



BLOCKCHAIN

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Table of Contents

Introduction	3
What is Blockchain Technology?	3
Blockchain on the Music Industry	4
Blockchain on the Entertainment Industry	7
Legal Implications	8
Conclusion	8
Bibliography	9

Introduction

Over the many decades in which the music industry has revolutionized, we have experienced a digital revolution that has changed the music and entertainment industry significantly in a permanent manner. Due to the extreme accessibility we have to music and having the ability to listen to music anytime and anywhere, there is a clear shift from analogue to digital within both these industries (Koksal, Forbes, 2019). As music and the production of music is more accessible than ever, competition is high and there are more individuals wanting to join this market due to the lower threshold.

What is Blockchain Technology?

Blockchain technology made its first public debut when Satoshi Nakamoto, whose identity remains unknown, released the complex paper 'Bitcoin: A Peer-to-Peer Electronic Cash System' in 2008 with the attempt at explaining a peer-to-peer version of electronic cash known as Bitcoin (Marr, 2018). Bitcoin's ledger was the first Blockchain but has since developed majorly over the last decade, as it is one of today's largest groundbreaking technologies that is impacting and changing every industry.

The "block" section of the name is made up of digital pieces of information, specifically into three parts. The first part to understand about blocks is that it has the ability to store information about transactions, specifically the time, date, and amount of recent purchases (Fortney, 2019). The second part of information that these blocks store is who is participating in these transactions. However, using the Blockchain distributed ledger would allow you to make purchases without having your personal information recorded by using a unique 'digital signature' instead (Fortney, 2019). Finally, blocks have the ability in being able to distinguish each block from one another. This is due to the unique code called a 'hash', which allows for each block to be different (Fortney, 2019). As digital information is now allowing for the distribution but not copying, Blockchain technology was able to create the backbone for an entirely new type of Internet. But how does Blockchain technology actually work? In order for a block to be added to the Blockchain there are multiple steps that need to take place. Firstly, a transaction must occur then that transaction must be verified. Through Blockchain technology this

verification comes from a network of computers, these computers then check whether the transaction happened and are then able to store this information in a block. This block is then given its unique hash, which distinguishes it from all the other blocks on the Blockchain. So at its core, Blockchain technology is a distributed ledger that has the ability to validate and register transactions without the need for central authority (Dickson, 2016).

Blockchain on the Music Industry

Blockchain technology is revolutionary, however the disruption here is that collaboration and code is what creates trust rather than central authority. This means that banks are no longer involved within money transfers around the world and that companies are no longer needed in order to facilitate transactions of any kind. Due to this, almost every industry has the potential to be revolutionized and is therefor forced to adapt, specifically the music and entertainment industries.

In order for the music industry to stay as relevant as possible, it is extremely important for this industry to continuously develop based on the digital revolution that is making the world more technologically advanced. The music industry has demonstrated fluctuating data on its overall success as this industry has been forced to continuously change and adapt to how the rest of the world is revolutionizing. However, according to McGrath, who wrote an article arguing whether Blockchain technology would be a saviour to the music industry, states that over the last three years the industry has shown exponential growth. In 2015, the sales of live music tickets approximately made \$7.2 billion and this is predicted to rise to \$9.1 billion by the year 2021 (McGrath, 2018). Moreover, the music industry had a large growth in revenue due to an 8.1% global increase in 2017 (McGrath, 2018). Due to these numbers, it is evident that more money is coming in. In order to sustain this, the music industry is forced to continuously adapt to new technology and with a new type of Internet, Blockchain, we see another shift within the music and entertainment industries.

But to what extent is Blockchain technology affecting the music and entertainment industry, and is this a positive change or rather seen as a disruption? Within the music

industry, Blockchain could have the power to transform publishing, monetization of music, and the relationship of artists with their fans (Dickson, 2016).

Firstly, Blockchain technology has the ability to establish the owner of the intellectual property rights by using a distributed ledger. Music can be published on this ledger, and with this comes a unique ID and time stamps where this becomes effectively unalterable (Dickson, 2016). In theory, this can be used as clear evidence of ownership and could solve the issue of digital content being copied, modified and downloaded. This is because each record on the distributed ledger will store information containing the ownership and rights information in an immutable way for individuals to see and verify, therefore ensuring that the right people get paid (Dickson, 2016). Ensuring ownership is particularly useful within the music industry as it can help prevent legal battles between artists and record labels. The music industry has a reputation for having many complicated laws when it comes to ownership and copyright, and having a distribution ledger with immutable information available will give insight on the ownership of audio, specific lyrics and anything relating to intellectual property rights. Not only will Blockchain technology be beneficial in preventing legal battles, but should make the overall process of establishing ownership much easier as many institutions and companies may state ownership in different ways. Relating back to McGrath's article, he argues that these companies state ownership through different wording, requirements and formatting as some of this may be manipulated into loopholes, which Blockchain would help prevent (McGrath, 2018).

Another way in which Blockchain technology will largely affect the music industry is through its fast and frictionless royalty payments (O'Dair, 2016). Royalty payments are one of the most important ways in which majority of artists make their income, however this can take up to months and sometimes even years to reach the rights holders (O'Dair, 2016). An artist's music is usually distributed on numerous on-demand streaming platforms like Spotify and Apple Music, which have allowed consumers to easily access music at any time. This, however, has created a level of intermediation between the artist and its consumer and has led to an inefficiency of royalty payments (Sitonio, 2018). Due to the numerous platforms that artists use, there is usually an incomplete agreement as to how much money was made where in August of 2018 it was reported that musicians only received 12% of total revenue made in the music industry (McGrath, 2018). Through the use of Blockchain and by putting content on this distribution ledger,

will allow for the connectivity and peer-to-peer transactions via a digital currency such as Bitcoin (Hern, 2018). Another change within the music industry based on the digital revolution and creation of Blockchain is the use of 'Smart Contracts', which is a component of Blockchain technology that could potentially help solve this issue therefore revolutionizing the monetization of music. Smart contracts are essentially 'contractual agreements that are built on computer protocols whose terms can be executed automatically on the Blockchain' (O'Dair, 2016) which could allow music royalties to administer immediately based on the agreed 'splits' rather than through the passing of intermediaries. This is due to smart contracts including the vital information of what percentage of revenue goes to each member of the group, the record label, manager and anyone else involved within the creation and distribution of a track and paying these individuals instantly (IEEE, Innovation at Work, 2019). Nick Yap, CEO and founder of Volareo, a company that is developing a smart speaker that will bridge music and Blockchain technology with a voice-controlled speaker states "Blockchain music has a huge potential to drive hardly needed revenue to artists, especially to independent artists; transparently, directly and instant" (Yap, 2018).

With the concept creation of smart contracts and allowing for the direct payment to the copyright holder, new companies emerge such as Musicoin and Revelator. They propose using Blockchain technology with the purpose of it simplifying digital-rights management and by bypassing intermediaries, which would allow micro-payments from fans that buy and stream the artist's music (Burchardi & Harle, 2018). The low transaction costs of digital currencies are what make micro-payments feasible, making it particularly useful seeing as typical payments in the streaming era are very small.

Lastly, Blockchain technology is changing the music industry as it has the ability to provide artists with an alternative source of capital. Using Blockchain and its transparency in delivering music is what makes it more attractive to investors, as it allows them to easily monitor investment outcomes and to model likely returns (O'Dair, 2018). Blockchain technology could also have a significant effect on crowd funding according to O'Dair, who states that artist who issue their own shares and have a smart contract that guarantees no pledge contribution would be taken if the funding targets were not to be met.

Blockchain technology has certainly demonstrated some significant affects to the music industry, and some see this as a disruption. However, like any disruption as significant as this, it is still too early to see its full potential. Many banks and even governments are exploring the full potential of Blockchain technology, and according to the World Economic Forum it is estimated that 10% of all global GDP will be stored on Blockchain's within a decade (World Economic Forum, 2018). If this is truly the case, and how majority of all industries will change, the areas outlined above may only be the beginning of its true potential (O'Dair, 2018).

Blockchain on the Entertainment Industry

The music industry is not the only industry that is highly being affected by Blockchain technology. Following the information above, Blockchain will also have a large impact on the entertainment industry, such as the news industry. The news industry is forced to adapt as it facilitates journalist's rights management by allowing anonymous writers to post content online and to be paid for this by readers. By posting articles online, these individuals will be able to secure micro-payments from advertising and eventually facilitating a pay-per-read model (Burchardi & Harle, 2018). When initiatives like these are taken, a disruption in the market for content intermediaries will occur, which would eventually be the cause of lower prices to consumers and will instead increase returns to the content creators.

Another industry that has begun to be affected by Blockchain technology is the film industry. With the arrival of Blockchain, it could be the possible solution in managing the increasing complexity of global networks and the digital distribution models through the use of smart contracts. Again, a smart contract can register and carry out distribution and release agreements, and in this case of the film industry this would be between the producers and the distribution partners creating a type of trust (Yadav, 2018). Smart contracts also allow for the enabling of automated distribution revenue when collections are recorded and received. An example for this could specifically be for smaller and more independent producers, who would be able to accept payments of tickets through crypto currencies and share collections even before the screening of the producers work is complete (Yadav, 2018).

Legal Implications

It is evident that Blockchain technology is changing and forcing industries of all types to adapt to this new type of Internet. As many industries demonstrate this shift, it is almost guaranteed to disrupt some areas within the legal industry as all types of information, documents, and data is being stored and verified. Storing, retrieving and verifying documents is a key function when it comes to the legal industry, and through the use of Blockchain technologies questions regarding the legality of wills and other legal documents could be eliminated (Marr, 2018). This is due to legal documents being stored securely and verified in a safe matter. Another example how Blockchain could affect legal implications is through the possible elimination of digital inheritance, as there is a rise in crypto currency and through Blockchain's ability to secure documents (Marr, 2018). John White, Founder and CMO of Social Marketing Solutions, states 'this technology eliminates lengthy court battles arguing over digital inheritance' and any records stored on the Blockchain can be quickly verified with any changes to the documents immediately authenticated and stored. (White, Founder and CMO of Social Marketing Solutions, 2018).

Conclusion

Like with any solution, Blockchain technology is not the perfect answer in fixing all the problems that the music and entertainment industries are currently facing. However, based on the information, which has been argued above, at the very least it will level the playing field to some extent. Blockchain technology has demonstrated immense growth in bringing greater opportunities for artists, songwriters, performers and musicians. These individuals, the real owners of the music industry, will be the main benefactors as they will finally be able to take ownership of their creations and get their due for their efforts in return (Dickson, 2016). This new type of Internet has also proven its ability in helping the news and film industry, specifically in helping writers who use online platforms to publish their work and then being able to secure micro-payments from advertising and potentially from each reader. Great opportunities have risen for stakeholders in the film industry from small independent producers to leading global studios. The film industry is largely able to benefit from Blockchain technology as this innovation has allowed for the digital support of connected global networks that include content producers, distributors and their audiences.

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