

BLOCKCHAIN

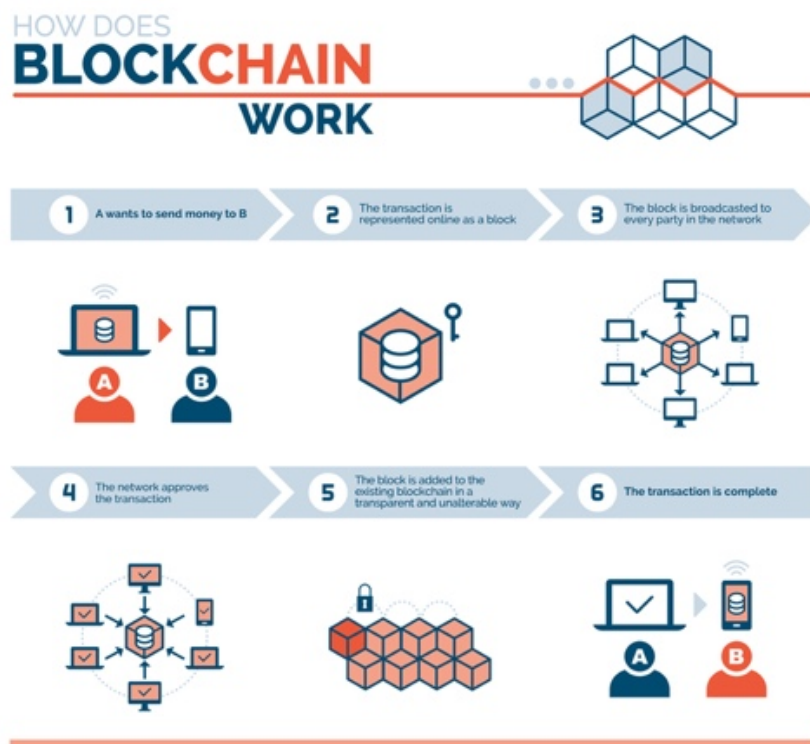
In this essay I will be explaining the definition of Blockchain, and the commercial use, and legal implications that Blockchain has on the music, and entertainment industries.

What is Blockchain Technology

Blockchain Technology is a form of *Distributed Ledger Technology*; a database spread across several nodes that carry data enforced by a network of computers. But not all *Distributed Ledger's* have such secure, and valid chain of blocks like Blockchain Technology has, blockchain technology stands out from the other *Distributed Ledger's* because of the way the blockchain is. Blockchain's data is grouped together, and organised in blocks of data linking together, and protected with cryptography.

Blockchain Technology was birthed off the back of bitcoin, and cryptocurrency both of which are digital, and or virtual currencies secured by cryptography making it extremely hard for anyone to counterfeit or like how they call it double spend. Just like Bitcoin, and Cryptocurrency, Blockchain is shared across, and looked after by peer-to-peer networks which is when two or more computers connect, sharing resources without going through a separate server computer, and being a *Distributed Ledger* blockchain's peer-to-peer network exists without a central type of authority or anyone managing the communication so no one but only the two participants can see, review and obtain data.

See how Blockchain works,



So as stated in the picture, A wants to send money to B, the transaction is then represented online as a block, the block is then broadcasted to every party in the network, so everyone can see it 'witnesses', then once everyone that has seen the transaction has approved it then the block is added to the existing blocks in Blockchain in a transparent, and in a way where it can not be altered, then the transaction is complete.

Blockchain was first spoken about in 2008, when Satoshi Nakamoto wrote about it online, and a year after, blockchain became known, and was implemented.

"A purely peer-to-peer version of electronic cash would allow online payments to be sent directly from one party to another without going through financial institution. Digital signatures provide part of the solution, but the main benefits are lost if a trusted third party is still required to prevent double-spending. We propose a solution to double-spending problem using a peer-to-peer network. The network timestamps transactions by hashing them into an ongoing chain of hash-based proof-of-work, forming a record that cannot be changed without redoing the proof-of-work".

- Satoshi Nakamoto, October 31, 2008

Blockchain in looser words is a long list of information, and or records. Data can only be added to the list. Deleting, or editing something that was entered in is impossible to do so, so in regards to events like voting, maybe we would have had a different outcome if blockchain was implemented a month or so before the recent elections, who knows.

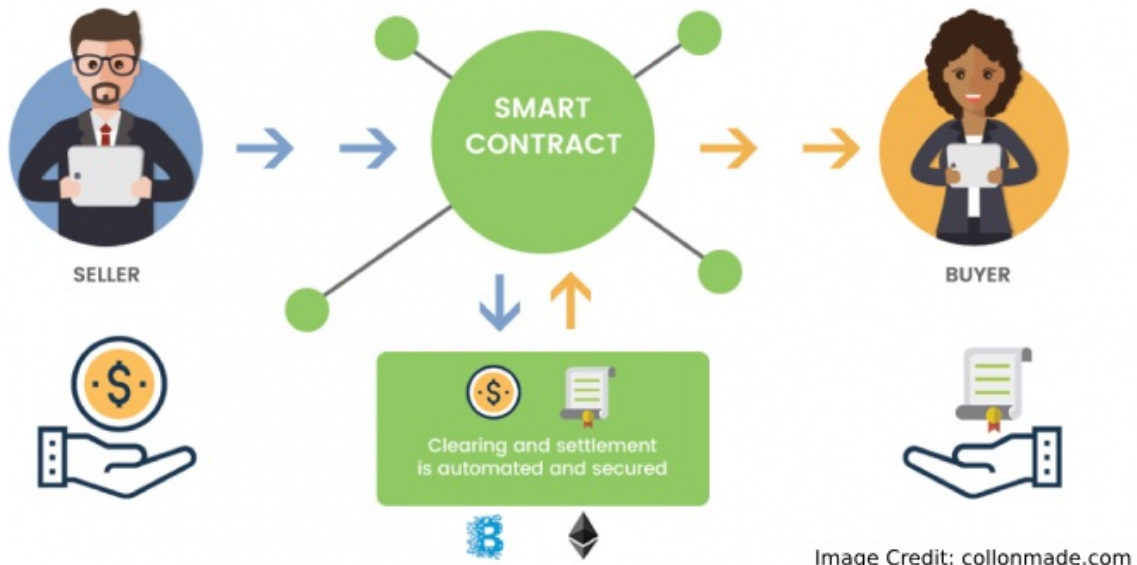
Blockchain, and the music industry.

Blockchain is said to be the next big, revolutionary thing that changes the music industry forever, effecting how companies handle contracts, digital data, and importantly money,

and transactions. Implementing Blockchain in the music industry can really transform the relationship between labels, and artist, managers, publishing, and streaming services, creating a more transparent music industry.

In 2019, the global music industry had a total of \$2.5 billion worth of royalties that were not collected, showing that there are many songwriters, and copyright owners that are unknown, and or unidentified. This problem has happened due to the fact of a lack of accuracy in the metadata of the streaming services. If some sort of a Blockchain distribution model that allows meta data to communicate with different systems was implemented, then all the information of who owns the rights to the music, and or owed money which is kept on a database by the record labels, streaming service providers, and music publishers would be able to communicate with each other more efficiently, and straight forward leaving no blurred lines of who owns what in a piece of music, and everyone would get their fair share of money. Blockchain technology would definitely be able to establish who owns the intellectual property rights of a creation by using a distributed ledger, that holds all record, and information of transactions in blockchain. This information can be used in let say court if needed to, helping to prevent legal situations from artists, and producers, who owns what part of the lyrics in a song etc, blockchain would really help to save money on law fees. Blockchain technology in the music industry could help with resolving any issues when it comes to companies or individuals purchasing the rights of music, for example if Warner Brothers wanting to buy the rights of music from a song I wrote, and produced, a blockchain technology could easily be used, and kept on record with access to trace the history of the rights, including date, time of purchase etc.

The use of smart contracts would also be used in the example I used earlier. Introduced in 1996 by computer, and cryptography scientist Nick Szabo, Smart Contracts are pieces of code that hold the contractual agreement together, with all its complexities attached. The contract is made on a blockchain, and is established when conditions in the contract are met. The blockchain as we now know is extremely hard to manipulate which is great for both parties. The smart contract helps two or more parties to make an agreement directly with each other without the need of any third party to look over, and or guarantee the transaction. A smart contract only works when you keep your end of the deal.



Just like how the picture above shows, only the two counterparts can deal with the contractual agreement, and the network executes it, no third parties are needed to give permission.

The only complicated issue with smart contracts in the music industry would be international rights, as when music crosses borders from country to country the distribution companies in those countries could have different laws, business practices, and regulations. A Blockchain technology would positively influence this as it would make communication of data smoother, making sure every that needs to get paid gets paid.

Most artists, when they release music are not paid on time. The performing rights society (PRS) pay performing royalties to their members through four distributions in a year; April, July, October, and December, whilst the Mechanical copyright protection society (MCPS) pay every month. If Blockchain technology was implemented in the music industry, a smart contract could be utilized that could pay artists instantly once certain requirements are met in the contract, this saves artists waiting months just to be paid for their music, and an help any artist that is in financial difficulty, it could really keep unsigned artists inspired, and keep the fire burning.

If blockchain technology became a forefront in the music, and entertainment industry there will be less pressure for artists to constantly be touring to earn money due to the fact that streaming doesn't give them as much money to survive. This could also decrease the chance of depression, and anxiety in artists trying to 'keep up'.

Blockchain Technology has its pros and cons for the music industry, but for the likes of distributors, like awal, ditto, distro kid, and more would not be needed anymore as Blockchain Technology cuts out every 'middle man' so there wont be any need for distributors to be involved in the career of artists. For artists, as explained earlier Blockchain Technology could be a very positive thing as the artists can have a more direct relationship with fans, allowing their fans to pay micropayments directly to artists for listening to their song.

Music, and entertainment companies that use Bitcoin Technology

There is several music, and entertainment companies that have already started to implement the Blockchain technology in their services. Early innovator Maycelia, a company located in London, founded by Grammy winning British singer, songwriter Imogen heap is a company known for being a research, and development centre for musicians, with aims to make the music industry a fairer, and transparent place making sure everyone gets paid properly. Maycelia aims as a company is to empower creative people in the music industry, working alongside artists, musicians, and general music lovers. Maycella's company database on blockchain contains full information about a song, this includes identification, acknowledgments, business partners, and payment mechanisms so every contribution towards the song is treated fairly. Imogen heap used the Ethereum Blockchain based Ujo platform to released her song 'Tiny Human' for \$0.60 which is was £0.45p in 2015, and now uses a smart contract in Maycelia which was a great payment system to pay everyone included in the contribution of her record.

Blockchain technology in the music, and entertainment industry could revolutionise the industry, and become the 'new' form of distribution, but I personally only see this happening if the use of blockchain technology grows organically from word of mouth type situations, and musicians, artists, and creative slowly hearing about blockchain technology and deciding to jump on board, or if established musicians and artists signed to major labels decide tomorrow to just leave these major labels, and publish content through blockchain type organisations. Obviously successful artists such as Imogen heap would have to frontier the idea, influencing major artists to jump on bored as Blockchain technology has helped her to in the success of her career. Alternatively, established companies such as Netflix, Spotify, and Amazon would have to choose to change their distribution companies to distribution companies that are private Blockchain platforms, doing this will open the Blockshain technology idea to be received and followed by content generators, and users, and this could really change the music, and entertainment industry forever.

Another British company that is implementing the Blockchain technology is Oxford based company Blokur. Blokur is a global publishing company that sources publishing data in music to manage, and monetize.

"Blokur matches and combines a wide range of data sources to composite master record that we call the 'Blokur State'. The Blokur State represents the current best understanding of the rights for a given song for each category of rights in each country. When we receive two pieces of conflicting data, the piece that makes it to the state is based upon a transparent and fair hierarchy of data authority. Put simply, this means that the closer you are to the piece of information you are describing, the higher score your data will have in the process.

The algorithm is designed to ensure that whoever is most likelt to have the latest information is given priority, so that everybody can benefit from the best available data"

- Phil Barry [Founder at Blokur] 2019

Blokur uses both artificial intelligence, and blockchain to bring together different types of data into one database, allowing music publishers, and copyright owners to catalogue their

work for the Blokur system community to approve. Using the artificial intelligence of Blokur, any data inputted that is disputed can be easily resolved through the scanning of these artificial intelligences making sure everything is right, and artists receive the correct payments. Successfully over 50,000 songwriters, and 7,000 publishers have submitted their work to the Blokur network.

Another London based company by the name Blockpool, is a Blockchain company creating Custom codes, and offers consultancy servicing in which they can help a company incorporate 'ledger technology' into their business system. Blockpool offer digital tokens, smart contracts, and tracks intellectual property rights, and licensing for the music industry, helping musicians incorporate Blockchain technology in all aspects of their artistry, from production to distribution to management. Alongside working with artists in the music industry, the Blockpool company help other businesses with the similar process.

Independent record label, One little Indian partnered with Blockpool and released musician Bjork's Utopia album, giving Blockpool power to provide digital currency incentives, whilst managing, and distributing royalties through the Blockchain technology.

"Our API uses custom blockchain code to help you create plug-ins and bespoke coding and is already helped Bjork's website make bold use of her own cryptocurrency. Blockchain is going to change the way the digital world works. Our real world experience can help you move quickly and forge a radical new generation of coding solutions".

- Blockpool 2019

One of the legal issues that Blockchain technology is said to may face is that Blockchain technology can cross jurisdictional boundaries as the nodes on blockchain can be found anywhere in the world and this could have server complex jurisdictions. At every transaction in blockchain technology, it could fall at every jurisdiction of its location in the network. So just in case a fraudulent activity is attempted to be made, finding the location of that blockchain could be hard due to the jurisdictions of the location of that blockchain. Due to something like this happening, a contract, and or an exclusive governing law would have to be implemented to make sure that the user has legal certainty of the law that will be applied, so if an issue was to happen, then it can be handled in court properly. And in terms of being the idea of a 'Decentralised autonomous organisation' (DOA) Shermin Voshmgir, author of Token Economy states,

"While the network might be geographically decentralized, and have many independent but equal network actors, the governance rules written in the smart contract or blockchain protocol will always be a point of centralization and loss of direct autonomy".

- Shermin Vochmgir [Authot of Token Economy] 2019

Lastly, I had the pleasure of speaking to the CEO of a Blockchain Technology based company called Jaak. Jaak is currently working in the music industry exploring how Blockchain technology can address issues regarding royalties in digital streaming. Below are the questions I asked CEO Vaughn McKenzie-Landell, and his answers in italic.

- 1) How have you structured your business model to ensure commercial viability in the music, and entertainment industry today?

Our business model requires rightsholders to pay us a tiered monthly subscription based on the volume of licensing transactions their catalogue generates. Importantly, we do not charge their customers. However, we can't be sure this model will guarantee commercial viability in the long run.

- 2) What are some of the legal challenges that you have had to overcome in the running of Jaak i.e. legal implications that you believe Blockchain has had on the music, and entertainment industry?

One of the most difficult problems the blockchain-music space has to overcome is integrating with copyright itself. In much the same way that Bitcoin has struggled to integrate with the financial sector. Will we see copyright exchanges where legal contracts are submitted and replicated as blockchain code (i.e. smart contracts)? Will copyright law change to make blockchain signatures legally binding? There are still many questions left to answer.

Conclusion

Blockchain Technology I believe can change the music, and entertainment industry forever if pushed to the forefront by companies, and artists already involved in implementing blockchain technology in their businesses. I believe Blockchain technology has the power to dismantle the negative, and shady parts especially in the music industry, and there will be no more excuse in not paying artists, songwriters, copyright owners in the right, fair, and transparent way. With blockchain technology, all users in that specific network can see the transactions, and or agreements made between two parties, and can approve them. This again allows transparency in any dealing, and can stop the risk of cyber fraud as once for example a smart contract is set between two parties it can not be amended or changed, unless authorised by both parties, and the community network itself. Blockchain is the future for the music, and entertainment industry and regardless of legal implications, and or threats that the music industry may be worried about losing artists to Blockchain technology, or losing their record labels, and performing rights, and overall losing the power to be able to 'own' artists is irrelevant in my opinion as I believe artists, creators, copyright owners are, and should be the leaders of their artistry, owning their intellectual property, or should at least have the choice to choose freely the direction they would like to go down. Blockchain Technology is exceptionally efficient for artists especially when holding data for their music, as music contains 2 copyrights, the sound recording, and the works and music, these two copyrights can be stored on blockchain technology with a cryptographic hash.

Bibliography

Barry, P., 2019. *Blokur's State Update: Ensuring data accuracy* [Online] Medium Available at < <https://medium.com/blokur/blokurs-state-update-ensuring-data-accuracy-a4b6c27abb49> > [Accessed 12th January 2020]

Blockpool., 2019. *About page* [Online] Blockpool Available at < <https://www.blockpool.io/about> > [Accessed 12th January 2020]

Burchardi, K., 2018. *The blockchain will disrupt the music business and beyond* [Online] Wired Available at < <https://www.wired.co.uk/article/blockchain-disrupting-music-mycelia> > [Accessed 12th January 2020]

Cope, J., 2002. *What's a Peer-to-Peer (P2P) Network?* [Online] Computerworld Available at < <https://www.computerworld.com/article/2588287/networking-peer-to-peer-network.html> > [Accessed 9th January 2020]

Daley, S., 2019. *17 BLOCKCHAIN MUSIC COMPANIES RESHAPING A TROUBLED INDUSTRY* [Online] BuiltIn Available at < <https://builtin.com/blockchain/blockchain-music-Innovation-examples> > [Accessed 12th January 2020]

Frankenfield, J., 2019. *Cryptocurrency* [Online] Investopedia Available at < <https://www.investopedia.com/terms/c/cryptocurrency.asp> > [Accessed 9th January 2020]

McGrath, S., 2019. *Will Blockchain Technology Be a Music Industry Savior?* [Online] Singlegrain Available at < <https://www.singlegrain.com/blockchain/will-blockchain-technology-be-a-music-industry-savior/> > [Accessed 12th January 2020]

McKenzie-Landell, Vaughn., 2019 *Email conversation with Vaughn McKenzie-Landell* 16th January 2020

Mckinlay, J., 2018. *Blockchain: background, challenges and legal issues* [Online] Dlapiper Available at < <https://www.dlapiper.com/en/denmark/insights/publications/2017/06/blockchain-background-challenges-legal-issues/> > [Accessed 12th January 2020]

Middlesex University, 2016. *Music on Blockchain* [Online] Musictank Available at < <https://www.musictank.co.uk/wp-content/uploads/2018/03/Music-On-The-Blockchain.pdf> > [Accessed 12th January 2020]

Nakamoto, S., 2008. *Bitcoin: A Peer-to-Peer Electronic Cash System*[Online] Nakamoto institute Available at < <https://nakamotoinstitute.org/bitcoin/> > [Accessed 9th January 2020]

PRS, 2019. *When am I getting paid?* [Online] Prsformusic Available at < <https://www.prsformusic.com/help/when-am-i-getting-paid> > [Accessed 10th January 2020]

Ray, S., 2018. *The Difference Between Blockchains & Distributed Ledger Technology* [Online] towardsdatascience Available at < <https://towardsdatascience.com/the-difference-between-blockchains-distributed-ledger-technology-42715a0fa92> > [Accessed 9th January 2020]

Shiloh, M., 2019. *How Blockchain Will Revolutionize Murky Music Industry Relationships and Practices* [Online] Entrepreneur Available at < <https://www.entrepreneur.com/article/328895> > [Accessed 10th January 2020]

Varnavas, L., 2018. *An Introduction To Smart Contracts in the Crypto World* [Online] Coinreview Available at < <https://www.coinreview.com/smart-contracts/> > [Accessed 10th January 2020]

Voshmgir, S., 2019. *Tokenized Networks: What is a DAO?* [Online] Blockchainhub Available at < <https://blockchainhub.net/dao-decentralized-autonomous-organization/> > [Accessed 12th January 2020]