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Copyright Protection through Blockchain Technology: International Experiences and Implications for Vietnam

DO QUYNH NGA*

ABSTRACT

This paper examines how blockchain technology may support copyright protection in digital environments and draws implications for Vietnam. The growth of digital technologies and the creative economy has reshaped the ways in which copyrighted works are created, exploited, and distributed, expanding access to knowledge while increasing the risk of cross-border infringement that is difficult to monitor. Traditional protection mechanisms have revealed shortcomings in establishing rights, managing copyright transactions, and enforcing rights in cyberspace. Blockchain is increasingly regarded as a technology capable of supporting copyright protection through its decentralised structure, transparency, traceability, and capacity to preserve data integrity. Drawing on the experiences of China and South Korea, this paper analyses the current Vietnamese legal framework governing copyright protection in relation to blockchain and discusses possible directions for legal reform. The analysis indicates that, despite the existence of a basic legal framework, a number of issues concerning blockchain-based transactions, smart contracts, NFTs, and the evidentiary value of blockchain data remain insufficiently addressed. The paper proposes several recommendations aimed at facilitating the use of blockchain in copyright protection in a manner consistent with technological development and international integration.

Keywords: Blockchain technology, copyright protection, Vietnam, China, South Korea.

I. INTRODUCTION

The development of digital technologies and the Internet has transformed the ways in which creative works are produced, exploited, and disseminated. Literary, artistic, and scientific works are increasingly digitised and widely circulated through online platforms, facilitating access to knowledge and contributing to the growth of the creative economy. At the same time, digital environments have created new opportunities for copyright infringement, including the unauthorised copying, distribution, modification, and use of protected works. In many cases, identifying the rights holder, determining the time of creation, and tracing the history of

* Author is a Legal Associate at Vietsavvy Law Firm, Hanoi, Vietnam.

exploitation remain challenging, particularly for digital assets that can be shared and reproduced at high speed. Traditional copyright protection mechanisms rely largely on centralised systems for registration, storage, and data management. Although these mechanisms continue to serve an important function in establishing and protecting rights, they have revealed certain limitations in response to technological change. Difficulties often arise in proving the origin of a work, monitoring the exercise of rights, or managing copyright transactions with cross-border elements. Centralised data management systems may also be vulnerable to inaccuracies, data loss, or unauthorised interference affecting copyright-related information. These challenges have prompted growing interest in technological solutions capable of improving the management and protection of copyright in digital environments.

Blockchain is widely regarded as an emerging technology with significant potential for application in the copyright field, owing to its decentralised architecture, transparency, traceability, and ability to preserve data integrity. By its nature, blockchain does not replace the legal mechanisms through which rights are established. Rather, it can support the recording, management, and verification of information relating to the creation, exploitation, and transfer of rights in copyrighted works. Recent developments across several jurisdictions suggest a gradual incorporation of blockchain into intellectual property governance and copyright protection. China and South Korea offer two distinct approaches to the use of blockchain in this field. In China, legal and judicial developments have gradually recognised the evidentiary value of blockchain-recorded data in intellectual property disputes. South Korea, by contrast, has focused more heavily on the use of blockchain for the management, commercialisation, and exploitation of intellectual property assets within the digital cultural industry.

Despite these developments, existing scholarship has focused primarily on the technical features of blockchain and its potential applications in intellectual property management more broadly. By comparison, legal analyses of the use of blockchain to support the establishment, administration, and enforcement of copyright remain fragmented. In particular, limited attention has been paid to systematic comparisons between jurisdictions that have accumulated practical experience and Vietnam's legal framework. Examining foreign approaches and assessing their relevance to Vietnam can help clarify emerging legal issues while providing reference points for future legislative and policy development. The analysis may also contribute to ongoing discussions on how digital technologies can be integrated into Vietnam's copyright protection framework. Against this background, this paper addresses three main issues: first, the current Vietnamese legal framework and the regulatory gaps that remain in relation to copyright protection through blockchain technology; second, the legal framework and practical

implementation of blockchain in the copyright sector in China and South Korea; and third, proposals for improving copyright protection mechanisms based on blockchain technology in Vietnam, taking into account international experience as well as the country's legal and technological conditions.

II. VIETNAM'S CURRENT LEGAL FRAMEWORK AND REGULATORY GAPS IN BLOCKCHAIN-BASED COPYRIGHT PROTECTION

In recent years, Vietnam has gradually refined its copyright regime in response to technological change and its international commitments in the field of intellectual property. These developments reflect a shift from traditional regulatory approaches toward a framework more capable of accommodating new methods of creating, exploiting, and distributing works in a digital environment. Article 14 of the Law on Intellectual Property provides protection for literary, artistic, and scientific works expressed in various forms. This provision establishes a legal basis for protecting creative outputs, including works exploited in online environments. Beyond defining protected subject matter, Vietnamese law contains relatively comprehensive rules governing authorship, copyright ownership, and mechanisms for safeguarding the lawful interests of rights holders. Individuals and organisations holding copyright may adopt self-protective measures, request action against infringing conduct, or initiate legal proceedings to protect their rights and interests.¹ In addition, Decree No. 134/2026/ND-CP reflects a broader effort to strengthen copyright protection in digital environments by refining the obligations of intermediary service providers. The Decree supplements Article 112 of Decree No. 17/2023/ND-CP, requiring intermediaries to cooperate in blocking or removing infringing content upon receiving a valid request from rights holders or competent state authorities. It also establishes mechanisms for addressing copyright infringement occurring on digital platforms. These measures enhance enforcement and help curb the unauthorised dissemination of creative works in cyberspace, including derivative works used or exploited contrary to legal requirements. Yet these legislative developments remain focused primarily on enforcement and infringement control. A comprehensive legal framework for copyright protection through blockchain technology has not been established. Several important gaps may be identified.

First, current legislation does not contain specific provisions governing creative assets that exist solely in digital form.² Several Vietnamese scholars have argued that the emergence of digital assets and digitally created content requires a more comprehensive legal framework capable of

¹ Law on Intellectual Property, No. 50/2005/QH11, art. 198 (Viet.), as amended by Law No. 07/2022/QH15.

² Nguyen Linh Chi, *Developing a Legal Framework for Digital Assets: An Urgent but Cautious Task*, VIETNAM LAWYERS MAGAZINE (2025).

clarifying their legal status and the protection mechanisms applicable within the Vietnamese legal system. Although the protected categories of works are broadly defined, the legal framework continues to be built largely around subject matter that can be identified through conventional means. As a result, determining the scope of protection for works created, circulated, and exploited entirely in digital spaces remains problematic.

Second, the verification of a work's legal origin presents a significant challenge. Blockchain technology can record the time of creation, preserve transaction histories, and track patterns of exploitation through timestamp mechanisms and highly secure data structures.³ This capability may assist in authenticating the origin of a work and reconstructing its history of existence and use in digital environments.⁴ Nevertheless, Vietnamese law does not currently recognise blockchain-recorded information as an independent category of evidence in intellectual property disputes.⁵ Its evidentiary value therefore remains uncertain in practice. Some scholars argue that blockchain data may help establish the time at which a work was created or existed, but that it cannot fully replace the evidentiary methods already recognised by law. Consequently, its potential contribution to proving copyright claims has yet to be fully realised. From a practical perspective, Vietnamese scholarship has also acknowledged the potential of blockchain technology in the storage and authentication of electronic evidence, particularly where data integrity and traceability are essential.

Third, attention must also be paid to the digitisation of copyright-related transactions. In practice, blockchain is frequently combined with smart contracts to automate licensing arrangements, royalty payments, and transfers of exploitation rights.⁶ Although the Law on Electronic Transactions 2023 broadened the recognition of electronic transactions, Vietnamese legislation has yet to clarify the legal status, validity requirements, and dispute-resolution mechanisms applicable to agreements executed entirely through computer code. Scholars have identified these issues as among the most prominent legal challenges associated with blockchain-based copyright management.⁷ Vietnamese legal scholarship has likewise

³ Alexander Savelyev, *Copyright in the Blockchain Era: Promises and Challenges*, 33 COMPUTER LAW & SECURITY REVIEW 550, 551-553 (2017); Pham Tien Dat, *Application of Blockchain Technology in Intellectual Property Protection*, INFORMATION SECURITY JOURNAL (2022).

⁴ T. Nurhaeni et al., *Transformation Framework Design on Digital Copyright Entities Using Blockchain Technology*, 1 BLOCKCHAIN FRONTIER TECHNOLOGY 31, 38-39 (2021).

⁵ Pham Trung Dung & Nguyen Van Tung, *Application of Blockchain Technology in Electronic Evidence Storage in China, the United States and Recommendations for Vietnam*, PROCURACY JOURNAL (2023).

⁶ Savelyev, *supra* note 3, at 555-557; Nguyen Minh Hang & Phan Ngoc Bich, *Legal Issues Concerning the Immutability of Smart Contracts on Blockchain Platforms and Implications for Vietnam*, JOURNAL OF INTERNATIONAL ECONOMICS AND MANAGEMENT, No. 149 (2022).

⁷ S. L. Barata, P. R. Cunha & R. S. Vieira-Pires, *I Rest My Case! The Possibilities and Limitations of Blockchain-Based IP Protection*, in INFORMATION SYSTEMS ARCHITECTURE AND TECHNOLOGY: PROCEEDINGS OF THE 40TH ANNIVERSARY INTERNATIONAL CONFERENCE ON INFORMATION SYSTEMS ARCHITECTURE AND TECHNOLOGY -

emphasised that the absence of clear rules regarding the validity, immutability, and dispute-resolution mechanisms of smart contracts constitutes a significant obstacle to the broader adoption of blockchain technology. Where technical failures occur, systems operate incorrectly, or digital tools are misused for unlawful purposes, disputes are likely to arise.

From a data-governance perspective, blockchain also raises questions concerning the relationship between copyright protection and personal data protection. The immutability of blockchain enhances data integrity but may conflict with an individual's right to request the correction or deletion of personal information. Once information relating to an author or rights holder has been recorded on a blockchain network, modification or removal is often difficult, if not impossible, through ordinary means. Academic commentary has repeatedly highlighted this tension between immutable records and personal data protection requirements. This issue extends beyond technical design and raises broader questions concerning the balance between data integrity and individual rights.⁸ Reconciling data integrity with individual control over personal information therefore remains a significant legal challenge. The cross-border nature of blockchain networks creates a further layer of complexity. Unlike centralised databases located within a particular jurisdiction, blockchain systems operate through distributed nodes situated across multiple countries. Where copyright is infringed through digital platforms operating abroad, identifying the applicable law, determining jurisdiction, and enforcing legal remedies may become considerably more difficult.⁹

Fourth, Vietnamese law currently lacks specific rules governing disputes arising from the exploitation of intellectual property assets through blockchain platforms or non-fungible tokens (NFTs). This absence increases uncertainty regarding jurisdiction, choice of law, and the effectiveness of protective measures in international settings.

Fifth, the existing legal framework has yet to establish an effective connection between intellectual property law, electronic transaction law, data regulation, and broader digital technology governance. The lack of coordination among these fields leaves many emerging issues unresolved. Existing research suggests that uncertainty regarding legal mechanisms, technical standards, and data-governance models remains a substantial obstacle to the implementation of blockchain-based copyright solutions.¹⁰

ISAT 2019 57, 66-70 (A. Siarheyeva et al. eds., 2020).

⁸ Savelyev, *supra* note 3, at 558-560.

⁹ Savelyev, *supra* note 3, at 559-560.

¹⁰ H. S. Disemadi, J. Girsang & S. Selina, *Decoding Creativity in the Digital Age: Blockchain Unveiled - Navigating Opportunities and Challenges in Copyright Protection*, 4 BATULIS CIVIL LAW REVIEW 224, 236-237 (2023).

Despite these shortcomings, Vietnam has begun to take steps toward adapting to the development of the digital economy. National strategies on innovation and blockchain development demonstrate increasing governmental interest in foundational technologies. Several domestic enterprises have experimented with blockchain-based solutions for authenticating ownership of digital assets, facilitating NFT transactions, and verifying online data.¹¹ In parallel, Vietnamese scholarship has identified blockchain as a promising technology for strengthening intellectual property authentication and improving the management of digital assets in online environments. Early results suggest that blockchain may offer valuable tools for managing and authenticating digital assets, although implementation remains largely experimental. These developments indicate that legal reform should extend beyond isolated amendments and instead adopt a broader approach to rights governance in technology-driven environments.

Regulatory reform alone, however, will not be sufficient. The effective use of blockchain in copyright protection also depends on governance structures and cooperation among participants in the creative ecosystem.¹² Research consistently shows that legal rules represent only one element of a broader framework that includes technical infrastructure, institutional arrangements, and implementation capacity.¹³ For this reason, the experiences of China and South Korea provide useful reference points when considering how blockchain-based copyright mechanisms might be adapted to Vietnam's legal system, governance capacity, and level of technological development.

III. LEGAL FRAMEWORKS AND PRACTICAL DEVELOPMENTS IN BLOCKCHAIN-BASED COPYRIGHT PROTECTION IN CHINA AND SOUTH KOREA

A. China: Internet courts and blockchain-based evidence

China is widely regarded as one of the countries that has taken some of the earliest and most visible steps toward incorporating blockchain into copyright protection. Rather than treating blockchain merely as a tool for data storage, Chinese authorities have gradually integrated the technology into dispute resolution mechanisms and the broader framework of electronic justice. This development has accompanied the country's efforts to establish Smart Courts and to

¹¹ N. M. Duc et al., *The Application of Blockchain Technology in Authenticating Property Ownership on the Internet in Viet Nam*, 7 INTERNATIONAL JOURNAL OF RESEARCH IN COMMERCE AND MANAGEMENT STUDIES 62, 70-73 (2025).

¹² Disemadi et al., *supra* note 10, at 236-238.

¹³ Nurhaeni et al., *supra* note 4, at 39-43; Disemadi et al., *supra* note 10, at 236-238.

modernise judicial administration through digital technologies.¹⁴ This approach demonstrates that blockchain has not been deployed merely as a technical tool, but has been incorporated directly into the enforcement framework for intellectual property rights in digital environments. An important milestone was reached in 2018, when the Hangzhou Internet Court recognised blockchain-stored data as admissible electronic evidence in a copyright dispute. The court considered such data to be highly reliable because the recording, authentication, and preservation mechanisms embedded in blockchain systems make post-upload alterations extremely difficult. On that basis, blockchain was viewed as a tool capable of enhancing both the authenticity and the evidentiary value of electronic evidence in judicial proceedings.¹⁵

Subsequently, the legal basis for the use of blockchain data in litigation was further strengthened through regulations issued by the Supreme People's Court of China. Under the Rules of Online Litigation of the People's Courts, information stored through blockchain may be presumed unaltered after being uploaded to the system, provided that technical verification requirements are satisfied and no contrary evidence is presented.¹⁶ This approach does not grant automatic evidentiary status to blockchain data. Instead, such information remains subject to judicial assessment in accordance with established procedural standards. Legal recognition has also been accompanied by substantial investment in technical infrastructure. A prominent example is the Tianping Chain, developed by the Beijing Internet Court to facilitate the authentication and sharing of electronic data in judicial proceedings. This initiative illustrates that China's approach extends beyond formal legal acknowledgment and includes the creation of technological systems capable of supporting practical implementation. The Tianping Chain connects government agencies, notarial institutions, technology enterprises, and Internet service providers within a multi-party verification network. Through this structure, intellectual property data can be cross-checked and authenticated more efficiently, thereby facilitating both evidentiary assessment and dispute resolution in digital environments.¹⁷

China's experience therefore extends beyond the acceptance of blockchain data in judicial proceedings. Equally significant is the integration of blockchain into the broader modernisation of the judicial system. Within the Smart Courts framework, blockchain operates alongside technologies such as big data, artificial intelligence, and cloud computing to support the collection, storage, authentication, and sharing of electronic information among participants in

¹⁴ G. G. Zheng, *China's Grand Design of People's Smart Courts*, 7 ASIAN JOURNAL OF LAW AND SOCIETY 561, 561-565 (2020).

¹⁵ Zheng, *supra* note 14, at 577; Y. Wu, *Embedded Fusion: The Certainty of Blockchain Technology Complements the High Degree of Probability of Legal Presumption*, 12 CHINESE STUDIES 103, 107-108 (2023).

¹⁶ Wu, *supra* note 15, at 104.

¹⁷ Zheng, *supra* note 14, at 566-567.

legal proceedings. Judicial blockchain networks strengthen the ability to verify the origin of digital data and make it easier to establish factual foundations in disputes involving intellectual property rights online.¹⁸ At the same time, Chinese practice demonstrates that blockchain cannot fully replace traditional legal mechanisms. The value of blockchain-recorded information ultimately depends on the accuracy of the data entered into the system. If the person uploading the information is not the true author, or if the original data are inaccurate, blockchain can preserve the integrity of the record but cannot independently verify the truthfulness of its contents. The final determination regarding the admissibility of evidence and the identification of rights holders remains a matter for judicial authorities.¹⁹

B. South Korea: Copyright governance within the NFT ecosystem

While China has concentrated on the evidentiary function of blockchain in judicial processes, South Korea has adopted an approach more closely linked to the development of the digital content economy. Given its strengths in industries such as music, film, video games, and webtoons, South Korea has a strong demand for rights-management mechanisms capable of ensuring transparency and traceability in online environments.

The rapid expansion of non-fungible tokens (NFTs) has generated new models for exploiting copyrighted works through blockchain technology. In response, Korean government agencies and professional organisations have issued various guidelines concerning the creation, transfer, and use of NFTs. These documents clarify the relationship between NFTs and copyright, while emphasising that ownership of an NFT does not automatically confer copyright ownership over the associated work.²⁰ NFT purchasers may acquire a token and certain contractual benefits, but rights of reproduction, distribution, or commercial exploitation remain dependent upon the scope of the rights transferred by the author or copyright owner.²¹

Beyond clarifying the legal issues arising from NFTs, South Korea has actively promoted the development of digital ecosystems supporting creative production and content exploitation. Within national strategies relating to the digital economy and the metaverse, blockchain has been identified as a foundational technology capable of authenticating digital assets, recording transaction histories, and enhancing transparency in content-related activities.²² Government

¹⁸ Zheng, *supra* note 14, at 566-579.

¹⁹ Wu, *supra* note 15, at 109-110.

²⁰ F. M. Isa et al., *Tackling the Intellectual Property Issues Relating to Non-Fungible Tokens (NFTs): Lessons from the Republic of Korea*, in ATLANTIS HIGHLIGHTS IN SOCIAL SCIENCES, EDUCATION AND HUMANITIES 295, 298-300 (2024).

²¹ Isa et al., *supra* note 20, at 299-301.

²² E. Karimov, *Meta-Morphosis of Copyright and User-Generated Content: Can East Asia's Emerging Policies Navigate Through the Metaverse?*, 11 ASIAN JOURNAL OF LAW AND SOCIETY 466, 468-472 (2024).

investment in blockchain and metaverse projects reflects a broader policy objective that extends beyond technological innovation and seeks to strengthen future creative industries.²³ Unlike China, South Korea has placed less emphasis on the evidentiary function of blockchain and greater emphasis on its use in rights management and commercialisation. A particularly distinctive feature of the Korean model lies in the use of blockchain to manage the chains of rights associated with copyrighted works. The technology allows transactions involving licensing, transfers, and exploitation rights to be recorded systematically, making it easier to trace the history of a work and to verify relevant information when disputes arise.²⁴ This function is especially valuable in sectors such as music and film, where multiple parties often participate in the creation and commercialisation of content. In such industries, blockchain-based traceability offers advantages that are difficult to achieve through conventional centralised management systems.

Despite these developments, South Korea does not regard blockchain as a complete substitute for existing copyright protection mechanisms. New forms of intellectual property exploitation have emerged through blockchain-based technologies, yet legal debates surrounding NFTs remain unresolved.²⁵ Questions concerning the scope of the rights transferred through NFT transactions, the liability of intermediary platforms, and the application of traditional copyright principles in digital environments continue to generate differing views among scholars and practitioners.²⁶ Ongoing discussions regarding copyright ownership, digital transfers of works, and the possible application of the exhaustion doctrine illustrate that many issues remain unsettled.

South Korea's experience suggests that blockchain delivers the greatest benefits when embedded within a broader digital ecosystem. Technology alone, however, is insufficient to ensure effective copyright protection. Its effectiveness depends on interaction with legal institutions, governance mechanisms, and creative-content markets capable of supporting transparent and sustainable rights exploitation. Unlike China, which places greater emphasis on the evidentiary value of blockchain data in judicial proceedings, South Korea has focused more extensively on the use of blockchain in the management, exploitation, and commercialisation of intellectual assets within the digital content economy.²⁷

²³ I. Golovanova, *NFT Technology in South Korea: History and Trends*, ORIENTAL COURIER, No. 3 (2022).

²⁴ Golovanova, *supra* note 23.

²⁵ J. K. Cho & K. Tsche, *A Study on NFT Copyright Issues in the Digital Virtual World*, 72 KANGWON LAW REVIEW 257 (2023).

²⁶ Cho & Tsche, *supra* note 25.

²⁷ Karimov, *supra* note 22, at 476-482; Golovanova, *supra* note 23.

IV. RECOMMENDATIONS FOR VIETNAM DRAWN FROM INTERNATIONAL EXPERIENCE

The experiences of China and South Korea suggest that blockchain should not be viewed as a substitute for existing copyright protection mechanisms. Rather, its value lies in its ability to support the management, authentication, and enforcement of rights in digital environments. For Vietnam, the use of blockchain should be considered within the broader process of reforming intellectual property law, advancing technological modernisation, and fostering the development of the creative economy. Against this background, several recommendations may be drawn from both the current domestic legal framework and comparative experience.

First, a clearer legal framework should be developed for blockchain and smart contracts in the copyright sector. One of the most notable challenges lies in the absence of specific rules governing transactions conducted entirely through blockchain-based systems. In practice, blockchain is frequently combined with smart contracts to automate copyright licensing, royalty payments, and revenue-sharing arrangements among the relevant parties. Yet Vietnamese law has not clearly defined the legal status, validity requirements, or dispute-resolution mechanisms applicable to transactions executed through automated code.²⁸ Comparative experience indicates that blockchain-based copyright models function most effectively when supported by a coherent legal framework. Vietnam should therefore consider introducing provisions that clarify the operation of smart contracts, define the responsibilities of participating parties, and establish mechanisms for addressing risks arising from technical failures or the misuse of technology.²⁹ Such reforms would provide a legal foundation for future blockchain-based copyright exploitation models.

Second, the legal value of blockchain data should be recognised gradually in the establishment and proof of rights. China's experience demonstrates that blockchain can serve as a useful tool in supporting the verification of copyright claims when combined with appropriate technical standards and legal safeguards. The consideration of blockchain-based records during evidentiary assessment does not replace traditional methods of proof. Instead, it provides additional information concerning the origin of a work, the time of creation, and its history of exploitation.³⁰ At present, Vietnam may not need to recognise blockchain data as an independent category of evidence. A more cautious approach would be to acknowledge its evidentiary relevance during the verification of intellectual property rights. At the same time, clear criteria

²⁸ Savelyev, *supra* note 3, at 555-557; Disemadi et al., *supra* note 10, at 223-224.

²⁹ Nguyen Minh Hang & Phan Ngoc Bich, *supra* note 6.

³⁰ Zheng, *supra* note 14, at 576-578; Wu, *supra* note 15, at 104-106.

should be developed for assessing authenticity, integrity, and traceability. These standards would create a more predictable basis for the use of blockchain data in copyright disputes.

Third, the legal status of NFTs should be clarified and accompanied by an appropriate framework for the governance of digital assets. The emergence of NFTs has generated new methods of exploiting copyrighted works in digital environments. South Korea's experience illustrates that ownership of an NFT does not automatically entail ownership of the copyright associated with the underlying work. Confusion between rights in a token and copyright interests remains a common source of disputes.³¹ In response to this development, Vietnam should clarify the legal nature of NFTs and their relationship with the proprietary rights derived from creative works.³² Such reforms should not seek to equate NFTs with copyright itself. Rather, they should define more clearly the rights, obligations, and liabilities of the parties involved in NFT transactions. Consideration should also be given to establishing a regulatory framework for digital assets traded through blockchain networks, in order to reduce legal uncertainty and promote transparency in digital content markets.³³

Fourth, Vietnam should invest in digital copyright infrastructure while strengthening international cooperation. The experiences of both China and South Korea demonstrate that the effectiveness of blockchain depends not only on legal rules but also on technical infrastructure and institutional coordination among participants in the creative ecosystem. Blockchain-based copyright management requires interoperable databases capable of connecting state authorities, collective management organisations, technology companies, and digital content distribution platforms.³⁴ From this perspective, pilot projects involving blockchain-based copyright databases could be introduced in sectors characterised by intensive rights exploitation, such as music, publishing, and digital content services. International cooperation should also be expanded. Blockchain-based transactions frequently involve cross-border activities, while copyright infringement increasingly occurs on a global scale. Enhanced information exchange, coordinated enforcement efforts, and the further exploration of online dispute resolution mechanisms may contribute to more effective copyright protection in digital environments. International experience ultimately demonstrates that legal reform alone is

³¹ Isa et al., *supra* note 20, at 295-297; S. M. H. Bamakan et al., *Patents and Intellectual Property Assets as Non-Fungible Tokens: Key Technologies and Challenges*, 12 SCIENTIFIC REPORTS 1, 2-3 (2022).

³² Nguyen Linh Chi, *supra* note 2.

³³ N. Sharma & S. Manohar, *Unlocking the Metaverse and Navigating Legal Implications in the NFT Landscape*, in EXPLORING THE USE OF METAVERSE IN BUSINESS AND EDUCATION 193, 198-202 (2024); C. H. Kim, *A Study on the Protection of Digital Design: Focusing on Improving the Article Requirement in the Design Protection Act*, 22 MYONGJI LAW REVIEW 469, 480-484 (2024).

³⁴ Nurhaeni et al., *supra* note 4, at 39-42; Duc et al., *supra* note 11, at 71-76.

insufficient to ensure the sustainable implementation of blockchain in copyright protection, which also requires technological capacity, institutional coordination, and legal certainty.³⁵

V. CONCLUSION

The development of digital technologies has created new challenges for copyright protection. In this evolving environment, blockchain has emerged as a promising tool for supporting the establishment, management, and enforcement of rights through its ability to record information, enhance traceability, and improve transparency in the exploitation of creative works. The analysis undertaken in this paper indicates that Vietnam has established a basic legal framework for copyright protection. However, important regulatory gaps remain with respect to blockchain-based evidence, smart contracts, NFTs, and digital copyright transactions. These shortcomings indicate that the current legal framework has not yet fully adapted to emerging models of creating, managing, and exploiting intellectual assets in digital environments. The experiences of China and South Korea illustrate that blockchain may be incorporated into copyright protection through different institutional models. China has focused primarily on the evidentiary use of blockchain data in judicial proceedings and dispute resolution, whereas South Korea has emphasised copyright management within broader digital content and NFT ecosystems. Despite these differences, both experiences point to a common lesson: the effectiveness of blockchain depends not solely on the technology itself but also on the legal framework, technical infrastructure, and governance mechanisms within which it operates. For Vietnam, the selective adoption of international experience may contribute not only to the modernisation of copyright protection in digital environments but also to the longer-term development of digital content markets and the creative economy. Such reforms should be implemented gradually and in a manner that balances technological innovation with the protection of legitimate rights and interests, while preserving legal certainty, regulatory coherence, and the stability of the Vietnamese legal system.

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³⁵ S. Bonnet & F. Teuteberg, *Blockchain and NFTs in IP Management: Expert Insights on Benefits, Challenges, and Future Prospects*, 3 INTERNATIONAL JOURNAL OF BLOCKCHAIN APPLICATIONS AND SECURE COMPUTING 1, 4-5 (2025); O. Ajakaye & A. Lawal, *Digital Justice and IP Protection: A Transatlantic Approach to Regulating NFTs, Blockchain, and Copyright Infringement*, 10 ENGINEERING AND TECHNOLOGY JOURNAL 6932, 6933-6935 (2025).

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