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Module Number : **BMTY7002**
Assignment Title : **Element 1 (Essay)**
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Blockchain Technology:

How will Blockchain Technology impact the music and entertainment industries?



Word Count: 2298

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ABSTRACT

In recent years Blockchain has managed to capture the imaginations of innovators and entrepreneurs alike. The negative association with Bitcoin has decreased and other potential industry changing applications of Blockchain Technology have been outlined.

The music and entertainment industries are not immune to the future implications of novel Blockchain applications. The invention of the MP3 by Karlheinz Brandenburg changed the music industry and ushered in the age of streaming. Satoshi Nakamoto may have brought lasting change to the music industry by publishing a white paper establishing the model for a blockchain in 2008. Blockchain technology has the potential to change the way global markets operate. The fundamental shift from centralised to decentralised networks makes blockchain technology the sound of freedom for some and others are ringing the alarm bells of fear. This paper aims to define what blockchain is and explore the potential commercial uses within the music industry whilst also considering the legal implications of this new technology.

INTRODUCTION

History

Throughout history, technological advances have pushed the music industry into new and previously unimagined futures. The invention of the synthesiser at the turn of the 20th century had to wait until Bob Moog and his contemporaries pushed the music industry into a new future in the 1960s (Merrich J, 2020).

Karlheinz Brandenburg's Mp3 was not well received in the early 1990s and by the end of the 20th century the Mp3 was seen as the best system for the digital distribution of music (Rose, J & Ganz J 2011).

In 2008 the economies of the world went into recession with an unprecedented number of financial institutions collapsed or were bailed out by governments (Erkens et al 2012).

It was into this environment of uncertainty and economic upheaval that persons under the pseudonym Satoshi Nakamoto, published a white paper introducing a new cryptocurrency called Bitcoin (Deloitte 2017).

Since 2008, Blockchain and Bitcoin have been used interchangeably, this is largely due to Bitcoin being the first known application of Blockchain technology. Bitcoin uses Blockchain technology to allow transactions of cryptocurrency to be carried out.

Bitcoin is the largest cryptocurrency by market capitalisation and is underpinned by a public blockchain. Transactions are grouped in blocks and Bitcoin reaches consensus using proof of work methodology. In proof of work members of the bitcoin network (miners) compete by solving

a complex cryptographic puzzle and receive 12.5 new bitcoins plus a transaction fee if successful. This process can take up to 60mins and is criticised for its inefficiency (Castor A 2017). Bitcoin has grown in fame and value since Nakamoto implemented the first blockchain as the public ledger for transactions made using bitcoin.

Mechanism

Blockchain is the technology that unpins the cryptocurrency Bitcoin. Blockchain technology has many potential applications across various industries. Blockchain is a distributed ledger that operates with a peer-to-peer, decentralised network. The fundamental characteristics of Blockchain are, consensus, cryptography, time-stamping and digital information storage.

A distributed ledger describes the record of information or data that is spread across a network. In the case of Blockchain, the ledger is distributed across a peer-to-peer (P2P) network. It is this P2P network that forms the bases of the consensual basis of Blockchain. Information can only be added to a Blockchain if the participants in the P2P network are informed and agreed that the information is true.

There are various methods for gaining consensus within a blockchain. Proof of work (POW) is the most popular consensus system due to its use with bitcoin cryptocurrency. Other methods of consensus include; Proof of stake, proof of activity, proof of elapsed time.

Once confirmed the new information is added to a block. Each block has a unique identifying code that acts as a digital fingerprint known as a 'hash'. The block that now carries the agreed upon information, is locked in a chain cryptographically and the immutable Blockchain record is made.

Each new block is added to an existing block, each with an unique time-stamped hash code. The blocks are linked together to create a chronological chain of information. All the data uploaded onto Blockchains are digital and are therefore able to be recorded in real time with no need for physical documentation.

Blockchain can be used to store any string of information chronologically including but not limited to; emails, certificates, identification documents, contracts or copyright ownership agreements. In this sense Blockchain can be described as an expression that an event has occurred.

Recent and Potential Applications of Blockchain Technology

To further illustrate the potential applications for blockchain technology, various uses, both current and potential are explored briefly below.

Decentralised Cryptocurrencies

The developing world is gradually moving to a cashless banking system. At present, banks are the centralised, trusted intermediary for transactions and the exchange of finance. The

aforementioned Bitcoin is the largest type of virtual currency. Other cryptocurrencies include; Litecoin, Peercoin and Dogecoin.

Blockchain removes the need for an intermediary controlling and verifying the transactions and gives power to the peer-to-peer network to protect against fraud.

The benefits of Cryptocurrencies is that transactions of large sums of money can be done safely with reduced risk of fraud.

Supply Chain

The current methods employed in the logistics of transporting goods globally are extremely complex and susceptible to loss or theft of goods. Blockchain technology can revolutionize global supply chain management. The current lack of transparency has led to a global industry in which the true value of an item, the protection of workers at different stages in the supply chain and tracking stock, are often difficult to ensure with any confidence.

De Beers is a diamond company that uses Blockchain Technology from the moment they're mined to the point of sale to a customer.

Cloud Logistics offers real-time inventory tracking, vendor-to-vendor communication, and by doing so, is increasing the transparency of business within the Supply chain industry (Marr, B 2018).

Identification

The immutable nature of Blockchain once validated means that personal identification information can be protected from fraud, spam and wanted marketing schemes. These records would also be protected from loss and theft. Important credentials like birth certificates, passports, drivers licenses could be kept securely on an immutable ledger.

DISCUSSION

Smart Contracts

Smart Contracts are digital agreements that self-execute when the terms of the agreement are met. The implementation of smart contracts will be undoubtedly quicker in most instances than the current model. Smart contracts eliminate the need for an intermediary when conducting business with anonymous parties. (Deloitte 2017)

Smart contracts are entirely digital, self-executing as the code itself defines the obligations of the parties. Smart contracts differ entirely from traditional contracts that often contain multiple pages of printed documents. Traditional contracts also require intermediaries and third parties to put the agreements into motion or enforce the terms of the contract. (Deloitte 2017)

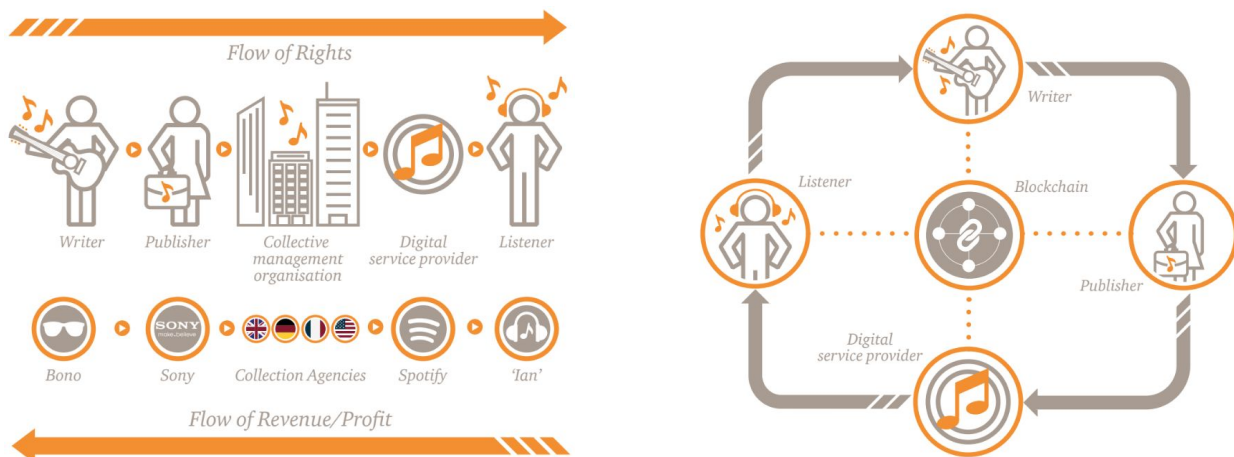
For a smart contract to work the parties must first set the terms of the agreement. The agreement is then digitised and translated into code that also carries the execute on the terms of the contract. The code is then saved on to the blockchain and an immutable, time-stamped record is created. The smart contract will then self execute once the specific terms in the agreement are met (Ryan P 2017).

For the music industry smart contracts could transform the relationships that make up the industry. Artists would potentially be able to work directly with labels and publishers on contracts

without the need for a music lawyer. Music industry contracts often have related payouts and royalty rates written into the terms. Producers and songwriters would be able to agree with artists and labels with greater confidence that the agreed royalty would in fact be paid. A current issue with record label agreements is the post-recoupment royalty payouts. At present the only way to be sure that you are receiving the correct royalty payments is to audit the other party that has agreed contractually to account. This process can be very costly and time consuming. Smart contracts will create an environment of trust where both parties are confident that the terms of the contract will be executed at the right time.

Micropayments

At present the royalty system for artists and copyright owners is incredibly convoluted, complex and costly. The intellectual property of artists and songwriters is monetised on various platforms in multiple countries and the royalties generated from each stream is collected by nationwide collection societies, publishing companies before it reaches the artists, producers and songwriters. In Europe alone there are different 28 collection societies collecting royalties for artists in 28 different territories. The process of artists and copyright owners being paid per stream would transform the way the music industry works. Blockchain, cryptocurrency micropayments could solve this problem. Blockchain micropayments are desirable due to the fact it is much cheaper to send funds across countries in cryptocurrencies compared to standard currencies with which there may be add fees and differing exchange rates. Blockchain reduces the amount of intermediaries for each micropayment and is therefore quicker and cheaper than traditional methods. With Blockchain technology operating micropayments, artists could, in theory, receive royalties from different territories in real time (Rzetecki M, 2020).



Flow of rights and royalties. Without Blockchain on the left and with blockchain on the right. Sourced from Pwc Blockchain: Recording the Music industry

Copyright protections

The innovation of blockchain technology also gives online service providers and realistic tool to ensure that their platforms are fully protecting and paying copyright owners for the distribution of content on their platforms. At present user generated content on digital service providers platforms like YouTube and Twitch is often uploaded without the proper copyright clearance. The online service providers have claimed that it is nearly impossible to ensure that all the user generated content uploaded on to their platforms is properly registered. Blockchain can be used to make a global database containing every song and the relevant copyright information to ensure that only music on that database can be uploaded onto the platform. A complete, global database matched with a micropayment system, both using blockchain technology would provide payment and protection to artists and songwriters in a way that previous technologies have been unable to deliver. The speed and efficiency of Blockchain technology would decrease overheads for online service providers such that copyright owners and performers could get a higher royalty at no extra loss to those companies.

Reservations

The recurring and fundamental shift that blockchain offers is to decentralise industries and remove the need for intermediaries. The possibilities for more efficient and more cost effective technologies to be created based on blockchain ledgers is unfathomable. New legislation should be drawn to ensure the proper use of new technologies. The birth of mp3 also led to an increase in intellectual property theft in the form of illegal downloads and copies of music being made. Bitcoin quickly became synonymous with criminal behaviour due to the unregulated nature of the new.

Due to the global applications of blockchain, the need for proper international governance is paramount, especially when considering smart contracts and their ability to be enforced in different territories.

The immutability of data on Blockchain is also a cause for concern for some. In the scenario that information is incorrect and still uploaded on the network, how easy will it be to dispute the information once it has been validated. In this way fraud could occur if the initial data stored is incorrect.

Within the music industry the collection societies who currently exist as intermediaries for copyright holders will be hesitant about smart contracts making their companies redundant. Labels and publishers will likely resist micropayment solutions as presently those companies usually payout between 2-4 times per year and thus accrue interest on the balance between payouts. Micropayments would stop Labels and publishers collecting interest on royalty payments and thus are slightly disincentive to welcome such industry shifting technologies.

CONCLUSION

Blockchain technology has already begun to change the world we live in. The financial industry has already shifted to include cryptocurrencies in the future strategies of mainstream financial companies including Goldman, Deutsche Bank, HSBC, UBS and many others. The music

industry should learn from the financial industry and be early adopters or risk being on the back foot when the industry changes. Legislation like the Directive for copyright in a single market in Europe and the Music Modernisation Act in the US set the scene for industry overhaul. Blockchain is likely the solution to the current problem that these laws seek to legislate against.

BIBLIOGRAPHY

(Castor A 2017). A short guide to Blockchain Consensus Protocols.

(Deloitte 2017). Blockchain Technology and its potential in taxes.

(Erkens et al 2012) Corporate governance in the 2007-2008 financial crisis: Evidence from financial institutions worldwide. Available at:

<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.704.5548&rep=rep1&type=pdf>

(Accessed 7th December)

(Marr, B 2018) How Blockchain will transform the supply chain and logistics industry. Available at:

<https://www.forbes.com/sites/bernardmarr/2018/03/23/how-blockchain-will-transform-the-supply-chain-and-logistics-industry/?sh=528092e15fec>

(Accessed 7th December)

(Merrich J, 2020) History of the Synthesizer. Available at :

<https://www.thomann.de/blog/en/history-of-the-synthesizer>

(Accessed 5th December)

(Rose, J & Ganz J 2011) The mp3: A History of Innovation and Betrayal. Available:

<https://www.npr.org/sections/therecord/2011/03/23/134622940/the-mp3-a-history-of-innovation-and-betrayal>

(Accessed 5th December)

(Ryan P 2017)Smart Contract Relations in e-Commerce: Legal Implications of Exchanges Conducted on the Blockchain

(Accessed 8th December)

(Rzetecki M, 2020) Grow your cash flow with Blockchain micropayments. Available

at:<https://espeoblockchain.com/blog/blockchain-micropayments-breathing-life-into-a-long-lost-technology>

(Accessed 5th December)