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Transfer of Economic Rights of the Author of Works Represented into NFT by Smart Contract

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Abstract

This research analyzes intellectual property law in relation to the transfer of economic rights from the author of the intellectual creation represented into the Non-Fungible Token (NFT) to the NFT buyer by a smart contract. The purpose of this research is to examine and comprehend the transfer of economic rights from the author of the intellectual creation represented into the NFT to the NFT buyer by a smart contract. This research approaches the topic from legal perspective, using the normative juridical method. This research will closely examine several relevant the provisions of laws and regulations to identify and analyze the legal issues involved in the transfer of economic rights from the author of the intellectual creation represented into the NFT to the NFT buyer by a smart contract. Research has shown that Article 16 Paragraph (2) of the Copyright Law can be applied to the transfer of economic rights of intellectual creation represented into the NFT by a smart contract, using the argumentum per analogiam method. This means that NFT buyer can

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enjoy the economic rights listed in Article 9 Paragraph (1) the Copyright Law.

KEYWORDS *Economic rights, Non-Fungible Token, smart contract*

I. Introduction

At present, the existence of technology is inevitable in societies, including in the Indonesian society. There are also those who suggest that the current societies are the consequence of modernization, where in this societies, according to Everett Rogers as quoted by Muzaini, modernization is the process of individual lifestyle changes from a traditional way of life to a more complex that is technologically advanced and swiftly changing.[1] From this perspective, societies are bound to experience changes in lifestyle as a result of the existence and development of technology in accordance with its temporal dimension. A seemingly similar opinion was also expressed by Eddy Cahyono Sugiarto, that revolutionary changes based on the application of the latest technology have encroached on various sectors of human life, including in the education sector and especially the economic sector.[2]

Furthermore, the development of technology in Indonesia has changed many aspects of people's lives, leading to the rise of the digital society. Due to the digitization that is taking place, technology has become inherent in the

[1] Muzaini Muzaini, "Perkembangan Teknologi dan Perilaku Menyimpang dalam Masyarakat Modern," *Jurnal Pembangunan Pendidikan: Fondasi Dan Aplikasi* 2, no. 1 (June 2014): 48–58, https://doi.org/10.21831/jppfa.v2i1.2617.

[2] Kementerian Sekretariat Negara Republik Indonesia. "Kecerdasan Digital, Disrupsi, dan Indonesia Maju", https://www.setneg.go.id/baca/index/kecerdasan_digital_disrupsi_dan_indonesia_maju (accessed November 13, 2023).

behavioral patterns of all members of society.[3] The rapid growth of digitization is evident in the emergence of Non-Fungible Tokens (henceforth referred to as NFTs).[4] From news source, it is known that the transaction volume of Karafuru NFTs, which is the intellectual creation of WD Willy, an Indonesian citizenship, has reached one trillion rupiah.[5] The fact that WD Willy has sold over a trillion rupiah worth of his Karafuru NFTs shows that people are more interested in using NFTs to digitize intellectual creations. Therefore, it is necessary to understand the history that underscores the existence of NFTs and what really meant by NFTs.

The existence of NFTs cannot be separated from the development of blockchain technology that is used as a facilitator to enable secure peer-to-peer (P2P) transactions without involving intermediaries (which could be certain authorities such as financial institutions).[6] Initially, the implementation of this blockchain technology was seen in the existence of cryptocurrency, namely Bitcoin, which was first issued and introduced to public in 2009.[7] Due to innovations in technology, the new technological developments were

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[3] Abdullah Nurhidayah, Hanira Hanafi, and Nazli Ismail Nawang, "Digital Era and Intellectual Property Challenges in Malaysia," *Pertanika Journal of Social Sciences and Humanities* 29, no. S2 (May 2021): 205–19, https://doi.org/10.47836/pjssh.29.s2.14.

[4] A U Mentsiev et al., "Blockchain as a Technology for the Transition to a New Digital Economy," *Journal of Physics: Conference Series* 1399, no. 3 (December 2019): 1–5, https://doi.org/10.1088/1742-6596/1399/3/033113.

[5] PR Newswire. "Karafuru NFT and USS Feed Presents the Indonesia's Biggest NFT Real-Life Experience Project",https://www.prnewswire.com/news-releases/karafuru-nft-and-uss-feed-presents-the-indonesias-biggest-nft-real-life-experience-project-301515755.html (accessed November 13, 2023).

[6] Riza Aditya Syafri and Azizah Ulfa, "Teknologi Blockchain dan Potensinya," *Buletin APBN* 6, no. 11 (June 2021): 7–11.

[7] Matthew Kien-Meng Ly, "Coining Bitcoin's 'Legal-Bits': Examining the Regulatory Framework for Bitcoin and Virtual Currencies," *Harvard Journal of Law & Technology* 27, no. 2 (2014): 587–608.

obtained, which function within the blockchain technology.[8] Consequently, in 2015, Etheria was introduced as an NFTs that functions within Ethereum blockchain technology.[9] Although cryptocurrencies and NFTs both function within blockchain technology, it is known that they fundamentally differ. According to Investopedia, NFTs are defines as follows:[10]

> "Non-Fungible Tokens or NFTs are cryptographic assets on a blockchain with unique identification codes and metadata that distinguish them from each other. Unlike cryptocurrencies, they cannot be traded or exchanged at equivalency. This differs from fungible tokens like cryptocurrencies, which are identical to each other and, therefore, can be used as a medium for commercial transactions."

The above definition affirms that NFTs are classified as digital assets functioning in the blockchain. Furthermore, NFTs have unique identification codes that distinguish one NFT from another.[11] Unlike cryptocurrencies, NFTs are traded through the NFT marketplace, such as Opensea, Valuables, or Rarible.[12] Due to the unique characteristic of NFTs, an

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[8] Muddasar Ali and Sikha Bagui, "Introduction to NFTs: The Future of Digital Collectibles," *International Journal of Advanced Computer Science and Applications* 12, no. 10 (2021): 50–56, https://doi.org/10.14569/IJACSA.2021.0121007.

[9] Lennart Ante, "Non-Fungible Token (NFT) Markets on the Ethereum Blockchain: Temporal Development, Cointegration and Interrelations," *BRL Working Paper Series*, no. 22 (2021): 1–23, https://doi.org/10.2139/ssrn.3904683.

[10] Investopedia. "Non-Fungible Token (NFT): What It Means and How It Works", https://www.investopedia.com/non-fungible-tokens-nft-5115211 (accessed November 15, 2023).

[11] Investopedia.

[12] Qin Wang et al., "Non-Fungible Token (NFT): Overview, Evaluation, Opportunities, and Challenges," ArXiv:2105.07447, no. v3 (2021): 1–22.

NFT cannot be exchanged with another NFT as a replacement.[13] An NFT only represents one identity that represents any object (which can be an intellectual creation, such as artworks, photo, film, or music) in the form of a digital asset that results in the rarity of NFT itself.[14]

From the above explanation, it is known that the existence of NFTs have a significant impact on the art sector.[15] Minting an NFT allows an author to digitize their intellectual creation, creating a unique digital asset that represents that creation (works).[16] Therefore, it could happen that author actually make the NFT a certificate of ownership of an intellectual creation of the author and a valid proof of ownership of intellectual property rights over the intellectual creation represented into NFT.[17] Or, even the author merely makes the NFT a duplicate of the author's intellectual creation and does not make the NFT a valid proof of ownership of intellectual property rights over the intellectual creation represented in the NFT.[18]

The two differences of minting NFTs can be traced from the examples of minting Bored Ape Yacht Club (BAYC) NFT and another NFT intended to be traded on the Valuables (an NFT marketplace). In the

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[13] Norton Rose Fulbright. "NFTs and Intellectual Property Rights", https://www.nortonrosefulbright.com/de-de/wissen/publications/1a1abb9f/ nfts-and-intellectual-property-rights (accessed November 15, 2023).

[14] Andres Guadamuz, "The Treachery of Images: Non-Fungible Tokens and Copyright," *Journal of Intellectual Property Law & Practice* 16, no. 12 (December 2021): 1367–85, https://doi.org/10.1093/jiplp/jpab152.

[15] Felipe Marquetta de Sousa, "Token-Art System and the New International Art Market: The Impacts of NFT Technology and the Legal Aspects Involved," *Journal of Law, Market, & Innovation* 1, no. 1 (2022): 97–115.

[16] World Intellectual Property Organization."Non-Fungible Tokens (NFTs) and Copyright",https://www.wipo.int/wipo_magazine/en/2021/04/article0007.html(accessed November 16, 2023).

[17] Bressler Amery & Ross. "NFTs: A Digital Tale of Unprecedented Legal Issues", https://www.bressler.com/publication-new-jersey-law-journal-NFTs-a-digital-tale-of-unprecendented-legal-issues (accessed November 16, 2023).

[18] Dw Putu Alit Denbagus Rafli, "NFT Become a Copyright Solution," *Journal of Digital Law and Policy* 1, no. 2 (January 2022): 87–96, https://doi.org/10.58982/jdlp.v1i2.166.

minting of Bored Ape Yacht Club (BAYC) NFT, it is affirmed that if a transaction sale of Bored Ape Yacht Club (BAYC) NFT occurs, then the buyer has the right of valid ownership of the intellectual creation in the form of Bored Ape Yacht Club (BAYC) and obtains intellectual property rights over Bored Ape Yacht Club (BAYC) NFT.[19] So, the author actually explicitly makes Bored Ape Yacht Club (BAYC) NFT as a certificate of ownership of the intellectual creation in the form of Bored Ape Yacht Club (BAYC) and a proof of valid ownership of intellectual property rights over the intellectual creation represented into an NFT. On the other hand, if a transaction sale of NFT occurs on the Valuables, then the buyer only obtains a duplicate of the author's intellectual creation and does not acquire intellectual property rights over the intellectual creation represented into an NFT.[20] So, the ownership of intellectual property rights over the intellectual creation represented into an NFT remains with the author.

It is well-known that authors have the right to digitize their intellectual creations into NFTs. However, a situation can occur where someone who is not entitled actually digitizes another person's intellectual creation into an NFT. In fact, the untitled person creates an NFT that claims to be a certificate of ownership for someone else's intellectual property. This can be seen from the alleged copyright infringement on Jay-Z's 1996 debut album by Damon Dash.[21]

In short, Damon Dash digitized Jay-Z's 1996 debut album through the minting of an NFT and registered the NFT for sale on the Super-Farm (an

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[19] European Commision. "Making Sense of NFT's and What They Mean from an IP Standpoint in India", https://intellectual-property-helpdesk.ec.europa.eu/news-events/news/making-sense-nfts-and-what-they-mean-ip-standpoint-india-2022-03-25_en (accessed November 16, 2023).

[20] European Commision.

[21] The Verge. "An NFT of Jay-Z's First Album Has Sparked a Record Label Lawsuit", https://www.theverge.com/2021/6/21/22543753/jay-z-nft-lawsuit-reasonable-doubt-roc-a-fella-damon-dash (accessed November 16, 2023).

NFT marketplace).[22] Roc-A-Fella Records, Inc. alleged that Damon Dash committed copyright infringement over Jay-Z's 1996 debut album due to the digitization of Jay-Z's 1996 debut album into an NFT by Damon Dash.[23] Despite Damon Dash being a minority shareholder of Roc-A-Fella Records, Inc., Damon Dash does not have a direct interest in Jay-Z's 1996 debut album.[24] Therefore, Damon Dash was not entitled to digitize Jay-Z's 1996 debut album into an NFT.[25]

The emergence of NFTs has sparked a lively debate among scholars and legal experts in the field of intellectual property. Viewed from a normative perspective, up to this point, there are apparently no specific regulation that govern the legal relationship between parties interested in NFT transactions, what actions are permitted, what actions are prohibited, and even sanctions.[26] Although NFTs and crypto-assets both function on the blockchain, the current crypto-assets regulations does not cover NFT regulations.[27] Even specific intellectual property laws, such as Law of the Republic of Indonesia Number 28 of 2014 Concerning Copyrights State Gazette of the Republic of Indonesia of 2014 Number 266 (hereinafter referred to as the Copyright Law), do not address the issue of NFTs that contain intellectual property.

The consequence of the absence of regulations on issues in the field of NFTs certainly creates legal uncertainty due to the absence of norms

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[22] Complex. "Dame Dash Not Allowed to Sell Jay-Z's 'Reasonable Doubt' as NFT as They Settle on Who Owns Album", https://www.complex.com/music/dame-dash-prohibited-selling-jay-z-reasonable-doubt-as-nft-settle-who-owns-album (accessed November 16, 2023).

[23] United States District Court Southern District of New York. "Case No. 1:21-cv-5411", https://storage.courtlistener.com/recap/gov.uscourts.nysd.562168/gov.uscourts.nysd.562168.1.0.pdf (accessed November 16, 2023).

[24] United States District Court Southern District of New York.

[25] United States District Court Southern District of New York.

[26] Asia Business Law Journal. "NFT Regulations in Indonesia", https://law.asia/nft-regulations-indonesia/ (accessed November 17, 2023).

[27] Asia Business Law Journal.

governing the legal relationship between parties interested in NFT transactions. It is a fact that author can make NFT a certificate of ownership of an intellectual creation of the author as well as valid proof of ownership of intellectual property rights over the intellectual creation represented into an NFT. So, author actually intend to transfer copyright in the form of economic rights from the author to the NFT buyer.

Based on Article 16 Paragraph (2) of the Copyright Law and its elucidation, the transfer of economic rights must be done clearly by a written agreement with or without a notarial deed. In practice, NFT transactions often involve the transfer of economic rights from the author to the NFT buyer without a written agreement. Instead, the parties rely on a smart contract to govern the transfer.[28] The smart contract is a type of contract, other than a traditional contract, which functions on a blockchain and is self-executing, thus it can implement the terms of the agreement automatically.[29] This smart contract determines as well as implements the terms of selling NFTs. The lack of regulation in the Copyright Law and its elucidation for the transfer of economic rights by a smart contract creates legal uncertainty.

The current regulations regime does not fully align with the emerging realities of NFT trading, particularly with regard to the transfer of economic rights from the author to the NFT buyer, by smart contract. This situation results in a curiosity to conduct research on how are economic rights transferred from the author of the intellectual creation represented into the NFT to the NFT buyer by a smart contract? Therefore, this study aims to examine and comprehend the transfer of economic rights from the author of the intellectual creation represented into the NFT to the NFT buyer by a smart contract.

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[28] Pınar Çağlayan Aksoy and Zehra Özkan Üner, "NFTs and Copyright: Challenges and Opportunities," *Journal of Intellectual Property Law & Practice* 16, no. 10 (December 2021): 1115–26, https://doi.org/10.1093/jiplp/jpab104.

[29] Eureka Inola Kadly, Sinta Dewi Rosadi, and Elisatris Gultom, "Keabsahan Blockchain-Smart Contract dalam Transaksi Elektronik: Indonesia, Amerika, dan Singapura," *Jurnal Sains Sosio Humaniora* 5, no. 1 (2021): 199–212.

The research has a novelty element because it examines how economic rights transferred from the author of the intellectual creation represented into the NFT to the NFT buyer by a smart contract. Therefore, this research takes a legal perspective based on the Civil Code, Law of the Republic of Indonesia Number 11 of 2008 Concerning Electronic Information and Transactions State Gazette of the Republic of Indonesia Year 2008 Number 58 (hereinafter referred to as the ITE Law), the Copyright Law, Law of the Republic of Indonesia Number 19 of 2016 Concerning Amendment to Law Number 11 of 2008 Concerning Electronic Information and Transactions State Gazette of the Republic of Indonesia Year 2016 Number 251, and Law of the Republic of Indonesia Number 1 of 2024 Concerning Second Amendment to Law Number 11 of 2008 Concerning Electronic Information and Transactions State Gazette of the Republic of Indonesia Year 2024 Number 1. This novelty element is not found in previous researches that examine legal issues of intellectual property due to the existence of NFTs.

Dio Bintang Gidete, Muhammad Amirulloh, and Tasya Safiranita Ramli in their written work titled "Perlindungan Hukum atas Pelanggaran Hak Cipta pada Karya Seni yang dijadikan Karya Non Fungible Token (NFT) pada Era Ekonomi Digital" examine the allegations of violation of moral rights and economic rights of authors as a result of Twisted Vacancy's actions against two-dimensional artwork owned by Kendra Ahimsa and alleged violations of Article 32 Paragraph (1) of the ITE Law.[30] Similarly, Dewi Sulistianingsih and Apriliana Khomsa Kinanti in their written work titled "Hak Karya Cipta Non-Fungible Token (NFT) Dalam Sudut Pandang Hukum Kekayaan Intelektual" examine the legal challenges of

[30] Dio Bintang Gidete, Muhammad Amirulloh, and Tasya Safiranita Ramli, "Pelindungan Hukum Atas Pelanggaran Hak Cipta Pada Karya Seni yang Dijadikan Karya Non Fungible Token (NFT) Pada Era Ekonomi Digital," *Jurnal Fundamental Justice* 3, no. 1 (March 2022): 1–18, https://doi.org/10.30812/fundamental.v3i1.1736.

protecting NFT artworks under intellectual property law.[31] Although Dewi Sulistianingsih and Apriliana Khomsa Kinanti briefly discuss smart contracts in NFT trading transactions, they do not elaborate on the transfer of economic rights from the author of the intellectual creation represented into the NFT to the NFT buyer by a smart contract.

In addition, Qonita Nadya Haq, Aimee Aurilya Anindita, Erina Setyowati, and Putri Liny Anggraini in their written work titled "The Dynamic Aspects of Smart Contract in Non-Fungible Tokens" examine the problems of smart contracts when they become evidence in a dispute, while at the same time reviewing the validity of smart contracts in the positive legal system in Indonesia.[32] However, their work differs from this research. This research is to examines and comprehend the transfer of economic rights from the author of the intellectual creation represented into the NFT to the NFT buyer by a smart contract, which is linked to the provisions of the Copyright Law, in addition to the Civil Code and the ITE Law. This research focuses on whether the type of smart contract is allowed as a cause for transferring economic rights by the author.

This research approaches the topic from legal perspective, using the normative juridical method.[33] This research will closely examine several relevant the provisions of laws and regulations to identify and analyze the legal issues involved in the transfer of economic rights from the author of the intellectual creation represented into the NFT to the NFT buyer by a smart contract.[34] Data collection for this research was carried out by reviewing,

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[31] Dewi Sulistianingsih and Apriliana Khomsa Kinanti, "Hak Karya Cipta Non-Fungible Token (NFT) dalam Sudut Pandang Hukum Hak Kekayaan Intelektual," *KRTHA BHAYANGKARA* 16, no. 1 (April 2022): 197–206, https://doi.org/10.31599/krtha.v16i1.1077.

[32] Qonita Nadya Haq et al., "The Dynamic Aspects of Smart Contract in Non-Fungible Tokens," *DE LEGA LATA: Jurnal Ilmu Hukum* 7, no. 2 (December 2022): 280–91, https://doi.org/10.30596/dll.v7i2.10381.

[33] Sulistyowati Irianto and Shidarta, *Metode Penelitian Hukum: Konstelasi dan Refleksi* (Jakarta: Yayasan Pustaka Obor Indonesia, 2011), 121-122.

[34] Irianto and Shidarta.

such as primary legal materials, including the Civil Code, the ITE Law, the Copyright Law, Law of the Republic of Indonesia Number 19 of 2016 Concerning Amendment to Law Number 11 of 2008 Concerning Electronic Information and Transactions State Gazette of the Republic of Indonesia Year 2016 Number 251, Law of the Republic of Indonesia Number 1 of 2024 Concerning Second Amendment to Law Number 11 of 2008 Concerning Electronic Information and Transactions State Gazette of the Republic of Indonesia Year 2024 Number 1, and Government Regulation Number 71 of 2019 Concerning Electronic Systems and Transactions Operations State Gazette of the Republic of Indonesia Year 2019 Number 185. Correspondingly, data was collected from secondary legal materials including books, scientific journals, and articles related to the research. The method of data analysis used in this study was the descriptive analytical with deductive thinking criteria and primary data processing techniques using the legal discovery method.

II. Analysis of Transfer of Economic Rights of the Author of Works Represented into NFT by Smart Contract

As NFTs are a new technology, there is still much debate about them, including in the field of intellectual property law. NFTs as a new technology still require a comprehensive explanation from numerous scholarly studies conducted on them.[35] The absence of a complete explanation of what is meant by NFTs, their use, and how they function, creates difficulties in proposing solutions to the debates that arise from the existence of NFTs.[36] Given that from the perspective of normative currently enforced, these have yet to govern

[35] Wang et al., "Non-Fungible Token (NFT): Overview, Evaluation, Opportunities, and Challenges."

[36] Guadamuz, "The Treachery of Images: Non-Fungible Tokens and Copyright."

matters about NFTs, a basic explanation of NFTs can be gathered from technical studies.

NFTs are digital assets with unique characteristics that make them indistinguishable from each other.[37] The uniqueness attached to the NFT causes scarcity.[38] Due to uniqueness and scarcity of NFTs, they are classified as high-valued digital assets.[39] For example, in May 2021, CryptoPunk #1190 NFT sold for 1.400.000 US dollars.[40] Similarly, in the same month, the Estate #4186 NFT sold for 700.000 US dollars.[41]

Following on, an NFT that operates based on a smart contract within a blockchain system has introduced a new way in the field of art.[42] By minting NFTs, their authors can represent their intellectual creations (be it artwork, music, movie, or otherwise) in the form of NFTs.[43] The minted NFTs can then be traded on the NFT marketplace, so authors are entitled to royalties as well as profit from the selling price if the author acts as the first seller.[44] From this perspective, minting NFTs provides ease to the authors of intellectual creations to acquire value appreciation for their creations (works).[45] However, it can happen that authors instead suffer losses due to

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[37] Cheong Ghil Kim, "A Study on Technology to Counter Copyright Infringement According to NFT Transaction Types," *Journal of the Semiconductor & Display Technology* 20, no. 4 (2021): 187–91.

[38] Aksoy and Üner, "NFTs and Copyright: Challenges and Opportunities."

[39] Aksoy and Üner.

[40] Ante, "Non-Fungible Token (NFT) Markets on the Ethereum Blockchain: Temporal Development, Cointegration and Interrelations."

[41] Ante.

[42] Christian Pinto-Gutiérrez et al., "The NFT Hype: What Draws Attention to Non-Fungible Tokens?," *Mathematics* 10, no. 3 (January 2022): 1–13, https://doi.org/10.3390/math10030335.

[43] Sousa, "Token-Art System and the New International Art Market: The Impacts of NFT Technology and the Legal Aspects Involved."

[44] Guadamuz, "The Treachery of Images: Non-Fungible Tokens and Copyright."

[45] Madison Yoder, "An 'OpenSea' of Infringement: The Intellectual Property Implications of NFTs," *The University of Cincinnati Intellectual Property and Computer Law Journal* 6, no. 2 (2022): 1–14.

unauthorized duplication and display of their intellectual creations by others without the author's permission.

From a legal scholarly perspective, the emergence of NFTs demands additional legal protection for authors of intellectual creations. The current legal protection has not extended into issues arising in the utilization of NFTs. Consequently, it is difficult to handle legal issues emerging in societies realities due to events damaging authors of intellectual creations. When addressing these challenges, the concept of intellectual property rights currently in effect must be observed.

In the literature, there is a justifying theory that forms the basis for the existence of intellectual property rights. These theories are based on the idea that individuals have the right to own the products of their creative thoughts. From this perspective, everyone has the right to whatever they produce.[46] This view is similar to Locke's theory, the basis for the justification of intellectual property rights starts from the recognition of individual ownership over what one produces.[47] When the law protects intellectual property rights, it guarantees the authors can gain the benefits of their intellectual creations. This is evident in the existence of laws that give authors an exclusive right to their works, including both moral rights and economic rights.[48]

Moral rights preserve the author's identity and freedom over their work. Meanwhile, economic rights afford additional value in the form of economic benefits to the authors. The Utilitarian or Goal-Based Theory

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[46] Anak Agung Mirah Satria Dewi, "Perlindungan Hukum Hak Cipta Terhadap Cover Version Lagu di Youtube," *Jurnal Magister Hukum Udayana (Udayana Master Law Journal)* 6, no. 4 (December 2017): 508–20, https://doi.org/10.24843/JMHU.2017.v06.i04.p09.

[47] Stanford Encyclopedia of Philosophy. "Intellectual Property", https://plato.stanford.edu/entries/intellectual-property/#LockJustInteProp (accessed November 18, 2023).

[48] WTO. "Module 1 Introduction to the Trips Agreement", https://www.wto.org/english/tratop_e/trips_e/ta_docs_e/modules1_e.pdf (accessed November 18, 2023).

provides a justification for the existence of economic rights.[49] This theory, which justifies legal protection over someone's intellectual creations, argues that economic benefits encourage the creativity.[50] The existence of these economic benefits also stimulates everyone's interest in producing their intellectual creations. Without economic rights, others could profit unfairly from a creation, such as through commercialization without the author's permission or through duplication, which constitutes an infringement of the author's rights. Thus, legal protection for intellectual creations is essential.

Under current laws and regulations, the concept of legal protection over intellectual creations can be found in the Copyright Law. The definition of copyright has been described in Article 1 Number 1 of the Copyright Law, as follow:

> "Copyright means an exclusive right of the author vested automatically on the basis of declaratory principle after Works are embodied in a tangible form without reducing by virtue of restrictions in accordance with the provisions of laws and regulations."

Additionally, the definition of the author has been described in Article 1 Number 2 of the Copyright Law, which reads as follows: *"Author means a person or several persons who individually or jointly produce works that are unique and personal."*

The definition of works is stated in Article 1 Number 3 of the Copyright Law, which reads as follows: *"Works mean any scientific, artistic, and literary works resulted from inspiration, ability, thought, imagination, dexterity, skill or expertise expressed in a tangible form."*

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[49] Kahsay Debesu Gebray, "Justifications for Claiming Intellectual Property Protection in Traditional Herbal Medicine and Biodiversity Conservation: Prospects and Challenges," *WIPO-WTO Colloquium Papers* 4 (2013): 23–34.

[50] Gebray.

Additionally, the definition of the copyright holder has been described in Article 1 Number 4 of the Copyright Law, which reads as follows: *"Copyright Holder means an Author as the Copyright owner, the party acquiring a lawful right from the Author, or other parties who acquire subsequent rights from the party such acquiring lawful rights."*

The Copyright Law also asserts in Article 4 that copyrights are the exclusive rights comprising moral rights and economic rights. From this perspective, the Copyright Law already provides general legal protection for intellectual property rights, but it has not yet been specifically extended to the legal issues arising from NFTs. In the digital age, technological change is happening so quickly that the law is having trouble keeping up with the evolving ways that communities are using technology. Nurhidayah Abdullah, Hanira Hanafi, and Nazli Ismail Nawang have also written about this in their paper titled "Digital Era dan Intellectual Property Challenges in Malaysia" arguing that technological change is creating new legal challenges that are difficult to address because the law is lagging behind.[51]

This research examines the legal issues surrounding the transfer of economic rights to NFT buyer by smart contract. The following illustration is necessary as an introduction before diving deeper into this legal issue. Authors can digitize their intellectual creations into NFTs to demonstrate that they are the authors of the NFTs and the intellectual creations they represent. Furthermore, authors freely determine how rare their NFTs will be. Therefore, authors will follow these steps:[52]

1. NFT Digitize, the process of digitizing intellectual creations from the raw data into the targeted format.

[51] Nurhidayah, Hanafi, and Nawang, "Digital Era and Intellectual Property Challenges in Malaysia."

[52] Wang et al., "Non-Fungible Token (NFT): Overview, Evaluation, Opportunities, and Challenges."

2. NFT Store, the process of storing the raw data into an external database outside the blockchain.
3. NFT Sign, the process of signing an NFT transaction, including the hash of NFT data, and then sends the transaction to a smart contract.
4. NFT Mint and Trade, the process of minting and trading NFTs that begins after the smart contract receives the transaction with the NFT data.
5. NFT Confirm, the confirmation process needed to complete the NFT minting process. Thus, the minted NFTs are linked to a unique blockchain address.

In relation to that, the workflow is attached, which starts from NFT Digitize to NFT Confirm:

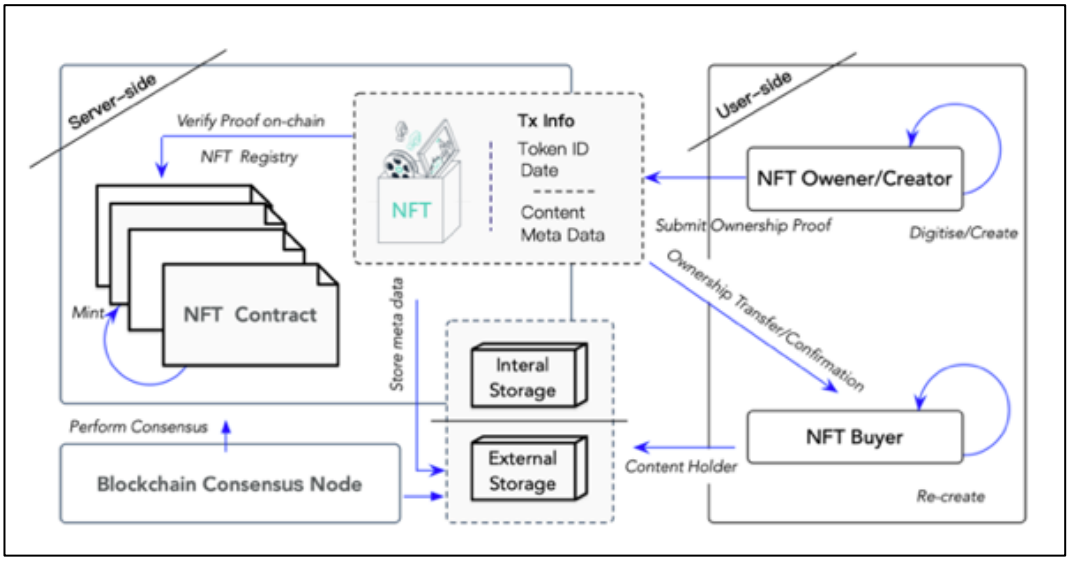

FIGURE 1. Workflow of NFT Systems

Source: Qin Wang, Rujia Li, Qi Wang, and Shiping Chen, 2021.[53]

From the explanation above, it is clear the importance of the existence of a smart contract at the NFT Mint and Trade stage. From a legal perspective, the existence of a smart contract is intended to establish a legal relationship between the author of the NFT, who may at the same time

[53] Wang et al.

be the author of the intellectual creation represented into an NFT, and the buyer of the NFT. It is possible that the author only specifies the intention of his NFT minting for the purpose of duplicating the intellectual creation owned by the author and does not make the NFT a valid proof of ownership of intellectual property rights over the intellectual creation represented into an NFT. Therefore, NFT buyers are prohibited from enjoying the intellectual property rights over the intellectual creation represented into the NFTs.

From a normative perspective, it may occur that the author transfers the intellectual property rights in the form of the author's economic rights to other legal subject (in the form of person). This transfer makes the person who receives the economic rights from the author entitled to do anything under Article 9 Paragraph (1) of the Copyright Law, as follows: "*The Author or the Copyright Holder as referred to in Article 8 has the economic rights to engage in:*

a. publication of the Works;
b. reproduction of the Works in all its forms;
c. translation of the Works;
d. adaptation, arrangement, or transformation of the Works;
e. distribution of the Works or their copies;
f. performance of the Works;
g. publication of the Works;
h. communication of the Works; and
i. rental of the Works."

The transfer of these economic rights must be carried out in accordance with the provisions stipulated in Article 16 Paragraph (2) of the Copyright Law, which reads as follow: "*A Copyright may be transferred, either in whole or in part by:*

a. inheritance;
b. grant;
c. waq f;

d. testament;
e. written agreement; or
f. other justifiable reasons in accordance with the provisions of laws and regulations."

Furthermore, if the NFT buyer intends to enjoy the economic rights set out in the Copyright Law, the desired cause is the presence of a legal event set out in Article 16 Paragraph (2) of the Copyright Law. However, in practice, NFT transactions often involve the transfer of economic rights from the author to the NFT buyer without a written agreement. Instead, the parties rely on a smart contract to govern the transfer.[54] This situation raises legal issues because the Copyright Law and its its elucidation do not actually regulate the transfer of copyright in the form of economic rights by a smart contract.

Therefore, it is necessary to examine what is meant by a smart contract. The smart contract is a type of contract, other than a traditional contract, which functions on a blockchain and is self-executing, thus it can implement the terms of the agreement automatically.[55] This smart contract determines as well as implements the terms of selling NFTs. Smart contracts are operated by computerized code within electronic systems so that they do not require a third party in an electronic transaction.[56] So, a smart contract is different from traditional contract such as written agreement which are designed, agreed upon, and signed directly by the parties in a transaction.[57]

From the explanation above, it is understood that the element that must exist for a smart contract to be formed and implemented is the

[54] Aksoy and Üner, "NFTs and Copyright: Challenges and Opportunities."
[55] Kadly, Rosadi, and Gultom, "Keabsahan Blockchain-Smart Contract dalam Transaksi Elektronik: Indonesia, Amerika, dan Singapura."
[56] Tresnawati Tresnawati and Angelina Marlina Fatmawati, "Blockchain-Based Smart Contract: Advancing Digital Consumer Protection and Preventing Private International Law E-Commerce Cases," *Yustisia Jurnal Hukum* 10, no. 3 (December 2021): 354–68, https://doi.org/10.20961/yustisia.v10i3.54891.
[57] Kadly, Rosadi, and Gultom, "Keabsahan Blockchain-Smart Contract dalam Transaksi Elektronik: Indonesia, Amerika, dan Singapura."

computerized code within an electronic system. This computerized code, which represents the will of the parties at the time of forming the smart contract, becomes the provisions in the smart contract and simultaneously the executor of the smart contract provisions (smart contract is self-executing). In this context, the advantages and disadvantages of smart contracts on NFTs can be explored.

From the explanation above, it is understood that the implementation of provisions in a smart contract does not depend on the actions of the parties to the contract, but only depends on the code in the smart contract. This situation shows that there is a greater predictability of the implementation of smart contract provisions compared to the predictability of the implementation of traditional contract provisions, because it can be determined from the creation of the code in the smart contract that the code executes the contract provisions according to the terms and conditions.[58] This is different from the implementation of traditional contract provisions, which depends on the actions of the parties in the contract.[59] In relation to the transfer of economic rights from the author of the intellectual creation represented into the NFT to the NFT buyer by a smart contract, the parties obtain predictability that the transfer of economic rights of the author from the author (also the seller of the NFT) to the NFT buyer will be executed by the code in the smart contract. This situation prevents differing interpretations of the implementation of smart contract provisions among the parties. This explanation is an advantage of smart contracts on NFTs.

Furthermore, as it is understood that NFTs essentially operate on the implementation of smart contract provisions. Similarly, as previously explained, the computerized code within the electronic system is an

[58] T.J. de Graaf, "From Old to New: From Internet to Smart Contracts and from People to Smart Contracts," *Computer Law & Security Review* 35, no. 5 (October 2019): 1–15, https://doi.org/10.1016/j.clsr.2019.04.005.

[59] Graaf.

essential element for a smart contract to be formed and executable. In this context, there could be a situation where the code has a bug.[60] If such a situation occurs, it certainly results in the concerned smart contract not being able to be executed.[61] In relation to the transfer of economic rights from the author of the intellectual creation represented into the NFT to the NFT buyer by a smart contract, the existence of a bug in the code in the smart contract results in the smart contract not being able to be executed. In other words, the intended transfer of economic rights of the author cannot be executed. This shows a disadvantage of using smart contracts on NFTs due to the execution of smart contracts that solely depend on the code in the smart contract.

Therefore, to avoid a disadvantage and to ensure an advantage from the use of smart contracts, the parties in the smart contract must ensure that the code in the smart contract will function according to the will of the parties and does not experience bugs from the formation of the smart contract.[62] This is in line with the opinion of T. J. de Graaf who stated that from the formation of the smart contract and the execution of a smart contract, each party that creates a smart contract only needs to trust that the smart code functions in accordance with the requirements of each party.[63] This trust arises if the parties in the smart contract ensure that the code in the smart contract will function according to the will of the parties and does not experience bugs from the formation of the smart contract.

From the explanation above, it is known that smart contracts are utilized in electronic transaction relationship within electronic system. From this perspective, it seems that smart contracts can be classified as

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[60] Joshua Ellul and Ioannis Revolidis, "Non-Fungible Tokens (NFTs), Smart Contracts and Contracts: The Need for Legal and Technology Assurances," *SSRN Paper*, 2023, 1–24, https://doi.org/10.2139/ssrn.4325415.

[61] Ellul and Revolidis.

[62] Ellul and Revolidis.

[63] Graaf, "From Old to New: From Internet to Smart Contracts and from People to Smart Contracts."

electronic contracts, the regulations for which are found in the ITE Law, Law of the Republic of Indonesia Number 19 of 2016 Concerning Amendment to Law Number 11 of 2008 Concerning Electronic Information and Transactions State Gazette of the Republic of Indonesia Year 2016 Number 251, Law of the Republic of Indonesia Number 1 of 2024 Concerning Second Amendment to Law Number 11 of 2008 Concerning Electronic Information and Transactions State Gazette of the Republic of Indonesia Year 2024 Number 1, and Government Regulation Number 71 of 2019 Concerning Electronic Systems and Transactions Operations State Gazette of the Republic of Indonesia Year 2019 Number 185.[64]

It is noteworthy that the ITE Law has not explicitly regulated blockchain technology or smart contracts. Even in the Law of the Republic of Indonesia Number 1 of 2024 Concerning Second Amendment to Law Number 11 of 2008 Concerning Electronic Information and Transactions State Gazette of the Republic of Indonesia Year 2024 Number 1 has not explicitly regulated blockchain technology or smart contracts. This regulation refines norms such as electronic evidence, electronic certification, and electronic transactions. In Article 1 Number 17 Law of the Republic of Indonesia Number 19 of 2016 Concerning Amendment to Law Number 11 of 2008 Concerning Electronic Information and Transactions State Gazette of the Republic of Indonesia Year 2016 Number 251 states, as follows: *"Electronic Contract means an agreement of parties entered into by means of Electronic Systems."*

Furthermore, in relation to the explanation of Electronic Systems, it is stated in Article 1 Number 5 Law of the Republic of Indonesia Number 19 of 2016 Concerning Amendment to Law Number 11 of 2008 Concerning Electronic Information and Transactions State Gazette of the Republic of Indonesia Year 2016 Number 251, as follows: *"Electronic*

[64] Kadly, Rosadi, and Gultom, "Keabsahan Blockchain-Smart Contract dalam Transaksi Elektronik: Indonesia, Amerika, dan Singapura."

System means a set of electronic devices and procedures that functions to prepare, collect, process, analyze, store, display, announce, send, and/or disseminate Electronic Information."

Furthermore, from the two definitions above, it is known that a smart contract is an electronic contract that is used as a tool to accommodate electronic transaction to bind each party in a smart contract created in an electronic system.

A smart contract as an electronic contract is deemed valid if it fulfills certain conditions set forth in Article 46 Paragraph (2) Government Regulation Number 71 of 2019 Concerning Electronic Systems and Transactions Operations State Gazette of the Republic of Indonesia Year 2019 Number 185, including an agreement is reached between the parties, it is entered into by a competent legal subject or their authorized representatives in accordance with the provisions of laws and regulations, there is a specific matter, and object of the transaction does not contravene the laws and regulation, good morals, and public order. Additionally, as regulated in Article 47 Paragraph (3) Government Regulation Number 71 of 2019 Concerning Electronic Systems and Transactions Operations State Gazette of the Republic of Indonesia Year 2019 Number 185, smart contracts as electronic contracts contains at least data on identities of the parties, objects and specifications, electronic transaction requirements, prices and costs, procedures in the event of cancellation by the parties, provisions granting rights to an injured party allowing it to return the goods and/or to request for a product replacement if any hidden defects are found, and choice of law for the completion of electronic transactions.

From the above explanation, smart contracts are actually implicitly regulated in the current laws and regulations. It's just that, the implementation of smart contracts in the transfer of economic rights by the author of intellectual creations represented into NFTs still causes uncertainty about whether the type of smart contract is allowed as a cause for transferring economic rights by the author. Moreover, the lack of

regulations regarding NFTs raises legal uncertainty about whether electronic transactions in the use of NFTs are allowed, what actions are prohibited, and what legal consequences arise from the use of NFTs. This situation is worth trying to explore to find a solution to the problem that occurs.

Examining the provisions regulated in Article 16 Paragraph (2) of the Copyright Law, smart contracts are not explicitly regulated as the cause of the transfer of the creator's economic rights. Interpreting the content of Article 16 Paragraph (2) letter f of the Copyright Law and its elucidation, it still causes uncertainty whether smart contracts are allowed as the cause of transferring the author's economic rights. The elucidation of Article 16 Paragraph (2) letter f of the Copyright Law only shows other causes that are permitted according to the provisions of laws and regulations, including a transfer due to a court decision that is final and binding, mergers, acquisitions, or dissolution of a company or a legal entity where a consolidation or separation of company assets take place.

As for dealing with the provisions of the laws that has not yet been regulated, it is necessary to use a legal discovery method in the form of a legal construction known in legal literature. The specific method utilized on the legal construction "*argumentum per analogiam*", which is one of the methods of legal construction, where the application of a provision will be carried out for conditions that are essentially the same as those which have been explicitly regulated in a legal provision.[65] This method is used in order to find a legal basis for the transfer of economic rights by the author of intellectual creations represented into NFTs by a smart contract. Therefore, it is necessary to consider what is regulated in Article 16 Paragraph (2) of the Copyright Law. These provisions allow written agreement as a cause for the transfer of the author's economic rights.

[65] HukumOnline.com. "Arti Penafsiran Hukum Argumentum A Contrario", https://www.hukumonline.com/klinik/a/arti-penafsiran-hukum-iargumentum-a-contrario-i-lt58b4df16aec3d (accessed November 18, 2023).

Although the characteristics of the smart contract are different from the written agreement, 2 (two) similarities are found in the elements of transactions carried out based on written agreement and smart contract.

The similarity of these elements is found in terms of the validity of written agreement and smart contract. The validity of written agreements governed by Article 1320 of the Civil Code, the elements of which include the agreement of those who bind themselves, capacity to make an obligation, a certain subject matter, and a cause that is not prohibited.[66] Likewise, the validity of a smart contract which is subject to Article 46 Paragraph (2) Government Regulation Number 71 of 2019 Concerning Electronic Systems and Transactions Operations State Gazette of the Republic of Indonesia Year 2019 Number 185 has similar elements with Article 1320 of the Civil Code which includes an agreement is reached between the parties, it is entered into by a competent legal subject or their authorized representatives in accordance with the provisions of laws and regulations, there is a specific matter, and object of the transaction does not contravene the laws and regulations, good morals, and public order.

Furthermore, the other similarities between written agreement and smart contract are the purpose of the formation of the agreement. The purpose of a written agreement is to establish a legally binding relationship between the parties involved. Likewise, smart contract in NFT transactions create obligations between the author of the NFT the NFT buyer who bind themselves in the smart contract. So, both cause legal consequences which ultimately occur the transfer of rights from one party to the other in the agreement (contract). For example, with a sales and purchase agreement, it is intended for the transfer of the author's economic rights to the recipient of the economic rights. Likewise, by a smart contract, it is intended for the transfer of the economic rights of the author of the intellectual creation represented into the NFT to the NFT buyer.

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[66] Budiono Kusumohamidjojo, *Perbandingan Hukum Kontrak (Comparative Contract Law) Edisi Revisi* (Bandung: CV Mandar Maju, 2019), 50.

From the above explanation, it is clearly known that there are 2 (two) similarities obtained which indicate the basis for justification for the use of the argumentum per analogiam method for Article 16 Paragraph (2) of the Copyright Law if there is a transfer of the author's economic rights of the intellectual creation represented in the NFT to the NFT buyer by a smart contract. Therefore, it is known that Article 16 Paragraph (2) of the Copyright Law also applies if there is a transfer of the author's economic rights of the intellectual creation represented into the NFT to the NFT buyer by a smart contract. As a result, the NFT buyer can enjoy the economic rights regulated in Article 9 Paragraph (1) of the Copyright Law if the smart contract contains provisions for the transfer of the author's economic rights and is made the cause of the transfer of the author's economic rights.

III. Conclusion

The cause of the transfer of the author's economic rights as stated Article 16 Paragraph (2) of the Copyright Law does not regulate the transfer of the author's economic rights of the intellectual creation represented into the NFT to the NFT buyer by a smart contract. Therefore, there is uncertainty about whether this type of smart contract is allowed as a cause for the transfer of the author's economic rights. In response to the provisions of the laws and regulations that have not been regulated, it is necessary to use a legal construction argumentum per analogiam.

The result is that there are 2 (two) similarities between written agreement and smart contract which is namely the similarity of validity requirements and the similarity of the purpose of the formation of the agreement, which indicate the basis for justification for the use of the argumentum per analogiam method for Article 16 Paragraph (2) of the Copyright Law if there is a transfer the author's economic rights of the intellectual creation represented into the NFT to the NFT buyer by a

smart contract. Consequently, Article 16 Paragraph (2) of the Copyright Law also applies if there is a transfer of the author's economic rights of the intellectual creation represented into the NFT to the buyer of the NFT buyer by a smart contract. NFT buyer can enjoy the economic rights regulated in Article 9 Paragraph (1) of the Copyright Law if the smart contract contains provisions for the transfer of the author's economic rights and is made as the cause of the author's economic rights transfer.

Due to the absence of regulations governing the transfer of the author's economic rights of intellectual creations represented in the NFT to the buyer of the NFT Buyer by a smart contract, it is necessary to recommend the formulation of statutory provisions that regulate this matter. The formulation can be done by making amendments to Article 16 Paragraph (2) of the Copyright Law or making statutory regulations in the field of NFTs.

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Intellectual property is a key aspect for economic development.

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