

Blockchain technology in the music and entertainment industries

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Introduction

“...[I]f we don’t go to the tech industry with a solution, they will impose one upon us. We create one of the most valuable, viral, exciting things on earth – music! Yet we don’t know how to control or contain it.” – Benji Rogers (Dredge, 2017)

The music industry is experiencing its most fruitful period in the last decade. In 2016, the global recorded music industry saw revenues of US\$ 15.7 billion (IFPI, 2017). However, despite its economic upturn, the music industry has developed the unwanted reputation of being slow to react to changing social trends (Gray, 2015). As a result, old-fashioned consumption methods such as the compact disc (CD) and digital downloads have suffered: the IFPI (2017) goes on to report that 40% of the industry’s revenues have been lost in the last 15 years. The vast majority of these losses could feasibly have been avoided, if not at least minimised, had the sector’s powerhouses – namely the record labels and publishers in control of the copyrighted material – been more welcoming of technological innovation. Technologies that were first popularised during the ‘dot-com bubble’ of the late-1990s have only recently been adopted by the music industry. For example, peer-to-peer (P2P) file sharing – the application model employed by platforms such as Napster – was widely castigated by the music industry due to the legal complexities that it presented (Buford, 2009). Despite this, P2P technology later powered a “significant part” of the desktop service for current industry leader, Spotify (Dillet, 2014).

Blockchain is another example of a disruptive new technology that could potentially have a major impact on the music industry. The distributed ledger system operates without a centralised database, making it similar in concept to P2P file-sharing (Bashir, 2017). Whereas the music industry has stalled on the implementation of blockchain technologies, the legal and financial sectors have been quietly preparing for their introduction; so much so that new industries, such as the aptly-titled ‘Fintech’, have spawned (Sanicola, 2017). Although some are understandably sceptical about this relatively new technology, others (O’Dair & Beaven, 2017) believe that blockchain could have transformative effects on the recorded music industry if it were introduced on a larger scale. This essay begins by explaining exactly what blockchain technologies are and how they work. It then examines their present commercial uses before clarifying how they can be successfully implemented into the current working model of the music industry. It is put forward that the technology will have the largest impact on the recorded music sector, particularly as this has been the area of the industry that has principally felt the adverse effects of recent technological advances. Lastly, this essay explores the relevant legal implications of introducing blockchain technology into the music industry.

Understanding blockchain technology

What is blockchain?

Before understanding how blockchain can be implemented into the current working model of the music industry, the technology must firstly be explained. The meaning of the term is often confounded: in a 2017 journal article, Pike demonstrates that blockchain “refers to both a specific digital transactional ledger and the software, network, and protocols that provide the technological infrastructure” (Pike, 2017). The technology upon which the ledger sits “enables the secure transfer of money, assets, and information via the Internet, without the need for a third-party intermediary such as a bank” (Swan, 2017). The decentralised nature of this ledger is enabled through a distribution network spread across hundreds, or sometimes thousands, of computer ‘nodes’. These ‘nodes’, often personal computers, act as intersections amongst the pathways that make up the larger network. It is at this point that software algorithms generate a fixed-length alphanumeric string, known as a ‘hash’, which forms part of the block (Pike, 2017).

How secure is blockchain?

If blockchain technology were to be introduced into the recorded music industry, its focus would need to be on maintaining the security and accuracy of intellectual property. Whilst all distributed ledger systems provide users with the security of a “tamper-proof auditable history of all transactions” (Swan, 2017), blockchain delivers an additional layer of protection. The term “block chain” originates from the process by which the ledger is formed: each transaction is ‘chained’ together and is therefore linked via the ‘hash’. Every new block references the block that precedes it, meaning any attempt to change the data within a specific block would fail as the other users within the network would quickly recognise that the data no longer relates to the information in the subsequent blocks (Pike, 2017). As each transaction requires approval from others within the network, the transaction would therefore be rejected. Blockchain also encrypts the information that is ‘hashed’ into the blocks. The underlying data is moved outside of the block leaving only the uniquely generated message. Therefore, in the event that a ‘hash’ were to be hacked, only the randomly generated message would be at risk and not the actual data itself (Pike, 2017). It can therefore be stated that the encryption and hashing of data serve as the foundation for blockchain technology’s reputation as a highly-secure and trustworthy model. However, blockchain, and other distributed ledger systems, present some regulatory issues.

Criticisms of blockchain

The reality is that the technology represents a departure from traditional and current economic practices. It is therefore understandable that whilst some (Pike, 2017) would argue that it is a welcome change, others are less enthusiastic about blockchain’s impending rise. The UK Government’s Office for Science (Walport, 2016) has recognised that the “underlying philosophy of distributed consensus, open source, transparency and community could be

highly disruptive” to a variety of sectors. A system without a centralised regulator to maintain the integrity of the ledger, Her Majesty’s Government states, would “pose a challenge to institutional power structures and existing industries” (Walport, 2016); a structure that would likely give rise to a policy response in favour of the relevant industry’s major powers. Another criticism of the distributed ledger system arose in December 2016 when Senegal announced it would be introducing a digital currency in 2017. Although it has yet to be confirmed whether blockchain technology would be used to power the currency, sceptics say it could introduce “a host of unforeseen regulatory and distribution issues for the West African regional bank” (Chutel, 2016). One such solution to these regulatory problems has been proposed by Edge, a start-up cyber security company that “empowers individuals to take control of their own online data” (Mitchell, 2017). Although this is primarily focused on the US market, its introduction is designed to prevent “large-scale data breaches” that would no doubt have global effects (Mitchell, 2017).

It is clear that blockchain technology has the potential to disrupt a variety of industries. Despite the potential regulatory problems, the possibilities remain encouraging for its effective introduction into the music and entertainment industries.

Commercial uses of blockchain

“Blockchain is the catalyst for change in the industry. It’s a new piece of technology, in the same way MP3 was. It’s a step in the right direction” – Imogen Heap (Bello Perez, 2016)

Cryptocurrencies in the recorded music industry

The first and, as a result, most prominent commercial use of blockchain technology was bitcoin. The heavily-scrutinised cryptocurrency that has come to the fore in late 2017 was developed in 2008 and uses blockchain technology as its infrastructure (Popper, 2017). The virtual currency has grown in popularity since its inception and has now been adopted as a payment method in a number of industries, including music.

In November 2017, Icelandic alt-pop artist Björk announced that her 10th album, *Utopia*, would be available to buy using a range of cryptocurrencies (Damiani, 2017). Not only would bitcoin and two other virtual currencies be accepted as payment, but the singer’s record label also partnered with British-based blockchain start-up Blockpool to reward consumers with 100 free AudioCoins alongside any purchase (Damiani, 2017). Whilst this is not the first instance of digital currencies being used within the music industry (Witt, 2015), Forbes indicates that the embracing of the technology by a global artist such as Björk could aid the redistribution of wealth across the sector and “revolutionize the music industry in a powerful way” (Damiani, 2017).

Although it is still relatively early in its adoption, the use of cryptocurrencies by artists to enable purchase of their work is evidence that blockchain technology has the potential to infiltrate the current working model of the recorded music industry.

Potential commercial uses of blockchain

A number of academics, Swan for example, have noted that blockchain’s benefits are “more than just economic” and have the potential to extend into “political, humanitarian, social, and scientific domains” (Swan, 2015). As was previously highlighted (Sanicola, 2017), a range of companies and services across both the legal and the financial sector have been preparing for blockchain’s impending rise to prominence. Whilst music has adopted peer-to-peer file sharing (Dillet, 2014) – albeit, two decades late – its readiness to accept cryptocurrencies evidences changing attitudes towards new technologies.

However, moving away from blockchain’s use as the system underpinning digital currencies, the technology’s other uses have been less successfully ushered in. Many observers (Khouri, 2017) believe that the main way in which blockchain technology could impact the recorded music industry is through the automation of royalty payments and creation of an entirely global digital rights database. The idea that copyright ownership information could be “encoded into each digital music file in a permanent, immutable way” (Khouri, 2017) is a view

shared by dotBlockchain founder Benji Rogers, who believes that blockchain could, if not *will*, have transformative effects on the landscape of digital rights management (Mas, 2016). Rogers' project recently received backing from major catalogue holders (Jones, 2017). O'Dair & Beaven (O'Dair & Beaven, 2017) also point to the lack of a global database as a structure that "needlessly complicates" the music industry's notoriously slow payment process. The concept that everything from "lyrics, video, and artist biography [...] could be embedded as metadata in digital recordings" (O'Dair & Beaven, 2017) is far from radical but would require collaboration from a number of territorial bodies; a process that has proved difficult in the past (PRS for Music, 2014).

It can therefore be stated that blockchain has the potential to positively impact the way in which digital rights are managed across the recorded music industry. Although this would be largely progressive for the artists and songwriters whose work is being exploited, a number of legal and policy hurdles exist.

Legal implications

How can blockchain affect copyright disputes?

The last major copyright legislation in the UK was enacted in 1988 (Copyright Designs and Patents Act, 1988). Although there have been various revisions and amendments, this could be considered insufficient in an age in which technology is evolving faster than ever before. By nature, copyright subsists in a work from the moment it is tangibly expressed and requires no registration (Copyright, Designs and Patents Act, 1988, Section 1). However, in relation to the music industry, it is uncommon for the copyright in a work to be owned solely by the creator or author. The permanent or fixed-term assignment of some, if not all, rights is a common term of music publishing and recording contracts (Moser & Slay, 2014). Once assigned, the work must be licensed to those who wish to obtain access and use. Blockchain technology has the potential to help those who need copyright disputes solved as quickly and cost-effectively as possible. For this reason, the technology is particularly pertinent to the recorded music industry.

As explained earlier, the introduction of blockchain technology into the digital rights management sphere would allow copyright ownership data to be encapsulated into the file holding a song (Khoury, 2017). Not only would this help to solve disputes, it would also mean that payments can be distributed faster (O'Dair & Beaven, 2017). Although section 77(1) of the Copyright, Designs and Patents Act 1988 (Copyright Designs and Patents Act, 1988) protects the moral right to be identified as an author, this has become increasingly difficult to enforce in the digital age as streaming services currently do not provide users with access to ownership information. Writers such as Newman are also of the belief that UK copyright law is designed to primarily protect “the interests of the investor and employer while the civil law approach, common in other European jurisdictions, emphasises the rights of individual authors” (Newman, 2000). The potential for change has been heightened following the news of a joint venture between ASCAP, PRS and SACEM; three of the largest collection societies in the world. According to their press release, the new system will use blockchain technology “to resolve conflicts between conflicting identifiers for the same work across multiple rights holders” (Music Business Worldwide, 2017). In addition to this, Swedish streaming platform Spotify recently acquired Mediachain, a New York-based blockchain company aimed at creating “a more fair, transparent and rewarding music industry for creators and rights owners” (Music Business Worldwide, 2017).

The signs point to an industry-wide commitment towards promoting adequate remuneration for artists, the protection of their rights in the digital age and greater transparency across the recorded music sector. Nevertheless, major statutory revisions would be required in order to fully modernise copyright laws. As much of the current intellectual property law in the UK coincides with EU laws, the current political climate, brought about by Brexit, leaves the future position uncertain. Lastly, the possibility of an effective trade relationship between the

US, UK and France (Music Business Worldwide, 2017) may also prove difficult at present, particularly considering past efforts that have tried and failed to achieve similar solutions (PRS for Music, 2014).

Policy problems

There are a number of intermediary services whose future status is at risk in light of blockchain's emergence. In relation to the financial sector, this starts with the major banks (Swan, 2017) and goes right down to any one of the "five different third parties in a credit card transaction that gets paid for basically just sitting there" (Smilansky, 2016). With regards to the music industry, this would impact everyone from music aggregators and distributors to publishers and record labels (Nylon Connect, 2017). It is therefore no surprise that some areas of the industry are reluctant to embrace this new technology.

Parallels can be drawn between blockchain and the rise of P2P file sharing. Imogen Heap, a recording artist and early supporter of blockchain in the music industry points to the "incredible" yet ill-fated software Napster as an example of the recorded sector's short-sightedness (Bello Perez, 2016). Her belief that the major labels moved to shut down the service "instead of doing what they should have done which was adopt it" (Bello Perez, 2016) is a view shared by many others (Buford, 2009). As was noted earlier, the UK Government's report on distributed ledger technology (Walport, 2016) indicates that there would likely be a policy response to blockchain's introduction that would protect the interests of the established corporations whose businesses would be at risk. This information will come as music to the ears of the recording sector of an industry that is again on the rise after years of decline and is evidently reluctant to allow anything to disrupt that, regardless of the impact on future generations.

Summary

It can be seen that blockchain has the power to positively disrupt the current working model of the recorded music industry. The technology has been implemented across the legal and financial sectors to great success but has thus far been more sparingly used in the music industry. Despite this, a growing number of proponents recognise its potential.

The music industry requires a change in the way digital rights and royalty payments are managed and many believe that blockchain serves as the best solution to these issues. In order for this to be the case, a variety of institutions are at risk of being rendered inoperable. This has understandably caused hesitancy amongst those whose business models are in danger.

The recorded music sector must avoid the same mistakes it made with P2P file sharing and the technology that powers it in order for it to continue to grow. Blockchain technology provides a high level of security, transparency and reliability, making it the perfect infrastructure for the management of digital rights and distribution of royalty payments. The question as to whether the major powers in the music industry will allow this to happen on a global scale remains to be answered.

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