dispute Resolution Mechanism

In 1950 when AI was first launched, people hardly believe it involves disease prevention. Also, in the early 2000s, corrections to the AI engine were carried out with in-depth research until the digitalization era. This technology assists complex algorithms to be learned independently. However, the medical sector is entering a new era where AI can be used through risk assessment models, increasing diagnostic accuracy, and workflow efficiency. As AI evolves in medicine, it is designed to change how medical care, research, and education are conducted. The doctor's role is to focus on being a leader and active participant in technology-based transformation as well as to improve health care [12].

Furthermore, the use of AI became a hot topic when COVID-19 reached its peak in China. Several doctors used AI algorithms to scan thousands of patients' lungs in Wuhan City. This algorithm is developed by Axial AI to analyze CT-scan results in seconds. The system shows whether a patient has a high risk of developing pneumonia from the coronavirus. This indicates that a consortium of companies developed AI to deal with COVID-19. The company claimed the system can show whether a patient's lungs have improved or worsened over time. Roentgen data are not in detail but the AI created is still faster than radiologists [13].

In the medical sector, Indonesia quickly responds to the development of AI. The University of Indonesia (UI) developed a tool called DSS-CovIDNet to predict cases of pneumonia using a deep-learning AI-based program. DSS-CovIDNet uses the concept of a convolutional neural network (CNN) to classify chest X-ray images into COVID-19 pneumonia, non-COVID-19 pneumonia, and normal lungs with an accuracy of 98.44% [14]. Regarding AI development, National Development Planning Agency with the Indonesian Center for Law and Policy Studies has provided several notes including integrating the functions of laws and regulations through institutional arrangements as well as system strengthening. Institutional arrangement and system strengthening are important because disputes tend to arise between AI creators and patients. Disputes which are either public or civil can occur between individuals, groups, companies, and countries. There tends to be a situation where the parties experience a conflict [15]. Therefore, the availability of institutions that provide win-win solutions is necessary since disputes over AI usage failed to subsist.

There are two approaches to resolving disputes in Indonesia. The first is the use of the litigation settlement paradigm to obtain justice through an adversary system as well as to produce a win-lose decision for the parties involved. Meanwhile, the second approach uses a non-litigation settlement paradigm which prioritizes a 'consensus' to bring together the party's interests and resolve the conflict through a win-win solution.

In the medical sector, dispute resolution over AI usage tends to be more efficient when it is directed to a non-litigation approach. This is because it is more effective, inexpensive, and does not incur revenge on the losing party. Initially, the non-litigation approach was only known in civil cases through ADR. Its development enables criminal law to be used as the supporting documents of the 6th United Nations Congress in 1995. Document A/CONF.169/6 described criminal cases that contain elements of fraud and white-collar crime. Therefore, the court need not impose a sentence but achieve beneficial results and reduces the possibility of repetition when the defendant is a corporation [16]. Several available forms of ADR such as consultation, negotiation, conciliation and mediation, expert judgment, as well as arbitration, [17] become the right choice for resolving disputes in the medical sector. Mediation is carried out at the prosecution level or a court hearing considering legal certainty, benefits, and justice. It is a teaching that gives the prosecutor the authority to conditionally or unconditionally put the case aside in the public interest despite having sufficient evidence. According to Article 35 letter c of Law Number 16 of 2004 concerning the Indonesia Prosecutor's Office, the Attorney General has the duty and authority to set aside cases in the public interest known as seponering. Meanwhile, penal mediation is performed at the trial court, considering that the parties truly know the importance of resolving conflicts through deliberation and awareness of peace benefits as well as mutual forgiveness [18].

3   Conclusion

1. Strengthening the use of AI through economic law development in the digital era is carried out by establishing a criminal responsibility system to mitigate malfunctioning risk.
2. Using Alternative Dispute Resolution to keep AI from being easily turned off is one of the mechanisms directed at resolving win-win solutions.

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