Blockchain + the Music Industry

Succeeding Where the GRD Failed

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In the expanding ecosystem of the music industry, a longtime problem has become more and more pressing: no central database exists to keep track of music metadata, making it difficult to track down those with ownership or rights and to ensure they get paid. This conundrum isn't only a disservice to musical artists; other parties suffer deeply from its inequity. Influential music-makers, societies, publishers, and digital music distributors have spent the last decade in conversation, and some action, to bring harmonization to the music industry, and to create uniformity and reciprocity among players with competing interests. Created in 2008, the Global Repertoire Database was one such endeavor, but it failed spectacularly. Now, a radical solution is on the horizon: blockchain technology could be the music industry's revenue savior.

While at first it seemed like a failure, today, music-industry thought leaders now see the GRD as a testbed for what could be the music industry's rights-management salvation: blockchain

A Brief History of Efforts to Wrangle Music Copyright Administration

In 1999, Napster launched, and the downward spiral of music piracy and rights chaos began. The bickering about dividend distribution has pitted music companies, file-sharing services, artists, and fans against each other, with conflicts of interest, dysfunctional methodologies, and plenty of bad blood. And technology hasn't exactly been kind to some of these stakeholders, as it provides more and more ways for consumers to listen to songs without consistent, equitable revenue streams for music makers and rights owners. Finding a solution that will placate everyone and compensate robustly has seemed like an insurmountable challenge.
The GRD was conceived as a "single source of truth" on music works ownership. For songwriters, publishers, and licensees, this database was intended to reduce the complexity of song registration, licensing, and the royalty payment process.

Larger artists have roughly 500,000 potential ways to create revenue from published works. The challenge is to link compensation to usage consistently and make payment automatic.

In 2008, a working group came together consisting of representatives from major publishers, music societies, and digital music distributors. This group of cross-sector entities brainstormed the optimal way to create a singular, comprehensive, and authoritative ledger. A few years were spent on research and recommendations, and a diverse and respectable set of organizations participated, including Universal, EMI Music Publishing, Apple, Nokia, Amazon, PRS for Music, Sweden's STIM society, and France's SACEM.[1]

The singular focus was to create global transparency within the music industry, making royalty collection and distribution expedited, infallible, and equitable. At the same time, the GRD's leaders hoped to lower the costs of music rights administration for everyone involved.

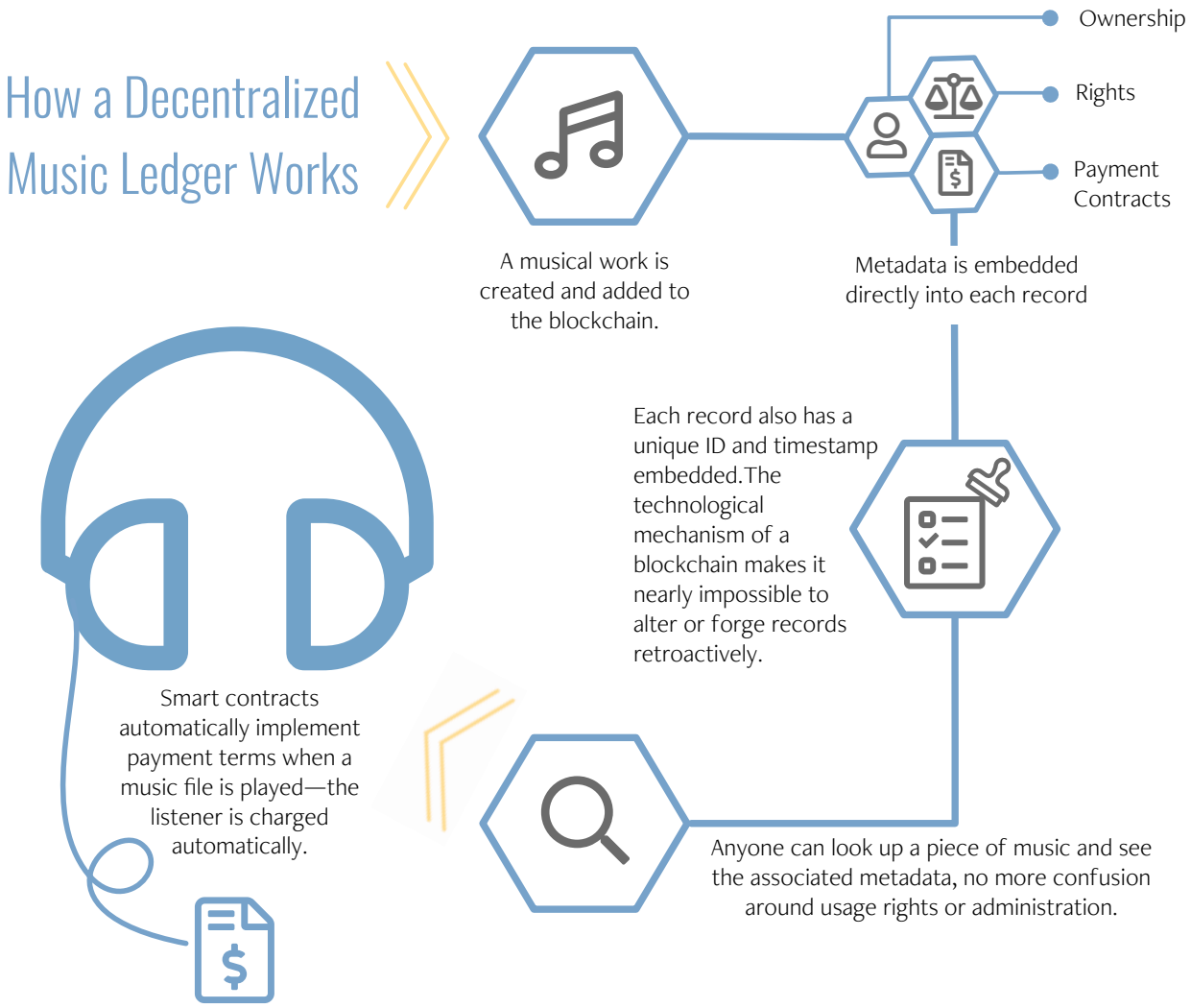
The GRD was not the first attempt to create a cohesive and comprehensive global music-rights database, though. In 2000, the International Music Joint Venture formed to help administer music copyrights more efficiently and cheaply. In 2011, the World Intellectual Property Association launched the International Music Registry (IMR). Neither of these efforts were successful, and ultimately, neither was the GRD.

In 2014, with the funders getting cold feet, the GRD project was shelved, a debt of $13.7 million in its wake.[2] The factors that contributed to the funder withdrawals are oblique and disputed, but one factor was intense fear of one centralized organization having control. Thus the project failed, the original problem unsolved.

A New Paradigm for Data Ledgers: Blockchain

Technology has certainly created more ways for music stakeholders not to get paid. But ironically, it's also most certainly the solution to the rights-management conundrum. The tech sector could swoop in to save the day with a technology that's already disrupting the finance world and showing up across nearly every other domain: blockchain. Bold organizations across industries are innovating better ways to digitally track ownership of assets—most notably, to date, currency, but the other applications are vast and exciting.

> *"The hundreds of pilots and proofs-of-concept currently in motion are but a tip of the iceberg when it comes to potential applications of the blockchain technology."*
>
> *Business Insider* [3]



The foundational data structure behind blockchain is a digital transaction ledger dispersed among a distributed network of computers, instead of resting on a single provider. Because there's no single source of ownership, it's a radically more secure and, at the same time, transparent type of record-keeping, nearly impossible to alter after the fact.

Open to all. Owned by no one. A permanent record of ownerships anchored to a place and time.

A blockchain solution could succeed in the music industry where the GRD failed: the creation of a decentralized ledger for transparent, efficient, and cost-effective rights management, with embedded metadata that cannot be separated from the music files themselves. Ownership, rights, and payment contracts would be attached to each file, and with full transparency, anyone could search on music files and see that metadata—no more confusion around usage rights and payment administration. As songs are created and encoded, a decentralized global database would roar to life.

6 Benefits of Blockchain

Faster data

With the ability to download only partial data from the ecosystem as needed, access is sped up

Full transparency

Anyone can access metadata—no more confusion around usage rights or administration

Uneditable records

Unique IDs and timestamps for records make them immutable and unalterable once added to the ledger

Cryptographic security

Digital signatures are required to add a block of data, so fraud is nearly impossible to achieve

Embedded metadata

Rights and payment information is part of the file, unable to be seperated, lost, or altered

Utter scalability

The more organizations and individuals who participate, the higher the value of the experience for everyone

The Major U.S. Music Rights Organizations

ASCAP (the American Society of Composers, Authors and Publishers) is the largest non-profit music rights organization in the U.S. Formed in 1914 by a group of composers and publishers to enforce small performance rights, it introduced the idea of the "blanket license," where users could pay a single fee for access to any musical composition in the repertory, and ASCAP would determine how to distribute the royalties to artists. This was an innovative concept in an era where most performances were live and it was impossible to track usage, but the paradigm no longer applies as accurately as it once did. In the era of digital usage, it's possible to track nearly everybit of usage.

BMI is another longtime, bigtime player in the music industry. In 1939, a group of radio industry leaders met to develop an alternative to ASCAP, which was doubling its licensing fees to the radio industry and had restrictive limitations on membership. At the time, ASCAP members had to qualify by being represented by another publishing member, which made it a bit of an exclusive club.[4] BMI's founders sought to offer open enrollment to composers and create a more democratic, artist-friendly organization. BMI has gone on to be an enormous influencer in the world of music rights and royalties, but again ironically, not everyone today would call the company a champion of artists' rights.

SESAC was founded in 1930 by a German immigrant with the specific goal of helping European publishers secure American performance royalties. In the beginning, the canon was mostly gospel music. SESAC established relationships with radio stations across the nation and eventually evolved its repertory into the mainstream pop music market. In the '70s, the organization expanded to sign singer-songwriters directly. And in contemporary times, SESAC has focused on technology innovations as well as film and television music. However, it remains the smallest of these three players.

While a Blockchain solution would still have risks associated with change management, data conversion, and regulations, if implemented properly, it could solve the largest issue of centralized power and greatly benefit the music industry.

In fact, if the GRD project were to run all over again, but this time built on blockchain, the outcome would certainly be very different.

How Blockchain Answers Problems the GRD Left Unanswered

In many ways, the failed GRD project was a successful preliminary foray into solving a lot of data problems for the music industry. The research, efforts, and collaboration it created provides a solid foundation for a blockchain solution. Now, we know the problems, how they can't be solved, and how they potentially could.

Decentralization of Data

Today, there are several music rights databases in the U.S. alone (see sidebar). But none of them are comprehensive, and all of them have owners who ultimately control both the music files and the payments associated with them. In a blockchain-enabled music world, musical works would be published right on the blockchain. As they're added to the ledger, with a unique ID and timestamp, they become immutable and unalterable. Embedded in each record is metadata detailing ownership rights and payment information. Anyone can see this metadata. Users — both businesses and consumers — can also listen to musical works right from the ledger.

> "Several music rights databases exist on a national level, such as the databases maintained by the U.S. Copyright Office and the PROs. Yet, at the very best, they provide information about a small fragment of the works that exist in the music industry, and can suffer from a number of other issues, including inaccuracy and inaccessibility."
>
> Klementina Milosic on the Berklee College of Music - Music Business Journal [5]

> "There are instances in which artists are rewarded for their works. Such rewards create incentives to produce new creations. In an effort to provide such incentives, the artistic world created royalties."
>
> College Music Symposium [6]

Royalty payments

Royalties were originally envisioned to create a symbiotic relationship between artist and consumer, enabled via "work for hire" contracts by record companies, licensing agencies, and other entities. But the original vision has been

compromised in many ways. There's been conflict, bad blood, and plenty of legislative and judicial activity. And as time has marched on, many, many organizations have come into the mix, making royalty payments complicated almost beyond orchestration. Currently, it can take months of even years for artists and songwriters to receive royalties on their published works.[7]

There's a valuable opportunity in blockchain to dramatically speed up this turnaround time and solve many other problems associated with royalty payments. There are literally hundreds of thousands of ways artists and rights-holders make money off of musical works. Via embedded metadata and the potential of micropayments, blockchain would create more direct connections between contracts, transactions, and payments.

The music makers—artists, songwriters, musicians, performers, record labels, publishers, managers, and all other who get paid as part of the maker equation—would be able to assign and track rights and usage in real time, knowing exactly when a music file was accessed on any platform, through any means, and get paid directly and instantly. This would also benefit the streaming digital providers—Apple Music, Hulu, Netflix, Pandora, Spotify, etc.—because payments could be made seamlessly and immediately, taking their administrative burden out of the equation.The positive effect on accounting and financial systems would be magnificent for the music industry.

For the public, the benefit would be in knowing that they're paying for exactly what they listen to, when they listen to it, and that the creators they listen to are being compensated fairly.

Rights Management

Blockchain provides a natural method to track (or manage) who actually owns a piece of media and what contracts exist to distribute it. Smart contracts are self-executing contracts written into lines of code. When applied to a Blockchain, they automatically implement the terms of a contract under certain circumstances. In this case, when a music file is played, the listener would be charged automatically.

With smart contracts in place, there's no subjective reading of the contract. There's simply a machine-readable formula that looks something like this: "When Song a is played b times, c is paid to d."

Transparency

One critique of performance rights organizations (PROs) is that their royalty payment systems include hidden formulas. With blockchain, every bit of data is transparent and accessible to anyone. Consensus ensures that shared ledgers are exact copies, and that everyone has access to the same information.

The Move to Blockchain Is Picking Up Speed

"While the protocol doesn't mandate blockchain, we feel that by far the most interesting implementations are blockchain-based."

Panos Panay, Berklee College of Music [8]

In 2017, Spotify reached a $30 million settlement with a publishing group over unpaid royalties, and as part of that settlement, agreed to put in place a system for the streaming music service that would do a dramatically better job of matching music streams with creators and owners. Subsequently, Spotify announced an acqui-hire of blockchain technology company Mediachain Labs, which created an open source peer-to-peer database for registering, identifying, and tracking creative works online.

The Open Music Initiative(OMI) is a nonprofit comprised of leading academic institutions, music and media industry organizations, creators, technologists, entrepreneurs and policy experts working together to create an open-source protocol for the uniform identification of music rights holders and creators. The goal is to create a protocol of API specifications to enable industry platform interoperability.

PledgeMusic, Benji Rogers' online music platform, has published a comprehensive blueprint for the Fair Trade Music Database, an idea for a globally decentralized blockchain-based ledger.

PeerTracks, a music startup, envisions an artist-equity trading system platform that leverages the MUSE blockchain, a ledger specifically engineered for the music industry which is promising artists the ability to claim 90% of their sales income (they currently get 15%). [9]

BitTunes is another blockchain startup that addresses digital music piracy with a bitcoin-based peer-to-peer file-sharing platform.

And musician Imogen Heap is creating a new music ecosystem called Mycelia that uses blockchain to enable direct payments for artists and give them more control over the circulation of their songs.

The blockchain movement is picking up speed throughout the music industry, but there's no one global solution in place… yet. Still, growing interest and serious investment from reputable companies and organizations signal that blockchain is going to be a significant disrupter in the music industry, with real benefits to business. Blockchain has the added advantage of being industry agnostic. Many existing use cases across various industries demonstrate the technology's robustness and staying power.

Blockchain-enabled royalty distribution can be fully trackable and allow artists, songwriters, labels, publishers, and other rights holders the ability to better govern the flow of payments and reduce common bottlenecks in the payment distribution process. This reduces the need for audits, which results in cost savings for record labels, PROs, and streaming services.

> "Many streaming services are at the mercy of the record labels (especially the big three: Sony, Universal, and Warner), and nondisclosure agreements keep all parties from being more transparent. Perhaps the biggest problem artists face today is that lack of transparency."
>
> David Byrne [10]

Security

The technological mechanism of Blockchain makes it nearly impossible to alter or forge records retroactively. A network of distributed ledgers keeps copies of each record on the computers of all network nodes, or system participants. In a very large Blockchain network (like Bitcoin), that could be millions of computers that hold records.

It's a self-correcting system. Inconsistencies between individual chains are detected and corrected by the system's collective processing power. The validity of a historical record is "proofed" by the majority agreement of the computing powers within the collective system. Every new transaction is verified, and once added as a new block, becomes virtually unalterable.

To forge a new record, an entity would have to hijack enormous numbers of networked computers and attempt to override a target blockchain. Today, this is considered a nearly impossible feat.

> "The majority of the critical issues cited by music industry experts stem from a few sources, but a key problem area falls within transparency and clarity of ownership data, or metadata to be precise."
>
> Benji Rogers, CEO dotBlockchain Media & Founder of PledgeMusic[11]

Data Ownership

When it comes to music files, metadata is the basic information about who wrote, performed, and owns each piece of music. Its existence, accuracy, and ease of access are essential to ensuring that creators and owners get paid for their work, no matter where it's played—streamed, downloaded, wafted in over coffee-shop speakers.

This is a situation rendered more complex by the fact that songs can have multiple writers, performers, publishers, and licenses, and those details can change by territory. The lack of a centralized database means that data is often incomplete, disconnected, fragmented, and out of date. This is the situation that leads to incredibly slow and often errant payout times.

A blockchain ledger that contained all the metadata for each song—ownership, performance info, copyright ownership, and usage rights—would solve this problem.

Financial Impact

Fragmented and non-transparent music data is also the situation that leads to money sitting on the table, with no one to claim it. The average song has a minimum of eight different collaborators, and there can be as many as fifty different intermediaries between the consumer and the person who created the song. As Panos Panay of Berklee College of Music — the force behind the founding of the Open Music Initiative, puts it: "This leads to a lot of revenue leakage… at best." [13]

> "For the first time in the history of the music business, the money being left on the table is dwarfing the money being made under the table."
>
> Benji Rogers, CEO dotBlockchain Media & Founder of PledgeMusic[12]

The benefits of blockchain and the distributed ledger include reduced operational and administrative costs typically spent on intermediaries to facilitate licensing and royalty distribution services. Cost savings can enable rights holders the opportunity to negotiate better rates and take home more money to reinvest in new content and sustain the livelihood of rights holders.

Reporting

With transparency and centralized data come easier reporting. A single reporting system used across the music industry would have a tremendous impact on the ability of artists and organizations to collaborate more fluidly. With everyone looking at the same information, there would be far less potential for confusion and dispute.

Music-rights organizations, record labels, and streaming music services would be empowered with the data to better understand and control revenue streams, identify trends, and make more informed business decisions.

At the same time, data tailored to the role of the rights holder has the potential to dramatically reduce and even eliminate concerns about accidental or intentional underpayment of royalties. Such democratic reporting lends itself powerfully to the perception and the reality that all parties have equality in the music-rights formula.

Equal Control Between Societies

BMI, ASCAP, SESAC… today, so many organizations and societies exist to manage and orchestrate music rights and royalty payouts that trying to follow a chain of usage, ownership, and payout is a madcap endeavor.
A blockchain solution would increase accountability across rights holders and societies and enable stronger, more productive collaborations based on synergy around similar goals and objectives.

The Challenges

With so much at stake and such an obviously perfect technology application available, why hasn't a blockchain rights-management solution been launched yet? There are certainly challenges to implementation—or at least, open questions. In many ways, a blockchain solution would have to overcome some of the same challenges as the GRD, but with higher stakes, since that project failed.

Legal Implications

Obviously, the regulatory ramifications to any new global music-rights ledger are complex to navigate. Not only would parties contend with varying music-rights laws globally, but blockchain regulation varies and is evolving on state, federal, and global levels. Right now, states have the authority to legislate blockchain regulation on their own. In order to create a harmonious global system, it would have to "play nice" with international regulations.

> "Regulatory responses to emerging technologies, and to blockchain in particular, range from excitement to suspicion to indifference."
>
> The Columbia Science and Technology Law Review [14]

Were a blockchain solution to be developed, it would have to be aligned with developing laws and ICO regulation, keeping security of information paramount in every decision. There are plenty of laws still in development, so this is an area that will require a close eye as any initiative goes forward.

Some of the Laws + Regulations That Come into Play

U.S. Regulations

The U.S. government has the prerogative to regulate blockchain to the exclusion of states—which it generally does with most financial regulation—but for now, states are responsible for their own rules and regulations. In 2015, New York became the first U.S. state to regulate cryptocurrency companies. By mid-2017, at least eight more U.S. states had joined in, making Bitcoin and other cryptocurrencies available to citizens. [15]

Other states have made rulings on blockchain technology outside of the cryptocurrency domain. Arizona fast-tracked a blockchain records-recognition bill amending existing legislation on electronic records, and Vermont signed into law Act 51, which includes a section which mandates a report on recommendations for blockchain technology for record-keeping. That state was even rumored to be considering a switch to blockchain-based public record-keeping—although technology-friendly California, ironically, shut down its own virtual currencies bill in 2016.[16]

European Regulations

The good news is that the EU has been very welcoming toward blockchain technology, following what Business Insider calls "the path of an innovation-first business philosophy."[17] In early 2017, the executive arm of the EU government announced that it will focus on using blockchain to support distributed ledger-based projects. In an official press release, the commission said: "Distributed ledger technology's almost limitless list of potential use cases makes it both very promising and challenging… The Commission is actively monitoring Blockchain and DLT developments." [18]

This is all very good for any music industry blockchain initiative.

ICO Regulation

As an alternative to IPOs (initial public offerings), ICOs (initial coin offerings) are a new paradigm in which organizations launching a business based on blockchain technology can raise funds outside of the regulatory constraints and requirements applied to traditional underwritten IPOs. However, in 2017, the SEC clarified their stance on ICOs and said that if the ICO involves the offering of a security, it will be subject to established securities-law requirements, with some exemptions.[19] If an organization fails to register with the SEC or tries to structure their offering in such a manner that it qualifies for an exemption, it could violate federal securities laws. So blockchain organizations cannot remain a rogue operation exempt from the letter of the law for long.

ICO regulation is relevant if Smart Contracts and automated micro-payments using cryptocurrency become part of the scheme.

The Current State of the Blockchain Ecosystem

The winds of change are blowing strong. For startups, blockchain technology is a pivotal focus right now. In a one-month period of 2016, 200 new blockchain-focused startups sprung up. [20] And major banks like Goldman Sachs [21] and Big Four accounting firms like Ernst & Young [22] are starting to stand behind a push for Blockchain in their respective industries, as well.

Still, while many companies are trying to enter the enterprise blockchain space, there aren't yet a lot of public examples of implemented solutions. Microsoft's Azure is one of the clearest offerings to date.

Microsoft is aiming to make blockchain mainstream by focusing their technology offering on the enterprise across industries and usage types. Microsoft's blockchain solution, Azure, is one of the leading players. Microsoft's Azure sales pitch is that their platform is easy to implement, low-cost, low-risk, and "backed by a cloud platform with the largest compliance portfolio in the industry" [23] – certainly something to consider.

Microsoft is also committed to partnering with best-in-breed blockchain and other technology companies to create an ecosystem of blockchain technology, including companies such as Enterprise Ethereum Alliance, R3, Hyperledger (IBM's), and Chain Core.

Lack of Leading Technology

The decision to build on blockchain is just the first step. The next would be to choose a technology platform with which to implement. But which one?

The MUSE blockchain was created by music startup PeerTracks to support musical artists, but it's design is narrow. Bigger names in blockchain are emerging—see the sidebar about Microsoft Azure, for instance—but it's not yet clear which is the best solution for this application.

One idea might be to partner with a technology leader like Microsoft to develop a solution in tandem with their efforts. At least right now, they seem to be leading the way in blockchain.

The Challenge of Getting Everyone to the Table Again

Possibly the greatest challenge to implementing a blockchain solution is going to be convincing all the stakeholders to come back to the table and start again. The GRD failure was disheartening, and the big question would be around funding. Lots of money was lost when GRD tanked. Who is going to foot the bill to create an open global solution?

The Questions We All Need to Be Asking

To get the discussion started, here are some frank questions the major stakeholders in the music industry can consider asking themselves and each other:

1. What are the needs for an organization to leverage Blockchain?
2. What are the costs and value savings for an organization to use Blockchain?
3. What organizational changes would be required?
4. What are the requirements for the organization?
5. What are the minimum requirements, so we can standardize metadata formats in a way that will serve every stakeholder best without introducing unnecessary complexity?
6. How do we proof of concept? Can we identify a working group to focus first on one core piece of business, such as rights management?
7. What's the quick win within organizations?
8. Can we leverage a blockchain sandbox such as one offered by IBM or Cisco just to get acclimated with the technology and applications?
9. Would it be best for each party to start a private blockchain first, then try to connect them all together in the future?
10. What will it take to start a pilot program, with buy-in from all parties?

For a blockchain solution to succeed, it would require magnificent coordination and agreement between several parties with very different strategic goals.

Threat of Slow Adoption

And on a related note, unless all participants buy in, the system won't work. It's difficult to go backwards into the "data soup" of existing music files. Not everyone is motivated to clean up the mess, but for a blockchain solution to work, existing data would have to be updated with correct metadata.

Now's the Time

It's already technologically possible to implement a blockchain solution for music-rights management. The challenge is largely one of mindset, at this point. The good news is that the desire is there; the launch of the GRD proves that all stakeholders want to see a change. Now, it's a matter of getting everyone back to the table, sussing out funding roles, and identifying first-mover advantage.
Perhaps the music industry initially addresses a core use case for blockchain. With that foundational success, the infrastructure could then continue to grow throughout the industry, ultimately replacing our dysfunctional current system with one that's secure, transparent, and equitable for all stakeholders.

> "Blockchain will not be a perfect answer to all the problems that the music industry is facing. But at the very least, it will level the playing field to some degree."
>
> Ben Dickson, TechCrunch [24]

It certainly benefits the music industry to be ahead of the disruption blockchain will inevitably bring every sector of business in the near future. The paradigm shift is enormous—and it will take experienced change management to institute a smooth and successful transition, but the shift will benefit every stakeholder in music today, and transform rights management as we know it.

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