International Research Journal on Advanced Engineering and Management
https://goldncloudpublications.com
https://doi.org/10.47392/IRJAEM.2025.0159
e ISSN: 2584-2854
Volume: 03
Issue:03 March 2025
Page No: 977 - 979

Echo Chain

Aman Yadav[1], Shejal Thalkar[2], Sanuli Vanjari[3], Unnati Warule[4], Akshay Jain[5]
[1,2,3,4]UG Student, Dept. of Computer Engineering, Guru Gobind Singh College of Engineering and Research Centre, Nashik, Maharashtra, India.
[5]Assistant Professor, Dept. of Computer Engineering, Guru Gobind Singh College of Engineering and Research Centre, Nashik, Maharashtra, India.
Emails ID: *engineeramanyadav@gmail.com[1], shejalthalkar2019@gmail.com[2], sanulivanjari@gmail.com[3], unnatiwarule@gmail.com [4], jainakshay781@gmail.com [5]*

Abstract
A decentralized music platform builds on blockchain technology, a fully transparent, fair, and community-driven system of distribution for music. Unlike traditional models, which are controlled by centralized authorities over the dissemination of content, revenue sharing, and governance, giving artists much greater control over their content, rights, and revenue. The platform makes use of smart contracts to ensure fair payments directly to the creators and reduces dependency on intermediaries. Users will be able to get a more transparent flow of support for their followed artists through community governance by DAO, enabling a collaborative environment that prioritizes the interests of the artist and the fan. Moreover, the blockchain-based digital assets give an unparalleled opportunity to engage with fans, notably in NFTs, because they provide exclusive material and even investments in artists' careers. It is a model of this extent that transcends democratizing the music, using it anywhere in the world, and creating an even more inclusive and trustworthy whole in general.

Keywords: *Blockchain, Decentralization, Music distribution, Artist empowerment, Revenue sharing, NFTs (Non-Fungible Tokens), Copyright protection, Decentralized Autonomous Organization (DAO).*

1. Introduction
The music landscape has seen substantial changes in recent decades, changing from physical recordings (vinyl, cassettes, CDs) to downloads and streaming platforms. Spotify, Apple Music, and YouTube Music are some examples of platforms making music easily available across the globe. But centralized services have multiple downsides: disproportionate revenue shares, transparency concerns, and unreasonable dominance by intermediaries. Artists only get a fraction of the overall income made from their music. As per reports, top streaming sites pay artists fractions of a cent for each stream, so an artist would need millions of streams to gain a living wage. Moreover, record labels, managers, and distributors get a significant amount of an artist's income, cutting down on their profits even further. With the advent of blockchain technology, smart contracts, and energy decentralized finance (DeFi), it is possible to transform the music industry by eliminating intermediaries and making artists directly and fairly compensated. A decentralized music-sharing platform can solve these problems by applying blockchain-based smart contracts for payments, NFTs for ownership, and decentralized storage for content protection.[2]

1.1 Decentralized vs. Centralized Music Platforms
Most existing music-sharing platforms today are run on a centralized system, wherein a single firm or entity dominates the whole infrastructure. Although it brings order and simplicity, it also generates important issues, which are:

- Limited Transparency – The artist and listeners cannot see any details about the

International Research Journal on Advanced Engineering and Management
https://goldncloudpublications.com
https://doi.org/10.47392/IRJAEM.2025.0159
e ISSN: 2584-2854
Volume: 03
Issue:03 March 2025
Page No: 977 - 979

revenue sharing and price structures. [1]

- High Commission Costs – Platforms pay artists 30-50% commission fees at maximum, thus decreasing their payments. [3]
- Censorship & Content Takedown – Music can be taken down based on copyright claims or community policies.
- Payment Delays – Artists typically face delayed payments, at times waiting months to see revenue.
- A decentralized music-sharing platform eliminates these problems by empowering artists and users. Major advantages of decentralization are:
- Immediate Peer-to-Peer Payments – Artists are paid immediately without intermediaries.
- Transparency & Security – Every transaction is stored on a public ledger, promoting equitable revenue sharing.
- Decentralized Storage – Music is distributed on IPFS (Interplanetary File System), avoiding single-point failures.
- NFT-Based Ownership – Artists can tokenize their content as Non-Fungible Tokens (NFTs), providing verifiable ownership and facilitating resale royalties.

1.2 Blockchain, Smart Contracts, and NFTs' Role

Blockchain technology forms the foundation of a decentralized music-sharing platform, providing secure, tamper-proof, and transparent transactions. The major elements are:

- Smart Contracts – These are contracts that are self-executing and are kept on the blockchain. They execute payments, licensing deals, and royalty payments automatically without any intermediaries.
- Non-Fungible Tokens (NFTs) – Artists will be able to sell their music or albums as NFTs, which provide proof of ownership and guarantee musicians receive a proportion of secondary streams or sales.
- Cryptocurrency Payments – Payments occur in digital forms such as Ethereum (ETH), enabling instantaneous and borderless transactions.
- For instance, an artist can design a music NFT with an embedded 10% royalty provision in the smart contract. Whenever there is a resale of the NFT to another party, the original artist gets 10% of the resale amount—a feature which cannot be achieved in conventional models.

1.3 Challenges and Considerations

While decentralization brings many benefits, it also introduces some challenges to be overcome:

- Gas Fees & Scalability – Ethereum fees for transactions can be steep, making small transactions less effective. Still, our platform operates on Ethereum, and we're working to optimize costs without sacrificing security and reliability.
- Piracy & Unauthorized Sharing – While NFTs confirm ownership, music files can nevertheless be pirated. Encryption and access control methods are required.
- User Adoption & Education – Artists and users are largely ignorant of blockchain and NFTs, so they need education in order for adoption to occur at large.
- Legal & Copyright Issues – Smart contracts have to be compliant with current copyright laws.

Despite the issues, decentralized music platforms are the future of music distribution, empowering artists and creating a more equitable, more transparent environment for creators and listeners.[4]

2. Results

The decentralized music distribution platform based on blockchain was conceptualized and proven to offer an open, equitable, and artist-friendly model of content distribution. Smart contracts made direct and equitable payments to artists possible, lessening reliance on intermediaries. With the incorporation of a Decentralized Autonomous Organization (DAO) for decision-making, the platform enabled decision-making by the community, with artists and users having greater authority over content governance and

International Research Journal on Advanced Engineering and Management
https://goldncloudpublications.com
https://doi.org/10.47392/IRJAEM.2025.0159
e ISSN: 2584-2854
Volume: 03
Issue:03 March 2025
Page No: 977 - 979

revenue allocation. The system successfully employed blockchain technology to record immutable ownership and transaction records, strengthening copyright and authenticity. NFT-based digital assets enabled novel forms of artist-fan engagement, providing access to exclusive material and investment prospects. Initial assessment of the platform's workflow demonstrated effective deployment of secure and automatic revenue-sharing arrangements, with the potential for scaling across the worldwide music industry.

3. Discussion

The findings highlight the potential of blockchain technology to transform the music industry through decentralization of distribution and revenue-sharing systems. The removal of intermediaries provides artists with more control over their income while promoting direct interaction with their fans. The openness of blockchain transactions promotes trust in the community, with artists being guaranteed fair returns for their work. One of the most significant strengths of this system is its support for smart contracts that enable royalty payments to be automated, reducing conflicts over revenue sharing. The DAO-based model of governance adds to the inclusivity of decision-making by enabling both artists and fans to have a role in platform development. The incorporation of NFTs also presents new monetization avenues, which guarantees continued artist engagement and funding. Yet, some challenges must be resolved for mass adoption. Scalability of blockchain networks is still an issue, with transaction fees and processing times varying depending on network traffic. Furthermore, regulatory ambiguity over NFTs and decentralized platforms could affect their legal status in different areas. Future improvements might involve optimizing blockchain efficiency via Layer 2 scaling solutions and promoting industry cooperation to create standardized frameworks for managing digital assets. On the whole, the integration of blockchain within the music world provides an opportunity for change, allowing for more equitable revenue sharing, stronger copyright protection, and more artist control. The success of the system will rest on advances in blockchain scalability and regulatory certainty that provide a smooth and seamless user experience.

Conclusion

A decentralized music-sharing platform can transform the music industry by giving artists complete control over their content and revenue. Through the use of blockchain, NFTs, and IPFS, the platform cuts out middlemen and provides fair revenue sharing. Research in the future needs to address scalability, adoption, and user interfaces.

References

[1]. Akshat Jain, Chaman Pandey, Sakshi Tayal (2023). Decentralized App for music Streaming. International Journal for Research in Applied Science & Engineering Technology, ISSN: 2321-9653 doi: 10.22214/ijraset.2023.57832.

[2]. Sadhik A, Hari Kumar V, Nisanth N, Prof. Giridhar.C (2023). Decentralized music player-bmusic. International Research Journal of Modernization in Engineering Technology and Science, ISSN: 2582-5208. doi: 10.56726/IRJMETS35509

[3]. Yogiraj Gutte, Aasit Vora, Yogesh Sharma, Bhaskar Bhardwaj. “NFT Marketplace Based on Ethereum Blockchain.” International Journal of Advanced Research in Science, Communication and Technology (IJARSCT). ISSN (Online) 2581-9429. doi: 0.48175/IJARSCT-3729

[4]. Sridhar Kumar Singh, Shallu Rani, Shivam Kumar, Utpal Chandra. “Beyond Playlists - The Future of Music Streaming with Blockchain in Spotify.” International Journal of Advanced Research in Science, Communication and Technology (IJARSCT). ISSN: 2319-7463. ISSN: 2319-7463