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LEGAL ISSUES ARISING FROM THE DEVELOPMENT, IMPLEMENTATION, AND USE OF ARTIFICIAL INTELLIGENCE (AI) - INTERNATIONAL EXPERIENCES AND LESSONS FOR VIETNAM

Le Hoang Minh Huy*, Nguyen Thi Thu Ha, Dao Trong Duc, Ky Dieu Linh, Bui Thi Thuy Linh, Nguyen Nam Trung

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Abstract:

Currently, in the age of the digital revolution, artificial intelligence (AI) plays a crucial role and is widely applied in various fields such as education, healthcare, and transportation. Besides its benefits, the application of AI also carries potential legal risks for the involved parties, such as: (i) whether AI can be considered a natural person; (ii) who bears the responsibility for compensation if AI causes damage; (iii) whether intellectual property produced by AI is eligible for protection; (iv) how to handle cases in which AI violates copyright; and (v) how to protect personal data stored on AI applications.

Keywords: *artificial intelligence; compensation responsibility; author's rights; legal status; personal data.*

1. Introduction

Throughout human development, we have created countless remarkable inventions to improve the quality of life. From illuminating entire cities with the invention of the light bulb, to facilitating faster and more convenient transportation with modern vehicles, and encapsulating almost all of humanity's knowledge into a small handheld device, we have continuously strived to enhance our lives. Even within our homes, we have appliances such as microwaves, electric stoves, refrigerators, televisions, and fans – all these great inventions by humans to provide a better quality of life for everyone. The emergence of these inventions implies that humans must increase their labor productivity to manufacture these devices. As a result, we continue to invent more sophisticated technologies to reduce human labor and effort.

That is the reason for the emergence and explosive development of the digital technology era, in which artificial intelligence plays a pivotal role. Artificial intelligence is now regarded as "a tool opening up a new era for exploring unlimited human challenges" [Russel, S. and Peter, N., 2022] Although it is not difficult to recognize the numerous benefits that artificial intelligence brings to human life, building, operating, and applying artificial intelligence also entail various risks. It requires perfecting a legal system to prevent, control, and address these risks, enabling humans to maximize the benefits that artificial intelligence offers.

This article will clarify (i) The concept of artificial intelligence; (ii) The applications that utilize artificial intelligence; (iii) The parties involved in the process of development, operation, and management of artificial intelligence; and (iv) The legal issues arising during the development, operation, and management of artificial intelligence.

2. Theoritical Framework

2.1. Definition

"AI" stands for ***Artificial intelligence****, depending on the changes in the development period of AI, their definitions are also different. As follow:*

In 1956, John McCarthy was the first to explain AI that "A science and design for making intelligent machines, especially intelligent computer programs" [McCarthy, J. 2022]. *John McCarthy's definition shows us that AI is a sophisticated and intelligent computer program.*

However, in 2010, Russell and Norvig have a lot of different explanations and grouped AI into four categories: "Think like a human, act like a human, think rationally and act rationally" [Russel, S. and Peter, N., 2022].

Approaching from another angle, the Oxford Dictionary defines AI as "Artificial intelligence is the research and development of a computer system that can behave intelligently like a human" [Oxford Learner's dictionary].

From the above concepts, we conclude that: "AI is a type of intelligence demonstrated by machines, in contrast to the natural intelligence of humans. AI is used to describe machines or computers that are capable of imitating functions that humans must associate with the mind such as "learning", and "problem-solving"

2.2. Applications of artificial intelligence in life

Nowadays, Artificial Intelligence has been applied in many areas of social life, however, we only present 3 areas with the most potential legal risks; and this is the basis for our analysis in section 4.

2.2.1. Healthcare

Taking care of our health is always a top priority for all activities in life. With modern equipment like today, many lives have been saved. Not only that, AI also contributed significantly to those successes.

One statistic shows that artificial intelligence is widely applied in medical activities including (i) image analysis; (ii) clinical diagnosis support; (iii) AI robot-assisted surgery; (iv) support medicine production; (v) medical records management and databases [Minh,H., 2018].

2.2.2. Education

In 2020, the first robot named Tri Nhan was introduced to Le Hong Phong High School in Ho Chi Minh City for education [Quyen, M., 2020].

Besides the above application, today, with the explosive development of science and technology, there have been numerous examples where AI is applied in education, serving learning and research activities. science, such as:

- ChatGPT is "an automatic language recognition model built by OpenAI", or is considered an: "automatic question and answer application, using machine learning techniques, reinforcement learning from human feedback (Reinforcement Learn from Human Feedback - RLHF)" [Minh, NC., 2023].

- In addition to ChatGPT, there are other applications with similar features to ChatGPT, including (i) Notion AI, which is a tool that uses an innovative AI model to assist users in their work, writing, editing, summarizing and performing other tasks [Linh,KD,. 2023]; (ii) Bing AI, a chat box that helps set up a personal plan, and also works like scientific research. Bing AI can make poetry, writes stories, or shares ideas [Huy, N., 2023].

2.2.3. Transportation

The automotive manufacturing industry always has significant technological advancements, such as the vehicle braking system, which helps enhance safety for passengers by assisting in identifying obstacles during traffic and avoiding collisions. Above all, it's about a car that can drive autonomously. In 2020, we have seen a lot of auto-driving cars such as the BMW 5 Series with semi-automatic mode, the Cadillac CT6, the Volvo XC60,... [Anh, M., 2020].

The term "self-driving car" refers not only to a vehicle that can operate independently but also to vehicles that can be moved thanks to the assistance of a computer system; such as (i) Cruise control; (ii) Antilock Brakes; (iii) Electronic Stability Control; (iv) Blind Spot Detection; (v) Forward Collision Warning; (vi) Lane Departure Warning; (v) Google Maps [NHTSA].

2.3. Parties involved in the process of development, operation, and management of artificial intelligence

The law is established to protect the legitimate rights and interests of individuals and organizations; therefore, when researching the legal issues arising during the process of building, operating, and managing AI, the first step is to identify the parties involved.

- The AI development: Individuals or legal entities with the function of designing, assembling, and completing the structure of an AI.

- The AI operator: Resolution 2020/2014 (ILC) of the European Union defines the AI operator. This definition is divided into two types: "Fronted Operator" and "Backend Operator." The Fronted Operator exercises a level of control over the risks associated with the operation and functions of the AI system and benefits from its activities. On the other hand, the Backend Operator operates on an existing platform, defines the features of the technology, provides data, as well as essential support services, and thus also exercises a level of control over the risks associated with the operation and functioning of the AI system.

- The AI manager: AI management is typically under the purview of governments, as they will establish the most appropriate mechanisms to regulate AI as a form of assets continuing on an existing platform, defining the features of the technology, providing data, as well as essential support services, and thus also exercising a level of control over the risks associated with the operation and functioning of the AI system [Twaig, O-R., 2020].

- The AI data provider: An entity that supplies data to an AI system, not necessarily the one who developed it.

- The AI user: Artificial Intelligence is a product created by humans to meet certain criteria and serve human needs.

3. Result and Discussions

3.1. Legal status of Artificial Intelligence

Legal status can be understood as the position of the legal subject concerning other legal subjects based on legal provisions. Particularly, legal subjects are understood as subjects with rights and obligations as prescribed by law, established by law, and protected under current regulations.

Legal status has major theoretical value, considering not only the role of the subject's legal status in legal relations but also in other networks of rules governing human behavior [Claudio Novelli, Giorgio Bongiovanni and Giovanna Sartor]. Most countries nowadays admit two types of legal status: First, the legal status of natural people; Second, the legal status of the subjects who are given rights and obligations by the law (organizations, legal entities).

3.1.1. Artificial intelligence has the legal status of natural humans

Currently, some countries admit the legal status of artificial intelligence “like a human”. such as Saudi Arabia or Japan, India, ... by admitting citizenship or granting residence permits to robots.

Some specific examples such as a robot named Sophia. This is also the world's first female robot - with a nationality of Sauri Arabia (Saudi Arabia) [Nguyen, N., 2017]. In Japan, The chatbot named Shibuya Mirai is also provided a residence permit under a special regulation (Cuthbertson, 2017) [Truc, P., 2017]. Saudi Arabia's recognition of Sophia's citizenship and Japan's issuance of a residence permit to the Shibuya Mirai chatbot has caused many controversial legal issues.

The actions of the governments of Saudi Arabia and Japan have opposed the citizenship criteria which they introduced in 2018 to determine citizenship. Similarly, Japan's action was also contrary to the law regarding the procedure for granting a residence permit in the country at that time [The Nationality Law of Japan 2018].

Although granting AI status to have “human” rights, it will contribute to creating a mechanism to deal with problems that arise when damage occurs. This will help bring the AI system under the jurisdiction of both Civil and Criminal courts. In the event of serious consequences, the competent authority can decide to punish through disabling, blocking, or even completely destroying AI. However, the recognition of AI as human in Saudi Arabia and Japan creates unfair treatment and creates a legal vacuum. AI has no humanity, no ethics and cannot be held legally responsible on its own. Granting separate rights and obligations to AI can help AI creators and avoid liability. The recognition of AI's status as human is inappropriate and ineffective.

In Vietnam, the Civil Code 2015 stipulates that only individuals and legal entities can establish legal status. Because these are subjects with full capacity to participate in legal relations. AI cannot have an individual personality like humans because it is a product of technology, works by machines and has no humanity. Giving AI the same legal status as humans introduces legal risks and may create opportunities for stakeholders to evade legal liability.

3.1.2. Artificial intelligence is a subject that is given rights and obligations by law

Besides the countries that consider AI as a person, there are also countries such as Russia and Germany, that consider AI as a subject that is given rights and obligations by law.

Sberbank has introduced robot lawyers to represent individuals in lawsuits, and Glavstrah Control has also used robots to resolve insurance disputes [Atabekov, A. and Yastrebov, O., 2018]. However, the legal status of AI is still limited compared to the legal status of individuals or organizations. The German civil law, in Article 164, Article 278, Article 831, provides for "the status of a legal subject in part based on certain legal possibilities [Schirmer, J-E.].

According to the analysis that has been mentioned, the authors believe that Vietnam can build the legal status for AI based on the provisions of the German Civil Law. The public authority may require the registered owner to qualify with the competent authority and impose an insurance sum to bind liability. This will open up development opportunities for AI and promote the national development strategy on AI.

3.2. Liability to compensate for damage caused by artificial intelligence

Liability for damages for products made by artificial intelligence can be complex and needs to be determined on a case-by-case basis. The authors will present the liability to compensate for damage caused by artificial intelligence in 2 specific aspects; (i) Medical; and (ii) Transportation.

3.2.1. Medical

The application of AI in scientific and technical research brings many benefits. However, the issue of liability is still a question without an exact answer. In this field, when using AI gives incorrect results, who will be legally responsible?

In 2018 at Cedars-Sinai Medical Center in Los Angeles, an AI System was used to predict a patient's probability of death. But after implementation, the system sent false reports about the possibility of death of hundreds of patients. This incident has raised questions about the liability of AI manufacturers and suppliers in the event that these technologies cause harm to patients [Kalaichandran, A., 2019].

According to the provisions of the law of the French Republic, the medical examiner is only responsible for errors and consequences that cause damage during the procedure. Prevention, diagnosis, or patient care. According to clause 1 of Article 1142-1 of the French Public Health Law, doctor will be "responsible only if fault and consequential damage are caused when performing an act of prevention, diagnosis or care of the patient". This regulation does not recognize the fault of doctors and it is very difficult to determine the fault of doctors in the process of medical examination and treatment. However, the French Council of State believes that this provision can be applied to regulate issues related to civil liability caused by medical AI.

In Vietnam, the 2009 Law on Medical Examination and Treatment has the same approach as the French Public Health Code. The person who is assigned the task of medical examination is obliged to examine, diagnose, prescribe treatment methods, prescribe drugs in a timely and accurate manner, and take responsibility for medical examination and diagnosis, and specifying methods. treatment and prescription drugs. At the same time, the medical examination must be based on the results of clinical examination, and subclinical examination, combined with factors of medical history, family, occupation, and epidemiology, and performed in a timely, objective manner. prudent and scientific. In particular, the diagnosis and treatment must ensure scientific principles as the basis for doctors to apply AI technology.

A notable difference between Vietnamese law and French law is the element of error. As analyzed, the error factor in the examination, diagnosis, and use of AI helps to determine the responsibility of the relevant doctor [Hoi, NV., 2017]

3.2.2. Transportation

One of the most popular applications of Artificial Intelligence today in the field of transportation is Automated Vehicles (AV), commonly known as self-driving cars. Self-driving cars are expected to significantly reduce accidents and make traffic safer, with more than 94% of traffic accidents due to human error. At the same time, the use of self-driving cars can reduce traffic congestion, driving costs, and CO2 emissions. However, when the use of self-driving cars leads to accidents, with the current legal regulations, it is difficult to determine the liability, as well as the person responsible for compensation.

On March 18, 2019, in the US in the State of Arizona, an Uber self-driving car running on autopilot caused an accident that killed a woman who was walking across the street. Uber's automatic braking system was disabled, preventing the car from stopping in time, and the driver of the car was not paying attention to the driver. Relatives of the victim sued Uber, after which Uber settled the case with a non-disclosure agreement [Levin, S. and Wong, JC., 2018].

So the question is who will be legally responsible? The vehicle owner or self-driving car manufacturer? In order to clarify the liability for damages of the cases, the authors have studied and analyzed several regulations of countries in the world and Vietnam.

In the United States, there is no uniform federal regulation of product liability. However, to create a certain similarity in the states, the US Department of Commerce enacted the Model Uniform Products

Liability Act (MUPLA). At the same time, in May 1997, the American Law Institute (ALI) completed the Third Amendment to Product Liability [Victor E. Schwartz., 1998]. According to the above legal documents, the liability for compensation caused by self-driving cars is determined in two forms: (i) tort liability; (ii) strict liability. The subject of product liability may be the manufacturer of the final product, the manufacturer of the components, the participants in the supply chain of the product (the seller, the reseller, the supplier) and anyone engaged in product repair or modification.

According to the legislation of the Federal Republic of Germany, the driver of the vehicle is strictly liable for any damage caused by the vehicle (regardless of whether at fault or not). Unless the damage is due to force majeure or the vehicle is stolen.

In Vietnam, self-driving car technology is only at the research and testing stage, so Vietnam currently does not have a specific legal framework for this type of vehicle. We can refer to the current regulations of Vietnam regarding liability in car accidents.

About liability for compensation for damage in road traffic, although Vietnam does not have a specific legal framework for self-driving cars. However, one can refer to the regulations regarding liability regarding the use of highly hazardous sources.

According to the Law on Road Traffic 2008 (Clause 18, Article 3), cars are classified as motor vehicles. According to the 2015 Civil Code, motor vehicles are a source of extreme danger for which the owner is responsible for compensating for damage caused by the source of extreme danger. If the owner has assigned it to another person to possess and use, this person must compensate, unless otherwise agreed. If the source of extreme danger is illegally possessed or used, the person who is illegally possessing or using the source of extreme danger must be responsible for compensating for damage. If the owner or the person possessing or using the source of extreme danger is at fault in allowing the source of extreme danger to be illegally possessed or used, they must jointly compensate for the damage.

About the responsibility with the product, according to the provisions of Article 60, Law on Quality of Products and Goods of Vietnam 2007, if the accident and damage to road users are determined to arise from a defect in the autopilot system, then The manufacturer must be responsible to the self-driving car user/driver for such defect.

3.3. Intellectual property rights to a product created by artificial intelligence

3.3.1. Copyright protection for products created by Artificial Intelligence

In Australia, in the case of Acohs Pty Ltd v Ucorp Pty Ltd (2012) [CCH iKnow], the Court also stated that a work created by computer intervention cannot be protected by copyright because it is not protected by copyright. created by humans.

Copyright is defined as “the right of an organization or individual to a work they create or own. Copyright arises from the time the work is created and expressed in a certain material form” [Vietnamese IP Law 2005., amended, supplemented in 2009, 2019, 2022]. Up to now, there is no specific legal document specifying who is the author of works created by GPT chat. However, there are still a few points of view regarding identifying the author of these works such as:

- Chat GPT is considered the copyright owner

- Chat GPT is not the copyright owner

- Both GPT Chat and the user will be identified as co-owners of copyright for the work created by this superintelligence

In fact, there have been cases where the courts of many countries around the world have admitted the possibility of authorizing copyright protection of works created from AI. For example, a Court in Shenzhen, China decided that an article created by AI is protected by Copyright Law [Wan, Y., 2021].

In some countries, the law does not recognize copyright for works that are not created by humans. In the United States, in "Copyright Compendium: What Can Be Protected", regarding the conditions of authorship, the US Copyright Office makes the following view: The United States Copyright Office will grant copyright protection to an original work, if the work is created by a human, the document also states: "The Office will refuse to protect a claim demand if one considers that people do not create works" [Compendium: Copyrightable Authorship., 2021].

Therefore, in some countries around the world, copyright has not been recognized for works created by AI, so the handling of violations in this legal issue has not been clarified yet.

In Vietnam, ***The 2005 Intellectual Property Law*** provides for the protection of intellectual property rights, including copyright. However, this Law does not specifically mention copyright protection for artificial intelligence (AI) and products created by AI such as ChatGPT.

Overall, this is a legal issue that deserves attention and consideration. Based on the above views, it can be seen that copyright protection for works created from artificial intelligence is necessary and it is need to have an appropriate method to protect the interests of related subjects. . The point of view of the author group of the article also agrees with the above opinion and believes that the law on copyright should have specific provisions on this issue.

3.3.2. The issue of legal liability when artificial intelligence infringes the copyright of another subject's work

Artificial intelligence is capable of infringing copyright by itself in the course of performing its tasks.

An example of this is the case of Goldman v. Breitbart News Network [Goldman v. Breitbart News Network, LLC] in the United States. In this case, the Court found that the defendant had built software capable of taking copyrighted images on a third-party server and then displaying them to users on the network. Such distribution and display by artificial intelligence infringes the copyright of the images because it is an unfounded act of copying and spreading.

Regarding the issue of liability when artificial intelligence infringes copyright, the current US copyright law does not have provisions to resolve legal issues when artificial intelligence performs an infringement. Artificial intelligence cannot hold the copyright to any kind of work, and others cannot sue artificial intelligence for damages. Therefore, there must be an alternate party that can hold the copyright and also be liable for piracy caused by artificial intelligence.

Vietnamese law does not have a provision to deal with the issue of copyright-protected data by artificial intelligence. As for the use of copyrighted data for machine learning, among the acts listed by IP in Article 25, the Law allows subjects to self-reproduce a copy for scientific research purposes. commercial purposes. This provision facilitates the process of machine learning training, if copying a copy for artificial intelligence training and not for commercial gain, it can be considered not infringing copyright. This reproduction does not require permission and does not require payment of royalties or remuneration.

Based on the above practical cases, the authors recommend that the Vietnamese law should identify who is responsible for acts of infringing upon privacy. In it, the end user or programmer is considered to have created, directed, and benefited from artificial intelligence, so the responsibility for the acts of artificial intelligence will be assumed by them.

3.4. Protect user data when using applications from artificial intelligence

The using of applications from artificial intelligence need user data. For example, self-driving cars, medical devices, or GPT chats when you want to use them all have to leave personal data. So is all this data safe and secure?

In recent years, there have been many cases with risk issues because user data is widely posted for sale on private groups. Invasion of privacy is also a legal issue that needs to be solved.

To update regulations on personal data protection, the European Union has issued the General Data Protection Regulation (GDPR) to strengthen the responsibilities and obligations of organizations and businesses in collecting data. import and use and protect personal data. Compared to the 1995 Data Protection Directive, GDPR uses terms related to the Internet (Internet, social networks, websites, links, etc.). However, there is no mention of artificial intelligence, nor is there a term associated with concepts such as intelligent systems, autonomous systems, automatic theory and inference, machine learning or big data. This reflects the fact that GDPR focuses on challenges facing the Internet - which were not considered in the Data Protection Directive of 1995 - rather than on new issues related to artificial intelligence, which are only recently recognized. attracted attention in recent years. Nevertheless, many of the provisions in the GDPR are still relevant for artificial intelligence.

Nowadays, Vietnam's protection of user data when using artificial intelligence is regulated in a number of laws related to personal information protection and information security. Specifically, the Law on Protection of Personal Information 2019 stipulates principles and regulations on the protection of personal information and requires organizations and individuals to be responsible for protecting users' personal information. In addition, the 2018 Law on Cybersecurity also stipulates the protection of information safety on the network, and agencies, organizations and individuals are responsible for protecting information and ensuring the safety of information systems.

However, the enforcement of these regulations has not been fully and effectively implemented, especially in the context of rapidly developing artificial intelligence. The protection of user data needs attention and respect from organizations, businesses and artificial intelligence developers to ensure the rights and information security of users.

4. Conclusion

Based on the analysis above, it can be concluded that artificial intelligence brings many benefits to humans and society. However, the application of AI sometimes poses legal risks and violates the rights of users. Currently, there is no clear law that ensures these risks are adequately addressed. Therefore, there is a need for consensus and efforts from legislators and data management organizations to ensure that AI is used appropriately and safeguards the rights of users and other relevant parties.

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