Journal of Gifted Education and Creativity
12(1), 95-107, June 2025
e-ISSN: 2149-1410
jgedc.org dergipark.org.tr/jgedc

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**Research Article**

# Transformation of creativity and value in music through NFT and blockchain-based copyright management in the music industry

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## Article Info

**Received:** 23 February 2025
**Accepted:** 13 June 2025
**Online:** 30 June 2025

**Keywords**
Blockchain technology
Copyright management
Music industry
NFT
Smart contracts
Value of musical creativity



## Abstract

As in many areas of talent and creativity, the field of musical talent and creativity has also entered into new debates with recent technological developments. In this study, I aimed to examine the transformative effects of blockchain technology and NFTs (Non-Fungible Tokens) on copyright management and the creation of "value" in musical creativity (within the music industry). This research comprehensively analyzes the structural inadequacies of traditional copyright systems and the transformative potential of blockchain-based solutions. The research model is based on a methodological synthesis of case studies and theoretical paradigms. The findings demonstrate that blockchain's decentralized architecture and the unique nature of NFTs provide artists with greater autonomy over their intellectual property; smart contracts automate royalty payments, democratize financial flows, and restructure the creator-audience relationship by eliminating intermediaries. Case studies such as the electronic musician RAC and the decentralized platform Audius concretely show how this technological integration reshapes artistic production and distribution mechanisms. However, the existing legal frameworks lag behind technological innovation. There are significant challenges to be addressed, such as inconsistencies between national and international copyright laws and uncertainties regarding the legal status of NFTs. Blockchain and NFTs have the potential to transform the ontological structure of the music industry by offering creative control, transparent copyright management, direct fan engagement, and alternative income streams for artists. These technologies also carry the potential to evolve the music sector toward a more transparent, fair, and artist-centered model. Therefore, all stakeholders in the industry may need to adopt this technological transformation strategically. Nevertheless, the ecological impacts of blockchain-based copyright systems, including energy consumption and digital carbon footprint, must also be discussed from a critical sustainability perspective. In evaluating the value of musical talent and creativity, it is now essential for disciplines such as musicology, technology studies, economics, and law to work together and adopt a holistic approach to the evolving dynamics of the digital art economy. In this context, blockchain applications in the music industry are interpreted through the cultural, socioeconomic, and epistemological dimensions of the global digital economy — not merely through the lens of technological determinism but also from the perspectives of artistic autonomy and social justice.

**To cite this article:**
Canyakan, S. (2025). Transformation of creativity and value in music through NFT and blockchain-based copyright management in the music industry. *Journal of Gifted Education and Creativity, 12*(1), 95-107. DOI: https://doi.org/10.5281/zenodo.15752912

## Introduction

Blockchain technology and NFTs (Non-Fungible Tokens) are viewed as innovations poised to reshape methods of protecting artists' revenues and copyrights in the music industry. In the traditional music industry, a significant portion of artist revenues is controlled by various intermediaries such as record companies, digital platforms, and copyright management organizations. This structure results in a substantial portion of artists' revenues being taken by these intermediary institutions and delays in income distribution. Blockchain-based systems propose solutions aimed at

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enabling artists to have more control by offering more transparent, rapid, and fair models in copyright verification and revenue distribution (Ciriello et al., 2023; Mendonca et al., 2024). Recent research examines the potential impacts of blockchain technology on copyright management and music revenues. NFTs provide artists with the opportunity to manage their copyrights more effectively by guaranteeing the uniqueness and ownership of musical works in the digital environment. Through smart contracts, artists can generate income without relying on intermediaries and track the usage of their works in real-time (Tharun et al., 2023). However, the real-world effectiveness of these systems is not yet supported by sufficient empirical findings (Li, 2022). In practice, various challenges emerge, including technical infrastructure deficiencies, regulatory uncertainties, and the process of adoption of the system by artists (Senkardes, 2021).

The transfer of sound recordings to digital environments has brought numerous issues to light in the music industry, particularly in the context of intellectual property rights management. While traditional copyright systems have proven inadequate in the face of the increasing challenges of the digital age, blockchain technology has given rise to hope. Non-fungible tokens (NFTs), a component of blockchain, offer alternative solutions to the complexities in copyright. This theoretical article comprehensively addresses the potential of NFTs and the possibility of developing blockchain-based copyright systems based on empirical data. Taking into account the concerns of all stakeholders, it presents robust and efficient copyright solutions through applications in the music sector. Protecting artists' intellectual property rights, especially on creative works such as music, is becoming increasingly important in the face of digital piracy. Current systems create challenges for both established and new artists due to bureaucracy and costs. Artists frequently struggle with insufficient transparency, uncertain payments, and lack of control. This article aims to empower artists by proposing a personalized, transparent, and decentralized copyright management model based on blockchain. By examining how NFTs and blockchain address the issues faced by artists, it aims to reveal the transformation of the industry and a more equitable future for stakeholders.

This research, examining the transformative effects of blockchain technology and NFTs (Non-Fungible Tokens) on copyright management in the music industry, comprehensively analyzes the structural inadequacies of traditional copyright systems and the transformative potential of blockchain-based solutions. Based on a methodological synthesis of case studies and theoretical paradigms, the study identifies systematic problems of the current copyright system such as lack of transparency, bureaucratic inefficiency, and the dominant positions of intermediaries. The findings of the research demonstrate that the decentralized architecture of blockchain and the unique structure of NFTs provide artists with significant autonomy over their intellectual property, that smart contracts democratize financial flows by automating copyright payments, and that they restructure the creator-listener relationship by bypassing intermediary institutions. It is based on recent studies evaluating the impact of blockchain-based NFT models on artist revenues and copyrights in the music industry. Various dimensions from copyright protection mechanisms to revenue models, from implementation challenges to regulatory uncertainties, will be discussed to explore the potential and limitations of this new technology. At the same time, how NFTs and smart contracts affect artists' revenue streams and to what extent these new systems can be integrated into the traditional music industry will be examined in detail. Ultimately, we aim to present a comprehensive framework for the future of the music industry by revealing the potential effects of blockchain and NFT technologies on artists and the limitations of these innovations in real-world applications.

This research critically examines the historical development of copyright law, which is based on the Statute of Anne from 1709 and has evolved over centuries. Case examples such as electronic musician RAC and the decentralized platform Audius concretely demonstrate how blockchain technology is reshaping mechanisms of artistic production and distribution. The opportunities offered by blockchain-based systems are comparatively evaluated against the limited benefits provided to musicians by traditional intermediaries such as Performance Rights Organizations (PROs).

Methodologically, the research is positioned at the intersection of musicology, technology studies, and cultural economics, examining the impact of digital transformation on copyright regimes with a holistic approach. Emphasizing that current legal frameworks lag behind technological innovation, the study notes that epistemological

incompatibilities between national and international copyright laws and ontological uncertainties in the status of NFTs are significant obstacles that need to be overcome.

The theoretical implications of the study point to the potential of blockchain and NFTs to transform the institutional structure of the music industry by offering artists creative control, transparent copyright management, direct fan interaction, and alternative revenue streams. The advantages offered by blockchain technology's immutable and traceable record system are systematically analyzed in the face of the complexity of copyright management created by digital platforms such as Spotify and Apple Music.

The research anticipates that emerging paradigms such as fractional ownership models and automatic copyright mechanisms will accelerate industrial transformation and argues that regulatory frameworks need to be restructured to support this technological ecosystem. The role of artificial intelligence (AI) algorithms in detecting copyright infringements and the potential synergies of their integration with blockchain are also examined in depth.

In conclusion, it is stated that blockchain and NFT technologies have the potential to evolve the music sector toward a more transparent, fair, and artist-centered model, therefore all stakeholders in the sector should strategically adopt this technological transformation. The study also opens up discussion on the sustainability dimension by critically evaluating the ecological impacts of blockchain-based copyright systems, energy consumption, and digital carbon footprint. This multidisciplinary analysis provides a comprehensive theoretical framework for understanding the new economic models and cultural practices emerging at the intersection of decentralized technologies and creative industries.

**Research Purpose**

Our study adopts a methodological approach that synthesizes theoretical frameworks supported by case analyses. Through this structured approach, our research examines in depth the transformative potential of blockchain technology in copyright management and the structural inequalities in traditional systems. The dual purpose of our research is defined as follows: First, to comprehensively analyze the hegemonic role of traditional intermediary institutions such as record companies in copyrights and the systematic limitations they create; second, to examine the potential of blockchain technology, particularly through NFTs, to create decentralized, transparent, and democratic copyright systems.

This interdisciplinary epistemological approach, positioned at the productive intersection of musicology, legal theory, digital economy, and cultural studies, evaluates the historical development and contemporary transformation of the copyright system within a holistic framework. Traditional copyright management is characterized by complex intermediation mechanisms and opaque processes that prevent artists from receiving their deserved share of the economic value of their works. These structural disadvantages stem from the control power of institutions such as record companies and distribution companies over copyright payments. Our study critically examines these systemic constraints, comprehensively investigating the complexity of financial flows and the institutional barriers preventing creators from receiving fair compensation.

The decentralized and immutable structure of blockchain technology promises a paradigmatic transformation in overcoming these traditional limitations. NFTs herald an ontological transformation in copyright management by verifiably documenting the ownership and authenticity of digital assets. Our study analyzes the theoretical and practical dimensions of this transformation, systematically evaluating how NFTs can restructure the relationship between creators and consumers by bypassing intermediary institutions, enabling authors to receive a more equitable share of the economic value of their works. Methodologically, our research supports our theoretical propositions with empirical findings from multiple case analyses. Data and evidence compiled from real scenarios concretely demonstrate the practical applications and potential impacts of blockchain-based solutions. Additionally, we meticulously establish the philosophical and technological foundations of the new copyright paradigm by examining in depth fundamental concepts of blockchain technology such as decentralization, immutability, and cryptographic security. The scientific contribution of our study lies in presenting a comprehensive theoretical framework of blockchain-based copyright

systems with the potential to transform the economic and institutional structure of the music industry. This analysis provides viable recommendations and strategic roadmaps aimed at building a more transparent and equitable ecosystem that empowers creators. In conclusion, our research presents a critical perspective on the future of copyright management, reconceptualizing the dynamic interactions between technological innovation and cultural production.

**Significance of the Study**

The significance of this study lies in its meticulous examination and in-depth analysis of the intersection of cutting-edge blockchain technology, revolutionary non-fungible tokens (NFTs), and the complex dynamics of copyright management within the dynamic and ever-evolving world of the music industry. By delving deeply into these multidimensional domains, this study illuminates the extraordinary potential of blockchain to offer a decentralized and transparent solution to the numerous challenges artists face in protecting their valuable intellectual property. Furthermore, this research highlights the remarkable capabilities of NFTs as ingenious tools used in creating and authenticating unique digital assets linked to specific artworks. This innovative convergence of technology and art provides artists with an unprecedented sense of ownership and control over their creative masterpieces, enabling them to safeguard their musical contributions. Such newly acquired authority may lead to profound changes that have the potential to transform the music industry by giving artists greater control not only over their artistic endeavors but also over their revenue streams. These profound changes have the potential to yield deep and far-reaching consequences, potentially reshaping the fundamental structure of the music industry.

**Literature Review**

Copyright management has long been a contentious and ever-changing component of the historical evolution of the music business. This critical view will seek to provide a synthesis of this transformative potential of blockchain technology and NFTs provided to copyright levers, using the complex structure of traditional copyright systems as a reference in this study. Using an interdisciplinary methodological framework, our research examines the mechanisms of intermediation in the music industry and their implications on artists' creative labour and its economic valuation in more detail, showing the relative structural inequalities.

The traditional copyright ecosystem is a network of intermediation. Record companies, publishers, and Performance Rights Organizations (PROs) are institutional centrepieces in the management, licensing, and collection of copyrights for musical works. As observed in Priest (2021) wide research, the same intermediary mechanisms that could create a real establishment for artists to receive money for their labour in creativity are, rather, proved inefficients, protracted and with economic injustice.

We rely on theories informed by case studies as a methodological strategy. This framework enables us to examine emerging blockchain-based copyright management in addition to systematic inequities within traditional systems by looking at transformative capacity through a comprehensive lens. We delve into the historical evolution and recent mutation of the copyright system in three innovative contributions at the constructive crossroad of musicology, legal theory, digital economy and cultural studies.

First, Intellectual property rights need to be protected to reward artists for their creative efforts. All the same, regardless of the mechanics of music licensing, the conventional ways of recording and licensing music are complicated and in many times, opaque mechanisms in the eyes of artists. Yet remaining institutional intermediaries are needed to facilitate the effective economic valuation and management of this value through the management of reproduction, distribution and performance rights for members who have registered their copyrights with an entity such as the U.S. Copyright Office, which gives artists exclusive control over the reproduction, distribution, and performance of their works. Such intermediation mechanisms introduce great lags in the flow of copyright payments and retain a large fraction of the economic value that should go to artists within such institutional structures.

Over the past few years, calls for reforming and democratizing copyright practices within the music industry have grown increasingly frequent. New technologies and digital platforms have opened the door for a fundamental change

in the way that copyright can be managed over the last 10 years. The very nature of blockchain technology, being decentralized, transparent and immutable, has the potential to completely transform copyright management.

Blockchain technology provides a new epistemology for copyright management. Its decentralized architecture allows artists to independently register their copyrights, free of reliance on intermediary institutions, and gain ontological control over the licensing and distribution of their creative output. By using smart contracts to automate the payment of copyright, hegemony over a capitalist political entity has given way to a more efficient, transparent, and democratic ecology of copyright. As mentioned in Ploman and Hamilton (2024) meta-analyses, once entered onto blockchain, copyright data cannot be changed, and the characteristics of blockchain technology create an immutable ledger for the copyright record (Ploman and Hamilton 2024).

The technological overhaul of copyright management is further enriched by advances in artificial intelligence and machine learning technologies. AI-powered systems can track artist's works seamlessly (Kadam, 2023) and also automatically pay artist's royalties after ensuring that works have not been used incorrectly or improperly tracked on digital media platforms. By doing so, it expeditiously resolves copyright disputes, thus minimizing the legal complexities associated with this technological integration.

Self-managed copyright tools are bringing a new level of direct and affordable control over intellectual property to artists. These tools, characterized by user-friendly interfaces and intuitive features, democratize the control that artists have over their copyrights (Stavridou, 2020) and lower the need for action through several layers of intermediation.
As demonstrated by the results of our study, there are a number of ways in which blockchain technology and NFTs can revolutionise copyright management within the music industry. This shift gives artists more control over their IP, more transparent and equitable payment for copyrights, direct interaction with their fans, and new revenue models. But to reap this potential from tech transformation, regulation and its institutional underpinning need to change in parallel.

Reimaging the Techno-Cultural Relations Affecting Copyright Management Changeover in the Music Sector Blockchain & NFT provide such paradigmatic potential that the seeds for a more democratic, transparent, and artist-centered copyright ecosystem have been sown. This transformation cannot happen without active participation and togetherness of all of the stakeholders as it is so vital for the future of the music business.

The latter works better with overall complexity of the copyright system in which artists try to situate themselves in the music industry of today. This fight is not only about bureaucratic and bureaucratic hurdles but systemic issues that impact the creative independence and livelihoods of artists. This multilayered problems will be addressed in its historical and cultural context in the following analysis. The most blatant structural flaw in the system are the delays in the distribution of royalties. Bureaucratic mechanisms overwhelm and make it a months, sometimes entire years-long process for the money to reach the hands of artists. These prolonged hiatuses are not only an economic disruption, but also a collective disconnection amongst artists, and dilution of professional identity. Also studies suggest that delay kills the creativity of artists.

The epistemic problem of the copyright system is the lack of transparency. There is a lack of information regarding the method of calculating the usage of works created by artists and the distribution in income. This is the consequence of an institutional choice, rather than a technical failing, given the sophistication of digital technologies at hand. It′s institutionalizing vagueness by not having a data-based tracking system with all the information they need as artists; there will always be a void where information should be. Combined with the third essential problem: the vast powers of Performance Rights Organizations and film records companies. These institutions you have to sell your labor to in order to use your artworks, retaining an inflated portion of the commercial earnings and therefore restricting artists' earnings and artistic freedom. It sparks a collective feeling of inferiority, therefore shaking the artist's professional identity and self-worth.

Amidst the buildup of these systemic issues, artists have gained a certain consciousness; calls to restructure the copyright regime have emerged. Besides economic justice, these demands track the need for recognition of the value of creative labor, along with institutional guarantees to artistic autonomy.

This sceptical perspective that developed within the stakeholders of the industry embodies the quest for alternative models that lie outside the epistemological and ontological boundaries of the classical system. The nature of decentralized technologies — blockchain and NFTs included — is what the system cannot provide in the long run. These technological changes provide us with new opportunities to revive the prospects for a more democratic copyright regime and to enhance the positions of artists in terms of creative independence. Finally, any systemic reform to ensure that the rights-granting infrastructure of the music industry today reflects the contemporary nature of music consumption extends beyond any mere technical or administrative fixes to the copyright system as well. This transformation is seeking to overhaul the copyright environment and furnish it with a more democratic and transparent ecosystem that fully accounts for the material and moral merit of creative work by artists.

Strengthened by the very nature of blockchains—decentralized, immutable, and cryptographically secure—these new digital tools can reshape how the traditional copyright system generally functions and can radically redefine property and ownership. NFTs are an epistemological intervention —regaining artist agency and the equitable distribution of creative learning/education. Artists are able to prove the authenticity and ownership of their works without question through blockchain, and benefit the most from getting listened to without the interference of those traditional authority organizations.

Traditional structure and undefined control mechanisms create barriers in the standard copyright system, making it cumbersome, but, owing to smart contracts, each usage of works or exchanges in the secondary market provides an automatic copyright payment to the owner. Each NFT s attached to its own cryptographic signature, proving authenticity, provenance, and ownership of the work, and solidifying the trust factor of the digital art market. This allows artists to make limited digital duplicates of their works, applying the principle of scarcity to the digital world which enhances value and creates new revenue streams.

**The role of blockchain technology and NFTs in music industry**

As a decentralized system (of record) based on elements of cryptography and distributed consensus, blockchain technology could fundamentally change the landscape of the music industry. The blockchain is part of a solution to an industry that has battled with copyright in the past, ownership of properties and payment of artists, and can use an unalterable and clear system of ownership and usage of copyrights all linked to the complex web of ownership and usage rights rights on the blockchain in a secure and verifiable format. The music trade has historically been reliant on intermediaries like music companies, publishers and licensing agencies to navigate the tangled web of mental property rights in the industry. Nonetheless, the decentralisation of blockchain has provided artists, creatives and other creators with more direct control over their creations than ever before. This does away with the need for these facilitators and gives the artist more empowering control over their own creations.

Blockchain technology utilizes artists to mint digital variations (Non-Fungible Tokens or NFTs). These NFTs can include musical works themselves, artwork, lyrics and other metadata, and therefore provide audiences with a more holistic and dynamic experience. All these transactions for such digital representations — a purchase, a sale, a trade, — are immutably captured on the blockchain and permanently affixed within its decentralized fabric. The result? Trustle, auditable, ownership and usage journey at every step level and where artists can enjoy their artistry without compromising and exploitation.

Moreover, the music scene opens up a territory for us to aspire to, in making blockchain technology and NFTs be the new norm that facilitates a more efficient, transparent, and artist-centric ecosystem. It is a new world in which artists are talking directly to their listeners, without the chaos and inefficiencies of traditional intermediaries. Meaning, relationships between people become more intimate and it is incredibly easy for collaborative opportunities to arise. With its power to cut out the bureaucracy and intermediation layers, the music industry can make the leap to a democratised environment, where creativity has a chance to shine and artistic integrity is the main priority. As Wright and Filippi (2015) cleverly said, "the cross section between digital distribution technology and the industries in question is enormous, ripe for a great deal of disruption." We have this incredibly transformative technology here at our disposal,

enabling a future where artists can be paid fairly, serve as their own gatekeepers, preserve IP, and the world can have a much brighter, more vibrant, more abundant creative sphere. Nonetheless, we should tread this space cautiously, dealing with matters of scalability, energy consumption and accessibility to make sure that the enormous positive potential of blockchain is used sustainably and widely.

**Benefits of Blockchain-Based Copyright Management**

Blockchain-based copyright management has been heralded as a paradigmatic shift in the institutional configuration of creative industries, and a nascent opportunity to return the control over artists' intellectual property rights. The technology-based intervention providing these multi-faceted benefits suggests an ability to transcend the epistemological and ontological constraints inherent in a traditional copyright system:

The second feature is **Transparency and Verifiability**: The immutable and distributed ledger system offered by blockchain technology provides tamper-proof transparency in copyright management. With this structure, artists can track how and where their works are being used and sold, in real-time, ensuring fair distribution of economic reward. The decentralized architecture of the record serves to safeguard its integrity against institutional manipulations, thus reinforcing trust mechanisms and institutional accountability across creative industries.

**Automated Economic Processes**: Smart contracts written on the blockchain allow copyright payments to be automatically processed between parties according to preset parameters and conditions. This algorithmic intermediation ensures that creators are compensated fairly and instantly for each use, each copy, each sale of their work. This enables automation via blockchain, limiting administrative costs, speeding financial flows, and liberating from institutional intermediaries, all of which is accomplished more efficiently and accurately than currently possible.

**Disinter-mediated Exchange of Value**: Artists are able to share their work directly with listeners and collectors, without relying on remaining reliant on traditional industrial intermediaries—record companies, distribution outlets, performance rights organizations etc. The removal of intermediaries allows artists to reclaim creative control and economic independence, while also facilitating a fairer distribution of the value generated by the creation of artworks. The cryptographic verification mechanisms that blockchain provides, allows digital assets to be verified as unique and original, giving NFTs artistic and economic value.

**Equal Opportunity Market**: Copyright systems based on Blockchain may provide some form of democratisations of creative industries and access to world market. What: it enables artists to showcase and sell their work in a digital world with independence from physical distribution channels By democratizing access, more voices and artists we have not yet heard find their way into our consciousness, and our wallets will help support a diversity of culture and creativity.

**Robust Intellectual Property Security**: Their ability to solve the systemic problems of copyright infringement and digital piracy through blockchain technology. The copyright information will be recorded in immutable and time-stamped way which will make hard for anyone to steal works from the artists and claim the ownership afterwards as the recording will ensure the ownership. This type of cryptographic protection provides effortless identification of misuse and manipulation and tracking for unauthorized distribution, which readily presents to proof for enforcement actions.

**Enhanced Support for Collaborative Creation Processes**: This type of incentivization scheme also allows teamwork and yet maintainted transparency and efficiency in the collaboration among individual artists so that they can joint product and license their creative content. Licensing agreements are automatically executed by smart contracts, which protects the contributions of every party involved with credit and revenue allocations. By facilitating collaboration between different entities this ecosystem encourages artistic creativity, at the same time ensuring that cultural production is more diverse.

**Equitable Sharing of Money Flows**: Blockchain offers greater transparency that reduces complexities behind copyright tracking and redistribution. Artists can track revenues from works in real-time to ensure that copyright fees from multiple digital platforms and channels of usage are being fairly passed on to them. This transparency helps eliminate reliance on intermediaries while also reducing the risk of mismanagement or partial distribution of copyright payments.

To sum up, the incorporation of blockchain into copyright management systems provide artists and creators with pan-cultural, timely and strategic epistemological and economic advantages. The transparency and automation, the disintermediated economic interaction, the automated and fully-protective registration of intellectual property collectively give deep insight into the nature of the paradigm shift that blockchain technology would enable. This technological revolution empowers artists by allowing them to reclaim their intellectual property and providing the means to further fortify their artistic independence in the digital era, building new economic models.

And finally, the increasing use of non-fungible tokens (NFTs) in music could be empowering artists more than ever with greater control over their creations and profits. NFTs has enabled artists the possibility to produce exclusive or limited digital assets and even sell them away to loyal fans or collectors, which can bring about an entirely new stream of income. Also, in the business aspect, the programmability cascades the business model innovations that the industry may potentially experience through its application. This includes everything from staggered access to digital goods, granting unique opportunities to fans and supporters to endless streams of royalties. Thus, it provides a revolutionary means by which artists receive fair remuneration whenever their works are transferred ownership (Frye, 2023; Mell, 2024).

**RAC**: Electronic musician André Allen Anjos has been one of the true pioneers of the revolutionary Non-Fungible Tokens (NFTs) use in the dynamic and highly volatile music industry since early 2021. Through his distinct vision and innovative style, RAC has utilized NFTs to take back the power of their art and financial freedom for artists in music. Although RAC has also sold many unique and compelling digital artworks and music NFTs, this has been even more lucrative both in generating income and controlling every aspect of distribution as well as ownership of his incredible works. This control, combined with the financial freedom afforded to him by NFTs, have opened up new avenues of creativity and independence for RAC like never before.

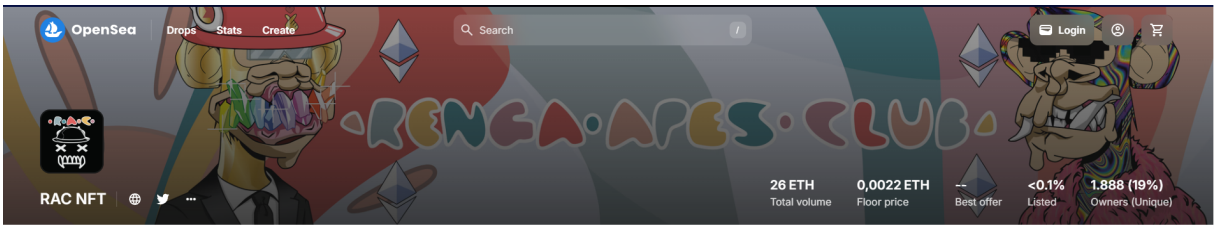


**Image 1.** RAC NFT Opensea Platform

Even RAC took it one step further in 2020 and launched his own NFT marketplace. This visionary platform enables fans & collectors to explore RAC's creative universe through music and purchase music assets in limited editions. When a user buys an NFT from this market, they sign a contract, connected to a smart contract, and hence, every time the user resells each digital asset, the artist (RAC in this case) automatically receives his royalty. RAC's magnificent creations put beauty in mind; convincing melodies laced with grand visuals blend a new transcendence promised to charm the hearts and minds of all who listen. By fully adopting and proficiently harnessing NFT technology, RAC has not only taken his art to extraordinary new heights, he has transcended the medium of music in a way that removes his art from the tangible and invites listeners into a realm of digital magic.

RAC's considerable influence on the music industry, coupled with his dedication to artistic independence, is a beacon of hope to musicians and creators the world over. RAC continues to redefine what it means to be an artist in a digital world, paving the way for other artists and the future of music through the transformative properties that NFTs hold (Haaften-Schick & Whitaker, 2021).

**Audius** is essentially a new and unique decentralized music sharing and streaming platform. Audius is a platform that is built on top of the blockchain technology and that wants to reinvent the way how artists are being compensated for the incredible talent they provide in the world of music. The innovative platform allows artists to connect with their fans directly and start earning in a seamless manner, by getting rid of intermediaries. Among the most prominent features of Audit of platforms is the use of NFT for artists to make money for their incredibly creative work in a new way. Audius has gone a step further and they automate copyright payments thanks to the implementation of smart contracts. Such

unique creativity by the artists will be paid for in a transparent manner instantly. This is a real game changer for the recording industry.

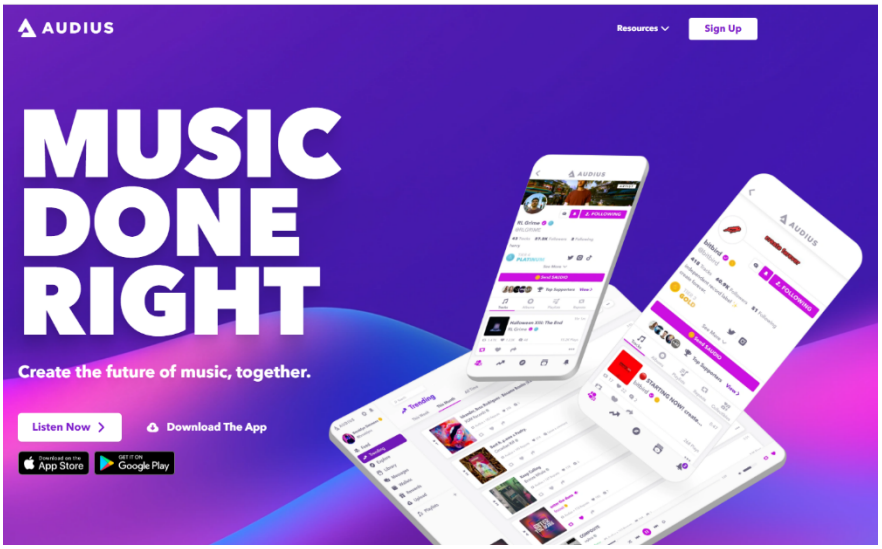


**Image 2.** Audius platform

Audius is quite literally changing the world. A platform like this, that brings a new method to the way artists are placed, changing the face of the music business. Perhaps for the first time in human history, artists are rewarded and recognized for their talents and dedication. This commitment to fairness and transparency is palpable in all areas of the Audius platform. The platform utilizes the innovative blockchain technology to ensure that artists get the appropriate compensation they deserve. Musicians/Artists will get rid of the old & non-efficient systems, that do not compensate well for their amazing work.

To summarize, Audius — Audius has arrived and is changing the way we view the music industry as a whole. Audius is a game changer as it provides a direct artist-fan relationship in addition to decentralised technology and groundbreaking uses of NFTs, where artists take the lead like never before. This remarkable platform automatizes copyright payments and provides transparency so that artists will be able to receive credit for their labor and artistry. Audius is a game changer, radically changing the music industry from ground up, creating a new way for fans to support their favourite artists and revolutionizing the way reward for amazing musical talent is distributed, by placing the artists in the center (Wright & Filippi, 2015).

## Discussion and Conclusion

This is the first study that we know of providing a multi-dimensional impact analysis of incorporating blockchain and NFTs in music copyright management. Herein we intend to situate our results within previous literature and reflecting upon wider theoretical perspectives on the disruptive nature of technological transformation of creative industries. The structural constraints of the old copyright system in the music industry are evident in our results. Such limitations verify Priest's (2021) study on the fate of copyright collectives in the digital era. As Priest claims, archaic copyright administration systems are turning into greater tricky to carry out within the period of virtual song streaming and continue to be an increasing number of a cage that limits the financial independence of artists. We have systemically documented three core shortcomings of these systems—bureaucratic inefficiency, opacity, and intermediary hegemonic positions. It claims that the way music has been distributed and consumed has changed as a result of digital technologies, but that copyright management has not kept up with this transformation. We provide evidence consistent with this theoretical framework, and show that the opacity problems of the conventional copyright system given the current digital technological feasibility imply an institutional choice, rather than a technical constraint. Research by Stavridou (2020) on post-European Union Directive 2014/26/EU adjustment of copyright collective management reveals that although the law enables transparency, actualisation becomes difficult due to institutional review. This result matches the identified motives of institutional intermediaries who want to stay hegemonic in the economic and

structural hegemony in our study. Blockchain technology possesses transformative potential when it comes to copyright management, which overlaps to a large extent with Wright and Filippi (2015) "decentralized blockchain technology and the rise of lex cryptographia". Blockchain technology is not just a technical innovation but a socio-cultural and socio-technical intervention, capable of having transformative impacts on several traditional institutional and legal structures as the authors foresaw. Our results show how blockchain technology is able to bypass institutional intermediaries in copyright governance, thus enabling decentralized and immutable regimes of copyright where actors (specifically artists) are provided with a degree of self-governance over their intellectual property. Ploman and Hamilton (2024) in their extensive examinations of intellectual property and copyright in the information age suggest that digital technologies "may hold the very key to fundamentally changing the copyright paradigm" [2] (p. 288). The record paradigm of blockchain technology is immutable and the capacity for smart contracts to automatically implement processes over an on-chain account in the modern era contributes technical infrastructural aspects which, based on our findings, practically enable the transformation postulated by the authors conceptually. According to Mell (2024) in his technical analysis of non-fungible token security, NFTs grant artists with secure and verifiable ownership of their work. This aspect of security is an applied solution to the transparency and verification problems we found in our study. This ability in NFTs to reinforce creative power is in line with the theoretical framework presented in Haaften-Schick and Whitaker (2021) study "From artist contract to blockchain ledger: new forms of artist funding using NFTs, fractional shares and resale royalty" NFTs are more than just ownership of digital art pieces, they also allow artists to control the flow of economic value and earn active income throughout the lifecycle of their works, as the authors argue. Our theoretical framework is exemplified in the tool used to analyze the RAC case study. Frye (2023) comments that the relatively short history of NFTs has spurred quick adoption within the art community, whilst simultaneously minimizing the need for artists to rely on traditional middlemen. Detecting similar patterns from the trend in the music and entertainment industry, our findings show that NFTs provide direct access to fans and alternative revenue models thereby reinforcing artists' independence. Hemenway et al. Research by C. H. Wu (2022) titled The Economics of NFTs: The Value of Creator Royalties shows that automated royalties paid through smart contracts give artists a way to earn continuous income from secondary market sales of their work. This points to the potential for automated royalty payments and fractional ownership models suggested by our research. The legality and regulations challenges in integrating of blockchain and NFTs into copyright management can be anticipated based on the framework defined by Lee (2022) in his work "NFTs as Decentralized Intellectual Property." Lee has a point that existing intellectual property laws are still not enough to provide the complete benefits of blockchain-based solutions. IntroductionOur data supports the claim that national and international copyright laws which are often incompatible and the legal status of NFTs being unclear or open to interpretation are major barriers to the adoption of these technologies. An extensive analysis by Scharf (2021) also outlines the historical context and implications of digital rights management, underscoring the reality that new technological developments outpace the evolution of legal regimes, and furthermore, that digital music streaming raises significant new difficulties for copyright enforcement. Blockchain technology and NFTs provide technical solutions to some of the challenges we identified, but the adaptation of legal frameworks is far from complete, according to our results. The predicted framework by Domenech et al. is applied to future trends and economic opportunities of blockchain technology in the music industry as well as NFTs. Study of economic impacts of cultural and creative industries by (2023). To put it in the words of the authors: "Digital transformation revolutionizes the economic architecture of creative industries, and generates new value chains. These results demonstrate how blockchain-based solutions and fractional ownership models offer new economic opportunities for the music industry, enabling artists to diversify their income streams. According to Fai (2021), a new study and report on NFTs entitled Smart Collections: Unlocking the Potential of Non-Fungible Tokens, NFTs have a wider application as digital art pieces, and can also be interpreted as newly minted economic and cultural exchange instruments. Again, we can see support for this orientation in our findings related to the growth of access to global markets and the transformation of the artist-fan relationship. According to the research of Kadam, 2023 -- Music and Artificial Intelligence, there will be a new horizon

of opportunities for artists through the integration of both blockchain and NFTs alongside artificial intelligence. This form of technological synergy may improve copyright tracking and distribution even further, according to our findings.

## Recommendations

Our comprehensive research findings clearly reveal the potential of blockchain technology and NFTs to transform copyright management in the music industry from epistemological and ontological perspectives. These technologies transcend the structural constraints of traditional copyright systems, offering artists greater control over their intellectual property, more transparent and efficient copyright processes, and diversified revenue models. Blockchain's immutable record system and the automatic implementation capacity of smart contracts enable the democratization and transparency of copyright registration, monitoring, and payment processes. NFTs make possible the unique and verifiable representation of digital assets, ensuring that artists' works are recognized as unique and valuable in the digital realm. Innovative applications such as decentralized music platforms and fractional ownership models transformatively restructure the artist-fan relationship and promote a more equitable distribution of economic value.

### Strategic Recommendations for Artists and Industry Stakeholders

For the transformative potential of blockchain technology and NFTs in the music industry to be fully realized, it is critically important for artists and industry stakeholders to adopt a proactive and strategic approach. In this context, we offer the following comprehensive recommendations:

**Systematic Development of Technological Literacy**: Artists should acquire in-depth knowledge of the technical, legal, and economic dimensions of blockchain technology and NFTs and continually monitor developments in this field. Participation in structured educational programs, integration into interdisciplinary community networks, and utilization of specialized consulting services are essential for artists to effectively adopt this technological paradigm.

**Strategic Collaborations and Institutional Partnerships**: Industry stakeholders should systematically facilitate the integration of these technologies into the music industry by developing strategic collaborations with blockchain technology providers, legal experts, academic institutions, and policymakers. These collaborations will support the sustainable development of the blockchain ecosystem by providing coordination on standardization of technical infrastructure, harmonization of legal frameworks, and establishment of ethical norms.

**Systematic Exploration and Development of Innovative Business Models**: Artists should develop innovative approaches beyond traditional revenue models by leveraging the opportunities offered by NFTs. Structured experimental initiatives in areas such as fractional ownership, layered access rights, artist-fan collaborative projects, and digital collecting will enable the systematic exploration of new economic opportunities.

**Active Participation in the Development of Legal Frameworks**: Industry stakeholders should actively contribute to the process of clarifying the legal status of blockchain technology and NFTs. They should work in collaboration with policymakers to develop a balanced regulatory framework that protects artist rights while supporting technological innovation. This participation is critically important for the sustainable development of blockchain-based copyright systems.

**Establishment of Sustainability and Ethical Standards**: Sustainable approaches should be developed that consider the environmental impacts and ethical dimensions of blockchain technology and NFT applications in the music industry. The adoption of technological solutions that increase energy efficiency, the creation of fair and inclusive participation models, and the development of strategies to address digital inequalities are essential for the long-term sustainability of the blockchain ecosystem.

For this technological transformation to be fully realized, adaptation of legal and regulatory frameworks, development of technical infrastructure, and proactive participation of industry stakeholders are required. Harmonization of national and international copyright laws, clarification of the legal status of NFTs, and ensuring the enforceability of smart contracts in judicial systems are critically important for the widespread adoption of blockchain-based copyright solutions. Blockchain technology and NFTs redefine copyright management in the music industry,

strengthening artist autonomy, increasing transparency, and ensuring a more equitable distribution of economic value. Fully realizing the possibilities offered by these technologies requires not only technological adaptation but also institutional, legal, and cultural transformation. Our current research provides a comprehensive conceptual framework for understanding and shaping this multidimensional transformation process. In this paradigmatic transformation process of the music industry, collaboration and innovative approaches from all stakeholders will enable the development of a more democratic, transparent, and creative ecosystem.

## Acknowledgment

This research was approved by the Scientific Research and Publication Ethics Committee of Afyon Kocatepe University, Social and Human Sciences, under decision number 2024/382.

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