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2022 ELI Writing Contest Essay written by Michael Harrigan

Beyond a Reasonable Doubt: How Blockchain Technology can Shift the DMCA's Burden of Notification Away From Copyright Owners

I. Introduction

The blockchain revolution has reached the music industry with full force, and its shockwaves are not going unnoticed. Artists such as Taylor Bennet, Grimes, and Steve Aoki have all made headlines for experimenting with NFT's (non-fungible tokens)¹ and its underlying blockchain technology to increase revenues while reducing payments to intermediaries.² Hip-Hop icon Jay-Z currently finds himself in the wake of a copyright infringement lawsuit staking claim over the unauthorized auction of an NFT containing the copyright to his debut album *Reasonable Doubt*, a case that could potentially set a much needed precedent regarding the application of Copyright Law to digital assets.³ In an age where digital streaming is rapidly evolving, the law already lags well behind the industry's innovation, and it is safe to say the blockchain frenzy has brought along a new set of complicated legal challenges that must be addressed.⁴

Music and blockchain are no strangers, the implementation of the decentralized technology as a solution to industry issues has been heavily contemplated in recent years.⁵ The

¹ A non-fungible token, or NFT, is a unique, individualized digital asset issued through distributed ledger technology. Much like cryptocurrencies, NFT's can be easily identified and authenticated via decentralized systems of nodes that operate on the blockchain. However, NFT's provide a method of "provable uniqueness" and ownership for digital pieces of art, music, and other digital content. It is possible to have a copy of the same content, but only the owner of the specific token can prove authentic ownership of the digital content. Daniel S. Cohen et al., *The Coming Blockchain Revolution in Consumption of Digital Art and Music: The Thinking Lawyer's Guide to Non-Fungible Tokens (NFTs)*, 26 No. 6 *Cyberspace Lawyer* NL 1 (2021).

² Carly Kessler, *NFT's Are Reshaping Artists' IP Rights*, BLOOMBERG LAW (March 24, 2021, 4:00 AM), <https://news.bloomberglaw.com/us-law-week/nfts-are-reshaping-artists-ip-rights>.

³ Chris Dometsch, *Jay-Z's NFT Feud Spotlights Legal Peril in Hot Investment Trend*, BLOOMBERG TECHNOLOGY, (September 16, 2021, 6:30 AM), <https://www.bloomberg.com/news/articles/2021-09-16/jay-z-s-nft-feud-spotlights-legal-peril-in-hot-investment-trend>.

⁴ Tran Ngoc Linh Tam, *Music Copyright Management on Blockchain: Advantages and Challenges*, 29 *Alb. L.J.Sci & Tech.* 201,226-27 (2019). (Finding that the current application of blockchain technology is in its early stages which means the technology still has practical barriers, although there is the potential for positive impacts on the music industry such as tracing royalty payments and increasing data transparency).

⁵ Angelo Massagli, *The Sample Solution: How Blockchain Technology Can Clarify a Divided Copyright Doctrine on Music Sampling*, 27 *U. Miami Bus. L. Rev.* 129,131 (2018). (Noting

rise in popularity surrounding blockchain technology has left many wondering what makes this new technology so appealing. One of the primary reasons artists are making the switch from traditional publishing to personalized sales on the blockchain stems from the disparity between the growth of the music industry and the lack of growth in artist income. In 2020, streaming services such as Spotify and Apple Music brought in \$10.1 billion in revenue, making up 83% of total retail revenues for the U.S. music industry.⁶ That number is expected to be shattered based on RIAA estimates through the first half of 2021.⁷ Meanwhile, copyright owners are battling with their service providers to prevent royalty rates from reaching an all-time low⁸, which are already set at just fractions of a penny.⁹

On its face, blockchain technology may seem to pose a threat to the streaming services holding majority of the industry's market share. However, it is more likely that the rising popularity of music sales on NFT exchanges simply represents the growing frustration among artists to be properly compensated by their service providers. As digital streaming settles in as the primary source of music consumption, streaming platforms have been put under increasing pressure to properly distribute streaming royalties and ensure licenses to distribute music are attributed to the proper parties.¹⁰ Legislation such as the Digital Millennium Copyright Act (DMCA) and the Music Modernization Act have made strides to adapt the current Copyright Law framework to the advances of the streaming era.¹¹ Yet, the shortcomings of copyright

blockchain technology has been widely acknowledged for its potential to positively impact the music industry that is currently dealing with a multitude of legal issues including compensation and copyright infringement).

⁶ Digital streaming services include on-demand steaming platforms such as YouTube and Vevo, in addition to the major interactive streaming services such as Spotify and Apple Music. Joshua P. Friedlander, *Year-End 2020 RIAA Revenue Statistics*, <https://www.riaa.com/reports/2020-year-end-music-industry-revenue-report/> (last visited January 1, 2022).

⁷ Joshua P. Friedlander, *Mid-Year 2021 RIAA Revenue Statistics*, <https://www.riaa.com/reports/2021-mid-year-music-industry-revenue-report-riaa/> (last visited January 1, 2022).

⁸ Streaming services proposed a mechanical royalty rate as low as 10.5 percent to the Copyright Royalty Board for 2023 through 2027, which would create the lowest amount of royalties paid by streaming services in the last 15 years. Evan Bogart, *What Songwriters Need To Know About The Next Royalty Rate Decision*, GRAMMY ADVOCACY, (December 10, 2021, 8:55 AM), <https://www.grammy.com/advocacy/news/what-songwriters-need-know-about-next-royalty-rate-decision>.

⁹ The Copyright Royalty Board is tasked with setting the copyright royalty rates for the rights to reproduce and distribute musical works every five years. In 2018, the Copyright Royalty Board initially raised the royalty rate from 10.5% 15.1% of revenue generated from music streaming. *See Johnson v. Copyright Royalty Board*, 969 F.3d 363, 366-67, 375 (D.C. Cir 2020).

¹⁰ *See* Andrew Massagli, *supra* note 5 at 131.

¹¹ *See Generally*, 17 U.S.C. § 101-1401 (2018) (providing that the Music Modernization Act and the Digital Millennium Copyright Act are the two most significant amendments to the Copyright Act of 1976). *See also*, Jillian J. Dahrooge, *The Real Slim Shady: How Spotify And Other Music Streaming Services Are Taking Advantage Of The Loopholes Within the Music Modernization Act*, 21 J. High Tech L. 199, 203-04 (2021). (Noting that the MMA was passed by Congress to

legislation have created a greater mess for rightsholders and streaming services, indicating a need for change.¹²

The current Copyright Law, specifically the Digital Millennium Copyright Act, can no longer ignore the availability of blockchain technology as a solution to reduce copyright infringement on online platforms and to remove the burden on rightsholders to protect their copyrighted materials. This essay will provide a brief background of the DMCA and how it provides certain online platforms liability protection from copyright infringement. An overview on blockchain technology will then provide clarity as to how this rapidly evolving technology has major implications on the future of the music industry. Finally, the article will discuss how the DMCA sets the stage for the implementation of blockchain technology to help identify instances of copyright infringement, and how a simple adjustment to the current law can help rightsholders and online platforms get back to the collaborative framework the DMCA was intended to provide.

II. The Digital Millennium Copyright Act

In 1998, the Digital Millennium Copyright Act (DMCA) was enacted by Congress to create a collaborative system between copyright holders and online service providers (OSP's)¹³ to adapt copyright infringement policies to the evolving digital revolution.¹⁴ A key provision of the DMCA is the Online Copyright Infringement Liability Limitation Act (OCILLA), which came to be known as the DMCA's "safe harbor provision."¹⁵ The safe harbor provision grants OSP's limited liability protection, upon meeting specific criteria, when third-party infringement of copyrighted materials occurs on their platforms.¹⁶ Essentially, a website is not liable for monetary damages in copyright infringement disputes if the website "responds expeditiously to remove, or disable access to, the material that is claimed to be infringing."¹⁷ Furthermore, OSP's

address current issues within the Copyright Act of 1976 as music transitions into the streaming era).

¹² Garry Gabison, *Policy Considerations for the Blockchain Technology Public and Private Applications*, 19 SMU Sci. & Tech. L. Rev. 327, 339 (2016). (Noting that blockchain solutions specifically within copyright fields would require a reassessment of specific legislation like the DMCA before effective solutions can be implemented).

¹³ An online service provider, OSP, is an entity that offers "transmission, routing" or "connections for digital online communications. . . without modification to the content of the material as sent or received." See 17 U.S.C § 512(k)(1)(A) (2018).

¹⁴ 17 U.S.C. § 512, 1201-1205, 1301-1332 (2018).

¹⁵ Methaya Sirichit, *Catching the Conscience: An Analysis of the Knowledge Theory under 512(c)'s Safe Harbor Provisions & The Role of Willful Blindness in the Finding of Red Flags*, 23 Alb. L. J. Sci. & Tech. 85, 117-19 (2013) (Explaining that the DMCA safe harbor sought to clarify service providers' liability that resulted from third party infringement including direct, vicarious and contributory infringement).

¹⁶ Online service providers must: (1) adopt and reasonably implement a repeat infringer policy that (2) does not interfere with standard technical measures t from potential liability for infringement. See Jessica E. Gopiao, *The Music Industry's Discord with the DMCA*, 46 AIPLA Q. J. 267, 271-72 (2018). See also 17 U.S.C § 512(i)(1).

¹⁷ 17 U.S.C. § 512(c)(1)(C).

must adopt a repeat infringer policy that does not interfere with “standard technical measures”¹⁸ in order to enjoy the limited liability protections of the DMCA.¹⁹ Once OSP’s meet these criteria, the rest of the work is placed upon the copyright holders.

Copyright infringement allegations require the rightsholder to provide a written notice of copyright infringement to a designated agent of the service provider, who must then act expeditiously to remove or disable the alleged infringing material.²⁰ In the early years following the passage of the DMCA in 1998, the co-operation between copyright holders and OSP’s worked effectively to incubate the growth of the internet and to adopt a “notice-and-takedown” policy whereby copyright holders would notify the service providers of any infringing activity and the service provider would quickly take the proper steps to identify and remove the material.²¹ Over the years, however, the growth of the internet has made it nearly impossible for music rightsholders to keep track of and identify every instance of infringement.²²

The DMCA currently does not place a duty on service providers to monitor infringing material on their platforms.²³ The entire burden is thus put on copyright owners to detect infringement. This burden gives rise to a “whack-a-mole” problem where copyright owners must scour the internet and file a DMCA takedown notice every time their work is uploaded without permission.²⁴ There is a firm divide as to whether an affirmative monitoring requirement should be required for online service providers. Proponents of the DMCA claim the current burden of notification placed on rightsholders reduces uncertainty regarding the liability of OSP’s when

¹⁸ “Standard Technical Measures” are defined as technical measures used by copyright owners to identify or protect copyrighted works and: (1) have been utilized by a broad consensus of copyright owners and service providers (2) are easily available and nondiscriminatory in accessibility and (3) do not impose substantial costs or burdens on service providers. *See* 17 U.S.C. § 512(i)(2).

¹⁹ A “repeat infringer policy” has been inconsistently defined by the courts, and sometimes not enforced at all, putting a greater burden on the copyright owner’s duty to notify the OSP of infringement. *See* Jessica E. Gopiao, *supra* note 16 at 272-73.

²⁰ 17 U.S.C § 512(c)(3).

²¹ Evan Engstrom & Nick Feamster, *The Limits of Filtering: A Look at the Functionality and Shortcomings of Content Detection Tools*, 1,2 (2017), <https://www.engine.is/the-limits-of-filtering>. (Explaining that a notice-and-takedown strategy is one in which a service provider removes access to an infringing file upon request and the recent argument to change the DMCA requirement to a notice-and-staydown strategy would require service providers to proactively identify and remove infringing material).

²² Jessica E. Gopiao, *infra* note 24 and its accompanying text.

²³ *Viacom Intern., Inc. v. YouTube, Inc.* 676 F.3d 19, 41 (2nd Cir. 2012) (holding that the Section 512 safe harbor expressly disclaims any affirmative monitoring requirement except that refusing to accommodate a standard technical measure can expose the service provider to liability). *See also, Capitol Records, LLC v. Vimeo, LLC*, 826 F.3d 78, 94 (ruling that the service provider has the burden of proving they qualify for the safe harbor protections of Section 512 but the burden rests upon the copyright holder to prove the service provider’s misconduct disqualifies them from safe harbor protections).

²⁴ The continuous filing of takedown notices by copyright owners every time a user uploads infringing material has been referred to throughout the music industry as the “whack-a-mole” problem. *See* Gopiao, *supra* note 16 at 274.

infringing material is uploaded; and requiring OSP's to monitor all material for infringing activity would place an even greater burden on service providers, especially those smaller in size.²⁵ Meanwhile, copyright holders in recent years have argued the internet's enormous growth since the enactment of the DMCA in 1998 has caused the law to stray from its original objective, as current notice-and-takedown strategies are becoming ineffective,²⁶ and service providers are able to enjoy the liability protections of Section 512 with ease.²⁷

The broad definition of who may qualify as an online service provider has allowed for a multitude of websites and platforms—such as YouTube and Twitch—to enjoy the protections of the DMCA safe harbor provisions. Even NFT exchanges like OpenSea have taken advantage of the DMCA's safe harbors to protect against liability for art and musical works exchanged on their platform.²⁸ However, some of the most widely used music streaming platforms, including Spotify and Apple Music, fall just outside the protections of the DMCA, and thus face an onslaught of liability.²⁹

The DMCA oversees far more than just music. Yet, the growth of the internet and its technological capacities over the last three years alone has given rise to a new conversation about how the music industry can understand the current legal framework and make adjustments to remain ahead of the curve in protecting artists' works and the platforms that distribute these works.

III. Blockchain Technology Meets the Music Industry

Blockchain technology is a tamper-proof ledger system operating on a decentralized network, where specific data is stored in “blocks” representing one transaction on the network that is time stamped upon creation.³⁰ Each block contains data pertaining to anything of value, tangible or intangible, which is linked to the previous block through a “hash value”,³¹ so the alteration of any one block on the chain results in the alteration of every subsequent block.³² The

²⁵ Engstrom & Feamster, *supra* note 21 at 8.

²⁶ *Id.*

²⁷ Gopiao, *supra* note 16 at 273

²⁸ Turner Wright, *Cloned CryptoPunks are back on OpenSea marketplace after DMCA counter notice*, COINTELEGRAPH, (September 29, 2021), <https://cointelegraph.com/news/cloned-cryptopunks-are-back-on-opensea-marketplace-after-dmca-counter-notice>.

²⁹ Streaming platforms like Spotify are not the actual copyright holders of their music, but rather a licensee that may not qualify for protections under the DMCA. Furthermore, these streaming platforms do not qualify as OSP's under the DMCA because these platforms must obtain licenses to upload artists' music on their interactive streaming platforms, giving copyright holders more bargaining power. Paige Clark, *The Invisible Defense Against Music Piracy*, 15 J. Marshall Rev. Intell. Prop. L. 297, (2016). *See also* Gopiao, *supra* note 16 at 274-75.

³⁰ *See* Sebastian Pech, *Copyright Unchained: How Blockchain Technology Can Change the Administration and Distribution of Copyright Protected Works*, 18 Nw. J. Tech. & Intell. Prop. 1, 10-11 (2020). *See also* Gabison, *supra* note 12 at 328.

³¹ A cryptographic hash is an abbreviated reference to the data block before it, found in each block, [the hash] keeps the blocks in proper order. “In theory, no one can alter an existing transaction, because every block is linked in an immutable sequence.” *See* Kevin Werbach & Nicolas Cornell, *Contracts Ex Machina*, 67 Duke L.J. 313, 327 (2017).

³² Pech, *supra* note 20 at 11.

addition of a new block requires a consensus among the existing members of the respective network, which fosters further transparency and security.³³ Blockchain technology is decentralized in the sense that all the information is regulated by the existing network, rather than a single entity.³⁴ Therefore, data entries on the blockchain are publicly accessible and can be authenticated and verified quickly.³⁵

While blockchain technology is the framework allowing for the *storage* of information, “Smart Contracts” are another feature of blockchain technology facilitating the *exchange* of ownership information.³⁶ Smart contracts are computer programs created to perform specific actions if pre-defined conditions are met.³⁷ For example, smart contracts can execute the transfer of rights of a musical work from the original rightsholders, to a record label, to a streaming platform seeking executive licenses, and even consumers themselves, all while keeping track of ownership and properly distributing royalties.³⁸ Although smart contracts on the blockchain have their technological limitations,³⁹ commentators have agreed that the effectiveness of this technology cannot be overlooked, as it will encourage careful consideration and forward thinking in contract formation.⁴⁰

NFT’s are another subset of blockchain technology that display similarities to cryptocurrencies like Bitcoin, except each individual NFT has one-of-one uniqueness.⁴¹ The increasing popularity among musicians to distribute their music as NFT’s puts the power of blockchain technology on full display. Blockchain creates a more direct avenue for musicians to connect with their supporters by distributing their work as NFT’s, where consumers can pay

³³ *Id.*

³⁴ *Id.* at 11. *See also*, George Bouchigar, *Collective Management Organizations as Fiduciaries and Blockchains Potential for Copyright Management*, 66 J. Copyright Soc’y U.S.A. 201, 215 (2018).

³⁵ Justin Evans, *Curb Your Enthusiasm: The Real Implications of Blockchain in the Legal Industry*, 11 J. Bus Entrepreneurship & L. 273, 280 (2018).

³⁶ Pech, *supra* note 20 at 35.

³⁷ *Id.*

³⁸ Collective Management Organizations, or CMO’s, have faced criticism for their lack of transparency and inability to keep track of resales, hurting the rightsholders who already struggle to exercise copyright rights. However, blockchain distributed ledger technology can conduct the traditional role of the CMO, but it will allow copyright information to become transparent, while rights can be distributed or monitored with more accountability and efficiency. *See* Zhao Zhao, *Fulfilling the Right to Follow: Using Blockchain to Enforce the Artist’s Resale Right*, 39 *Cardozo Arts & Ent. L.J.* 239, 252-56 (2021).

³⁹ Cornell, *supra* note 31 at 365.

⁴⁰ Cornell, *supra* note 31 at 374-75. *See also*. Net Metering, FL. S.B. 1024, Florida One Hundred Twenty-First Regular Session, § 1 (2021) (recognizing that blockchain and distributed ledger technology is a promising way to provide government services for recordkeeping, data security, and service delivery).

⁴¹ Cohen et al., *supra* note 1

artists directly for their music.⁴² The skepticism surrounding NFT's⁴³, however, suggests that this form of music distribution may not have long-term sustainability. "Without a specific contract saying otherwise, a NFT *does not* grant ownership of the artwork it points to in any meaningful sense."⁴⁴ Knowledge on how NFT's operate and interact with the current Copyright Law is critical for musicians to understand the steps necessary to protect their musical works.⁴⁵ The lack of precedent applying Copyright Law to digital assets puts further pressure on musicians to take extra precautionary measures before entering the NFT space.⁴⁶ Nevertheless, the underlying blockchain technology still has untapped potential that can assist in addressing legal challenges within the music industry.⁴⁷

IV. Blockchain Technology as a "Standard Technical Measure"

Section 512 of the DMCA states that service providers may enjoy the protections of the DMCA safe harbor only if they, "accommodate and do not interfere with standard technical measures."⁴⁸ However, no standard technical measure for identifying and monitoring copyrighted materials currently exists within the music industry or any other digital medium.⁴⁹ Although OSP's are not required to adopt technology to mitigate copyright infringement, several service providers have implemented voluntary approaches—such as YouTube's Content ID program⁵⁰—to help protect rightsholders works.

NFT exchanges such as OpenSea and SuperFarm have been able to use their status as OSP's to utilize the DMCA safe harbor protections for copyrighted material reported on their platforms, although some argue that these platforms continue to neglect copyright holders.⁵¹ "Notice-and-Takedown" is the most common takedown procedure among OSP's operating under

⁴² Arya Taghdiri, *How Blockchain Technology Can Revolutionize the Music Industry*, 10 Harv. J. Sports & Ent. L. 173, 178-179 (2019). (Noting that smart contracts utilized through blockchain technology can facilitate many of the same transactions between artists and their consumers as record labels do, making this technology especially promising for smaller musicians in the industry).

⁴³ See generally, Carly Kessler, *Copyright Concerns for NFT Buyers, Sellers in Music Industry*, Law360 Expert Analysis (2021), available at <https://plus.lexis.com/api/permalink/9d61745c-80c6-4d8b-be01-e19d894b8324/?context=1530671>. See also, Katya Fischer, *Once Upon a Time in NFT: Blockchain, Copyright, and the Right of First Sale Doctrine*, 37 Cardozo Arts & Ent. L.J. 629, 633 (2019).

⁴⁴ David Gerard, *NFTs: Crypto Grifters Try to Scam Artists, Again*, ATTACK OF THE 50 FOOT BLOCKCHAIN, (March 11, 2021). <https://davidgerard.co.uk/blockchain/2021/03/11/nfts-crypto-grifters-try-to-scam-artists-again/>

⁴⁵ See generally, Cohen et al., *supra* note 1

⁴⁶ *Id.*

⁴⁷ Taghdiri, *supra* note 42 at 181-82.

⁴⁸ 17 U.S.C. § 512(i)(1)(B)

⁴⁹ Engstrom & Feamster, *supra* note 51 at 7

⁵⁰ Google Additional Comments USCO Section 512 Study (page 2)

⁵¹ Anete Lusina, *As Theft Thrives, Artists Say OpenSea Does Little to Protect Copyrights*, (December 20, 2021) <https://petapixel.com/2021/12/20/as-theft-thrives-artists-say-opensea-does-little-to-protect-copyrights/>.

the DMCA.⁵² The notice-and-takedown procedure requires copyright holders to file a DMCA takedown notice to the service provider, upon which the service provider must act “expeditiously” to identify any potentially infringing material and take the proper steps to remove, or disable access to, the material.⁵³ Once a takedown notice is submitted, a counternotice may then be returned by the user or service provider who posted the alleged copyright material.⁵⁴ The back-and-forth battle between copyright owners and OSP’s, who often bring in third parties for claims of contributory infringement, to gain control over the rights to a work often allows service providers to continue profiting from infringing material as litigation persists.⁵⁵ Blockchain technology makes up the very foundation of NFT marketplaces, so why not require these platforms to use the technology resting on their fingertips to help thwart copyright issues from the start. Since there is no requirement for streaming platforms to accurately monitor copyrighted material on their platforms, and there is little existing law that explains the relationship between blockchain technology and the Copyright Law, streaming platforms are entering uncharted waters where the law needs to offer much needed guidance.

For example, on June 18th, 2021, Roc-A-Fella Records, Inc. (RAF inc.) filed a lawsuit against Damon Dash alleging Dash intended to sell the copyright of *Reasonable Doubt*, the debut album of Shawn Carter a.k.a. Jay-Z, as an NFT through an online auction.⁵⁶ Dash owns a one-third stake in Roc-A-Fella, Inc., but Jay-Z and his team of lawyers argue that Dash did not own the copyright to the musical work.⁵⁷ Dash’s attorney countered, stating they were trying to assign the rights of future royalties that Dash is entitled to as a part owner of RAF Records.⁵⁸ Although

⁵² The rule that OSP’s are required to proactively monitor content for infringing material is only theoretical, because “standard technical measures” as defined by Section 512 do not currently exist over a broad consensus within the online ecosystem. *See* Engstrom & Feamster, *supra* note 21 at 7. *Citing* L. Gallo, *The Impossibility of “Standard Technical Measures” for UGC Websites*, 34 Colum. J.L. & Arts 283 (2011).

⁵³ 17 U.S.C. § 512(c)(1)(A)(iii)

⁵⁴ 17 U.S.C. § 512(g)(2)(B).

⁵⁵ “One infringes contributorily by intentionally inducing or encouraging direct infringement while declining a right to stop or limit it.” *Eight Mile Style, LLC. v. Spotify USA Inc.*, 535 F. Supp. 3d. 738, 745 (2021) (holding that the Harry Fox Agency, an agent of Spotify, did not face secondary liability against Eight Mile Style, affiliates who own the rights to Eminem’s musical compositions, because Spotify was the principal engaging in streaming music without a proper mechanical license). *See also*, Jillian J. Dahrooge, *The Real Slim Shady: How Spotify and Other Music Streaming Services Are Taking Advantage of The Loopholes Within the Music Modernization Act*, 21 J. High Tech. L. 199, 213-14 (2021). While streaming services seek copyright holders of unidentified works, or battle with copyright holders over takedown notices, streaming services may continue to profit off music on their platforms that have been uploaded without a license or proper ownership to the copyright

⁵⁶ Complaint at 1-3, *Roc-A-Fella Records, Inc., v. Damon Dash*, No. 1:21-cv-05411 (S.D.N.Y.) (June 18, 2021).

⁵⁷ *Id.*

⁵⁸ “Dash is just trying to assign the rights to future royalties he’s entitled to as a one-third owner of Roc-A-Fella, as artists have done for a long time, said his lawyer Natraj Bhushan.” Chris Dolmetsch, *Jay-Z’s Legal Dispute with Damon Dash Hits the NFT Space*, (September 16, 2021, 1:24 PM) <https://fortune.com/2021/09/16/jay-z-damon-dash-roc-a-fella-nft-lawsuit/>.

this case has not yet been decided, the outcome could provide clarification as to how Copyright Law intertwines with digital assets such as NFT's, and why the current legal framework should be adjusted to prevent the increasing number of copyright infringement lawsuits arising from this uncertainty.⁵⁹

Although the idea of blockchain technology is complex, its solution to the growing issues of copyright infringement throughout the expanding internet is quite simple. The transparent and easily traceable qualities of blockchain technology can create a standardized platform for uploading copyrighted works, where artists and service providers can work together to encrypt copyright information within the digital music files uploaded onto an OSP. Blockchain's ledger technology can then keep a close eye on uploaded materials with ease, ensuring copyrighted works are not being uploaded without permission of the rightsholders. Smart contracts can facilitate the payment of royalties to identifiable copyright owners, eradicating the issue of unpaid royalties plaguing artists throughout the music industry.⁶⁰ If streaming services have this technology at their disposal, these platforms should have some duty to take reasonable measures to ensure artists' copyright materials are not being uploaded and profited from without the permission of the rightsholders.⁶¹ Not only will this require streaming services to make greater efforts to protect copyright owners, but it will also relieve the overworked copyright holders who have carry the burden of filing takedown notices.⁶²

The adoption of blockchain as a "standard technical measure" will not only reduce the unfair burden on copyright holders to identify unauthorized use of their work, but also allow service providers to maintain their protections under the DMCA safe harbors, while returning to the collaborative effort to prevent copyright infringement intended by the DMCA drafters. Furthermore, streaming platforms such as Spotify and Apple Music can utilize blockchain technology to gain DMCA safe harbor protection. These streaming platforms must obtain licenses from the copyright holders to distribute their music, which creates a more cooperative process where the copyright owners have increased bargaining power.⁶³ If a standard technological measure, such as a blockchain operated copyright ledger, is established, then they could enjoy the protections of Section 512 safe harbors against anti-circumvention liability. The adoption of blockchain technology as the standard technological measure to prevent the

⁵⁹ Fair use and first sale rights would likely apply to the creation and distribution of NFT's, but there are currently no court decisions that apply these traditional copyright doctrines to the sale of NFT's or through any other platform that utilizes blockchain technology. *See* Cohen et al., *supra* note 4

⁶⁰ Blockchain-based platforms use smart contracts to distribute royalty payments and can even set up the smart contracts in a manner that allows royalties to be distributed by a pre-determined split to each contributor of the song. Furthermore, these automated transactions would occur faster than current royalty payment systems and have the ability to trace and verify copyright owners more efficiently than current methods. *See* Tran Ngoc Linh Tam, *supra* note 4 at 220-24.

⁶¹ George Bouchigar, *Collective Management Organizations as Fiduciaries and Blockchains Potential for Copyright Management*, 66 J. Copyright Soc'y U.S.A. 201, 216-17 (2018).

⁶² The installation of "tamperproof hardware" on streaming services to prevent circumvention of copyrighted material is another way in which blockchain technology can be utilized to meet the needs of OSP's and copyright holders who seek the protections of the DMCA. *See* Clark, *supra* note 29 at 314.

⁶³ Gopiao, *supra* note 16 at 274-75.

copyright infringement of digital content can benefit licensee platforms such as Spotify by ensuring further transparency for its content creators and reducing the amount of unpaid royalties resulting from unidentifiable works.⁶⁴

A blockchain solution to monitor copyright information will not occur overnight, and it will have to stem from legislative change. Many states legislatures have already begun to investigate the positive benefits of blockchain technology to improve government services.⁶⁵ The use of blockchain technology is going to continue to grow in the coming years, and its application will go beyond the buying and selling of music and art NFT's.⁶⁶ Streaming services need to realize the reason so many artists are using this technology is to get closer to their listeners in a way that current streaming platforms cannot offer. Service providers must take similar action in using their platforms as a vehicle to bring the artists closer to their listeners, while increasing the economic benefits to all parties involved.

V. Conclusion

The evolution of digital music streaming and now the advent of music NFT's has created opportunities for artists to connect with their fans in ways that have never been achieved. The internet's growth and innovation, however, has been accompanied by an increased threat of copyright infringement that is difficult to prevent. The current framework of Copyright Law is not yet fully equipped to tackle the legal issues arising from this new digital millennium. However, there is an opportunity for the law to adapt in a way that protects online service providers and their copyright owner counterparts. The implementation of blockchain technology to trace and identify copyrighted works has the potential to improve the relationship between streaming platforms and artists, while reducing the burden on the copyright holder to scour the internet in search of copyrighted materials. The power of blockchain technology poses a viable solution to help copyright owners and online service providers get back to the collaborative nature the Copyright Law was designed to nurture.

⁶⁴ Dahrooge, *supra* note 55

⁶⁵ Over 30 states in the United States currently have adopted some form of legislation that involves the implementation of blockchain technology. *See generally* Paul Hodnefield, *Blockchain and Distributed Ledger Laws: State-by-State Adoption*, Corporation Service Company with Practical Law Finance (2021), available at <https://us.practicallaw.thomsonreuters.com/w-019-0651>.

⁶⁶ The NFT space has seen digital art such as CryptoPunks and NBA Top Shot, and other projects sell for hundreds of thousands of dollars. However, the eventual goal of NFT's and its underlying blockchain technology is to achieve the "long-touted and practically elusive" goal of making blockchain technology a tool to allow artists to benefit from their creations with a reduced need for intermediaries while also protecting investors through authentication of the works. *See* Cohen et al., *supra* note 1.