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Angelo Massagli

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The Sample Solution: How Blockchain Technology Can Clarify a Divided Copyright Doctrine on Music Sampling

Angelo Massagli*

This article will examine how blockchain technology can clarify the complex and inconsistent judicial approach to the copyright doctrine regarding music sampling. As it stands today, circuit courts are divided over how to handle copyright infringement stemming from unlicensed music sampling. The first approach is simple: if you want to sample, get a license. The second approach is more lenient and applies a de minimis standard that forces courts to make fact sensitive, case-by-case decisions regarding whether or not the sample of the original work is sufficient enough to be defined as an infringement. The reason for this split in rationale stems from the difficulty of reconciling the two opposing virtues of music copyright laws: protecting an artist's copyrighted works from infringement and nurturing an artist's ability to create.

Blockchain technology can help bridge the gap between the two conflicting goals of music copyright law. A blockchain has the capability to store music files embedded with "smart contracts" that will automatically detect when a musical work is being used

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and what it is being used for. It can then facilitate a transaction based on what it detects. This function will make the act of licensing sound recordings simpler and more efficient which will in turn decrease transaction costs. If licensing sound recordings become more economical for the unsigned or emerging artist, it will both incentivize collaboration while protecting the original artist's work from being appropriated without proper compensation. Therefore, the strict approach of "if you want to sample, get a license" will not have as strong of a deterrent effect on artist collaboration and creativity. This will arguably open the door for courts to unanimously shift towards adopting the bright line approach, which will create clarity and certainty in a traditionally muddy doctrine without compromising an artist's creativity.

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PART I: THE NEW KID ON THE BLOCK

The music industry is facing another technological revolution. Innovative developments in the way we listen to music have either invigorated or deteriorated the billion-dollar music business over the years. Vinyl and cassettes quickly became antiques with the rise of the CD. MP3s and the iTunes platform sent CD sales into a tailspin. The rise of streaming services such as Pandora and Spotify once again flipped the industry on its head and into the new era of music licensing that has left major music distributors scratching their heads and asking, "does anyone buy music anymore?" As technology races forward, the industry fights to keep up as tried and true models of music distribution become obsolete overnight.

An overarching issue in today's music landscape is the issue of compensation. Major record labels are struggling because of dwindling

album and single-track sales¹ while artists and songwriters are disgruntled over the confusing and opaque system of compensation for music streams.² Major streaming services like Spotify are facing lawsuits from artists seeking millions of dollars in damages for unpaid royalties due to what the company claims to be inaccurate record keeping of ownership rights.³ Artists are getting sued for copyright infringement because of the ever-increasingly popular art of music sampling.⁴ Clearly, the easier it gets for the consumer to listen to and use recorded music in his everyday life, the messier things get for the artist. As a result, innovators are looking for a way to reconcile these issues and find a way to reinvent the industry to meet the needs of consumers and artists alike.

Blockchain technology, made famous as the engine that drives cryptocurrencies, is gaining steam as a tool with the potential to revolutionize failing facets of the music industry. A quick search of “music” and “blockchain” will cue up countless articles discussing the impact this technology can have on an industry that has gotten stuck in the mud. For this article, blockchain technology will be fleshed out in a focused case study on how it can reinvent the way copyright ownership data is recorded as well as its potential impact on the law pertaining to music sampling. Before diving into the solution, it is important to get a better understanding of the tool that can be used to get there. Bitcoin, the ubiquitous cryptocurrency dependent on blockchain technology, is a relevant example of a blockchain’s capabilities. A brief description of Bitcoin and blockchain will set the stage for an application of a blockchain to the copyright issues in the music industry.

You would be hard pressed these days to turn on the television, log into Facebook, or scroll through your Twitter timeline without seeing something about Bitcoin. Whether it is the Winklevoss twins becoming the first “Bitcoin billionaires”⁵ or bloggers debating if the precipitous rise

¹ See Ed Christman, *U.S. Record Industry Sees Album Sales Sink to Historic Lows (Again) – But People Are Listening More Than Ever*, BILLBOARD (Jul. 6, 2016), <https://www.billboard.com/articles/business/7430863/2016-soundscan-nielsen-music-mid-year-album-sales-sink-streaming-growth>.

² See Lizzie Plaugic, *Spotify’s Year In Music Shows Just How Little We Pay Artists For Their Music*, THE VERGE (Dec. 7, 2015, 11:28 AM), <https://www.theverge.com/2015/12/7/9861372/spotify-year-in-review-artist-payment-royalties>.

³ See Erin M. Jacobson, *Spotify May Have to Pay Songwriters \$345 Million*, FORBES (July 19, 2017, 6:37 PM), <https://www.forbes.com/sites/legalentertainment/2017/07/19/spotify-may-have-to-pay-songwriters-345-million/#379d061e193d>.

⁴ See Justin Charity, *9 Times Rappers Were Recently Sued for Sampling*, COMPLEX (Sept. 26, 2014), <http://www.complex.com/music/2014/09/how-many-emcees-must-get-sued/kool-aid-and-frozen-pizza>.

⁵ Emmie Martin, *The Winklevoss Twins Have Become The World’s First Bitcoin Billionaires*, CNBC: MAKE IT (Dec. 4, 2017, 11:19 AM), <https://www.cnbc.com/2017/12/04/winklevoss-twins-may-have-become-first-bitcoin-billionaires.html>.

in Bitcoin is nothing but a hype-fueled “bubble”⁶ bound to burst, Bitcoin mania is unavoidable. Bitcoin is a form of digital currency⁷ that relies on coded encryptions to generate units of currency. What makes Bitcoin a unique and unprecedented currency is that it is a “decentralized currency.” This means that transactions and transfers of this virtual currency operate independently of a central bank. This is significant when you consider the role financial institutions hold in relation to online transactions, where they act as “trusted third parties” that process the online payments.⁸ For example, when you make an online purchase with cash, there is a trusted financial institution serving as the middle-man that guarantees the transaction occurs. Bitcoin promises a future where transactions are “trustless,” or in other words, non-reliant on third party financial institutions. Instead, transactions would be truly peer-to-peer thus eliminating the need for third party financial institutions. As a result, the burden of transaction costs on the consumer when making online transactions would be significantly lowered.

This summary of Bitcoin is concededly the short-and-fast version of a currency that has become the most disruptive, complex, and mysterious entity in our current financial landscape. However, the heart of this paper is not an examination of Bitcoin itself. This paper will focus on the blockchain technology that gives Bitcoin its unique and intriguing trustless characteristics.

A blockchain is a distributed database that stores entries verified by parties on the blockchain using public encryption.⁹ It acts as a virtual ledger that guarantees reliable identification of every transaction that occurs within it.¹⁰ Therefore, the data within a blockchain is considered “decentralized” because it is not reliant on anyone or anything else to regulate the transactions completed within it. The reliability of the automated recording of complex transactions theoretically can result with blockchain replacing many “centralized databases,” which only allow transactions that receive permission from a bank or government acting as

⁶ See Timothy B. Lee, *Is Bitcoin a Bubble? Here's What Two Bubble Experts Told Us*, ARS TECHNICA (Dec. 8, 2017, 12:45 PM), <https://arstechnica.com/tech-policy/2017/12/is-bitcoin-a-bubble-heres-what-two-bubble-experts-told-us/>.

⁷ Divya Joshi, *List of Top Virtual Currencies in 2017 and What Differentiates Them*, BUS. INSIDER (Oct. 19, 2017, 5:07 PM), <http://www.businessinsider.com/list-top-cryptocurrencies-analysis-comparison-2017-10>. Bitcoin is only one cryptocurrency in a sea of them. This provides a short list of relevant cryptocurrencies.

⁸ Satoshi Nakamoto, *Bitcoin: A Peer-to-Peer Electronic Cash System*, BITCOIN, <https://bitcoin.org/bitcoin.pdf> (last visited Jan. 12, 2018).

⁹ Stephen McJohn & Ian McJohn, *The Commercial Law of Bitcoin and Blockchain Transactions*, 47 UCC L. J. 1, 1 no. 2 (July 2017).

¹⁰ *Id.*

a third-party.¹¹ For example, a blockchain could make online transactions more efficient and economic by eliminating the need for a third-party financial institution to facilitate the transaction between the buyer and seller.

These virtual transactions are honored by what are known as “smart contracts.” A smart contract is an automated program that transfers digital assets within the blockchain upon certain triggering conditions.¹² Smart contracts can be set up to execute automatically on the occurrence of a predetermined event or the input of specific data.¹³ Because the parties involved in the predetermined transactions code the conditions of the contract, smart contracts can proceed automatically with coded consequences for performance or default of the underlying contractual agreement, making it unnecessary for either party to rely on the other or on the courts for enforcement.¹⁴ A practical example would be a distributor and a manufacturer that are connected via a blockchain. Assume that both parties use cryptocurrencies for their transactions. The distributor sends a predetermined offer that is coded onto the blockchain and the manufacturer accepts. The blockchain would theoretically be able to understand aspects of the agreed upon smart contract such as how many items were requested, how long the manufacturer has to deliver, whether or not the manufacturer has enough inventory to fulfill the order, and so on. The blockchain would autonomously set the wheels in motion for the predetermined agreement to be honored.

It is understandable to look upon a blockchain with some skepticism. Are blockchains safe from malicious hackers? Who makes them? How reliable are they? These questions will be addressed later. However, do not make the mistake of discounting this technology as nothing but an idealistic pipe dream. Lawmakers are preemptively implementing legislation that seeks to create a foundation for blockchain technology to smoothly assimilate into modern-day commerce. For example, states are beginning to recognize smart contracts in the same breath as traditional contractual agreements. Nevada issued an article to lawyers within the state putting them on notice to become familiar with blockchain

¹¹ *Id.* at 4.

¹² Joshua A. T. Fairfield, *Smart Contracts, Bitcoin Bots, and Consumer Protection*, 71 WASH. & LEE L. REV. ONLINE 35, 38-9 (2014) <http://lawreview.journals.wlu.io/smart-contracts-bitcoin-bots-and-consumer-protection/>.

¹³ Lance Koonce, *The Wild, Distributed World: Get Ready for Radical Infrastructure Changes, from Blockchains to the Interplanetary File System to the Internet of Things*, 28 INTELL. PROP. & TECH. L.J. 3, 4 n.10 (2016).

¹⁴ McJohn & McJohn, *supra* note 9, at 5.

technology and the concept of smart contracts.¹⁵ This was done directly after Nevada implemented legislation to provide a framework for the enforceability of smart contracts within the state.¹⁶ Vermont has jumped on the bandwagon as well, implementing legislation that provides for the legal enforceability of smart contracts executed over a blockchain.¹⁷

An opportunity has been presented to implement blockchain technology into the music industry. As addressed earlier, the music industry has a major problem with the transparency and clarity of ownership data.¹⁸ Spotify blames its multi-million-dollar lawsuits on the fragmented, incorrect, and out-of-date system of ownership data collection that the music industry relies upon.¹⁹ Artists are suffering from slow payout times or no payouts at all because of the same ownership data issues. Blockchain has the potential to create the infrastructure for the central database of copyright ownership that artists, labels, and streaming services are calling for while at the same time providing a platform for the fast, efficient, and automatic distribution of royalties for copyright owners of licensed music.

A technological achievement of that magnitude would be a huge win for artists as a new efficient system of ownership tracking and royalty payouts will nurture creativity by cultivating a more collaborative musical community. To illustrate the potential efficiency of this proposed system, this paper will focus on a pocket of music copyright law that would immediately experience change: music sampling.

PART II: SAMPLE SIZE

A. *How to Sample*

Music sampling is the art of taking a (traditionally) short portion of an existing sound recording and repurposing the snippet to create a new work. Artists often build entire songs using multiple layered samples. Sampling is used across a wide variety of genres such as electronic dance music

¹⁵ See Gale M. Hyman & Matthew P. Digesti, *New Nevada Legislation Recognizes Blockchain and Smart Contract Technologies*, 25 NEV. LAW. 13, 13 (2017).

¹⁶ See *id.*

¹⁷ McJohn & McJohn, *supra* note 9, at 4.

¹⁸ See Benji Rogers, *How the Blockchain and VR Can Change the Music Industry (Part I)* MEDIUM: CUEPOINT (Nov. 24, 2015), <https://medium.com/cuepoint/bc-a-fair-trade-music-format-virtual-reality-the-blockchain-76fc47699733>. Rodgers is the founder of Pledge Music, a digital platform that helps to connect fans with the artists they follow. Rodgers uses his knowledge of the digital music landscape to propose the possibility of an integration of blockchain into the music industry.

¹⁹ See Erin Jacobson, *supra* note 3.

(EDM) or contemporary pop, but for the purposes of this note, the focus will be on the sample heavy genre of hip-hop. Hip-hop is synonymous with the art of sampling. Hip-hop producers notoriously dig through old records to find the perfect pre-recorded sounds to build on with new sounds of their own. The earliest forms of hip-hop music sampling found DJs extracting “breakbeats” or “drum-breaks,” which are musical measures of drum beats in instrumental versions of previous sound recordings, and looping them throughout a song for emcees to rap over.²⁰ Hip-hop’s use of sampling has become more advanced throughout its history as pre-recorded melodies or vocal arrangements are also repurposed into new creations like musical alchemy. Kanye West, for example, is a voracious sampler. His samples range all over the spectrum from using Luther Vandross vocals on his classic track “Slow Jamz”²¹ to using sounds recorded by the 1960s Hungarian rock band Omega to create “New Slaves.”²² West’s use of sampling only scratches the surface of what is a genre-wide practice.

Hip-hop is built on collaboration, and music sampling runs central to the art. Considering that hip-hop/R&B has become the most dominant genre in the U.S. according to a report by Nielsen Music²³, it is arguable that the relevance of music sampling in today’s pop culture has reached a fever pitch in the U.S. and abroad.²⁴ In order to nurture this dominant technique of creation via collaboration, it is more important than ever to find solutions to the messy state of copyright owner databases and inadequate compensation for the use of an original owner’s work.

Before leaping into the promising solutions blockchain technology could hold for music sampling, we must first understand the problems that exist. Obtaining a license to sample someone else’s work, known as

²⁰ See WhoSampledTeam, *The 10 Most Sampled Breakbeats of All Time*, WHOSAMPLED (Apr. 29, 2010), <https://www.whosampled.com/news/2010/04/29/the-10-most-sampled-breakbeats-of-all-time/>.

²¹ See *A Listenable History of Kanye West Samples*, THE VERGE, <https://www.theverge.com/2014/8/20/6048381/kanye-west-samples-listenable-history> (last visited Jan. 19, 2018).

²² See Jessica Meiselman, *Sampled or Stolen? Untangling the Knotty World of Hip-Hop Copyright*, FACT (June 25, 2016), <http://www.factmag.com/2016/06/25/sampling-hip-hop-copyright/>. West was sued by Omega band member Gábor Presser for 2.5 million dollars claiming West failed to clear the sample before using it.

²³ Hugh McIntyre, *Report: Hip-Hop/R&B is the Dominant Genre in the U.S. for the First Time*, FORBES (July 17, 2017, 8:15 AM), <https://www.forbes.com/sites/hughmcintyre/2017/07/17/hip-hoprb-has-now-become-the-dominant-genre-in-the-u-s-for-the-first-time/#1125af495383>.

²⁴ Cf. Justin M. Jacobson, *Music Sampling: Breaking Down the Basics*, TUNECORE (Aug. 9, 2016), <https://www.tunecore.com/blog/2016/08/music-sampling-breaking-down-the-basics.html>. Sampling is not exclusive to hip-hop. Artists in genres like electronic dance and pop music also rely on the technique.

“clearing” a sample, is not a simple task.²⁵ Clearing a sample can be time consuming, expensive, and confusing for both artists on major labels and independent artists alike. However, despite the complexities of the process, it is still necessary for artists to obtain licenses to avoid legal action against them for copyright infringement.²⁶

In order to properly sample another musician’s work, an artist must first get permission to do so.²⁷ There are two separate copyrightable pieces of a song that both require permission from the copyright owner to sample.²⁸ There is the sound recording itself, which is the original artist’s recorded performance of the song that you would hear on iTunes or the radio.²⁹ The sound recording copyright is traditionally administered by the record label representing the performing artist or the artist himself if he is independent and owns his own catalogue.³⁰ Then there is the underlying musical composition, which consists of the written lyrics, harmony, melody and rhythm of the song.³¹ These copyrights are held by music publishing companies such as Sony/ATV that protect the rights of the songwriters that craft the music behind the final sound recording that listeners hear.³² In order to get permission to use these copyrightable parts, the artist must find the proper owners of each respective copyright.³³

On its face, finding proper owners of a song seems straightforward. An artist can contact or search the respective databases of major performing rights societies such as the American Society of Composers, Authors, and Publishers (ASCAP) or Broadcast Music, Inc. (BMI), which actively catalogue copyright ownership rights.³⁴ From there, the artist can ascertain from the databases direct contact information for the owners or at least a directory to third-party companies that handle licensing of finished recordings.³⁵ It seems quite simple.

²⁵ Nappy, *A Guide to Sample Clearance for Today’s Producer*, COMPLEX (Jun. 27, 2013), <http://www.complex.com/music/2013/06/guide-to-sample-clearance-for-producers/>. The author of the article conducted an interview with Gregg Sauber, a Copyright Coordinator for Sony Music Entertainment to gather insight on the oftentimes difficult process of music sampling.

²⁶ Justin Jacobson, *supra* note 24.

²⁷ Justin Jacobson, *supra* note 24.

²⁸ Justin Jacobson, *supra* note 24.

²⁹ See Justin Jacobson, *supra* note 24.

³⁰ See Justin Jacobson, *supra* note 24.

³¹ Nappy, *supra* note 25.

³² Nappy, *supra* note 25. Important to note that songwriters oftentimes perform their own written works and may have ownership, whole or in part, of both copyrightable parts of a song. See *Our Songwriters*, SONY/ATV, <https://www.sonyatv.com/en/songwriters> (last visited Jan. 17, 2018).

³³ Justin Jacobson, *supra* note 24.

³⁴ Justin Jacobson, *supra* note 24.

³⁵ Justin Jacobson, *supra* note 24.

Unfortunately, the seemingly simple process of finding the parties that own a song's copyrights assumes that these performing rights databases are accurate. As mentioned earlier, the major music streaming service Spotify fell victim to heavy lawsuits for unpaid royalties to music publishers.³⁶ In 2016, Spotify agreed to pay over \$20 million to music publishers as a result of a settlement with the National Music Publishers Association in addition to a \$5 million penalty.³⁷ Spotify honored the settlement but wanted to make it clear that its intentions were not malicious. Spotify claimed that it did not pay out royalties simply because of a lack of accurate data on the licensed works.³⁸ Spotify said it lacked an "authoritative database" that covered "all existing music rights."³⁹ Therefore, it is necessary for an artist to understand that while organizations like ASCAP and BMI have reputations as the go-to performing rights organizations, there is no guarantee that the information ascertained from them includes an accurate breakdown of the parties that claim ownership of the song.

Assuming the ownership information the artist finds is accurate, the next step is to request a sampling license from the concerned parties.⁴⁰ When requesting a sample an artist must be specific about how he intends to repurpose the sampled sounds in his new work. For example, an artist would have to consider how long the sample is, what part of the song is being sampled, how the sample is to be used, and whether the original sound recording will be used as created or distorted to achieve new sonic effects.⁴¹ The copyright owners may request to hear the artists' final product before determining a licensing fee or whether they want to allow the sample to be cleared at all.⁴² This process can prove to be incredibly time consuming.

The best-case scenario for an artist making a sampling request would include backing from a major label. The major label would undoubtedly have the resources and reputation at its disposal to expedite communications between parties. However, an independent artist may find the process daunting and frustrating.⁴³ If an independent artist wants to sample sounds from a major artist, sampling requests to large corporations

³⁶ Erin Jacobson, *supra* note 3.

³⁷ Sarah Perez, *Spotify Acquires Blockchain Startup Mediachain to Solve Music's Attribution Problem*, TECHCRUNCH (Apr. 26, 2017), <http://www.techcrunch.com/2017/04/26/spotify-acquires-blockchain-startup-mediachain-to-solve-musics-attribution-problem/amp/>.

³⁸ *Id.*

³⁹ *Id.*

⁴⁰ Justin Jacobson, *supra* note 24.

⁴¹ Justin Jacobson, *supra* note 24.

⁴² Justin Jacobson, *supra* note 24.

⁴³ Nappy, *supra* note 25.

may go unnoticed for weeks or months at a time because of the titanic influx of requests from artists across the globe.⁴⁴

After patiently waiting for a response to the sampling request, the artist and the copyright owners must agree upon a licensing fee.⁴⁵ Typical sample licenses may consist of an up-front fee, royalty payments on each recording sold, or actual ownership interest in the new recording.⁴⁶ The final cost of clearing a license depends on multiple factors. Generally, the more recognizable the sample the more expensive that sample may be.⁴⁷ Other factors taken into account during negotiations are the success and notoriety of the original artist, the success and notoriety of the sampling artist, the length of the sample, how it will be distributed, and how the sample will be used in the new recording.

While it is impossible to ascertain a universal cost of licensing a sample, a sample of a moderately popular sound recording could cost an artist up-front fees starting at several thousands of dollars.⁴⁸ This does not include potential percentage based royalty fees that will fluctuate based on the popularity of the new work.⁴⁹ There is also the possibility of a “rolling fee.”⁵⁰ Typical of negotiations with an independent artist looking to sample, an example of a breakdown of a rolling fee would look like an up-front fee of \$200 for getting permission to sample, \$500 if the song is picked up by a major label, and \$1000 for every 100,000 units sold.⁵¹ The copyright owners are insuring themselves by establishing merit-based milestones that will put more money in the copyright owners’ pockets as the sampling artist gains notoriety.⁵²

An artist on a major label has the benefit of relying on that label to represent the artist’s needs in licensing negotiations. However, an artist creating music within the vastly unrepresented community of independent artists will find this part of the process to be difficult.⁵³ Independent artists are immediately at a disadvantage because of their limited bargaining power. As mentioned earlier, one factor that would determine the overall cost of clearing a sample is the popularity of the artist requesting to use

⁴⁴ Nappy, *supra* note 25.

⁴⁵ See generally Justin Jacobson, *supra* note 24.

⁴⁶ Justin Jacobson, *supra* note 24.

⁴⁷ Nappy, *supra* note 25.

⁴⁸ James Davis-Ponce, *Borrowing Success: How to Legally Sample Music*, SONICBIDS BLOG (Feb. 24, 2015, 9:00 AM), <http://blog.sonicbids.com/borrowing-success-how-to-legally-sample-music> (citing *Accord Kohn on Music Listening*).

⁴⁹ See generally Justin Jacobson, *supra* note 24.

⁵⁰ Nappy, *supra* note 25.

⁵¹ Nappy, *supra* note 25.

⁵² Nappy, *supra* note 25.

⁵³ Nappy, *supra* note 25.

the sample.⁵⁴ Assuming the sample is taken from even a moderately popular recording, an independent artist lacks the knowledge of the industry and bargaining leverage to effectively negotiate with copyright owners. An independent artist's lack of representation, money, and popularity can also push copyright owners to deny the licensing sample from the outset as the copyright owners fail to see the value in allowing the use of their recording.

As mentioned earlier, without representation an independent artist will be missing the important connections within record labels and publishing companies to assure that their requests will not be ignored for weeks or months.⁵⁵ To combat this, independent artists have the option to hire third-party companies that specialize in clearing music samples.⁵⁶ These music clearance companies use their "proven record label/publisher relationships" as assets to assist unrepresented artists get clearance for a fee.⁵⁷ Despite the proven relationships, there is still no guarantee that these companies can secure proper clearance, and even if they do, an artist will be stuck paying both the third party company and the copyright owners for the sample clearance.⁵⁸ The risk of failure combined with the rising cost of doing business will likely deter an independent artist from sampling in the first place.

You may be noticing a pattern here. The sampling process is not equal. While the flaws in the sample clearance process effect all artists, the burden of these flaws fall squarely on the backs of unknown or emerging unsigned artists. Why should we care? The key to understanding the significance of the unknown artist's burden is to take note of the changing landscape of the music industry. Before the internet, it was difficult if not impossible for an artist to become a superstar without backing from a major label. Bruce Springsteen did not have the option to post his early solo performances at "Café Wha?" in Greenwich Village⁵⁹ for his YouTube channel subscribers. Michael Jackson could not post "Rock With You" on his SoundCloud page to the delight of his followers. However, in today's music industry the road to the top does not always pass through a record label.

⁵⁴ Justin Jacobson, *supra* note 24.

⁵⁵ Nappy, *supra* note 25.

⁵⁶ Nappy, *supra* note 25.

⁵⁷ Nappy, *supra* note 25.

⁵⁸ Nappy, *supra* note 25.

⁵⁹ See generally Douglas Martin, *Manny Roth, 94, Impresario of Cafe Wha?, Is Dead*, NY TIMES (Aug. 3, 2014), https://www.nytimes.com/2014/08/03/nyregion/manny-roth-94-impresario-of-cafe-wha-is-dead.html?_r=0. The link leads to the homepage of the famous "Café Wha?" in the Greenwich Village area of New York City. Artists such as Bob Dylan, Bruce Springsteen, Jimi Hendrix and more performed here early in their careers. The club was a place to be recognized by talent scouts.

Access to social media and music sharing sites allows artists the ability to cultivate an audience while remaining independent. The poster child for the new age of do-it-yourself musical mega-stardom is Chance the Rapper. Chance grew a fan base early on in Chicago, which expanded with the help of his team of promoters and agents to a level of international acclaim that few, if any, independent artists have experienced before.⁶⁰ His unprecedented success shed a light on an entire community of quality artists using the internet as their main tool to promote their music. Chance single-handedly forced the music industry to recognize internet reliant artists like himself when he famously challenged the National Academy of Recording Artists to change Grammy eligibility rules to include albums with streaming-only releases; previously, the Grammys only recognized physical albums.⁶¹ Chance's streaming-only album *Coloring Book* aptly won the Grammy for Best Rap Album at the first Grammy awards that recognized albums of that kind.⁶²

Following Chance's lead, there has been an explosion of rappers who have found success through releasing their earliest creative projects on the internet. The term "SoundCloud Rapper" has been coined to categorize the stable of rappers like Lil Uzi Vert, Lil Yachty, and Lil Pump, who relied on the SoundCloud platform to cultivate their fans directly through an online medium before the major labels came calling.⁶³

The music community is growing, and the internet is offering unprecedented opportunities for exposure. By looking at the amount of users and creators subscribed to SoundCloud, one can truly appreciate the sea-change that is occurring in the industry. SoundCloud artists have uploaded upwards of 100 million tracks on the platform.⁶⁴ Feverish uploading accounts for about twelve hours of audio being added to SoundCloud every minute.⁶⁵ Imagine how many of those 100 million tracks are from sampling-rich genres like hip-hop, EDM, and

⁶⁰ See Marc Hogan, *Charting Chance the Rapper's Unsigned Success*, PITCHFORK (May 17, 2016), <https://pitchfork.com/the-pitch/1150-charting-chance-the-rappers-unsigned-success/>.

⁶¹ Sarah Grant, *What Chance the Rapper's Streaming-Only Grammy Nod Means for Pop's Future*, ROLLINGSTONE (Feb. 10, 2017, 3:14 PM), <https://www.rollingstone.com/music/features/what-chance-the-rappers-streaming-only-grammy-nod-means-w466125>.

⁶² Sam Sodomsky, *Grammy's 2017: Chance the Rapper Wins Best Rap Album*, PITCHFORK (Feb. 13, 2017), <https://pitchfork.com/news/71555-grammys-2017-chance-the-rapper-wins-best-rap-album/>.

⁶³ David Turner, *They Came from SoundCloud: Lil Uzi Vert and the 6 Rappers Who Could Be Rockstars*, W MAG. (May 11, 2017, 1:02 PM), <https://www.wmagazine.com/story/soundcloud-rappers-lil-uzi-vert-lil-yachty>.

⁶⁴ Rob Walker, *Can SoundCloud be the Facebook of Music?*, BLOOMBERG BUSINESSWEEK (July 10, 2015, 7:10 AM), <https://www.bloomberg.com/news/features/2015-07-10/can-soundcloud-be-the-facebook-of-music->

⁶⁵ *Id.*

contemporary pop. Then imagine how many of those tracks use samples. How many of these largely anonymous creators actually cleared the samples they used? It would require a herculean effort to police the amount of music uploaded to SoundCloud daily. The inability to police the sheer volume of uploads can potentially account for millions of lost revenue for original copyright owners whose music is repurposed for sampling.

There is an obvious compensation issue here for sampled artists who do not have the resources to thoroughly vet SoundCloud's massive catalogue of creators for copyright infringement. There is also a less apparent risk taken by the anonymous infringing artists. One might think, "if an artist has little to no exposure, the likelihood of the artist getting caught for copyright infringement is slim to none. Why spend the money and time clearing a sample when in the grand scheme of it all, it does not matter?" The truth is, it does matter.

The goal of any unknown or emerging internet music artist is to grow a fan base and achieve recognition. Once that recognition is realized, not all artists have to take the diehard independent strategy used by Chance the Rapper. Those artists can be subject to lucrative deals with a record label.⁶⁶ However, if an interested record label notices that the independent artist's catalogue is full of songs comprised of infringing samples a label will likely walk away to avoid the trouble of dealing with the legal ramifications. The promising independent artist is ultimately left with no representation and a high vulnerability to legal action for copyright infringement.⁶⁷ In the event an artist does find himself in court, the copyright laws regarding music sampling are not any clearer.

B. *Sampling and the Law*

Copyright is a notoriously contested field of law. It is pulled between two opposing interests: protecting author's rights and promoting creativity. When it comes to music sampling, copyright law is at an impasse. The art of music sampling has reached unprecedented levels of popularity because of its central role in the creation of hip-hop, EDM, and

⁶⁶ See generally Jem Aswad, *Lil Pump's Warner Bros. Contract Voided, 'Gucci Gang' Rapper is Entertaining Other Offers*, VARIETY (Jan. 12, 2018, 7:43 AM), <http://variety.com/2018/music/news/lil-pumps-warner-bros-contract-voided-gucci-gang-rapper-is-entertaining-other-offers-1202662829/> (describing that Soundcloud rapper, Lil Pump, is currently fielding multi-million dollar offers from multiple labels because Warner Brothers voided Lil Pump's valid record deal between them); see also Trace William Cowen, *Why Did Wiz Khalifa Just Receive a Plaque for Lil Uzi Vert's "XO Tour Llif3"?*, COMPLEX (Nov. 30, 2017), <http://www.complex.com/music/2017/11/wiz-khalifa-lil-uzi-vert-plaque-xo-tour-life> (describing Lil Uzi Vert and Wiz Khalifa's distribution deal with Atlantic Records).

⁶⁷ Nappy, *supra* note 25.

pop tracks. Sampling is undeniably creative, but by nature infringing. Artists are blatantly repurposing existing sound recordings to create something new. It is creative recycling. How can the courts reach an effective solution that protects owners in a way that will not impede collaboration and creativity? Adopting blockchain to the music industry has the potential to alleviate this stalemate.

One existing approach to solving sampling induced copyright disputes is to use a fact-sensitive *de minimis* standard. Is the repurposed use of the prior work substantially similar enough to infringe? The Ninth Circuit has relied on this approach, which has become most prevalent in the analysis of sampled sound recordings.⁶⁸ The leading case regarding the popular *de minimis* standard is *Newton v. Diamond*, which examines the Beastie Boys' use of a sound recording by jazz flutist James W. Newton.⁶⁹ The *de minimis* standard asks whether an average listener can reasonably discern the underlying sampled work in the new sound recording.⁷⁰ In *Newton*, the Beastie Boys took a six-second sample from Newton's song "Choir" and looped it through their song "Pass the Mic."⁷¹ The *de minimis* standard lends itself to a fact-based analysis that looks to find qualities of "substantial similarity."⁷² If the sample demonstrates a significant appropriation from the original work, it is assumed that the average listener would be able to notice the infringement.⁷³ If substantial similarity is not met, the work created using the sample passes muster and is not considered an infringement of the original author's copyright protections. In light of the current state of copyright ownership in the music industry, this approach is considered to be artist friendly and supportive of collaboration.⁷⁴

Bridgeport Music, Inc. v. Dimension Films, a Sixth Circuit decision, stands at the opposite side of the spectrum from *Newton*.⁷⁵ Bridgeport Music, Inc. was one of a number of parties suing Dimension Films for using a song by the rap group NWA in one of its films. The song, "100 Miles," sampled a George Clinton riff that is looped throughout.⁷⁶ The court in *Bridgeport* took a strict approach to the subject of music sampling and asserted that the music industry would benefit from a bright-line rule

⁶⁸ See *VMG Salsoul, LLC v. Ciccone*, 824 F.3d 871, 877 (9th Cir. 2016).

⁶⁹ *Newton v. Diamond*, 388 F.3d 1189, 1190 (9th Cir. 2004).

⁷⁰ *Id.* at 1193.

⁷¹ *Id.* at 1192.

⁷² *Id.* at 1193.

⁷³ *Id.*

⁷⁴ See *id.* at 1192.

⁷⁵ See generally *Bridgeport Music, Inc. v. Dimension Films*, 410 F.3d 792 (6th Cir. 2005).

⁷⁶ *Id.* at 795.

when it comes to the law's treatment of sampling and copyright infringement.⁷⁷ Distancing itself from the largely subjective fact-based analysis used in *Newton*, the court directly asserted that if an artist wants to sample a copyrighted work that artist must pay for it.⁷⁸ This approach, paired with the difficult process of licensing samples, is less popular and is viewed as overly restrictive.⁷⁹

The court in *Bridgeport* shied away from the *de minimis* standard because it believed the fact-sensitive approach was time consuming and would lead to inconsistent outcomes.⁸⁰ Sampling, at its core, is undeniably a blatant and intentional use of someone else's work. Using an uncleared sample of any length is arguably copyright infringement.⁸¹ The court reasoned that sampling fees are not too great of a burden, and with this ownership-friendly approach confusion pertaining to the doctrine would be limited.⁸² It also explained that the ruling is not overly restrictive on future creativity because artists should be able to afford sampling licenses.⁸³ The counterargument for a *de minimis* standard is that by administering a bright-line rule that puts a price tag on collaboration, unknown artists with lesser funds will have a limited creative tool kit. It is therefore not surprising that other than *Bridgeport* and "the district courts following that decision," few cases follow the bright-line approach.⁸⁴

These two cases exemplify the struggles of music copyright. The policy behind each case is sound and justified, but diametrically opposed. *Newton* stands for collaboration and the promotion of creativity⁸⁵, while *Bridgeport* guards the copyright protections given to the artists behind copyrighted sound recordings.⁸⁶ Blockchain may be the tool that can reconcile these two goals of copyright.

If a blockchain can make the process of sampling more dynamic and efficient, what changes can we predict as a result? The following section will propose, based on anecdotes of real-life applications of blockchain into a music medium, how the market for music sampling would change.

⁷⁷ *Id.* at 802.

⁷⁸ *See id.* at 808.

⁷⁹ VMG, 824 F.3d at 890 (explaining the majority's view that a copyright is tangible property and no one should be allowed to steal that from a rightful copyright owner).

⁸⁰ *Bridgeport*, 410 F.3d at 802.

⁸¹ *Id.* at 801-04.

⁸² *Id.* at 801.

⁸³ *Id.*

⁸⁴ VMG, 824 F.3d at 880-81.

⁸⁵ *See generally* *Newton*, 388 F.3d 1189 (concluding that an average audience would not think *Newton*'s composition was significantly similar to the Beastie Boys', thereby allowing *Newton* to continue being creative with his music).

⁸⁶ *See generally* *Bridgeport*, 410 F.3d. at 793 (holding that sound recording owner had exclusive right to "sample" his own recording).

The ultimate proposition as to how the law will adapt to the market change will be as follows: If licensing sound recordings becomes more economical for the unsigned or emerging artist, it will both incentivize collaboration while protecting the original artist's work from being appropriated without proper compensation. Therefore, the strict approach of "if you want to sample, get a license" will not be as strong a deterrent on artist collaboration and creativity. This will arguably open the door for courts to unanimously shift towards adapting the bright-line approach, which will create clarity and certainty in a traditionally muddy doctrine without compromising an artist's creativity. First, we must paint a picture of the not-too-distant future of the music industry.

PART III: FOR THOSE ABOUT TO BLOCK, WE SALUTE YOU

The main takeaway from all of this is that technology is rapidly evolving the way people create and distribute music, and as a result, the industry and the relevant law that supports it struggle to keep up. Both monetary compensation and artist creativity are being stifled by cumbersome and ineffective copyright doctrines. How can the music industry create new infrastructure to ensure the accuracy and dependency of copyright ownership records, while properly compensating artists for use of their original works via sampling? This glaring need is further complicated by the two juxtaposing goals of copyright: restricting unauthorized use of original works while simultaneously stimulating creativity. This article proposes that by adopting blockchain technology, issues of accuracy will cease, artists will be automatically compensated for the sampling of their original works, and the impact of this new efficient model will force a clarification of courts' approach to sampling.

Here is the ideal vision: a comprehensive database that would contain accurate copyright ownership data for all music in existence and all music moving forward. The database would be an open, public space where artists and rights holders can upload their music and have it automatically monitored for use. Based on the usage of the copyrighted material, the database would have the means to automatically compensate the artists and rights holders through immediate royalty payments.

The technology required to pull this off has not been perfected. However, entities from major corporate players to artists to music industry innovators see the raw materials are at hand to usher in a new era of music distribution and consumption. The following are a few examples that illustrate the stage being set for a blockchain takeover.

Spotify, which has been mentioned multiple times in this article as being on the wrong side of major copyright infringement lawsuits, is

proactively searching for solutions to music's attribution problem. In the spring of 2017, Spotify invested in a blockchain startup called Mediachain Labs.⁸⁷ Before Spotify acquired Mediachain, the Brooklyn-based company had made waves by creating a decentralized, peer-to-peer database to connect applications with media and the information about it, as well as an attribution engine for creators and a cryptocurrency that rewards creators for their work.⁸⁸ Spotify plans to work together with Mediachain to develop blockchain-based technology that will connect artists and other rights holders with the tracks hosted on Spotify's service.⁸⁹ Mediachain's initial vision for a solution is a "shared data layer," which the startup believes "is key to solving attribution, empowering creators and rights owners, and enabling a more efficient and sustainable model for creativity online."⁹⁰

Singer/songwriter Imogen Heap is also embracing blockchain solutions by examining the issues she sees in the industry from an artist's perspective.⁹¹ In the opening lines of her op-ed in the *Harvard Business Review* she says, "As a musician, I want to encourage other artists to collaborate with my music." Her sentiment here is important. Artists do not want to stifle collaboration; they want to let it thrive. The caveat is that artists want to be properly compensated for collaboration. Heap goes on to say she envisions "a blockchain-empowered rights and payments layer" as the key to providing an easy way for others to license and collaborate with her music.⁹² Heap practiced what she preached and worked with the innovative music platform Ujo to create the first song ever to automatically distribute payments via a smart contract to all creatives involved in the making and recording of the song.⁹³

Heap sees blockchain as having the potential to provide "a more quick and seamless experience for anyone involved with creating or interacting with music."⁹⁴ But how would it work? Without getting too deep into a technological discussion, Heap's proposition centers around the creation of a new generic top-level domain (gTLD) called ".music" where this new "music ecosystem" can exist.⁹⁵ Individual ".music" domains would be given to "verified music creatives," who would then link their URLs to a

⁸⁷ Perez, *supra* note 37.

⁸⁸ Perez, *supra* note 37.

⁸⁹ Perez, *supra* note 37.

⁹⁰ Perez, *supra* note 37.

⁹¹ See 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> (discussing why blockchain is worth exploring for creatives).

⁹² *Id.*

⁹³ *Id.*

⁹⁴ *Id.*

⁹⁵ *Id.*

blockchain-enabled music registry, thus streamlining any transactions involving the works associated with the URL directly to the artist.⁹⁶ For example, Paul McCartney would own “paulmccartney.music,” which would be the central domain for all things pertaining to the works of Paul McCartney; and attribution for the use of his works would be conducted through the smart contracts associated with the music registry.⁹⁷ Seems farfetched, right? It is not. ICANN (The Internet Corporation for Assigned Names and Numbers) is the entity responsible for granting control of gTLDs to interested entities.⁹⁸ An auction is deciding who will have control of the “.music” gTLD. Two of the bidders are Google and Amazon.⁹⁹

Berklee College of Music, the Boston-based largest independent college of contemporary music in the world, has teamed up with Massachusetts Institute of Technology’s (MIT) media lab to create the “Berklee Open Music Initiative” or OMI.¹⁰⁰ The initiative seeks to “reinvent, build, and implement a new standardized digital architecture to track, account, and attribute payment for music.”¹⁰¹ OMI notices that tensions are rising within the industry because there is no uniform way to identify rights holders.¹⁰² In step with the two previous examples, OMI believes the innovative answer to the rights holder dilemma is building a distributed ledger using blockchain technology that will handle both the storage of copyright ownership data and the transactions that occur involving the works of rights holders.¹⁰³ Part of OMI’s focus is how to incentivize artists to input their data onto the proposed platforms because without artist participation the attempts at creating such a database would be futile.¹⁰⁴ OMI views potential benefits such as giving the artist the ability to collaborate easily internationally, instant payment for use of original works, and better attribution to less talked about contributors such as engineers and producers as key draws that will spur artists to participate.¹⁰⁵

These examples of progress toward the goal of a music industry bound together by blockchain technology show promise for its feasibility. While

⁹⁶ *Id.*

⁹⁷ *Id.*

⁹⁸ *Id.*

⁹⁹ *Id.*

¹⁰⁰ John Lahr, *Berklee’s Open Music Initiative*, MUSIC BUS. J. (Sept. 2016), <http://www.thembj.org/2016/08/berklees-open-music-initiative/>.

¹⁰¹ *Id.*

¹⁰² *Id.*

¹⁰³ *Id.*

¹⁰⁴ *Id.*

¹⁰⁵ *Id.*

there are indeed critics of these efforts,¹⁰⁶ the momentum that blockchain solutions are gaining within the industry makes an innovative future seem not only possible, but probable. If a decentralized database that has the capability to honor transactions through self-executing smart contracts becomes a reality, the tools will be in place to work toward a perfected model of copyright recognition and royalty attribution. More specifically, it would completely reimagine the murky, sluggish music sampling process for both major and unknown artists, thus fostering a greater creative and collaborative space for musicians to thrive.

As a result, I predict that a blockchain would sway the copyright law relevant to music sampling towards the holding in *Bridgeport*. A blockchain will make music sampling transactions simple, efficient, and more cost-effective, thus alleviating concern that the strict *Bridgeport* doctrine of “use a sample, pay the artist,” will stifle creativity in the music industry. Furthermore, the move towards *Bridgeport* will end the reliance on the subjective and inconsistent *de minimis* approach used in *Newton*. Sampling music and fairly compensating artists for the use of their original works will become automatic and seamless, as well as the law that governs it.

PART IV: THE SAMPLE SOLUTION

A. *Sampling with a Blockchain*

Assume for Part IV that a functional blockchain-empowered database rights and payments layer has been successfully created and integrated into the music industry. The following anecdotes will propose what the sampling process would be like for both the rights owner and the artist trying to clear a sample.

A copyright owner has two main goals: to have control over how his work is used by other creators and to be rightfully compensated for that use. The first step would be to submit the work into the database. The copyright owner would create a file that connects his work to the database.

¹⁰⁶ David Gerard, *Why You Can't Put the Music Industry on a Blockchain*, HYPEBOT (Aug. 2017), <http://www.hypebot.com/hypebot/2017/08/why-you-cant-put-the-music-industry-on-a-blockchain-excerpt.html> (citing issues of security and the technological difficulty of storing the entire music industry and all of its transactions on a single blockchain); see also Garry Gabison, *Policy Considerations for the Blockchain Technology Public and Private Transactions*, 19 SMU SCI. & TECH. L. REV. 327, 329 (2016) (discussing the ways that blockchain technology has taken over services “that are traditionally provided by public entities.”). The overall theme of the paper is not to suggest it is impossible, but instead suggests that our current perception of a blockchain would have to be tweaked to fit the specific needs of the music industry.

The owner would connect to that file some proof of copyright ownership and at that moment, it will be ready to upload. However, the owner wants to take a step further and micromanage the possible transactions that would occur if his work is used by another entity. In order to achieve this, the owner begins to create smart contracts to be encrypted into the blockchain database.

For example, the owner can set rates for situations where other artists sample his music. Instead of wasting time negotiating with the artist that sent the request for clearance and spending time asking for details about how the sample will be used, the owner can create smart contracts that will comport to the types of uses he is comfortable with at the prices he sees fit. Maybe he feels that a sample between 0–2 seconds should be for free but a sample between 3–6 seconds should cost X. Or maybe he can set smart contracts that charge a certain amount per each time the sample is looped through a song. The options are endless and entirely customizable according to the artist's preference. While the initial creation of these various smart contracts could be time consuming, once they are set in motion they are entirely self-executing. An interested artist looking to sample will be introduced to a blockchain-generated offer based on the specific ways he plans to use the sample and then choose to accept or deny.

It can be argued that the above rate-structure creates a similar dynamic to the one discussed earlier, where the sampling artist has little to no leverage to negotiate. The unknown or emerging artist looking to create using samples is placed completely at the will of the original creator. However, I predict that with increased efficiency of music sampling, paired with the skyrocketing popularity of sampling, the market for licensing will shift. Sampling will become routine and monetary attribution for use will become an automatic transaction conducted via smart contract. A blockchain will not only encourage artists to sample more freely, it will also more effectively protect copyright owners from losing out on compensation that was previously difficult to recoup in the former, less organized model of copyright documentation. Copyright owners will likely see sampling as a great stream of revenue that has finally reached its full potential. This will in turn encourage copyright owners to keep licensing fee demands low to raise the volume with which their work is sampled. On the contrary, some copyright owners may want to refuse permission to sample for various reasons. A concern may be that once a work is in a blockchain, samplers can freely borrow from original works as long as they pay regardless of the copyright owner's wishes. However, just as an owner would be able to set the terms of how the original work is allowed to be sampled, an owner can likewise prevent any sampling at all. The system will ultimately cater to the rights of the copyright owner.

From the sampler's perspective, clearing samples has never been easier. The days of relying on multiple databases with inaccurate records to find the rights owners who must be compensated will be phased out. The sampling artist will need only to reference the singular database to find up to date copyright ownership records.

Once the records are located after a quick search, the sampling artist will no longer have to contact record labels and music publishers to request clearance for both the mechanical and sound-recording licenses. The file found on the blockchain driven database will contain both licenses in addition to the terms of the specific smart contracts created by the copyright owners. The sampling artist can scroll through the characteristics that define how he chooses to sample the original work and immediately be presented an offer in accordance to the rates set by the copyright owner. The transaction will truly become peer-to-peer, artist-to-artist. If the offer is suitable for the sampling artist he simply needs to accept the offer and the transaction will occur immediately, thus granting him the license to sample in accordance with the agreed-upon terms of the smart contracts that govern the transaction.

If the process of sampling can be effectively simplified through the use of blockchain, the law surrounding sampling will undoubtedly evolve to match the newfound efficiency of the process. To refresh, the law governing music sampling is split into two schools of thought. There is the more popular, creativity friendly *de minimis* standard from *Newton* that promotes a case-by-case examination of copyright infringement to see if the sample was significant enough to infringe. Then there is the less popular *Bridgeport* standard that looks at sampling strictly as appropriation of another's copyrighted work and therefore, if an artist chooses to sample that artist must pay for the license. *Bridgeport* gets its reputation as a stingy holding because the belief is that to force artists to pay licensing fees for even the smallest, most negligible sample, it will have a deterrent effect on collaboration and creativity. I propose that if the industry adopted the blockchain-driven database that has been discussed throughout this paper, the law would shift back towards the reasoning in *Bridgeport*.

B. Bridgeport Renewed

Bridgeport takes a practical approach to the art of sampling. Sampling is, after all, the technique of taking another artist's sound recording for the purpose of making something new out of it. It is clear appropriation. The apprehension among courts to uniformly adopt this reasoning is a fear of constricting an artist's ability to create. However, would there be any

excuse not to give the copyright owner's their due when the infrastructure is in place to make clearing a sample as easy as a few keystrokes?

In the hypothetical future where the blockchain ownership rights database alleviates the failures of the old regime, sampling will become more commonplace. It will be encouraged and appreciated as the art form it truly is. If the market becomes flooded with sampling artists, copyright owners interested in increasing their revenue will look to get paid for their work. Furthermore, smart contracts will allow copyright owners to dictate the ways in which they are willing to have their work sampled with precision. The autonomous nature of a blockchain and the corresponding coded smart contracts will assure that those wishes will be honored.

This push for efficiency will be mirrored by the courts. There will be no reason to spend time sifting through facts to determine if the use of a sample was *de minimis* when a sampling artist is presented with his sampling options from the beginning through the database. The terms are set, and the sampling artist accepted those terms to get the license. Ultimately, copyright infringement cases will be boiled down to one simple question: did the artist sample or not?

This outcome is friendly to both copyright owners and sampling artists alike. Copyright owners will be able to realize the actual worth of the songs they create. Sampling artists will be able to use samples easily without the countless hassles and pitfalls that artists had to go through before them. Sampling artists will be able to build their own catalogues of music without the worry of it being built on illegitimate samples that expose them to copyright infringement. The law will be as simple and efficient as the new system that made it that way.

PART V: ON THE HORIZON

“Technological revolutions do not get interesting socially until they are boring technologically.” – Clay Shirky¹⁰⁷

While an application of blockchain technology to the music industry is exciting, there are still technological hurdles that must be cleared before this vision can be fully realized. But change is in the air. Major companies, famous artists, and brilliant engineering students alike all see the untapped potential of this new and emerging technology.

As technology recasts industries we have come accustomed to, our laws that pertain to those industries will inevitably adapt. Lawyers must stay up to date with the trends that may shape our practices in the near

¹⁰⁷ Joshua Fairfield, *Smart Contracts, Bitcoin Bots, and Consumer Protection*, 71 WASH. & LEE L. REV. 35, 47 (2014).

future. The dated structure of the music industry is vulnerable to evolution due to the new technologies that are shaping the way we listen to and create music. Where there is vulnerability, there is opportunity for disruption. In step with the quote above, once blockchain technologies become “boring” in the sense that there are no longer questions as to its capabilities, its social impact will begin to take form. With that in mind, it is important to prepare for change and become comfortable with the possibilities of what could be the next tech revolution in the music industry. Artists, copyright owners, and the law will be better for it.