



Legal Protection for Copyrighted Works Resulting from Artificial Intelligence which are Traded in the form of Non-Fungible Tokens (NFT)

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Abstract— This article looks at the protection of works produced by artificial intelligence, interpreted as objects of copyright in Indonesia. This article uses doctrinal research methods. This article answers legal issues regarding trading copyrighted works resulting from Artificial Intelligence in the form of Non-Fungible Tokens. The conceptual approach uses interpretation theory to examine statutory regulations to see the ideal form of recognition of intellectual property rights. The results of this research show that the existence of variations in AI as an object of intellectual property rights and the protection of works produced by AI in the form of Non-Fungible Tokens is protected preventively in the form of a license. Its repression is qualified as an infringement, and trade in works produced by artificial intelligence in Indonesia does not provide certainty because it only regulates in general, not specifically. The research concludes that the Indonesian government needs to review laws related to artificial intelligence and create regulations implementing the trading mechanism for digital copyrighted works in the form of NFTs and resolving disputes.

Keywords— *Artificial Intelligence; Blockchain; Copyright; Non-Fungible Token*

I. INTRODUCTION

As time progresses in the 4.0 era, the development of science and technology, especially in Artificial Intelligence and art, has rapidly developed [1]. For this reason, the creation of digital media works of art has significantly developed, and various quality aesthetic and innovative works of art can be presented and experienced by art lovers. The ease of artificial intelligence technology in creating creative works, especially two-dimensional works, provides essential technical support for creating creations[2]. Through research into the creation of digital media art based on artificial intelligence technology, it is hoped that this research can open new views and new directions to promote the development of comprehensive and sustainable creation of digital artworks, especially those produced from artificial intelligence technology [3].

Artificial Intelligence is an aspect that the legal system in Indonesia has not expressly regulated. However, in some cases, there are legal responsibilities for AI where it can also be treated like any other legal entity. First, the legal system in Indonesia can recognize AI as a legal subject. This condition means AI gets the same treatment as individuals or companies with rights and obligations [4]. Recognition of AI as a legal subject has implications for the emergence of legal responsibility in actions and contracts carried out by AI. Second, AI is the subject of laws regulating technology. The ITE and Copyright Law are examples of regulations specifically regulating AI. These two laws regulate the relationship between copyright and the use of technology. Third, as previously explained, the recognition and regulation of AI in laws and regulations has given rise to legal responsibilities for AI. This provision allows prosecution of AI if violations of the law are found, such as violations of copyright or privacy. [5]

Trading a copyrighted work in this increasingly advanced era can be done in various alternative ways. One way is through the Non-Fungible Token (NFT) trading mechanism. NFTs are unique digital assets that utilize computer code and record data using the blockchain method so that the public can access them [4]. Blockchain is

like a digital ledger that records all kinds of digital transactions. Non-fungible tokens (NFT) can carry out the process of recording, verifying, or tracking ownership of unique physical and digital assets [6]. Indonesia does not yet have special regulations specifically regulating NFT trading, but they are only generally associated with copyrighted computer programs regulated in the Copyright Law.

Artificial Intelligence is increasingly massive in producing creative works in the form of two-dimensional images, musical works of art, novels, videos, and several others. Based on these considerations, it is necessary to conduct further research regarding the limits of copyright owned by AI in creating a work.[7] Considering that Indonesia does not yet have regulations that specifically regulate this matter, it is necessary to have an interpretation process for the ITE Law and the Copyright Law, which specifically regulates the use of information technology.

In order to obtain information regarding the limits of legal protection for copyright from works produced by AI that are traded via NFT, this study was made using interpretation theory. Based on F. Vaughan Hawkins' explanation, interpreting legal documents must follow applicable boundaries. This process can be used to find various materials in a legal rule. Concerning this study, this theory can be a bridge to finding regulations that can explain the legal position of AI and the work it produces. This process is essential because Indonesia still needs regulations specifically regulating AI copyright restrictions and NFT trading mechanisms

II. LITERATURE REVIEW

The process of interpreting legal documents is something that is usually done. Even though the legislature has tried its best to articulate the interests of society in the formulation of legal rules, the limited choice of diction available can hinder the effectiveness of these efforts. The language used by a nation will usually have different grammar and context for using sentences than other nations. It is not uncommon for there to be problems related to the dictions available in a language.

Diction limitations can arise due to various reasons, such as language development arising from the many regional languages previously used by people living in that country. Other challenges can also come from abroad. This condition arises due to developments over time and globalization, which has given rise to new vocabulary that the national language needs to absorb adequately. Apart from that, diction often has several meanings in a dictionary. The applicable context and the grammar used can influence these differences in meaning. Choosing the diction that forms a sentence is essential in ensuring that the message created will be conveyed correctly.

The ability to interpret sentences in general and diction, in particular, is needed in social interactions and socializing in society. The interpretation process is also essential to formulating and implementing legal rules. For this reason, F. Vaughan Hawkins then developed the theory of legal interpretation. This theory can serve as a guide for the public to interpret legal documents correctly. The ability to interpret a legal product will influence public compliance and the effectiveness of implementing these regulations.

Interpreting a legal provision must be carried out by considering the most general form of the written sentence contained in the regulation. When carrying out this process, the reader needs to remember that the purpose of the writing process is to convey the thoughts or intentions of the writer. These guidelines also apply to policy formulators. Legislators must show what is in their minds by writing legal products. In interpreting legal products, there needs to be sensitivity to the information or intentions that the author wants to convey and the intent of the expressions contained in the writing.

Hawkins also emphasized the importance of limitations in interpreting legal products, which must be carefully considered. A legislator will express his thoughts with various efforts to formulate a rule with a legal impact and a chain of validity. So, what needs to be understood is the words or diction chosen in these rules. Then, understanding needs to be deepened to see the effectiveness of the chosen diction's ability to express policymakers' intentions.

Concerning the context of this study, it is necessary to have an interpretation process carried out in the Law that regulates information technology and Copyright. These two laws indirectly regulate the existence of AI so that legal responsibility arises from actions taken by AI. The absence of a law that directly regulates the limitations of AI copyright has given rise to the need for the public to be able to interpret the ITE Law and the Copyright Law. This process is expected to show the limits of legal protection for AI works traded in NFTs in Indonesia.

III. METHOD

This research uses doctrinal legal research. Conceptual and statutory approaches are used to support the selected research methods. Primary and secondary legal materials containing AI, NFT, and Copyright will be analyzed. The Interpretation Theory put forward by F. Vaughan Hawkins is an analytical tool to see to what extent the legal system in Indonesia can regulate and protect AI works traded in NFTs. The results of the study are presented in descriptive form.

IV. DISCUSSIONS AND RESULTS

A. Interpretation of AI-generated works in NFT form as objects of copyright protection

The current development of AI technology is transformative and can be said to be the prominent peak of the Fourth Industrial Revolution[8]. AI is a science and computing technology in the form of an artificial intelligence machine programmed to simulate human intelligence by imitating and practicing human thinking. Based on its use, AI is programmed to focus on learning reasoning and can also self-correct and adapt [1].

Artificial Intelligence is an aspect that the legal system in Indonesia has not expressly regulated. However, in some cases, there are legal responsibilities for AI where it can also be treated like any other legal entity. First, the legal system in Indonesia can recognize AI as a legal subject. This condition means AI gets the same treatment as individuals or companies with rights and obligations[4]. Recognition of AI as a legal subject has implications for the emergence of legal responsibility in actions and contracts carried out by AI. Second, AI is the subject of laws regulating technology. The ITE and Copyright Law are examples of regulations specifically regulating AI. These two laws regulate the relationship between copyright and the use of technology. Third, as previously explained, the recognition and regulation of AI in laws and regulations has given rise to legal responsibilities for AI. This provision allows prosecution of AI if violations of the law are found, such as violations of copyright or privacy.[4]

B. Legal protection of AI works traded in the form of NFTs

The concept of legal protection is a dynamic condition because it must be able to accommodate society's changing needs in changing times. One form of legal protection society needs today is inseparable from works created using technological advances. With its algorithms, AI has produced various types of works that can now be traded in the form of NFTs.[9] Based on progressive legal principles, the government can provide legal certainty and protection against new phenomena that have enormous potential to influence human life in the future. With the legal protection mechanism provided through statutory regulations, it is hoped that the government will be able to safeguard the rights of every citizen without exception.

The protection provided by law for the rights of citizens is one of the functions of the existence of legal rules that apply in society.[10] Works produced by AI then need to receive special attention from the government because they are starting to be traded as a form of NFT. This protection is expected to safeguard the Intellectual Property Rights of these works.[10] This need cannot be separated from the function of NFT as a digital market that trades various digitally produced intellectual works. These works can be in the form of two-dimensional animations produced by AI and products in the form of music, videos, photos, drawings, or other forms. The most important thing about this phenomenon is the existence of a trading mechanism that can be carried out on AI works.[9]

The Indonesian government has recognized digital goods produced through the development of AI technology. However, the government still needs to provide specifications regulated in the promulgated regulations. Regulations regarding trade in digital goods in Indonesia can at least be interpreted in the Government Regulation on Trade via Electronic Systems. In this regulation, the government states that digital goods can be interpreted as any electronic information that produces intangible objects [8] or in the form of converted goods or goods that are in electronic form, such as software, multimedia, and or electronic data[7].

This regulation has demonstrated the government's intention to describe digital goods recognized in Indonesia[11]. For this reason, recognizing digital goods has made NFT forms in Indonesia possible. Consequently, digital goods can be subject to intellectual property rights per the provisions in the ITE Law. In this regulation, the government has ensured that electronic information and documents developed as intellectual works are protected as part of intellectual property rights.[12] Based on these regulations, it can be interpreted according to Hawkins' theory that governments that recognize all forms of digital goods developed as intellectual works also recognize digital goods created by AI.

C. Legal certainty for trading AI-generated copyrighted works in the form of NFTs based on the Indonesian legal system

Digital trading mechanisms exist not only in Indonesia but also in the world. The development of globalization, which creates a blurring of a country's legal boundaries, also impacts the trading process of AI-made digital goods, which are traded as NFTs.[6] Even though Cryptocurrency has not been recognized as a valid currency in Indonesia, this mechanism is recognized worldwide. This phenomenon then opens up opportunities for NFT trading to be carried out using Cryptocurrency. The Indonesian government has regulated crypto asset trading through the Ministry of Trade and the Commodity Futures Trading Supervisory Agency (Bappebti), but this is different from NFTs, which, until now, have no specific regulations governing them in Indonesia. NFT trading can be done on several marketplaces, such as Rarible, Opensea.io. Indonesia, namely TokoMall, owns its own local NFT market.[13]

In general, cryptocurrencies are used in NFT trading, but this is different from Indonesia, which uses rupiah for transactions, but it all depends on the marketplace [14]; this refers to the existing laws in Indonesia. So, for the

local NFT market, the rupiah is used in every payment process. Under the Government Regulation on Trading Through Electronic Systems, Indonesian law can be applied to foreign companies that meet the criteria following government regulations. Regulations made by the Indonesian government can bind several technical mechanisms, such as licensing, registration, and taxation. The government can also regulate mechanisms for providing access to electronic systems running in Indonesia. As a form of protection provided by the government, these companies are also bound by the consumer protection laws that apply in Indonesia.[7]

The Ministry of Communication and Information has also issued a circular to anticipate NFT trading activities in Indonesia.[13] Several provisions must be complied with, including the following: First, the government urges marketplaces to ensure that the content being traded does not violate statutory regulations. This rule mainly concerns efforts to protect personal data and intellectual property rights. Second, NFT trading must be under the supervision of Bappebti, which has the authority to manage crypto asset trading.

Third, to enforce the rules regarding NFT trading limits, which must comply with the provisions of the ITE Law, the government also imposes sanctions for actions that violate these provisions. The sanctions given may vary according to the violations committed by the service provider platform. The imposition of administrative sanctions by cutting off access for Indonesian users could be the law enforcement mechanism chosen by the government if violations are found in NFT trading activities.

Fourth, the NFT trading trend, which has positive economic impacts and potential, must be exploited by society wisely. It is necessary to increase digital literacy to support a conducive environment for society to minimize negative impacts and threats of legal violations. These efforts will help to achieve optimal conditions in utilizing NFT trading. Fifth, the government can coordinate and cooperate to take firm action against legal violations in the NFT trading process. This coordination can be carried out with various parties, such as the Ministry of Communication and Information, Bappebti, the Police, and other ministries and state institutions.

V. CONCLUSION

This research shows that the development of Artificial Intelligence work as an object of intellectual property rights in Non-Fungible Tokens has been protected preventively. This effort could be granting licenses to companies providing NFT trading platforms or repressive approaches to crack down on violations of artificial intelligence works in Indonesia. However, this regulation does not provide certainty because it only regulates the trading of digital assets in the form of NFTs and does not explicitly discuss the copyright of AI works. Thus, the Indonesian government needs to review laws related to artificial intelligence, create regulations implementing the trading mechanism for digital copyrighted works in the form of NFTs, and resolve disputes regarding them.

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