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SMART CONTRACTS: THE FUTURE OF BLOCKCHAIN IN THE ENTERTAINMENT INDUSTRY

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ABSTRACT

Streaming services like Spotify, while convenient for the consumer, diminish artists' hard-earned royalties. Artists split their rewards between services, labels, and intermediaries. As a result, most artists get paid little for their content. Many artists today are seeing a decline in sales and an increase in infringement. In 2015, a class action suit was brought against Spotify for using musicians' music without proper licensing. Though the resulting $43.45 million settlement provided some justice, the entertainment industry has still not found a way to circumvent low royalty distribution rates and infringement by large corporations.

The emergence of blockchain technology over the past decade has signaled a shift that may help artists protect themselves against copyright infringement. Currently, this technology is best known for its digital cryptocurrency, Bitcoin. Blockchain implements a decentralized ledger with the power and potential to simultaneously heighten data security while lowering transaction costs. For example, blockchain-based smart contracts have made their way into the legal world, providing automatic monitoring, execution, and enforcement of legal agreements. This technology could revolutionize the entertainment industry. Blockchain technology, with the help of Bitcoin and smart contracts, could be used to track and manage copyright-related rights and licenses for music, videos, software, and publications.

This Note discusses what blockchain technology is and has to offer, the enormous burden copyright infringement has placed on the entertainment industry, and how smart contracts have the potential to decrease copyright infringement, increase security, and streamline copyright management and royalty distribution in the entertainment industry.

INTRODUCTION

The entertainment industry is the backbone of modern commerce and consumption.[1] Film and music have increasingly made headway thanks to streaming convenience.[2] Streaming provides enhanced access to consumers and creates new avenues of exposure for artists. However, streaming services keep disproportionately large portions of revenue received from

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[1] *See* David Sarokin, *Analysis of the Entertainment Industry*, HOUS. CHRON. (Oct. 20, 2020), https://smallbusin ess.chron.com/ana lysis-entertainment-industry-78237.html.

[2] *See id.*

consumers.[3] Music and movie creators are at a great disadvantage.[4] Indeed, Spotify pays artists only $0.0032 per stream.[5] An increase in pushback by artists has brought more attention to the disparity in royalty distribution from intermediaries.[6] Notably, in 2014, Taylor Swift pulled all of her music from Spotify.[7] Swift reasoned that music should not be free because "[m]usic is art, and art is important and rare."[8] However, this option is not feasible for many artists. Swift's immense earnings allow her and others in similar positions to avoid intermediaries without considerable detriment to their careers or earnings,[9] while smaller artists rely on intermediaries for their livelihoods.

In addition to artist criticism, Spotify has faced legal challenges. In 2015, Spotify was sued for copyright infringement.[10] Plaintiffs David Lowery and Melissa Ferrick filed two separate class actions asserting that Spotify reproduced and distributed thousands of musical compositions without a license.[11] Despite the outcome of the case, a $43.45 million settlement payable to all

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[3] Spyros Makridakis & Klitos Christodoulou, *Blockchain: Current Challenges and Future Prospects/Applications*, FUTURE INTERNET, Dec. 12, 2019, at 1, 8.

[4] *Id.*

[5] Dmitry Pastukhov, *What Music Streaming Services Pay Per Stream (And Why It Actually Doesn't Matter)*, SOUNDCHARTS: BLOG (June 26, 2019), https://soundcharts.com/blog/music-streaming-rates-payouts#:~:text=Spotify%20paid%20the%20artists%20%240,fell%20slightly%20lower%20at%20%240.00436.

[6] Imogen Heap, *Blockchain Could Help Musicians Make Money Again*, HARV. BUS. REV. (June 5, 2017), https://hbr.org/2017/06/blockchain-could-help-musicians-make-money-again.

[7] Hannah Ellis-Petersen, *Taylor Swift Takes a Stand Over Spotify Music Royalties*, THE GUARDIAN (Nov. 5, 2014, 3:53 PM), https://www.theguardian.com/music/2014/nov/04/taylor-swift-spotify-streaming-album-sales-snub.

[8] *Id.*

[9] Swift's net worth is estimated to be $550 million as of December 2021. *See* Abigail Freeman, *Begin Again: Taylor Swift is Looking for Another Win with Today's 'Red' Release*, FORBES (Nov. 12, 2021, 9:16 AM), https://www.forbes.com/sites/forbesmoneyteam/202 1/11/16/how-to-get-ready-to-buy-your-first-home/?sh=4798885f5f1a.

[10] Complaint at ¶ 1, Lowery v. Spotify USA Inc., No. 2:15-cv-09929-BRO-RAO (filed C.D. Cal. Dec. 28, 2015), 2015 WL 10434834 [hereinafter Lowery Complaint].

[11] *Id.*; Complaint at ¶ 1, Ferrick v. Spotify USA Inc., No. 2:16-cv-00180-BRO-RAO (C.D. Cal. 2016), 2016 WL 871108 [hereinafter Ferrick Complaint].

plaintiffs, Spotify's business has not materially changed. Recently, Spotify CEO Daniel Ek responded to complaints regarding Spotify's low royalty distribution to artists by shifting the blame onto the artists themselves.[12] Ek stated: "you can't record music once every three to four years and think that's going to be enough."[13] When met with backlash and criticism, Ek doubled down, saying that "the ones that aren't doing well in streaming are predominantly people who want to release music the way it used to be released."[14] These statements ignore Spotify's culpability and attempt to shift focus solely onto artists.

Spotify exploits the very artists without whom the platform could not exist. Powerful business interests, whether CD publishing companies or streaming services, take advantage of creators without providing much benefit in return. After giving away large portions of their proceeds, artists face the challenge of holding music streaming companies accountable. Blockchain technology presents a potential solution to this dilemma.

In 1991, researchers Stuart Haber and W. Scott Stornetta first outlined blockchain technology.[15] Its first real-world application came later, in 2009, with the digital cryptocurrency, Bitcoin.[16] Blockchain eliminates the need for intermediaries to establish ownership and trust.[17] More specifically, blockchain technology enables the use of smart contracts, which "execute the terms of a contract automatically under conditions and outcomes encoded into the program."[18] In recent years, multiple states have

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[12] Robert Pasbani, *Spotify CEO Pushes Back on Royalty Debate: You Can't Record Music Every Three or Four Years & Think That's Enough*, METAL INJECTION (July 31, 2020), https://metalin jection.net/its-just-business/spotify-ceo-pushes-back-on-royalty-debate-you-cant-record-music-every-three-or-four-years-think-thats-enough.

[13] *Id.*

[14] Nina Corcoran, *Nigel Godrich, Lupe Fiasco, Massive Attack, Dee Snider, More Slam Spotify CEO*, CONSEQUENCE OF SOUND (Aug. 5, 2020, 2:19 PM), https://consequenceofsound.net/2020/08/nigel-godrich-lupe-fiasco-spotify-ceo-comments/.

[15] Luke Conway, *Blockchain Explained*, INVESTOPEDIA, https://www.investopedia.com/terms/b/blockchain.asp#citation-6 (last updated Nov. 4, 2021).

[16] *Id.*

[17] Bryce Suzuki, Todd Taylor & Gary Marchant, *Blockchain: How It Will Change Your Legal Practice*, ARIZ. ATT'Y, Feb. 2018, at 12, 14.

[18] *Id.* at 16.

passed laws regarding the legality of smart contracts.[19] In 2017, Arizona enacted House Bill (HB) 2417, which amended the Arizona Electronic Transactions Act.[20] By effectively stating that smart contracts may exist in commerce, blockchain records are legitimate, and blockchain may show proof of ownership, this legislation encourages the development and use of blockchain.[21]

While state laws may provide a foundation for this technology, coordination and clarity is needed to determine how smart contracts will be designed, verified, implemented, and enforced on a federal level. Policy makers should provide broad uniform definitions for blockchain technology. To ensure blockchain's compliance with current laws while simultaneously allowing for innovation, current copyright laws should be amended, and new federal laws should be created.

This Note examines the revolutionizing effect blockchain technology could have on the entertainment industry. Part II explains the evolution of blockchain technology, Bitcoin, non-fungible tokens, and the emergence of smart contracts. Next, Part III provides an overview of copyright law, licensing agreements, and the legal foundation for blockchain. Part IV analyzes the *Ferrick v. Spotify* case and its overall effect on streaming and copyright infringement. Part V discusses potential actions and implementations of blockchain technology to effectively enhance the interaction between the entertainment industry and its consumers while ensuring artists and creators receive the full benefits of their work. Finally, Part VI concludes.

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[19] Craig A. de Ridder, Mercedes K. Tunstall & Nathalie Prescott, *Recognition of Smart Contracts in the United States*, 29 INTELL. PROP. & TECH. L. J. 17, 17 (2017).

[20] Jeffrey Neuburger, *Arizona Passes Groundbreaking Blockchain and Smart Contract Law – State Blockchain Laws on the Rise*, PROSKAUER: NEW MEDIA & TECH. L. BLOG (Apr. 20, 2017), https://newmedialaw.proskauer.com/2017/04/20/arizona-passes-groundbreaking-blockchain-and-smart-contract-law-state-blockchain-laws-on-the-rise/.

[21] H.B. 2417, 53rd Leg., 1st Reg. Sess. (Ariz. 2017); *see also* Suzuki et al., *supra* note 17, at 12-13.

I. BLOCKCHAIN, DIGITAL ASSETS, AND SMART CONTRACTS

A. INTRODUCTION TO BLOCKCHAIN TECHNOLOGY

A blockchain is a distributed, decentralized, public ledger that safely and effectively provides a method for creating and recording transactions between parties.[22] Senior Advisor at the MIT Digital Currency Initiative and co-author of *The Truth Machine*, Michael Casey explains that a shared and distributed ledger is important in facilitating secure peer-to-peer exchange.[23] Rather than depending on a single entity, which permits human fallibility and inevitable security risks, a decentralized ledger collectively produces multiple versions of a transaction through a simultaneous and consensus algorithm.[24] The term "blockchain" is derived from its functionality—blockchain technology receives data in discrete aggregates, called *blocks*, which are then time-stamped and ordered, forming an immutable *chain* of sequential data.[25] Blockchain gathers and orders data into blocks and then chains them together using cryptography.[26]

Such transaction ledgers are more secure than a centralized technology because the information is shared by a distributed network of computers and is secured by cryptography.[27] Because the blockchain records are visible to all computers on the network, it is therefore virtually impossible to add, remove, or change data without being detected by other users.[28] This system offers a secure

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[22] *See* Conway, *supra* note 15; *see also* Makridakis, *supra* note 3, at 1.

[23] Yan Kulakov, *What is the Blockchain Marketplace and How to Start One*, CS-CART: ECOMMERCE BLOG ON RUNNING AN ONLINE MARKETPLACE (May 12, 2021), https://www.cs-cart.com/blog/what-is-the-blockchain-marketplace-and-how-to-start-one/.

[24] *See* Conway, *supra* note 15; *see also* Makridakis, *supra* note 3, at 5.

[25] Suzuki et al., *supra* note 17, at 13-14.

[26] *Blockchain – The New Technology of Trust*, GOLDMAN SACHS, https://www.goldmansachs.com/insights/pages/blockchain/ (last visited Jan. 24, 2021).

[27] *See* Dave Berson & Susan Berson, *Overview of Blockchain Technology and US Blockchain Law*, COMPUT. & INTERNET L., June 2019, at 1, 1.

[28] *Id.*; *see also Blockchain – The New Technology of Trust*, GOLDMAN SACHS, https://www.goldmansachs.com/insights/pages/blockchain/ (last visited Oct. 31, 2021).

means of storing information while simultaneously allowing users to exchange goods without an intermediary.[29]

Using a blockchain, parties may transact without the aid of a central intermediary to authenticate transactions or verify records.[30] Doing so has the potential to lower transaction costs, increase speed and efficiency, and reduce disputes.[31] A common example is the Bitcoin blockchain. Transactions between users are cryptographically added to a ledger, and copies of the ledger are stored on thousands of computers worldwide.[32] These computers compete with one another to verify new transactions on the ledger through a computationally difficult procedure.[33] The successful computers are rewarded with Bitcoin in a process called Bitcoin mining, thereby incentivizing the duplication and accuracy of the shared ledger.[34] Each user possesses a unique piece of data, known as a private key, used to sign transactions.[35] Once added to the blockchain, the transaction is verified and, except in the occurrence of a fork,[36] generally cannot be altered, protecting parties from fraud.[37]

B. BITCOIN

After pseudonymous Satoshi Nakamoto's invention of Bitcoin in August 2008, Nakamoto released a white paper entitled *Bitcoin: A Peer-to-Peer Electronic Cash System*.[38] The paper described Bitcoin as a new form of currency allowing online

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[29] Suzuki et al., *supra* note 17, at 14.

[30] Makridakis, *supra* note 3, at 3.

[31] *Id.*

[32] Ollie Leech, *Bitcoin Is Not a Stock*, COINDESK (Mar. 17, 2021, 10:13 AM), https://www.coindesk.com/markets/2021/03/17/b itcoin-is-not-a-stock/.

[33] Florian Tschorsch & Björn Scheuermann, *Bitcoin and Beyond: A Technical Survey on Decentralized Digital Currencies*, HUMBOLDT UNIV. OF BERLIN, Mar. 2016, at 2084, 2086.

[34] *Id.*

[35] SATOSHI NAKAMOTO, BITCOIN: A PEER-TO-PEER ELECTRONIC CASH SYSTEM 2 (2008).

[36] A "fork" is a change or divergence from a previous version of the blockchain. Forks occur when a unanimous consensus regarding the future state of the blockchain cannot be reached, resulting in a split in the chain of blocks. A fork thus creates multiple valid chains that were originally one. Roshan Raj, *Blockchain Fork*, INTELLIPAAT, https://intellipaat.com/blog/tutorial/blockchain-tutorial/blockchain-forks/ (last updated Apr. 7, 2021).

[37] *See id.*

[38] Nakamoto, *supra* note 35.

transactions to take place without requiring trust between parties.[39] In January 2009, the Bitcoin protocol, built on blockchain technology, made its way into public view.[40] Over 1,500 cryptocurrencies have been created since the rise of Bitcoin, though Bitcoin remains the most popular in terms of market capitalization and usage today.[41]

Bitcoin is essentially its own payment network, held electronically and independently of any central bank or government.[42] This network creates a blockchain of every Bitcoin transaction without a central server or intermediary.[43] Within the entertainment industry, Bitcoin could be used for payment without the use of an intermediary.[44] Moreover, blockchain could be used to securely track and manage copyright-related rights, contracts, and licenses for music, videos, software, and publications at a lower cost.[45]

Several platforms already use blockchain to provide direct payments to musicians.[46] For example, PeerTracks uses blockchain technology to create an "artist equity trading system."[47] PeerTracks relies on the SounDAC[48] blockchain, a global ledger specifically engineered for the music industry, to manage copyrights and payment mechanisms.[49] SounDAC is completely owned and controlled by the copyright holders using the platform.[50] Copyright holders upload their content through the SounDAC's Rights

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[39] *Id.* at 1.

[40] *See* Conway, *supra* note 15.

[41] *Cryptocurrency and Exchanges*, GLOBAL INDUS. SNAPSHOTS 3, 4 (2018).

[42] Suzuki et al., *supra* note 17, at 14.

[43] *Id.* at 15.

[44] *See Cryptocurrency and Exchanges*, *supra* note 41, at 11.

[45] *See* Suzuki et al., *supra* note 17, at 17.

[46] *Id.*

[47] *Three Startups Trying to Transform the Music Industry Using the Blockchain*, BITCOIN MAG. (Nov. 13, 2015), https://bitcoinmagazine.com/articles/three-startups-trying-to-transform-the-music-industry-using-the-blockchain-1447444594 [hereinafter *Three Startups*].

[48] In 2018, this blockchain, formerly known as MUSE, was rebranded as SounDAC to avoid confusion with The Muse, a New York-based online career platform. David Hamilton, *Last Week's Biggest Gainer: SounDAC +5,834%*, COINCENTRAL (Sept. 10, 2018), https://coincentral.com/soundac-biggest-gainer/.

[49] *Id.*; *see also Three Startups*, *supra* note 47.

[50] Grace Muthoni, *SOUNDAC is Using Blockchain to Solve a Major Problem in the Music Industry*, BLOCKTELEGRAPH (Sept. 11, 2018, 9:00 AM), https://blocktelegraph.io/soundac-using-blockchain-solve-major-problem-music-industry/.

Management Portal and specify how royalties should be distributed.[51]

PeerTracks serves both artists and consumers.[52] The platform enables artists to sell music and engage with fans without a middleman. PeerTracks finds new songs in the SounDAC database and determines which songs to include in their catalog.[53] When PeerTracks users stream music, the copyright holders are paid directly from SounDAC's royalty pool.[54] For consumers, the platform offers a place to discover and buy cheaper music while ensuring all the funds go directly to the artists.[55]

Users on the platform are not required to use Bitcoin for transactions. PeerTracks creator, Cédric Cobban, explained that the platform has no public keys, no transaction fees, and is user-friendly.[56] Cobban also stated that the model can be used for movies, e-books, and physical goods traded online.[57] These kinds of platforms rely on blockchain technology to facilitate major aspects of music distribution, copyright, and royalty payments through smart contracts.[58] Further implementation of such platforms for videos, software, publications, and other physical goods presents great potential to revolutionize the entertainment industry.

C. NON-FUNGIBLE TOKENS

As of early 2021, a new kind of technology emerged in the entertainment industry. Non-fungible tokens, or NFTs, allow digital

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[51] *Id.*

[52] *See* Kevin Cruz, *PeerTracks: Paradigm Shift in Music World*, BITCOIN MAGAZINE (Oct. 22, 2014), https://bitcoinmagazine.com/articles/peertracks-paradigm-shift-in-music-world-1414000069.

[53] Muthoni, *supra* note 50.

[54] *Id.*

[55] Cruz, *supra* note 52.

[56] *Streaming Platform PeerTracks Uses the SounDAC Blockchain to Provide Free Music For Us All*, SUPERBCREW (Sept. 26, 2018), https://www.superbcrew.com/streaming-platform-peertracks-uses-the-soundac-blockchain-to-provide-free-music-for-us-all/ ("Within the SounDAC ecosystem, you simply create an account by entering a username and a password – just as you would do on a traditional website! No need to buy crypto or pay transaction fees. Everything looks and feels exactly as user friendly as a traditional app. We are truly ready to onboard the masses with this.").

[57] Cruz, *supra* note 52.

[58] *See id.*

artists to monetize their works.[59] NFTs are digital tokens tied to assets that can be bought, sold, and traded.[60] Unlike cryptocurrencies, NFTs are non-fungible.[61] In fact, NFTs are "one-of-a-kind" assets that have no tangible form of their own.[62] NFTs possess unique signatures using blockchain technology for any digital asset, including images, videos, or songs.[63] These kinds of digital assets have traditionally been copied and shared on the internet for free. NFTs thus provide a means for artists to sell their work in a way that enables true ownership of digital art.[64] While NFTs can still be copied, the artwork is "tokenized," creating a digital certificate of ownership.[65] The original work then becomes lucrative and one-of-a-kind for consumers.

On March 11, 2021, the American digital artist Mike Winkelmann, known as Beeple, set a new precedent for the value of NFTs. The auction company Christie's hosted an auction for an NFT of Beeple's work titled "Everydays: The First 5000 Days."[66] The work, a collage of every image Beeple had posted online each day since 2007, sold for $69.3 million.[67] While the image of Beeple's work can still be copied and shared, the buyer of the NFT owns a "token," proving that he owns the original work.[68] Beeple also plans to work directly with the buyer to find ways to physically display the work.[69]

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[59] *See* Andrew R. Chow, *NFTs Are Shaking Up the Art World—But They Could Change So Much More*, TIME (Mar. 22, 2021, 12:38 PM), https://time.com/5947720/nft-art/.

[60] *Id.*

[61] *What Are NFTs and Why Are Some Worth Millions?*, BBC (Mar. 12, 2021), https://www.bbc.com/news/technology-56371912 [hereinafter *What Are NFTs?*].

[62] *Id.*

[63] Andy Serwer & Max Zahn, *69 Million Reasons Why You Should Care About NFTs*, YAHOO! FINANCE (Mar. 27, 2021), https://www.yahoo.com/now/69-million-reasons-why-you-should-care-about-nf-ts-121858223.html.

[64] Chow, *supra* note 59.

[65] *What Are NFTs?*, *supra* note 61.

[66] Beeple, *Everydays: The First 5000 Days*, CHRISTIE'S (Mar. 11, 2021), https://onlineonly.christies.com/s/beeple-first-5000-days/be eple-b-1981-1/112924.

[67] *Id.*

[68] *What Are NFTs?*, *supra* note 61.

[69] Jacob Kastrenakes, *Beeple Sold an NFT for $69 Million*, THE VERGE (Mar. 11, 2021, 10:09 AM), https://www.theverge.com/2021/3/11/22325054/beeple-christies-nft-sale-cost-everydays-69-million.

According to technologists, NFTs may be the next step toward a blockchain-oriented technological revolution.[70] Indeed, this successful and lucrative transaction indicates that blockchain-minted digital art is now an acceptable medium of art.[71] Artists of NFTs may retain copyright ownership of their work.[72] NFTs may also contain smart contracts, allowing artists the potential to receive a percentage of any future sale of the token.[73] This provides yet another means for artists to profit off of their works. The rise of NFTs further shows the need to revolutionize the entertainment industry and reward artists for their creative works. Using blockchain technology, NFTs are merely the latest attempt to provide direct communication between artists and consumers.

D. SMART CONTRACTS

A smart contract—a type of "conditional transaction"—automatically executes the terms of a contract through blockchain technology.[74] In practice, smart contracts are pieces of computer code that generate transactions typically using "if-then" conditions.[75] Nick Szabo, one of the first people to define the smart contract concept, characterized the vending machine as the

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[70] Chow, *supra* note 59.

[71] Lucas Matney, *Beeple's $69 Million NFT Sale Marks a Potentially Transformative Moment for the Art World*, TECHCRUNCH (Mar. 11, 2021, 1:32 PM), https://techcrunch.com/2021/03/11/beeples-69-million-nft-sale-marks-a-potentially-transformative-moment-for-the-art-world/.

[72] *What Are NFTs?*, *supra* note 61.

[73] *Id.* For example, a smart contract could entitle an artist to a 10% royalty for any future sale of the token; if the NFT originally sold for $30,000 and later sells for $100,000, the artist would then receive a $10,000 royalty. *Id.*

[74] *See* Jelena Madir, *Smart Contracts: (How) Do They Fit Under Existing Legal Frameworks?*, SSRN 1, 3 (Dec. 14, 2018), https://ssrn.com/abstract=3301463; *see also* NICK SZABO, SMART CONTRACTS (1994), https://www.fon.hum.uva.nl/rob/Courses/InformationInSpeech/CDROM/Literature/LOTwinterschool2006/szabo.best.vwh.net/smart.contracts.html.

[75] Balázs Bodó, Daniel Gervais & João Pedro Quintais, *Blockchain and Smart Contracts: The Missing Link in Copyright Licensing?*, 26 INT'L J.L. & INFO. TECH. 311, 316 (2018).

"primitive ancestor of smart contracts."[76] He further explained, "the machine takes in coins, and via a simple mechanism . . . dispense[s] change and product[s] fairly."[77] Smart contracts have already been used for simple transactions, and further implementation is underway.[78] New applications are in development for Internet of Things service contracts, supply chain contracts, mortgage and property transfers, and insurance.[79]

Several states have recently passed laws incentivizing smart contracts. In 2017, Arizona became one of the first states to legally recognize smart contracts. HB 2417 recognizes the legitimacy of transactions using blockchain technology.[80] Specifically, HB 2417 defines a smart contract as an "event-driven program, with state, that runs on a distributed, decentralized, shared and replicated ledger and that can take custody over and instruct transfer of assets on that ledger."[81] As of 2020, eighteen states[82] have either (1) passed state legislation on smart contracts or blockchain technology, or (2) formed legislative committees to explore topics related to smart contracts and blockchain technology.[83]

Blockchain's implementation in the entertainment industry could streamline artist-to-consumer interactions. For example, smart contracts could automate and standardize copyright-related transactions and earnings.[84] In the entertainment industry, smart contracts and blockchain technology have the ability to unlock new

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[76] NICK SZABO, SMART CONTRACTS: BUILDING BLOCKS FOR DIGITAL MARKETS (1996), https://www.fon.hum.uva.nl/rob/Courses/InformationInSpeech/CDROM/Literature/LOTwinterschool2006/szabo.best.vwh.net/smart_contracts_2.html; *see also* Kristin B. Cornelius, *Smart Contracts and the Freedom of Contract Doctrine*, 22 J. INTERNET L. 3, 3 (2018).

[77] Szabo, *supra* note 76.

[78] Cornelius, *supra* note 76.

[79] *Id.*

[80] *See* de Ridder et al., *supra* note 19, at 17.

[81] H.B. 2417.

[82] These eighteen states include Arizona, Arkansas, California, Connecticut, Illinois, Maryland, Nevada, New Jersey, New York, Oklahoma, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, and Washington.

[83] Christopher Adcock, *An Update on State Smart Contract Legislation*, HUNTON ANDREWS KURTH: BLOCKCHAIN LEGAL RESOURCE ANALYSIS & INSIGHT BLOCKCHAIN L. (Apr. 15, 2020), https://www.blockchainlegalresource.com/2020/04/an-update-on-state-smart-contract-legislation/.

[84] Bodó et al., *supra* note 75, at 312.

financing opportunities for independent artists.[85] Artists will no longer need to sacrifice ownership, contract rights, or control of future royalties to intermediaries.[86] Smart contracts can increase commercial efficiency, lower transaction costs, and increase transparency.[87] However, further work is needed. Many complications, obstacles, and complexities exist to effectively implement smart contracts for copyrightable works. Nevertheless, technology is ever evolving. We are at the cusp of a new technological era.

II. U.S. COPYRIGHT LAW & THE PROTECTION OF CREATIVE WORKS

A. HISTORICAL ROOTS: THE CONSTITUTION AND COPYRIGHT ACTS

The foundations of copyright law are outlined in the U.S. Constitution.[88] Article I, Section 8, Clause 8 states that Congress has the power "[t]o promote the progress of science and useful arts" by granting exclusive rights to "authors" for their "writings."[89] The first federal statute governing copyright was the Copyright Act of 1790 (the "Act").[90] The Act adopted dual fourteen-year terms with reversion to surviving authors after the initial fourteen-year term.[91] The Act also included certain registration and deposit formalities.[92] The 1909 Copyright Act (the "1909 Act") extended state copyright protection, or common law copyright, for unpublished works, and extended the federal copyright term to twenty-eight years, which was then subject to renewal for an additional twenty-eight years.[93]

Copyright law today is codified in Title 17 of the United States Code. The Copyright Act of 1976 (the "1976 Act") provides

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[85] *See* Andrew Rossow, *Blockchain Aims to Be the Biggest Stage for Empowering Music Artists*, FORBES (May 27, 2018, 8:39 PM), https://www.forbes.com/sites/andrewrossow/2018/05/27/blockchain-aims-to-be-the-biggest-stage-for-empowering-music-artists/?sh=5960bac3e0bb.

[86] *Id.*

[87] Madir, *supra* note 74, at 1.

[88] U.S. CONST. art. I, § 8, cl. 8.

[89] *Id.*

[90] JANE C. GINSBURG & ROBERT A. GORMAN, COPYRIGHT LAW 4 (Foundation Press, 2012).

[91] *Id.* at 5.

[92] *Id.*

[93] *Id.* at 6.

the basic framework for most current copyright law issues,[94] though the 1909 Act still covers works created or published before the 1976 Act's effective date of 1978.[95]

Today, copyright rights automatically come into existence the moment a work of authorship is created. However, to file suit for infringement, a copyright must be registered with the U.S. Copyright Office. Under Section 102, copyrightable subject matter includes (1) works of authorship, (2) that are original, and (3) fixed in a tangible medium. [96] Section 102 further provides a non-exhaustive list of works of authorship: (1) literary works, (2) musical works, (3) dramatic works, (4) pantomimes and choreographic works, (5) pictorial, graphic, and sculptural works, (6) motion pictures and other audiovisual works, (7) sound recordings, and (8) architectural works.[97]

A copyrightable work must satisfy the standards of "originality" and "fixation." The originality requirement set forth in the statute has been defined by the Supreme Court. The standard for originality is fairly low, as the two requirements to satisfy a work as original are merely that the work: (1) be independently created by the author (i.e., not copied), and (2) possess at least some minimal degree of creativity.[98] The fixation requirement is defined in Section 101. A work is fixed in a tangible medium of expression when it is "sufficiently permanent or stable to permit it to be perceived, reproduced, or otherwise communicated for a period of more than transitory duration."[99]

B. EXCLUSIVE RIGHTS AND INFRINGEMENT

Section 106 of the Copyright Act establishes six exclusive rights for a copyright owner. This includes the rights to:

(1) reproduce the copyrighted work in copies;
(2) prepare derivative works;
(3) distribute copies to the public;
(4) perform the work publicly;
(5) display the work publicly; and

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[94] *Id.* at 7.
[95] *Id.* at 6.
[96] 17 U.S.C. § 102.
[97] *Id.*
[98] Feist Publ'n, Inc. v. Rural Tel. Serv. Co., 499 U.S. 340, 361 (1991).
[99] 17 U.S.C. § 101.

> (6) perform a sound recording publicly by means of a digital audio transmission.[100]

Copyright infringement occurs when an infringer violates one of these exclusive rights.[101] Specifically, two elements must be proven to establish infringement: (1) ownership of a valid copyright, and (2) copying of constituent elements of the work that are original.[102]

Copyright infringement can occur without an entire work being copied.[103] Courts must determine the extent of similarity necessary to prove infringement.[104] There are two methods for proving copying: (1) a defendant's admission that they copied, or (2) circumstantial evidence, such as a defendant's access to the original work.[105] The trier of fact must then determine whether the similarities between the two works are sufficient to prove copying.[106] In other words, the copied work must be "substantially similar" to the original work.[107] An inverse proportion between the weight of proof of access and similarity exists when proving copying through the use of circumstantial evidence.[108] Disproving access or otherwise showing independent creation is a defense to a certain degree of similarity.[109]

C. THE MUSIC MODERNIZATION ACT

In 2018, the Orrin G. Hatch-Bob Goodlatte Music Modernization Act (or the "MMA") became law. The MMA updated laws to reflect modern consumer preferences and technological developments in the music marketplace.[110] The MMA created a new compulsory licensing system for digital music

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[100] ALFRED C. YEN & JOSEPH P. LIU, COPYRIGHT LAW ESSENTIAL CASES AND MATERIALS 228 (3d ed. 2016).

[101] 17 U.S.C. § 501.

[102] *Feist*, 499 U.S. at 361.

[103] YEN & LIU, *supra* note 100, at 229.

[104] *Id.*

[105] Arnstein v. Porter, 154 F.2d 464, 468 (2d Cir. 1946).

[106] GINSBURG & GORMAN, *supra* note 90, at 134.

[107] *Id.*

[108] *Id.* (explaining that, "the less likely it is that the defendant had access to the plaintiff's work, the more convincing must be proof of similarities in the two works; the fewer the similarities, the more compelling must be the proof of access").

[109] *See id.*

[110] *The Music Modernization Act*, U.S. COPYRIGHT OFFICE, https://www.copyright.gov/music-modernization/ (last visited Jan. 24, 2021).

services, provided federal protection to sound recordings fixed before February 15, 1972, and authorized royalties for any contributing producers, mixers, and sound engineers. [111] Accordingly, the MMA includes three titles: Title I–Music Licensing Modernization (or the "Musical Works Modernization Act"), Title II–Classics Protection and Access (originally called the Compensating Legacy Artists for Their Songs, Service, and Important Contributions to Society ("CLASSICS") Act), [112] and Title III–Allocation for Music Producers.[113]

The Musical Works Modernization Act creates an efficient music-licensing process and makes it easier for rights holders to get paid when their music is streamed online.[114] This section creates a blanket license, which allows digital music providers to make both permanent and limited downloads and create interactive streams while improving royalty rate proceedings. [115] The Mechanical License Collective (the "MLC"), created within the Act, issues and administers the blanket license in addition to voluntary licenses for digital downloads and reproductions.[116] This effectively allows a single license to provide copyright protection for both the composer or songwriter and for the sound recording itself rather than having separate licenses for each.[117]

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[111] Music Modernization Act, H.R. 5447, 115th Cong. (as passed by H.R. Apr. 25, 2018), https://www.congress.gov/bill/115th-congress/house-bill/5447.

[112] The Classics Protection and Access Act provides an exclusive federal right for sound recordings fixed before February 15, 1972 by preempting actions under state and common law claims for these recordings. Moreover, Title II includes a rolling timeline for any pre-1972 sound recordings to enter the public domain, providing protection for at least 95 years after publication. *Summary of H.R. 1551, the Music Modernization Act (MMA)*, COPYRIGHT ALLIANCE 2, https://copyrighalliance.org/wp-content/uploads/2018/10/CA-MMA-2018-senate-summary_CLEAN.pdf [hereinafter *Summary of H.R. 1551*].

[113] The Allocation for Music Producers Act requires SoundExchange, the entity in charge of collecting/distributing digital performance royalties for copyright owners, to distribute a portion of royalties to contracted producers and engineers who were involved in the creative process of making a sound recording. Previously, producers were not covered by copyright law. *See* STEPHEN WADE NEBGEN & WENDY KEMP AKBAR, ENTERTAINMENT LAW: MUSIC 13-14 (Kathy Kay et. al eds., 2020).

[114] Titles II and III of the MMA are beyond the scope of this Note.

[115] *See Summary of H.R. 1551, supra* note 112, at 1.

[116] *See id.*

[117] *See* NEBGEN & AKBAR, *supra* note 113, at 13-14.

This legislation not only simplifies the licensing process, but it also allows copyright holders to negotiate for and collect fair royalty shares.[118] Specifically, the Musical Works Modernization Act replaced the song-by-song compulsory licensing structure with a blanket licensing system.[119] Digital music providers may now use the blanket license to make and distribute phonorecord deliveries (for example, permanent downloads, limited downloads, or interactive streams).[120]

After digital music providers report streaming and download data to the MLC, the MLC distributes royalties to the identified rights holders.[121] If the MLC cannot match royalty-receiving musical works to the copyright holders, the MLC distributes the unclaimed royalties to copyright owners identified in the MLC records, basing the amounts distributed on the relative market shares of such copyright owners.[122] While its effects are newly underway, the MMA ensures fair and timely payment to copyright holders while lowering licensing costs.

D. LICENSING AGREEMENTS

Copyright owners possess the ability to grant another person or entity the rights to use the copyrighted work in a particular capacity.[123] Transfers of rights can occur via license or assignment.[124] A license includes specific terms regarding the transfer of rights, such as the rights being licensed, the number of uses allowed, to what extent the work may be used, and the length of time until expiration.[125]

Copyright licenses can be terminated notwithstanding any terms in the license to the contrary. Section 203 describes termination rights of a copyright holder. Excluding a work made for hire, a transfer of rights or license of a copyright made on or after January 1978 may be terminated by the author if certain conditions

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[118] Charles Wallace, *The Music Modernization Act: Supporting Music Artists 3 Steps at a Time*, CREEDON (Dec. 4, 2019), https://www.creedonpllc.com/blog/2019/12/4/the-music-modernization-act-supporting-music-artists-3-steps-at-a-time.

[119] *The Music Modernization Act*, *supra* note 110.

[120] *Id.*

[121] Wallace, *supra* note 118.

[122] *Id.*; *see also The Music Modernization Act*, *supra* note 110.

[123] *Copyright Licensing*, JUSTIA, https://www.justia.com/intellectual-property/copyright/copyright-licensing/ (last visited Jan. 24, 2021).

[124] *Id.*

[125] *Id.*

are met.[126] For example, termination of a grant may be effected at any time during a period of five years beginning at the end of thirty-five years from the grant's date of execution.[127] This cannot be done retroactively.[128] If the license covers the right of publication, termination can occur thirty-five years from the work's date of publication or at the end of forty years from the license's date of execution, whichever is earlier.[129]

While many licenses can be executed at the will of the copyright holder, there are also several "compulsory" licenses. Section 115 defines the scope and content of certain compulsory copyright licenses. If a copyright holder has authorized the manufacture and distribution of at least one recording of their musical work, any person may make recordings of the work.[130] When this occurs, any persons making a recording of the work must give notice of such a recording, comply with statutory formalities, and pay the prescribed fee.[131] A "mechanical" royalty must be paid to the original copyright holder. Currently, the royalty rate is $0.091 for each copy sold by the person making the new version for a recording under five minutes, or $0.0175 per minute per copy for a recording over five minutes, whichever is greater.[132]

Other compulsory licenses exist, including secondary transmissions by cable television companies,[133] public performances of music by jukeboxes,[134] public television companies,[135] and secondary transmission of "superstation" programs.[136] The emergence of new digital technologies has created challenges for copyright law.[137] Therefore, courts must be free to adapt the doctrine to particular situations on a case-by-case basis.[138]

E. DEFENSES TO INFRINGEMENT

Once a *prima facie* case of infringement is established, the burden shifts to the alleged infringer to raise any defenses.[139] There

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[126] 17 U.S.C. § 203.
[127] *Id.*
[128] *See* NEBGEN & AKBAR, *supra* note 113, at 32.
[129] 17 U.S.C. § 203.
[130] YEN & LIU, *supra* note 100, at 322.
[131] *Id.*
[132] NEBGEN & AKBAR, *supra* note 113, at 87.
[133] 17 U.S.C. § 111.
[134] *Id.* § 116.
[135] *Id.* § 118.
[136] *Id.* § 119; *see also* YEN & LIU, *supra* note 100, at 323.
[137] *See generally* YEN & LIU, *supra* note 100, at 339.
[138] GINSBURG & GORMAN, *supra* note 90, at 181.
[139] YEN & LIU, *supra* note 100, at 370.

are numerous defenses to copyright infringement. The most common and important of these is fair use.[140] Congress first incorporated the fair use doctrine into the 1976 Copyright Act after its creation and use in the common law. The following factors must be considered to determine whether a use is fair:

> (1) the purpose and character of the use, including whether such use is of a commercial nature or is for nonprofit educational purposes;
> (2) the nature of the copyrighted work;
> (3) the amount and substantiality of the portion used in relation to the copyrighted work as a whole; and
> (4) the effect of the use upon the potential market for or value of the copyrighted work.[141]

These factors are not exclusive.[142] Because fair use is broadly defined, its use has been applied to many circumstances in litigation.[143]

The first factor asks whether a work is transformative. A transformative work must be "something new, with a further purpose or different character, altering the first with new expression . . . ."[144] Additionally, courts consider whether the use of the work is commercial or non-commercial.[145] A work created for commercial use is less likely to bear fair use protection.[146]

The second factor examines the nature of the work. Specifically, creative works are entitled to more protection than those factual in nature.[147] Courts recognize that some works are closer to the "core of intended copyright protection than others . . . ."[148] When former works are copied, fair use is more difficult to establish.[149] Moreover, unpublished works do not bar a finding of fair use.[150]

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[140] *Id.*
[141] 17 U.S.C. § 107.
[142] YEN & LIU, *supra* note 100, at 374.
[143] *Id.*
[144] Campbell v. Acuff-Rose Music, Inc., 510 U.S. 569, 579 (1994).
[145] YEN & LIU, *supra* note 100, at 385.
[146] *Campbell*, 510 U.S at 580.
[147] YEN & LIU, *supra* note 100, at 385.
[148] *Campbell*, 510 U.S at 586.
[149] *Id.*
[150] 17 U.S.C. § 107.

The third factor considers whether the amount and substantiality of the portion used in the infringing work from the original work is reasonable. Courts measure this both quantitatively and qualitatively.[151] For example, if a work takes more than is necessary from the original work, this weighs against a finding of fair use.[152]

The fourth factor assesses the potential harm to the market relevant to the original copyright owner. If an infringing work causes market harm to the original work or has a "substantially adverse impact" on its potential market or value, it weighs against fair use.[153] Arguably, if a defendant's use is one that the original copyright holder could license, the defendant's unlicensed exploitation cannot be fair use.[154]

Other defenses available to a defendant include copyright misuse, abandonment, statute of limitations, and fraud on the Copyright Office. Copyright misuse applies in cases where a copyright owner attempts to use that copyright to exceed the rights granted in the Copyright Act.[155] Because this "misuse" violates public policy, the copyright becomes unenforceable until the effects of the misuse are exhausted.[156] If a copyright owner abandons their work, the copyright can no longer be enforced.[157] However, abandonment occurs only when an owner *intends* to abandon the copyright.[158] The Copyright Act establishes a three-year statute of limitations for civil copyright claims.[159] Therefore, a plaintiff can only recover damages for acts that occurred within three years prior to the filing of a suit.[160] Lastly, if a copyright holder makes any fraudulent statements to the Copyright Office during registration, the copyright registration may be invalidated.[161]

Fair use poses unique challenges for smart contracts. Because fair use is applied on a case-by-case basis, it is not difficult to imagine possible scenarios where smart contracts may inherently undermine the intended use of fair use. For example, if a smart contract is designed to only permit use through an express license or under certain circumstances, a user will be unable to access the

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[151] YEN & LIU, *supra* note 100, at 385.
[152] *See Campbell*, 510 U.S at 587.
[153] *Id.* at 590.
[154] GINSBURG & GORMAN, *supra* note 90, at 191.
[155] YEN & LIU, *supra* note 100, at 467.
[156] *Id.*
[157] *Id.* at 470.
[158] *Id.*
[159] *Id.*
[160] *Id.*
[161] *Id.* at 471.

content under conditions typically provided by fair use.[162] Smart contracts may then unintentionally limit the scope of rights available to those operating under fair use. Policy makers will need to provide certain regulations to prevent this technology from impeding existing legal rights. Many unanswered questions exist surrounding this issue that exceed the scope of this Note. It is imperative to continue asking such questions to develop a system that will work with laws already in place.

III. CASE STUDY: INFRINGEMENT BY DIGITAL MUSIC TRANSMISSION

A. THE RISE OF STREAMING

The way consumers listen to music changed over twenty years ago with the rise of peer-to-peer digital music sharing.[163] In 1999, Shawn Fanning, a then-nineteen-year-old U.S. computer programmer, created Napster.[164] The online service enabled music consumers to freely share MP3 song files with each other.[165] Napster enabled users to download albums and access alternate cuts, demo versions, and live songs for free.[166] Prior to Napster and online file sharing systems, "[m]usic had been a collectible. Suddenly, it was disposable."[167]

Napster spread rapidly on college campuses nationwide.[168] Thereafter, artists such as Metallica and Dr. Dre brought copyright infringement suits against Napster.[169] In July 2001, Napster settled

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[162] *See* TIMOTHY K. ARMSTRONG, DIGITAL RIGHTS MANAGEMENT AND THE PROCESS OF FAIR USE 71 (Harvard Journal of Law & Tech., 20th ed. 2006).

[163] Stephen Dowling, *Napster Turns 20: How it Changed the History of Music Streaming*, BBC (May 31, 2019), https://www.bbc.com/culture/article/20190531-napster-turns-20-how-it-changed-the-music-industry.

[164] *Musicology: The History of Music Streaming*, MIXDOWN MAG., https://mixdownmag.com.au/features/columns/musicology-the-history-of-music-streaming/ [hereinafter *Musicology*].

[165] *Id.*

[166] *Id.*

[167] Sam Law, *Metallica vs Napster: The Lawsuit That Redefined How We Listen to Music*, KERRANG! (Apr. 19, 2020), https://www.kerrang.com/features/metallica-vs-napster-the-lawsuit-that-redefined-how-we-listen-to-music/.

[168] *See id.*

[169] *Id.*

several lawsuits.[170] However, in the landmark case *A&M Records, Inc. v. Napster, Inc.*, the Ninth Circuit ruled against Napster.[171] The court found Napster liable for contributory and vicarious copyright infringement, as Napster's users engaged in direct infringement.[172] Napster then filed for bankruptcy in 2002.[173]

Although Napster shut its doors in less than three years after its creation, it changed music and entertainment consumption forever. New streaming services including YouTube, Netflix, Spotify, Pandora, and Hulu have seen rapid growth in the twenty-first century.[174] These services generally provide legal methods of consuming music and media, but artists receive low royalties and continue to experience infringement.

B. FERRICK V. SPOTIFY USA INC.

Spotify has seen its fair share of lawsuits from artists. Notably, on December 28, 2015, David Lowery brought a class action suit against Spotify in the U.S. District Court for the Central District of California for copyright infringement, seeking damages and injunctive relief.[175] Shortly afterwards, on January 8, 2016, Melissa Ferrick filed a similar class action suit in the same California Court.[176] Both plaintiffs were musicians claiming that Spotify used their music without proper licensing or permission.[177] Lowery and Ferrick amended their separate complaints to include additional plaintiffs over the next few months.[178]

On February 12, 2016, Spotify then filed a motion to either dismiss the suit for lack of personal jurisdiction or to transfer venue

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[170] *Id.*

[171] *See Case Study: A&M Records, Inc. v. Napster, Inc.*, WASHULAW (Aug. 1, 2013), https://onlinelaw.wustl.edu/blog/case-study-am-records-inc-v-napster-inc/ [hereinafter *Case Study*].

[172] A&M Records, Inc. v. Napster, Inc., 239 F.3d 1004 (9th Cir. 2001).

[173] Law, *supra* note 167.

[174] *See A Brief History of Streaming Media*, PACE TECHNICAL (Jan. 17, 2014, 4:49 AM), https://www.pacetechnical.com/brief-history-streaming-media/ .

[175] Lowery Complaint, *supra* note 10, at 1.

[176] Ferrick Complaint, *supra* note 11, at 1.

[177] Lowery Complaint, *supra* note 10, at 4, ¶ 9; Ferrick Complaint, *supra* note 11, at 1.

[178] Ferrick v. Spotify USA Inc., No. 2:15-cv-09929-BRO-RAO (C.D. Cal. 2016), 2016 WL 11623778.

to the Southern District of New York.[179] On May 23, 2016, Ferrick and Lowery filed a Motion to Consolidate the two cases, which was granted by Judge Beverly Redi O'Connell.[180] Lowery and Ferrick, along with other named plaintiffs, filed a Consolidated Complaint on June 27, 2016, naming Ferrick, Jaco Pastorius, Inc., and Gerencia 360 Publishing, Inc. as the class representatives.[181] After Spotify refiled a Motion to Transfer Venue to the Southern District of New York, Judge O'Connell granted the motion and ultimately transferred the case to the Southern District of New York.[182]

The class action involved thousands of musical composition copyright owners.[183] Spotify allegedly reproduced and distributed music by Ferrick, Lowery, and other artists on their platform without acquiring proper licenses.[184] To avoid more cross-filings and motions, the parties agreed on a settlement of over $112.5 million, $43.45 million of which would be paid immediately in cash to all class plaintiffs.[185] However, Spotify continued to deny "any fault, wrongdoing, or liability of any kind to Class Plaintiffs" even after the settlement was finalized.[186]

As noted in the Consolidated Complaint, Spotify could have negotiated direct licenses with the relevant copyright owners or pursued compulsory licenses under 17 U.S.C § 115.[187] Instead, Spotify outsourced its licensing obligations to the Harry Fox

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[179] Notice of Motion and Motion to Dismiss for Lack of Personal Jurisdiction or to Transfer Venue to the Southern District of New York at 1, Ferrick v. Spotify USA Inc., No. 2:15-cv-09929-BRO-RAO (C.D. Cal. 2016), 2016 WL 11623778 [hereinafter Motion to Transfer].

[180] *Id.*

[181] Consolidated Class Action Complaint at 1, Ferrick v. Spotify USA Inc., No. 2:15-cv-09929-BRO-RAO (C.D. Cal. 2016), 2016 WL 11623778 [hereinafter Consolidated Complaint].

[182] *See* Memorandum of Law in Support of Plaintiffs' Unopposed Motion for Preliminary Approval of Settlement at 6, Ferrick v. Spotify USA Inc., No. 1:16-cv-08412 (AJN) (S.D.N.Y. May 22, 2018), 018 U.S. Dist. LEXIS 86083 [hereinafter Preliminary Approval of Settlement].

[183] *See* Eriq Gardner, *Spotify Wins Approval of $112.5 Million Deal to Settle Copyright Class Action*, THE HOLLYWOOD REPORTER (May 23, 2018, 8:42 AM), https://www.hollywoodreporter.com/thr-esq/spotify-wins-approval-1125-million-deal-settle-copyright-class-action-1114307.

[184] Consolidated Complaint, *supra* note 181, at 2-3, ¶¶ 6-7.

[185] Settlement Agreement and Release at 15-16, Ferrick v. Spotify USA Inc., No. 2:15-cv-09929-BRO-RAO (C.D. Cal. 2016), 2016 WL 11623778 [hereinafter Settlement Agreement].

[186] *Id.* at 3.

[187] Consolidated Complaint, *supra* note 181, at 2, ¶ 4.

Agency (the "HFA"), a music rights organization.[188] Both Spotify and the HFA allegedly neglected to comply with the Copyright Act, resulting in copyright infringement for thousands of musical works over the course of three years.[189]

Despite the resolution of this case, more lawsuits were filed after the fact by those enraged by the small amount of the settlement.[190] Many objectors to the *Ferrick* settlement argued that the $112.5 million deal practically gave Spotify a "free pass" on willful infringement.[191] Wixen Publishing Group, originally part of the *Ferrick* lawsuit, ultimately opted out of the settlement agreement and filed its own lawsuit on behalf of music from Rage Against the Machine, The Doors, Steely Dan, and others for "at least $1.6 billion."[192]

Copyright infringement remains an enormous burden in the entertainment industry, even when laws and regulations are put in place. Licensing, while abundant in options, is not always sought. Quasi-monopolies like Spotify can afford extensive litigation or settle when caught exploiting the rights of its artists. On the other hand, many artists cannot afford to enforce their rights. In fact, many may not even realize their works are being infringed upon. Often, infringers choose to avoid paying artists because even if their uses are illegal, the burden is upon the artists to prove ownership and to enforce their respective rights.[193]

These situations can be mitigated using blockchain technology. Using blockchain, records of licenses and transactions

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[188] *Id.* at 3, ¶ 8.

[189] *Id.* at 3, ¶ 7.

[190] Eriq Gardner, *Spotify Hit with $1.6B Copyright Lawsuit Over Tom Petty, Weezer, Neil Young Songs*, THE HOLLYWOOD REPORTER (Jan. 2, 2018, 10:57 AM), https://www.hollywoodreporter.com/thr-esq/spotify-hit-16-billion-copyright-lawsuit-tom-petty-weezer-neil-young-songs-1070960.

[191] Gardner, *supra* note 183.

[192] Gardner, *supra* note 190. This case, *Wixen Music Publishing, Inc. v. Spotify USA Inc.*, was ultimately dismissed in 2018 after being settled out of court for an undisclosed amount. *Spotify Settles $1.6bn Lawsuit Over Songwriters' Rights*, BBC (Dec. 21, 2018), https://www.bbc.com/news/business-46646918.

[193] *See How Blockchain Technology Can Be Used to Protect Intellectual Property*, 99DESIGNS (2018), https://99designs.com/blog/freelancing/blockchain-protect-intellectual-property/ [hereinafter *Blockchain Technology*].

can be recorded permanently.[194] Obligations of both parties are encrypted and specified through smart contracts, providing evidence of wrongdoings or diversions from the agreement.[195] Moreover, each transaction is aggregated with other blocks, forming one block of transactions.[196] Simply put, the artist can automatically detect any changes, new transactions, or unwarranted use at no additional cost.[197]

IV. ENTERTAINMENT SMART CONTRACTS

A. IMPLEMENTATION OF SMART CONTRACTS

Massive transactional efficiencies can be achieved using smart contracts. For example, smart contracts can automatically charge consumers when they download songs and distribute the revenue in pre-negotiated proportions to any specified stakeholder.[198] Infringement may be easier to detect using blockchain technology, thus potentially deterring such behavior entirely.[199]

The key here is to start small. There are many moving pieces—our economic and social infrastructures will have to adapt accordingly.[200] This technological revolution is beginning now, and newly passed state laws are the foundation for this change. Specifically, these laws may provide examples for blockchain's capabilities. Policy makers need coordination and clarity when deciding how smart contracts will be designed, verified, implemented, and enforced.[201] At the federal level, administrations and agencies, such as the Securities and Exchange Commission, the Federal Trade Commission, and the Internal Revenue Service,

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[194] Paul Niculescu-Mizil, Bogdan Ţigănoaia & Andrei Niculescu, *Blockchain and Smart Contracts in the Music Industry – Streaming vs. Downloading*, UNIVERSITY OF POLITEHNICA OF BUCHAREST, ROMANIA 215, 216 (2017).

[195] *See id.*

[196] *Id.*

[197] *See id.*

[198] Andre Dutra, Andranik Tumasjan & Isabell M. Welpe, *Blockchain is Changing How Media and Entertainment Companies Compete*, 60 MIT SLOAN MANAGEMENT REVIEW 39, 40 (2018).

[199] *See* Bodó et al., *supra* note 75, at 322.

[200] Marco Iansiti & Karim R. Lakhani, *The Truth About Blockchain*, HARV. BUS. REV. (2017), https://hbr.org/2017/01/the-truth-about-blockchain.

[201] *Id.*

already acknowledge the risk of overregulating.[202] Additionally, states have not found a general consensus for blockchain regulation, especially with regard to currencies.[203]

Though the current pieces of state legislation in place are an important first step in recognizing the legality of this technology, federal policy makers should define certain terms. For example, "cryptocurrency" does not have a uniform definition.[204] This is the case with many technological terms associated with blockchain technology. Thus, the next logical step is to outline and implement broad, uniform definitions nationwide. This will not only guarantee some sense of consistency but will also provide clarity for new regulations as blockchain technology develops.

Regulators should also administer guiding principles to provide safeguards against anticompetitive practices.[205] Policy makers and artists need to work together to ensure the operability of blockchain technology while complying with existing legislation.[206] Existing state laws may establish a foundation upon which federal laws may be built. Copyright law should be amended to account for blockchain technology, while leaving room for further expansion and clarification as the technology develops.

However, amending laws to include such a new and evolving technology poses the risk of creating unintended consequences.[207] Therefore, where blockchain technology does not fit into existing areas of law, federal legislators should create new laws specifically designed to regulate and accommodate this technology. Again, the key here is to begin small and to provide broad language to account for rapid growth and change. While this bears the risk of creating conflicting laws,[208] such language provides at least some stability and clarity for nationwide implementation of this technology in the coming years. This practice would provide

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[202] Joe Dewey, *Blockchain & Cryptocurrency Regulation 2021 | USA*, GLOBAL LEGAL INSIGHTS (2021), https://www.globallegalinsights.com/practice-areas/blockchain-laws-and-regulations/usa.

[203] *See id.*

[204] *Id.*

[205] TOM LYONS ET AL., THE EUROPEAN UNION BLOCKCHAIN OBSERVATORY FORUM, LEGAL AND REGULATORY FRAMEWORK OF BLOCKCHAINS AND SMART CONTRACTS 10 (2019), https://www.eublockchainforum.eu/sites/default/files/reports/report_legal_v1.0.pdf.

[206] *Id.*

[207] For example, such amendments could create loopholes in blockchain's use or application. *See id.*

[208] *Id.*

protection of existing rights in place by current law while allowing room for innovation.

B. TRANSFORMATION OF OWNERSHIP, RETENTION OF COPYRIGHTS, AND OTHER PLAYERS

Blockchain technology establishes ownership via the distributed ledger. Once a block is created, it cannot be changed or altered.[209] Additionally, because it is formed through automation, artists can protect their work at a lower cost and with a higher level of reliability.[210] This, of course, does not take into account the rights established through copyright. For these rights to be legally enforced, the works in question would still need to comply with copyright law and be registered with the Copyright Office.

If and when artists buy into this blockchain-run system, the technology will not render copyright law moot. In fact, copyright law and blockchain-based smart contracts must work together to succeed. Specifically, artists will retain their copyright exclusive rights.[211] Rather than partnering with intermediaries, each artist could independently license their works' different uses, either exclusively or non-exclusively.[212] Smart contracts authorizing licenses or uses of the creative works would be *prima facie* valid in each territory.[213] Blockchain may precisely track digital assets, thus establishing evidence of authorship while allowing verification of the time and date of the assets' creation.[214] Specifically, this time-stamped record may enable an artist to prove copyright authorship and ownership.[215]

Smart contracts can automate who has access to a work, under what conditions, and for how long.[216] Metadata on ownership and other aspects of a copyright can be stored on the blockchain, thus making the work easier to track and manage.[217] The

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[209] *Blockchain Technology*, *supra* note 193.

[210] *Id.*

[211] Iansiti & Lakhani, *supra* note 200.

[212] *See id.*

[213] *Id.*

[214] Michèle Finck & Valentina Moscon, *Copyright Law on Blockchains: Between New Forms of Rights Administration and Digital Rights Management 2.0*, SPRINGERLINK (Dec. 20, 2018), https://link.springer.com/article/10.1007/s40319-018-00776-8.

[215] *See id.*

[216] *See* Simon Stokes, *Digital Copyright: AI and Blockchain*, LEXOLOGY (Apr. 8, 2019), https://www.lexology.com/library/detail.aspx?g=f470dbbf-eb8e-44e5-9d45-1f55bfc25e2a.

[217] *Id.*

transparency offered through blockchain may diminish the need to have a third party, like the court system, determine ownership.[218] This will simultaneously enable various players to cooperate.[219] For example, blockchain technology may allow numerous stakeholders in the entertainment industry to own a "piece" of each work.[220] Because ownership and control of a work is, in a sense, a source of power, sharing data openly may be disincentivized.[221] While this technology is gaining speed, it is still far from complete.

C. DRAWBACKS AND OBSTACLES

Blockchain technology has great potential, but it is a long way from becoming the new standard. With cheaper and less complicated alternatives available, blockchain applications may fail to "address enforcement [of copyright infringement] in a meaningful way," at least in the near future.[222] Moreover, when information is first put into the blockchain system, the technology cannot check the validity of the information.[223] Specifically, blockchain could not analyze a work in the same way a court can determine whether a work satisfies all the requirements of a copyright.

Blockchain, while generally safe and immune to change, poses a significant issue if used for unlawful purposes.[224] Despite the technology set in place, it may remain difficult to prevent the occurrence of infringing activity.[225] Additionally, copyright holders must register with a blockchain-based system to receive the protection outlined in this Note. While it is not necessary for all artists to transact via smart contracts, a wider implementation would expedite the licensing process and exploit blockchain's advantages. Furthermore, conflicts between smart contracts and traditional licenses could arise with artists who may already have transactions in place and then begin utilizing this system.[226] If these traditional transactions are not properly recorded on a digital ledger, desynchronization of a blockchain may occur, thus thwarting the efforts of maintaining a complete-tracking system.[227]

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[218] Bodó et al., *supra* note 75, at 328-329.
[219] *Id.* at 328.
[220] *See id.*
[221] *Id.*
[222] *See id.*
[223] *Id.*
[224] Stokes, *supra* note 216.
[225] *Id.*
[226] Bodó et al., *supra* note 75, at 323.
[227] *Id.*

Some artists may not have the opportunity to take advantage of this system if they have already sold their rights or signed a contract forbidding negotiating with others. Even if this is the case, using a blockchain system can at least create a digitalized system of tracking, though unfortunately, artists may not have the bargaining power to utilize these systems if they are already using an intermediary. Clearly, this system puts intermediaries at a disadvantage and would thus create a disincentive for intermediaries to "allow" their artists to use this system.

V. CONCLUSION

Smart contracts have the potential to revolutionize the entertainment industry by increasing security while lowering transaction costs. If implemented correctly, smart contracts, through blockchain technology, can increase artists' royalties by removing the need for intermediaries. Artists may receive more direct payments while increasing security. This could also streamline copyright management and royalty distribution.

Rather than million-dollar corporations and companies controlling how artists use and distribute their creative works, artists would enjoy more autonomy over their works. A universal system would create a useful weapon against artist-harming monopolies. This system must start small. Like many great technologies of the past, it once seemed impossible. The difference here is that this system will put artists in control. Once this system proves effective, artists will flock.

The small steps taken now by individual jurisdictions are paving the way for success. Policy makers and artists must work together to understand this technology, its integration, and the regulations needed for ensuring its success. Blockchain technology should be uniformly defined, and copyright laws should be amended to reflect this technology's capabilities. Moreover, federal laws should be created to establish blockchain technology's place in our social and economic infrastructures. While lawmakers are key to unlocking this technology's potential, the ultimate leap will be made by the artists.