



THE PRACTICAL IMPACT OF NEW TECHNOLOGIES: PART TWO

PRESENTED BY:



CONTENTS

EXECUTIVE SUMMARY	04
THE WEB3 VISION	06
BLOCKCHAINS, NFTs AND MUSIC	18
METAVERSES AND MUSIC	23
CHALLENGES AND DEBATES	27
ABOUT ONE STEP AHEAD	33

THE PRACTICAL IMPACT OF NEW TECHNOLOGIES: PART TWO



IMPALA – the pan-European organisation promoting and supporting the independent music sector – has teamed up with CMU Insights to deliver One Step Ahead, a digital intelligence facility that enables independent music companies across Europe to navigate and identify trends, developments, challenges and opportunities in the digital music market.

This is the second of a two-part report exploring the impact of new technologies on the music industry, considering how those technologies are impacting on the way music is made, performed, recorded, distributed, managed, marketed and consumed.

In this report we put the spotlight Web3, blockchains, NFTs and the metaverse, considering how these technologies are already being employed within music, and what the longer-term impacts may be.

ONE STEP AHEAD: THE PRACTICAL IMPACT OF NEW TECHNOLOGIES - PART TWO

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EXECUTIVE SUMMARY

The history of the music industry is basically a story about how a sequence of new technologies respectively transformed the way music is made, performed, recorded, distributed, managed, marketed and consumed. And that story is, of course, ongoing.

This means that the wider music community is constantly having to consider how new and evolving technologies may impact on the business of music.

What challenges and opportunities do those new technologies present? And at what point do music companies need to embrace and invest in those technologies to meet the challenges and capitalise on the opportunities?

In recent years one group of technologies that have been a constant focus of discussion in the music industry are those that can be loosely grouped under the term Web3 and in particular blockchains and one specific implementation of blockchain technology, Non-Fungible Tokens.

Connected to that is the conversation around the metaverse – including the potential of virtual reality and augmented reality to revolutionise online and digital experiences. Crucially, blockchains and NFTs will play an important role in how metaverses evolve, and how consumers will interact with metaverse platforms and content within the metaverse

In terms of what this means for the music industry, we can consider the practical impact

of these new technologies at two levels – a macro level and a micro level.

First, the **macro level**. To what extent will the vision of Web3 evangelists become a reality and how will that impact on the music industry?

This will depend on a range of commercial and political factors as well as the technology itself, but it seems likely that the way we interact with content and each other online – and how we interact with the technology powering our ‘digital existence’ – will change substantially, possibly dramatically, in the next decade.

This will in turn impact on how consumers interact with music and music rights, and artists and artist brands, and will also likely result in new opportunities and new revenue streams for music rights owners and the wider music business.

Second, the **micro level**. A wide range of technology companies are already developing and launching new tools, products and business models based around Web3, metaverses and music.

For some artists and some labels, these are already creating new opportunities and new revenue streams which are definitely worth investigating and considering.

Although in many cases it is too soon to say which of these tools, products and business models will last the distance, and/or become new industry norms.

And in some cases it’s hard to see whether they are even tackling problems that require the use of new technology to solve.

THE WEB3 VISION

Web3 is a collection of established and new internet protocols based primarily on blockchain technology. A blockchain is essentially just a type of database. Specifically a 'distributed online ledger' where the data is simultaneously stored across a network of 'nodes' on the internet.

Blockchains have many uses, though were originally best known for powering cryptocurrencies. More recently the focus has turned to Non-Fungible Tokens: digital tokens created on a blockchain that are connected to an asset. The owner of the token has certain privileges in relation to the asset, which are set out in and managed by a 'smart contract' that is logged on the blockchain.

Concurrent to the development and growth of Web3 technologies is the development and growth of metaverse platforms. The term 'metaverse' is usually used to refer to virtual worlds that exist on the internet where people can gather, interact, socialise, play games and enjoy digital entertainment.

All these new technologies create both opportunities and challenges for the music industry.

BLOCKCHAINS, NFTs AND MUSIC

NFTs are already being used to power a number of music-based products and services.

That includes digital collectibles, where an NFT is connected to a digital asset, with the fan gaining certain privileges in relation to the asset as set out in a smart contract. NFTs and smart contracts can also be connected to limited edition physical products.

Others have used NFTs in ticketing, either to restrict the unofficial resale of tickets, or to offer extra benefits to the ticket holder. And NFTs can also be used to power a new kind of fan club and fan funding projects.

METAVERSES AND MUSIC

The growth of metaverse platforms is creating new opportunities in the sync space, and may also result in new kinds of streaming services being developed and launched.

Artists and labels are also increasingly staging virtual events in the metaverse, monetised in various ways, including through ticket sales, sponsorship and the sale of digital collectibles.

CHALLENGES AND DEBATES

Which platforms, blockchains and cryptocurrencies should the music industry embrace? Consideration needs to be given to the costs of employing different platforms, how easy they are to access and use for more mainstream consumers, and issues around security and environmental impact.

What rights are exploited? Where music NFTs are connected to recordings, the label will usually control the recording rights, but someone involved in the NFT drop will need to license the accompanying song rights. Many music NFTs are actually connected to visual assets, and may also exploit an artist's trademarks or publicity rights. So licensing of these rights also needs to be considered.

What is the label's role? Where an NFT is connected to a label's recordings, it will usually take the lead. However, a label is also often an artist's primary partner when it comes to creating compelling digital content, which means the label may play a much wider role in developing an artist's NFT activity.

What about the environmental concerns? The environmental impact of NFTs and metaverse platforms has been widely documented. Most blockchains and metaverses are committed to increasing the efficiency of their technologies. However, for an independent music community so focused on the climate emergency, it is important to be aware of which platforms are achieving the most in this domain.

01: THE WEB3 VISION



Web3 is a collection of established and new internet protocols based primarily on blockchain technology offering new ways to record, retrieve, secure and authenticate data and transactions without relying on a centralised authority.

To understand how these protocols work and their potential impact on how we use and experience the internet – and why some people believe they will radically change the way the internet operates for the better – we need to review some basics about how the internet at large has evolved since the introduction of the world wide web in the early 1990s.

THE INTERNET



At the most basic level, the internet is how computers all over the world can communicate with each other. And when we say ‘computer’, today we obviously mean a diverse range of hardware, so servers, desktop and laptop computers, smartphones and tablets, and even those devices that feel much less “computer-like” such as a smart speaker, smart TV, smart watch, or even a colour-changing smart lightbulb.

When we talk about internet ‘protocols’, we are referring to various systems and rules that enable the communication and exchange of data between devices. They are the hidden architecture that holds the internet together – and powers the technology that lets us connect with family and friends, allows us to consume, share, comment and interact with content, and helps us do business in the modern world.

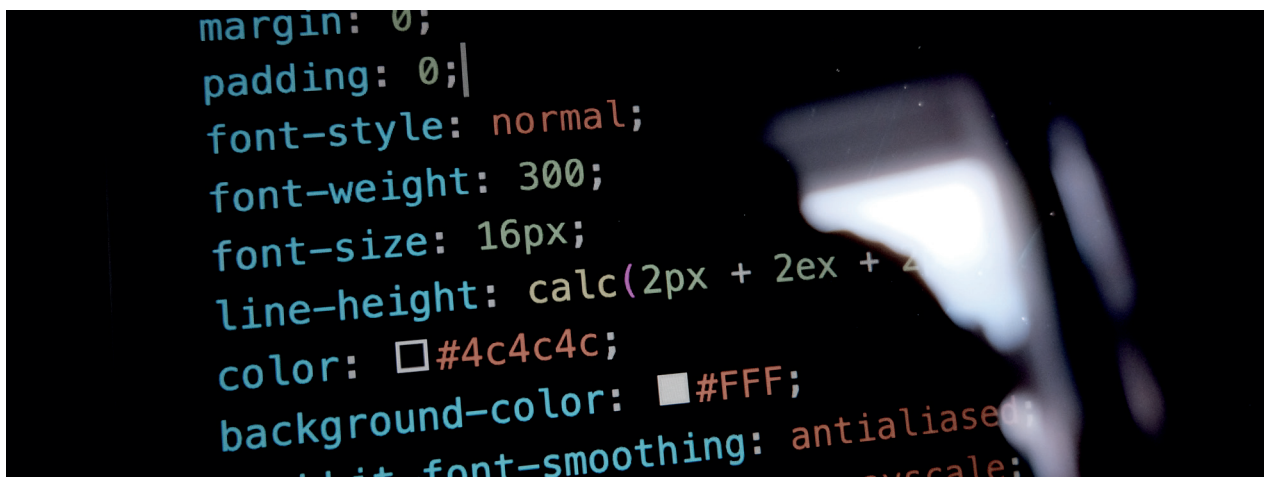
WEB1

Although we can trace back the origins of the internet to the mid 20th Century, and the first internet protocols were agreed in the following decades, for our purposes a key moment to reference is the invention of the first iteration of the ‘world wide web’ in 1989, powered by the protocol HTML. This was about giving people the ability to easily access and consume information that was stored on computers connected to the internet across the world.

Prior to the world wide web, making information available via the internet was

much more complicated, with a fairly non-standardised mish mash of different protocols. HTML changed that. Although, creating and hosting a website 25 years ago – in the era of Web1 – was still difficult and required relatively specialist knowledge.

The advent of software that made it easier to create HTML sites did lead to a boom in Web1, and exponential growth in both the number of websites available and the number of people accessing websites.



And much of Web1 was based on so called 'open protocols' – meaning it was a level playing field where anyone with a computer and an understanding of HTML could publish content, and if you were a kid in your bedroom or a major company, you were basically using the same tools.

Nevertheless, a level of knowledge and resource was still required to create and publish a website in this era. Which meant that – for a majority of the ever increasing number of internet users – Web1 was a 'read' web experience.

WEB2

In the Web2 era we saw the emergence of various online platforms and technologies that meant that anyone with an internet connection could now easily publish content online. You no longer needed access to relevant software or server space for creating and storing your website.

In the early days of Web2, the most visible articulation of this was through 'blogging' – platforms that allowed anyone to set up and regularly update a page or site that was accessible via the internet. This then evolved into social media, platforms that not only facilitated the easy publication of content, but also enabled and encouraged users to



share and interact with content that had been published by other people.

Web2, therefore, was a 'read-write' web, all internet users could now both read and write content. This was, of course, revolutionary, and on one level further leveled the playing field. Although it also gave the owners of the platforms that were enabling all this significant power.

A key criticism often made about Web2 is that, although all users can both read and write content, they do not control how that content is stored or distributed, nor how that content and the data connected to that content is monetised. Instead, the content and accompanying data is stored in 'silos' controlled by hugely powerful companies.

Those companies set the rules, and decide how the content is displayed and seen, how

the content and accompanying data will be monetised, and if and how any revenue generated is shared with the people who created the content.

If a social media platform was to suddenly shutdown, many of its users would lose access to their content. And even if they had the content backed up on their own devices, they would lose all the data that accompanies that content, including data about audience, usage and interaction. That data is crucial and adds significant value to the content itself. But that data is owned and controlled by the platform, and cannot be accessed or used beyond the platform.

One of the biggest criticisms of Web2 is that a lot of it is powered by private protocols – technology owned, operated and controlled by the 'big tech' giants.

WEB3



Web3 is defined by some as 'read-write-own', meaning that users can not only both consume and create content, but they will also own the content and all the accompanying data.

As a result, the user becomes less reliant on any one platform. Because not only do they have more direct control over the content itself, but the user also has access to and control

over all of the data, which they can then take with them to other platforms.

This is achieved by the decentralised nature of Web3. Instead of content and data living in silos owned and controlled by powerful technology companies, that content and data lives across a network that is owned and controlled by the users of the network. That network is comprised of blockchains, smart contracts and tokens.

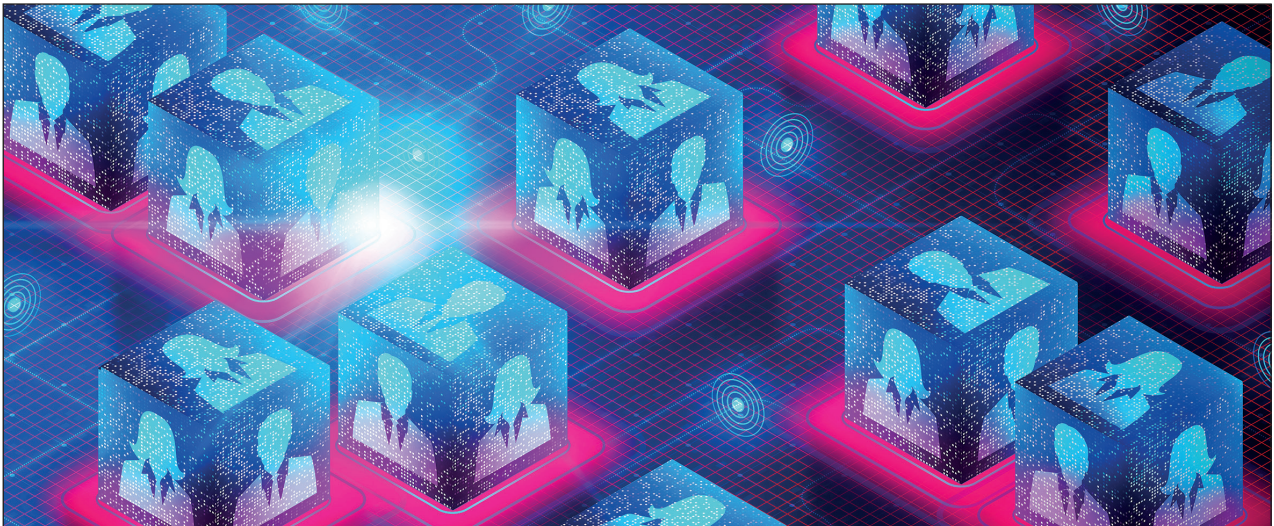
It's worth noting that people talk about Web 3.0 as well as Web3 – and these two terms are

not directly interchangeable. While they both address the same issues, Web 3.0 and Web3 take different approaches to solving those problems.

When people talk about Web3 they will generally mean a vision of the web where blockchains play a significant part, but when they talk about Web 3.0 this may not involve blockchains but rather other 'open data' initiatives.

It's a subtle distinction, but one that it is important to be aware of.

BLOCKCHAINS



A blockchain is essentially just a type of database. Specifically a 'distributed online ledger' where the data is simultaneously stored across a network of 'nodes' on the internet.

As with any ledger, data stored in a blockchain can be updated but not amended. With a ledger, if you want to document who owns a specific asset, you add a line of data detailing the asset and owner. If ownership then changes, you don't amend the original line of data, you insert a new line that details the change in ownership and the name of the new owner. All previous owners and changes of ownership are still recorded.

Of course, although in theory you can't amend previous lines in a ledger, that doesn't mean that people won't try to do that. With traditional ledgers we rely on the institutions that manage the ledgers – and the regulators which regulate those institutions – to ensure that doesn't happen.

For example, money held in a bank account is documented in a ledger; the bank maintains that ledger, and banks are regulated to ensure that the ledgers they maintain are accurate and that no one has altered the records held within those ledgers.

This means that someone holding money in a bank account needs to trust both the bank and the regulating authority.

Blockchains are different: because of the way that data is written and processed on a blockchain, we do not have to rely on any institution or regulator to know that the data has not been altered.

This is for two primary reasons. Firstly, whenever a new entry is created on a blockchain, it has a unique ID, and that unique ID contains a specific and verifiable link back to the previous entry that it is updating. This is often referred to as a 'hash'. This hash is created using complex cryptographic mathematics and is one core part of how blockchains work.

Secondly, the entire blockchain is recorded, verified and stored by thousands or even millions of nodes, which means that once a piece of data has been written into a blockchain and processed by that blockchain it is impossible for it to be changed or altered without agreement of the majority of the nodes on that blockchain. This is known as 'consensus' and is another core part of how blockchains work.

These various activities – carried out by nodes – require the nodes to process data, and for the nodes to remain active on the blockchain, communicating with each other.

There are many different blockchains, though Web3 companies operating in the music space most commonly use the Ethereum blockchain, or Ethereum 'side-chains' like Polygon.

COINS AND TOKENS



Until recently blockchains were best known for powering cryptocurrencies. In that domain, digital or crypto 'coins' are 'mined' via a pre-agreed methodology to reward participants on the blockchain.

As noted, nodes are required to process data and communicate with each

other – and this activity has (however marginal) a cost: eg the cost of the hardware processing the data; the cost of electricity to run that hardware; and the cost of providing and maintaining a connection – over the internet – to the other nodes forming the network of the blockchain.

Coins are the reward for participation – and the coins of most public blockchains (where anyone with the right technical knowledge and right software and hardware can run a node) are traded on ‘currency exchanges’ where people can convert one cryptocurrency to another, or convert their cryptocurrencies to ‘fiat’ – by which we mean a ‘real world’ physical currency such as EUR, GBP or USD. So coins are regularly traded and ownership transferred between users.

To send and receive coins both parties require an ‘address’ on the blockchain. Addresses are secured using ‘wallets’ which hold the credentials to document transactions relating to a particular address. We can think of an ‘address’ as an ‘identity’ on a blockchain, but by ‘identity’ we mean an identity like a domain name – impala.org – rather than an identity like a passport.

Whenever ownership of a coin changes, a new line is added to the blockchain recording the change of ownership and the new owner’s address. The use of the blockchain means that coin ownership and changes in coin ownership should be safely recorded without regulation.

Although cryptocurrencies quickly became the most visible use of blockchains – there are many other use cases where a decentralised ‘source of truth’ about a ‘thing’ can be valuable.

This might be documenting that something has happened, such as creating a verifiable record that a safety check has been carried out on a piece of equipment. Or it might be using a blockchain to store information about the ownership of a ‘thing’ – any asset, whether physical, digital or intellectual property. (Indeed, that is basically what is happening with cryptocurrencies as well, the coins also being a digital asset).

However, because of the underlying mechanisms and complexities of blockchains, tying a ‘thing’ to an ‘identity’ is not necessarily entirely straight forward. The only ‘things’ that the Bitcoin blockchain – the first and most visible blockchain – really allows are coins, and it cannot easily be used to record and manage ownership of other things.

As blockchains evolved various mechanisms and protocols were developed to allow the management of things beyond coins – but this created its own complexities.

With our examples above – ie verification that something has happened (or not happened) or information about ownership of an asset – both use cases need to start with the creation of an entry in the blockchain which is a statement of fact: “Bob checked this piece of equipment and that was verified by Kate” or “I wrote this song and own all the rights in it”.

But it may be that there is more complexity than this – for example, we might want to create a link to Bob which shows that his qualification to carry out that particular inspection have been verified. Similarly, with regards to the copyright in a song, we may want to create a link to an address on the blockchain and an entry that details the existence of a song copyright.

This link becomes – to all intents and purposes – proof of “ownership” and whoever controls that address – through the credentials that allow them to interact with that address – owns and controls the asset described in the entry.

The information created in this scenario is not necessarily the same as more simple transaction data – it may require rules around who can interact with the underlying data, who can link a new piece of data to the original data, and who can see what about the underlying asset or thing that has happened.

The creation and management of these rules – and the links between the blockchain and the underlying ‘thing’ – are facilitated through the use of ‘smart contracts’ and ‘tokens’.

A smart contract is a set of rules that determine how other people may – or may not – use or interact with the underlying asset represented on the blockchain. The smart contract also creates one or more ‘tokens’ which represent the underlying asset or a share of the underlying asset. A token is an entirely unique piece of data on the blockchain and the rules that are set against it mean it cannot be subdivided.

One of the original proposals for how the blockchain could be used in music related to the ownership of song and recording copyrights.

If someone writes a song and details their ownership of the copyright in that song in a blockchain they can create a token that represents their ownership of that copyright.

That token is unique, and if they wrote another song and created another token to represent that new song, then although the two tokens would be the same type of token, they would not be similar and interchangeable.

The owner of the song copyright could transfer the copyright to someone else by transferring the token – and that change in ownership would be recorded on the blockchain.

However, alongside this, the smart contract used to create the token could set rules. One rule could be that someone – anyone – is allowed to make a recording of the song, exploiting the song copyright, but that if they do, then they need to agree to the terms of the smart contract governing exploitation of the song copyright.

One of which rules would be that the recording copyright needs to be tokenised and an unbreakable link created between the token representing the song copyright and the recording copyright.

As part of that rule – and unbreakable link – it may be a term of the smart contract that any revenue derived from exploitation of the song copyright must be shared in certain proportions and that the revenue must be paid in the cryptocurrency of the blockchain in which the asset has been detailed – and that certain uses of the underlying song copyright are prohibited or subject to approval.

In its most sophisticated evolution, a web3 music service – a web3 streaming service – might require a subscription to be purchased using a cryptocurrency.

A web3 streaming service could then interact with the smart contracts of recordings – and the underlying songs – in order to ‘license’ a catalogue. The subscription revenues generated by users would be automatically passed through the smart contracts and distributed to the underlying owners of recordings and songs based on the rules determined in the smart contracts.

Is this truly going to happen? It’s highly improbable – or certainly highly improbable in the short to medium term – because there are so many things that would need to be put in place to make it happen, not least a seismic shift in how people pay for goods and services. Although cryptocurrencies and blockchains are hugely buzzy topics, it remains a fact that only a tiny proportion of consumers own cryptocurrency and outside of that small group, very few people really understand how to acquire cryptocurrency and then use it to pay for something.

There are other things that make this scenario unlikely – and that is in part down to the sophistication of the smart contracts necessary to make this work seamlessly and with no human intervention.

After all, if it still requires human intervention to approve or reject a particular use case, or if agreements around how much should be paid for a particular usage require people to negotiate, then there is little point in managing this process using a blockchain and smart contracts.

All of this *could* be managed by smart contracts. However, whether it will be – and whether those smart contracts would be sufficiently sophisticated – and whether the rights owners would feel comfortable delegating this to a smart contract that may be, to all intents and purposes, a ‘black box’ – are all dependencies which make this utopian scenario highly unlikely to come to reality any time soon.

This is before we even begin to address the question of whether it is necessary or desirable, and whether it may not in fact cause more problems than it seeks to address.

NFTs



When we talk about detailing an asset on a blockchain and using smart contracts to manage that asset, what we are actually talking about is NFTs. NFT stands for ‘non-fungible token’. We’ve said before that tokens are different to coins – but what do we mean by non-fungible?

Coins are ‘fungible’. This simply means that if you exchange one crypto coin for another

crypto coin from the same cryptocurrency, then although you technically own a different specific coin, your position hasn’t changed, in that you still own a single crypto coin.

Moreover, if I have one hundred 1% divisions of a single crypto coin, that is the same as having a ‘whole’ crypto coin. If I have fifty 1% parts of a crypto coin and someone gives me 50 more 1% divisions of the same type of crypto coin,

then that is the same as having one whole coin.

There can be other tokens on a blockchain that are fungible. In the real world, only certain institutions can issue coins, but anyone can issue vouchers. If a company issues a thousand vouchers, and we each have ten of those vouchers, and we then swap our vouchers, we both still have ten vouchers. In the same way, on the blockchain, although coins have a specific status, anyone can issue tokens which are fungible.

NFTs are tokens that are non-fungible. The tokens relate to specific assets which are distinct. If one person has a token linked to a digital artwork and another person has a token linked to a music track, and they exchange tokens, they now control different assets.

We might agree on any one day that the

artwork and the track have the same value, and are therefore a fair exchange, but that agreement would be subject to negotiation. It is not an immutable fact recorded on a blockchain.

NFTs – like coins – can be traded, with changes in ownership recorded on the blockchain. The smart contract can set out rules regarding the sale of the token, with a common rule being that the originator of the token shares in the profits of any resale. Where this rule applies, the money can be automatically split between owner and originator on the blockchain.

Marketplaces have emerged where NFTs are traded, like OpenSea, Nifty Gateway and Mintable. These marketplaces facilitate the promotion and sale of tokens, and the process of completing and documenting the trade on the blockchain.

METAVERSES

Concurrent to the development and growth of blockchain technologies and NFTs is the development and growth of metaverse platforms.

The term 'metaverse' is usually used to refer to virtual worlds that exist on the internet where people can gather, interact, socialise, play games and enjoy digital entertainment.





Such worlds have existed for some time – for example Second Life launched in 2003 – and the virtual worlds built around various gaming franchises have in essence become metaverses.

However, it's anticipated that metaverses will be more widely adopted and become more sophisticated in the next decade, partly as a result of technology innovations around virtual and augmented reality, and partly because of the connection with NFTs.

Most major tech and gaming companies have big ambitions in the metaverse space, either by building new or evolving existing platforms.

Current popular platforms that can be considered metaverses include Fortnite, Roblox, Sandbox and Decentraland – but there are many other 'metaverse-resembling' games and platforms such as Nintendo's 'Animal Crossing' or Niantic's 'Pokemon Go'.

Meanwhile Meta – the owner of Facebook, Instagram, WhatsApp and VR company Oculus – has significant ambitions in the metaverse and has been investing enormous amounts

of money – \$10 billion in 2021 – into its pivot towards the metaverse.

At its simplest a metaverse is a shared online 'world' or 'space' in which people can interact with one another in real time. Sophisticated metaverses more closely resemble a digital representation of the real world (or a world that seems real) and may allow participants to perform tasks and earn money that they can use in the metaverse to buy things (such as clothes for their digital avatar).

These tasks may be as basic as clearing away digital 'rubbish' dropped by other metaverse participants – or could be creating clothes or other items to sell by purchasing raw materials that have been 'mined' elsewhere in the metaverse.

The similarities in how a metaverse may operate and the underlying principles of how blockchains work (participation, work, reward) mean that most sophisticated metaverses will likely use (established or bespoke) blockchains as part of the underlying 'machinery' that makes the metaverse work.

HOW THIS ALL FITS TOGETHER

Web3 is about control and ownership – of content, of assets, of data – and about how that content, asset or data is recorded and managed.

Earlier we talked about how streaming music might (or might not) work using blockchains. A simpler example is to look at a service like Instagram or TikTok.

Both of these services rely on a couple of key things happening: people creating and sharing content, and other people interacting with that content.

If you create a video and share that on Instagram or TikTok then you upload the content to the Instagram or TikTok servers – the people to whom that piece of content is shown is determined by the service in question – and the data around those people's interactions (likes, saves, view time, and so on) is recorded, stored and owned by the service itself.

While you can remove your content from the service, you cannot meaningfully extract the data representing other people's interactions with that content.

In Web3 the piece of content would be hosted in a 'neutral' repository. A smart contract would set out ownership of that content and rules regarding use of the content. If I view your piece of content my identity and the metadata (time, date, duration) around my interaction would be recorded to the blockchain linked to your piece of content – meaning that you own that data.

With this approach, it would be possible for the content and accompanying data to be simultaneously accessed by multiple platforms, ie the content and data would be 'platform agnostic'. This content and data could therefore be utilised within any platform so long as that platform agreed to the rules of the smart contract. This would be game-changing in the context of the emerging metaverses.

So, with Web3, each person can build a library of content assets – both content they created themselves and content they have bought. That library of assets will be managed via the blockchain. Each metaverse could then provide a protocol to interact with a blockchain (or blockchains) and access content and data, allowing the user to access and share that content within the metaverse.

It is worth noting, it is not assured that this will be the reality of Web3 and the future metaverse experience. And, as noted, commercial and political factors, as well as technology factors, will impact on how that experience evolves. However, it is still important to be aware of what is possible, and then monitor how the Web3 and metaverse space develops in the years ahead.

02: BLOCKCHAINS, NFTs AND MUSIC



Blockchain technologies are currently being used to power various music-based products and services. Although all of these products and services are based on the blockchain and usually involve smart contracts and NFTs, the actual products and services being sold can be quite different. That said, any one NFT might fit into more than one of the following categories.

DIGITAL COLLECTIBLES

To date this is the use of NFTs in music – and other creative disciplines – that has got the most attention. An NFT is minted linked to a digital file which, via a smart contract, gives the owner of the NFT certain rights in relation to the digital file. The digital file itself could in theory be stored on the blockchain, although for practical reasons usually it is not. The file is instead simply stored on a server on the internet and is accessible via a link or app.

The digital file could be a simple document (like a Word file), or an image (like a GIF), or an audio file (like an MP3) or a video file (like an MP4). Usually it includes some kind of exclusive content that has not been previously released.

The smart contract sets out what rights the owner of the NFT has in relation to the digital file. The NFT owner could actually own the copyrights contained in the file or have the right to commercialise and generate revenue from the content, although that is not usually the case.

More often the smart contract is basically a licence that provides the NFT owner with certain rights in relation to the content. In many cases what the owner of the NFT really gets is 'bragging rights'. By buying the NFT they have a certain 'special status' in relation to the content and its creator. And that special status is confirmed in a smart contract on the blockchain.

Although it can be hard to appreciate why this special status would have value – given it is basically an artificial construct – there are parallels in the physical world.

Why do signed copies of CDs often sell for a much higher price? After all, the buyer of the signed CD has the same access to the same music as the buyer of the unsigned CD. However, the buyer of the signed CD feels a closer connection with the artist – and therefore has a special status – simply because the packaging is signed.

In a way, the NFT could be seen as a digital version of the signature – or possibly of the certificate of authenticity that some sellers of signed CDs provide to confirm that the signature is genuine.

While at the moment most digital collectibles are digital files that are simply stored on a server, ultimately NFTs could be more often connected to digital assets that exist in the metaverse. Each person's collection of NFTs will therefore have an impact on their presence in the metaverse – impacting on both their own experience and what other people see.

So your portfolio of NFTs creates your digital identity within the metaverse – an identity that can be manifested in multiple virtual worlds. Rather than having to separately build an identity on each digital platform you use via your bio, profile pictures and posts and so on, you will have a consistent digital identity that can be imported into any metaverse.

For artists and their business partners, a key consideration with digital collectibles is price point. A lot of the initial hype around NFTs was based on certain artists – and creators in other artforms – selling NFTs for very large sums of money. However, high cost NFTs of that kind are likely only an option for a certain kind of artist, and the particularly high value sales we saw in 2021 were arguably, in part at least, the result of short-term trends in the wider NFT market.

An artist also needs to be careful not to be seen to be exploiting their fanbase or to be only servicing a very small affluent portion of their fanbase. Some experts now advise artists to think of NFTs like other premium and limited edition products they sell – such as limited edition vinyl or merchandise – and price their digital collectibles in line with those products.

Like any NFTs, digital collectibles can also be resold, and for a certain sort of buyer the tradability of the token – and possible resale value – will be the main attraction. As always, via the smart contract, the originator of the NFT can set it so that they share in the profits of any resale.

CERTIFICATION OF PHYSICAL COLLECTIBLES

NFTs can, of course, be connected to physical assets as well as digital assets. So NFTs can also be attached to CDs, vinyl records or artist merchandise, usually limited editions.



In this context the NFT is also acting as a certificate of authenticity – in particular confirming the limited nature of the physical product, in the same way a physical certificate might be included with the product itself making a statement to the effect “this is item 44 of 50”.

But again, arguably what is really being sold here is bragging rights – ie the fan can prove they are a superfan not only because they have the limited edition physical product in their hands, but because that fact is also documented on the blockchain.

There could also be a digital asset linked to the NFT as well – either when the NFT is sold or subsequently down the line.

As those digital assets increasingly exist within the metaverse, it could be that a fan can display a digital representation of their physical record collection within the metaverse. That may then be linked to the actual music on a streaming service, whether that service exists within or outside the metaverse itself.

TICKETING CONTROL AND COLLECTIBLES

A number of companies are experimenting with using NFTs and the blockchain in ticketing. There are at least two sides to this.

Firstly, with a ticket connected to an NFT on the blockchain, it might be easier to restrict or control the unofficial resale – ie touting or scalping – of the ticket on the secondary market. Or at least, via a smart contract, the promoter of a show could receive a share of any resale (though, given the controversies around secondary ticketing, promoters might prefer to stop rather than profit from touting).

Secondly, NFTs can be used to create a digital collectible element to a ticket. Although tickets obviously primarily exist to gain a fan entry into a show, for some fans the ticket itself is also a souvenir of the show, ie a reminder and/or proof that they were there, particularly if it turns out to be an important show in the artist’s career. However, as ticketing becomes increasingly digital and mobile based, the souvenir element is lost.

Attaching an NFT to the ticket recreates

the souvenir element. Again, as NFTs are increasingly integrated with the metaverse, that digital souvenir could exist in the metaverse, so maybe the fan has a virtual pin board in their virtual world with all NFT tickets on display. Promoters and artists could also push additional content to the fan post-event, providing added value but also creating a new fan communications channel.

FAN COMMUNITIES AND FAN DAOS

Another use of the blockchain is to power a new kind of fan club or community, where an NFT grants membership. Depending on how the club or community is governed, this could take the form of a 'decentralised autonomous organisation' or DAO, which is a specific kind of blockchain-powered group that has proven popular within the Web3 community.

This kind of fan club could be run in a variety of ways, depending on how much control you wanted to give the members. Quite what membership involves would be set out in a smart contract connected to the NFT that granted each person membership of the club.

For example, an artist could set up a fan club with 1000 members, with each person paying €500 to buy an NFT which grants them membership and the accompanying rights. Of the €500,000 generated, the artist could dictate that half will be used for a new project, while the other half will be spent by the club community in ways agreed by the members. Moving forward, the membership is as involved in running the club as the artist.

Subsequently more money could be raised by expanding the membership. That would dilute the resale value of each member's token – though existing members could also share in the monies generated by the second round of

membership, or could have an involvement in how a portion of the new monies are spent.

ROYALTY RIGHT FAN FUNDING

With royalty right fan funding, fans – or possibly more conventional investors – are invited to invest in an artist project upfront. Most commonly the project involves creating some new music or other content, but in theory it could be any kind of project.

In return for the upfront payment, the fan gets certain rights in relation to the outputs of the artist project. This is most commonly a royalty right. So, for example, if the project the fan is investing in is the creation, production and release of a new track, the fan gets a share of any revenue subsequently generated by that track. The size of the fan's share will usually depend on what investment they make upfront, but is often very small.

Royalty right fan funding of this kind is not new. A number of technology businesses tried to get this business model off the ground in the mid-2000s, including companies like Slicethepie, Bandstocks and Sellaband. However, the difference with the new approach is that the fan's royalty right is recorded in a smart contract and minted into an NFT on the blockchain.

This means the existence and honouring of the royalty right is not dependent on the database, integrity and survival of the platform that originally facilitates the fan funding project. The smart contract can also be used to automate the processing of royalty payments using the cryptocurrency of the blockchain, or another kind of fungible token.

Plus the fan – or investor – who buys the royalty right can sell on the NFT and the royalty right that comes with it.

It is worth noting that the original royalty right fan funding platforms did not take off.

Although some artists had some success using the likes of Slicethepie, Bandstocks and Sellaband to fund projects and releases, many found it difficult to raise the kinds of money they needed to pursue the projects they were looking to fund, and to then deliver those projects.

Many of the next generation of fan funding platforms that followed in the late 2000s and early 2010s said that their research suggested that most fans weren't actually interested in having long-term royalty rights linked to their favourite artist's music, not least because the royalties they were likely to receive were often very small indeed.

Fans instead preferred the more immediate gratification of limited edition content or merchandise linked to the release, and the satisfaction of enabling their favourite artists to create. Moving forward, this immediate gratification could be a digital collectible NFT.

However, the new NFT-based version of royalty right fan funding could possibly be more

successful, mainly by appealing to music fans who are attracted to gamified and affordable investments, or investors who like the idea of making small investments in music. For both groups, the actual sell might be the opportunity to 'play the A&R game'.

Though that proposition would only really work at scale. If a platform had thousands of artists looking to fund projects with relatively affordable entry points, fans and investors could buy NFTs from numerous artists. The assumption being – as has always been the assumption in the music industry – that while the actual royalties generated by most of those NFTs will be nominal, one might be linked to a hit that becomes lucrative. And where that happens, there would probably be a marketplace for selling those NFTs on at profit.

While we have a relatively small number of artists fan funding in this way, royalty right fan funding is probably a super-fan product that only appeals to a certain kind of fanbase. However, at scale it could become a product that appeals to a wider audience where the potential profit to be made from the NFT is a key part of the experience.



03: METAVERSES AND MUSIC



Music plays an important role in the evolution of the metaverse, which means there are a number of opportunities for the music industry.

SYNC

Firstly, the growth of metaverse platforms provides new opportunities around synchronisation, as metaverses – or specific

events or experiences within the metaverse – need a soundtrack. This is already happening, of course, a lot of it to date within the gaming strand of the sync market. However, the opportunities will grow significantly in the next decade.

This will also create a micro-licensing challenge similar to that seen with user-generated content apps and platforms.

While the producers of big events and experiences in the metaverse will negotiate bespoke deals for the music they use, there

will be a significant number of user-produced events and experiences looking to use music.

As with UGC, this is another big opportunity if the industry can find a super easy and efficient way of licensing such uses, either by licensing the metaverse platforms at large, or by making music available to lower level event and experience creators via third party licensing portals, very possibly powered by the blockchain.

It also seems likely that – as has also happened with UGC – this will create a new audience and customer base for production music.

STREAMING

Opinion is divided as to whether a new kind of streaming service will exist within each metaverse, or whether existing streaming services will simply integrate with new metaverse platforms.

That will likely depend on how people want to interact with music on these new platforms – and how that relates to how they interact with music in the real world.

For the industry there will be the dilemma as to whether music within the metaverse – if that means the full catalogue of music being available on demand – should be treated as akin to conventional music streaming, or something more in the sync domain.

Which is to say, the industry needs to ensure any innovations in streaming within the metaverse do not negatively impact on the aforementioned opportunities in sync.

VIRTUAL EVENTS

Many artists will likely stage regular virtual events in the metaverse, although quite what that means is not yet clear. For example, will

these be truly live events, or will they be pre-recorded and streamed within the metaverse? What will the events actually involve – and in what ways will they be interactive? Will they be linked to real world events?

Plenty of events of this kind are already being staged within different virtual worlds and these projects are providing plenty of learnings about what is possible in this domain, and what kinds of events engage different kinds of audiences.

There is also the question as to how such events can be commercialised. Are they ticketed or subscription based, ad funded, or based around the sale of digital collectibles? Which of these approaches are used may depend on the fanbase and the priorities of each metaverse.

COLLECTIBLES

Which brings us to digital assets within the metaverse. Gaming platforms like Fortnite have proven that there is a demand among certain audiences to buy digital assets which enhance or personalise the user experience within the metaverse, including ‘skins’ which change the way a user’s avatar looks and ‘emotes’ which change the way an avatar moves.

It seems likely that this will become a key revenue generator for artists within the metaverse. And while some of those assets may be locked to specific metaverses, it may well be that this is a key way in which the NFT and metaverse opportunity collides.

The digital asset may well exist beyond the metaverse, with a user’s ownership of it set out in a smart contract connected to an NFT. Each metaverse would pull the relevant data and assets from the blockchain, allowing the user to easily import their assets into that digital world.

MUSIC-CENTRIC WEB3 AND METAVERSE COMPANIES

There are many companies experimenting with Web3 technology in the music space, most of which are collaborating closely with artists and labels as they develop, iterate and test different products and services.

It is still very early days, making it hard to predict which of these products and services have long-term potential. It may be that the long-term impact of Web3 in music takes a very different form yet to be properly understood – or, indeed, that Web3 has no real impact at all. Meanwhile, in the shorter term, the extent to which these products and services present opportunities for artists and labels right now completely depends on each artist and their fanbase.

Within some fanbases there may already be interest, even if it is pretty niche. But with some fanbases, there will be very little interest, or fans might be actively against certain Web3 products, such as NFT drops, either because they view such things as all hype or because of the concerns around the environmental impact. However, it's clear that for the right artists and labels, with the right fanbase and the right offering, there are potentially significant opportunities, even if these may change rapidly.

There are a number of interesting projects that have launched which provide useful learnings and case studies. It is often the projects involving superstar artists – or which quickly generate large sums of money (or at least seem to) – that grab the headlines, but there are opportunities for a much wider range of artists and projects than that. Meanwhile, the Web3 ambitions of the streaming service Napster and the use of the old LimeWire brand by a music NFT start-up have both got a lot of attention and are definitely worth tracking.

There are also a number of businesses in this space which are particularly interested in collaborating and experimenting with independent music companies, some operating their own platforms, others providing consultancy expertise to artists and labels pursuing Web3 projects. We put the spotlight on three of them here, who are also collaborating with IMPALA in this space...

SERENADE

Serenade's platform is designed to help break down the barriers to entry surrounding NFTs, making NFT products easily accessible and affordable for artists and their fans. Artists can mint

an assortment of music-related digital collectibles, including tracks, limited edition artwork, live performances, documentary footage, and other rare or previously unreleased items.



SERENADE

Describing itself as "the home of eco-friendly digital collectibles", the platform runs on Ethereum sidechain Polygon, which the company says enables it to mint NFTs in a "far more eco-friendly way" than is the norm. In fact, Serenade says that you would "have to mint 197,000 Serenade NFTs to equal the carbon footprint of a single 12" vinyl".

Unlike with most NFTs, buyers do not need an existing crypto wallet to purchase a Serenade NFT. Serenade's platform lets buyers pay by card and creates a digital wallet for the buyer where necessary, and automatically transfers the NFT into that wallet.

A recent note-worthy project involved the UK band Muse, who released an NFT version of their latest album. Serenade collaborated with the official music charts in the UK and Australia so that purchases of the NFT product were chart eligible in those countries. Talking about the release Serenade's Max Shand said: "As a simple, standardised and chart-eligible format, digital pressings will be a game changer on the global stage".

SOGA WORLD

Another company seeking to help bridge the gap between music and the blockchain is Soga World. Describing itself as a "creative agency in the Web3 space", Soga World says that its mission is to "create truly impactful cultural moments using ideas that shift and content that connects through consulting on long and short term strategies on all things Web3".



The company explains: "The music industry has always been hanging on the coat-tail of tech companies and at the moment, there are currently no other companies providing agency and strategy to cooperations to ensure their smooth adoption of Web3 technology. We understand that there is an extremely steep learning curve when it comes to Web3, but we feel that our special power is to reduce that curve and bridge the gap between music and tech".

A recent note-worthy project involved UK festival Strawberries And Creem. In collaboration with Serenade, Soga created NFT collectable trading cards for the festival which unlocked exclusive experiences at the event. Owners of these unique NFTs were granted access to VIP perks and special privileges including backstage access, VIP hospitality, exclusive content, special memorabilia and the 'best seats in the house'.

SOUNDR

Soundr describes itself as a "metaverse music lab" developing "virtual artists powered by AI". Founder John Black explains: "The virtual acts we're signing to Soundr will be accessible on multiple levels of engagement and keep fans connected and entertained like never before 24/7. We want to create an artist-to-fan experience for users to hang out, meet friends, game and be part of a 'real' virtual community. We're deploying the stars of the future to the next generation of fans who want a deeper, more immersive connection with the artists and music they care about".

By utilising the potential of NFTs, gamification and immersive experiences, Soundr says that its vision is to reject traditional barriers to access for music fans, and instead provide continuous virtual opportunities for fan-to-artist and fan-to-fan engagement. Opportunities include in-game wearables and exclusive content delivered via 'micro NFTs'.



04: CHALLENGES AND DEBATES



WHICH PLATFORMS, BLOCKCHAINS AND CRYPTOCURRENCES?

As noted, many see Web3 as an opportunity to disrupt an internet and digital ecosystem that has become dominated by a very small number of major corporations.

However, it seems likely that a relatively small number of organisations will come to dominate the NFT and metaverse space too. It is true that at least some of the data will be stored on decentralised networks managed by participants in those networks, rather than sitting in private silos owned and controlled

by big technology companies. However, even where that is the case, it may well be that big commercial entities could still play a gatekeeper role.

Which is to say that, as Web3 goes mainstream, it seems likely platforms will sit between many consumers and the blockchain to simplify the process of minting, buying and trading NFTs. And it seems likely a small number of companies will operate those intermediary platforms.

Either way, decisions need to be made regarding which blockchains, cryptocurrencies, marketplaces and metaverses the music industry should use when developing Web3

services, products and business models. There are various considerations here, including:

- the cost of using each blockchain and platform.
- the expertise required.
- the environmental impact of each platform.
- what the user-experience is like.
- where digital asserts are stored and how portable they are.
- how easy it is for buyers to trade their NFTs.
- what measures are in place to regulate the trading of the NFTs and to ensure buyers and sellers are protected from hacking and fraud.

In reality, most artists and labels are not going to be making these choices directly. The various music-centric Web3 companies are seeking to make the process as simple as possible for both creators and fans, and they will decide which platforms they employ, with the costs and technicalities of each platform being factored into their products and services.

However, artists and labels do need to be aware of the choices these companies are making – particularly in relation to user-experience, tradability, environmental impact and security.

WHAT RIGHTS ARE EXPLOITED?

Where an NFT is being linked to a digital asset, what rights are contained in that asset, and how are those rights being exploited? These are obviously key questions for music NFTs.

If an NFT is linked to a track, then obviously within that track there is a recording and a song, which are both protected by copyright. The NFT buyer could be acquiring those rights, but that is unlikely,

they are more likely securing rights to use the content in some way, or to share in revenues generated by the content, or simply bragging rights.

However, of course, the copyrights are still being exploited through the sale of the NFT. Although which elements of the copyright are being exploited, when and how is debatable.

If the NFT buyer gets a link via which they can download the track, then that's the same as the traditional sale of a download, meaning the making available and reproduction elements of the copyright are likely being exploited. But are any elements of the copyright also being exploited simply through the sale of the NFT itself? Maybe making available?

These technicalities are important to labels for two reasons. Firstly, while the label is usually in control of the recording rights, how those rights are exploited might impact on the artist's royalty. And secondly, the label usually does not control the accompanying song rights.

As, to date, NFT platforms are not licensing any song rights themselves, licensing these rights would be the responsibility of the label. Whether the label could secure the rights via the collective licensing system will depend on what elements of the copyright are exploited, as well as the industry conventions and collecting society rules in any one country.

Because of these complexities, many music NFTs to date have not actually involved a track. Instead, the digital asset linked to the NFT is an image or video file, possibly created bespoke for the NFT drop so that ownership of the copyright in the image or video is clearly defined. If the artist or label owns these rights, the copyright complexities are removed.

However, if the digital assets linked to an NFT are more commonly image or video files, this

creates an interesting question for labels. Obviously labels create lots of visual assets to accompany their releases which could be utilised for NFT drops in this way. But artists and their other business partners also create content of this kind. This potentially has an impact on whether or not a label is actively involved in an artist's NFT activity.

Another rights issue concerns both artists and labels. What is to stop a third party creating some original artwork around an artist or a release and then linking it to an NFT drop? After all, the third party would own the copyrights in the artwork.

The question here is whether or not an artist's trademarks (where they are registered) or publicity rights (where they exist in law) are also being exploited in that activity, and if that would allow the artist or their business partners to stop such unofficial activity. These are legal questions yet to be properly answered.

All these questions also apply to the metaverse. It seems more likely that metaverse platforms might seek to secure blanket music licences, particularly on the song rights side, which might simplify things to an extent. But plenty of questions remain regarding what rights are being exploited in what way, and who is empowered to license those rights.

A final rights consideration is the straightforward infringement of the music industry's intellectual property rights on NFT and metaverse platforms. This is already starting to happen. Which means those companies and agencies that monitor music piracy on behalf of the industry are now having to monitor NFT marketplaces and metaverse platforms too.

Where infringement is spotted, takedown notices need to be issued, as with any other digital platforms. As these are newer platforms,

it seems likely there will be challenges around the efficiency of the process of issuing takedowns and getting infringing content removed, and possibly disputes over the specific responsibilities of platforms in this domain.

And, of course, the music industry will be looking for NFT and metaverse platforms to be more proactive in filtering content that is uploaded or put up for sale, so that copyright infringing material is less likely to get through.

Again, this will likely result in disputes over the specific responsibilities of the platforms. They will be relying on the same copyright safe harbours as the UGC platforms when they try to restrict their responsibilities and liabilities, and the music industry may need to seek further reform of those safe harbours as a result.

As noted, with NFT and metaverse platforms, it may be visual copyrights, artist trademarks or artist publicity rights that are being exploited, as well as or instead of the copyrights in their songs and recordings. If these rights are being increasingly infringed, the music industry may have to see how it can extend anti-piracy measures that have traditionally focused on song and recording rights to these other kinds of intellectual property and similar rights.

THE LABEL'S ROLE

Today labels work with artists to create all kinds of content. While recorded music is still often at the heart of the relationship – and forms the core of a record deal – labels are usually creating lots of other kinds of content alongside each release, principally for marketing purposes. NFTs and metaverses create new opportunities to monetise that content and content making expertise. But what rights does the label have to participate in that opportunity?

Obviously, if an NFT is linked to a recording, artwork or video owned or controlled by the label – or metaverse activity centres on that recording, artwork or video – then the label's rights are being exploited. In that scenario it seems likely the label would lead on the activity, sharing any revenues with the artist subject to the terms of the record contract.

But what if the artist creates bespoke content for their NFT or metaverse activity? What if it's arguably the artist's trademark or publicity rights that are really being exploited?

Whether a label has a legal right to participate in this work will depend on the specifics of the record deal. What can labels do to address these questions upfront in new deals? And what can labels do regarding Web3 opportunities around catalogue?

While those questions will need to be dealt with, labels can clearly add great value to an artist's NFT and metaverse activity. The opportunities on these platforms are usually based around the creation of compelling digital content and labels are usually an artist's primary business partner when it comes to content creation.

And, as noted, labels now work with artists to create all kinds of content, and many having invested heavily in extending their content creation abilities. It should therefore be relatively easy to demonstrate the value of the label in this domain.

Another consideration here is that some Web3 products could potentially be seen as a competitor to record labels, and specifically the way labels secure artist partnerships by being a key investor in each artist's creative projects. NFT-enabled royalty right platforms and fan clubs can provide an alternative way for artists to raise money to fund projects, and some of those services overtly market

themselves as providing an alternative to labels for participating artists.

This isn't actually a new debate. When the original royalty right fan funding platforms first emerged in the mid-2000s, there was much discussion about whether that model was a threat to record labels, especially as they emerged at the same time as the early DIY distributors.

Together, those services, in theory at least, provided artists with an alternative way to secure cash flow to record music and then deliver that music to the digital market, both things for which artists had traditionally relied on labels.

However, those innovations didn't really impact on labels in any major way. Firstly, the first generation of royalty right fan funding platforms didn't really take off. And secondly, while distributing music is now relatively easy, marketing it remains a challenge, and a crucial area of label expertise.

Labels clearly add immense value well beyond cash advances and other investments, and many artists who experiment with alternative ways of funding projects often subsequently return to working with labels because they recognise the value of that expertise.

And some would argue that NFT-enabled fan funding and fan community platforms could also be an opportunity for labels, especially smaller independent labels who do not sit on substantial cash reserves. Running fan funding campaigns, setting up and running fan clubs, and delivering release marketing campaigns all still require significant knowledge, resources and contacts – not to mention a steady stream of content – and most artists still need support in that domain.

Labels without cash reserves could therefore potentially partner with artists on delivering a release campaign funded via an NFT-

enabled fan funding platform or fan club, with subsequent royalties being shared between artist, label and the fans. Labels with this expertise would then potentially be able to compete against the bigger labels that have easier access to cash flow.

ENVIRONMENTAL CONCERNS

As has been widely documented in the media, there are significant environmental concerns regarding widespread adoption of NFTs and the metaverse, because of the energy required to power these services.

That said, most of the organisations and companies behind blockchain and metaverse platforms are under pressure to become more energy efficient, and many are specifically promoting their initiatives to be so, with some actively promoting their environmental credentials as a USP.

With NFTs, energy consumption is very much linked to the way any one blockchain is set up. As noted, most high profile NFT drops have been on the Ethereum platform which, although more energy efficient than, say, the Bitcoin blockchain, nevertheless has traditionally involved high levels of energy consumption.

However, Ethereum has made changes to the way it is set up and operates – in technical terms, moving from a ‘proof of work’ to a ‘proof of stake’ system. Although it took longer to achieve than originally hoped, this change of approach was completed in September 2022. Various experts have estimated that this should reduce Ethereum’s energy consumption by more than 99%. Given the widespread concerns around the environmental impact of NFTs this is clearly an important change.

Other rival blockchains also claim to be particularly energy efficient. Although, if tradability is an important element of an NFT drop, really it has to happen on a widely used blockchain which has an active marketplace for resale, which means picking a less well known blockchain for energy efficiency reasons can impact on the viability of the product.

This is why some companies operating in this space utilise the aforementioned sidechains. These are connected to a bigger blockchain – often Ethereum – but the operator of the sidechain has more control over things like costs and energy consumption.

As for environmental concerns regarding the metaverse, as metaverse platforms evolve and become more sophisticated – employing more virtual and augmented reality – powering them will obviously consume ever more energy.

While the way platforms are run will have an impact on levels of energy consumption, companies that are investing heavily in the metaverse – like Meta and Microsoft – are talking more about their efforts to power their data centres with renewable energy.

In the main, the energy efficiency of blockchain and metaverse platforms is out of the control of the companies and people who use them – unless, of course, they choose to boycott such platforms outright.

However, labels should check the environmental credentials of any platforms they choose to work with (including any data centres they utilise) and help ensure that those platforms continue to see energy efficiency, low/zero emissions and other sustainability policies as being key to competing in the market place.

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One Step Ahead is a digital intelligence facility from IMPALA to enable independent music companies across Europe to navigate and identify trends, developments, challenges and opportunities in the digital music market. Delivered in partnership with music business consultancy CMU Insights and with support from Merlin, One Step Ahead provides reports, tools and training to help independent music businesses of all sizes to get the most out of today's digital opportunities in Europe.



ABOUT IMPALA

IMPALA was established in 2000 and now represents over 5000 independent music companies. 99% of Europe's music companies are small, micro and medium businesses and self-releasing artists. Known as the independents, they are world leaders in terms of innovation and discovering new music and artists – they produce more than 80% of all new releases and account for 80% of the sector's jobs. IMPALA's mission is to grow the independent music sector sustainably, return more value to artists, promote diversity and entrepreneurship, improve political access, inspire change, and increase access to finance. Read more about IMPALA's story in 20 milestones on our website. impalamusic.org



ABOUT CMU INSIGHTS

CMU helps people navigate and understand the music business through media, education, research and events. CMU Insights is the company's business intelligence unit. It supports the music industry – both music companies and companies working with music – through training, consulting, research reports and conference sessions. cmuinsights.com



ABOUT MERLIN

Merlin provides independents the means to own their future. Members work directly with key digital partners, but benefit from Merlin's premium deals with over thirty digital music services around the world. Merlin's membership consists of independent labels, distributors, and other rights-holders, representing tens of thousands of labels and hundreds of thousands of artists from every country in the world, representing 15% of the global market share. As a member-led, artist-focused organisation, Merlin's mission is to deliver best in class services and work collaboratively with its digital partners to drive incremental benefits to members, while delivering value back to digital music services. merlinnetwork.org



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