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New Technology in Music and Creative Entertainment

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Introduction:

The music industry started with the invention of the phonograph in the 1880s with three major labels leading the way Edison, Columbia and Victor.

Now 138 years later its accustomed ways of running have evolved and changed over time. In the old centralised world, the artists created their music in the Major Label's recording studios and accepted losing-hand contracts, giving away their master copyrights to have access to the advantages that only major labels can offer in order to advance their careers. Music distributions in the physical formats on tapes, cassettes, CDs and Vinyl forms through retailers are becoming a distant memory. Today music fans consuming their music via streaming services like Spotify and iTunes and the live performance sector is expanding more than ever.

Legacy formats are declining rapidly as only last year alone physical sales decreased 5.4% from an already falling sector.

(IFPI 2018)

In 2002, CDs reached its record highest peak when it generated 95% percent of the sales revenue and surpassed cassette tape sales and go on to dominate music industry for 25 years until 2015. However, acute fall from the rise of CDs in 2016 had dropped under only 16% revenue in sales. (Mark J. Perry 2017)

New Technology in Music and Creative Entertainment:

History of music formatting:

Let's look back at some of the ways music formatting developed from the physical products into digital streams:

- 1877

Phonograph Cylinder

- 1889

Gramophone Record

- 1898

Wire Recording

- 1925

Electrical Cut Record (78rpm)

- 1930

Transcription Disc

- 1934

Acetate

- 1935

Reel-To-Reel Tape

- 1936

Tefifon

- 1948

Vinyl LP

- 1962

Flexi Disc

- 1963

Compact Cassette

- 1964

8-Track Tape

- 1969

Microcassette

- 1971

Floppy Disk

- 1975

Betamax

- 1976

VHS

- 1978

LaserDisc

- 1982

Compact Disc

- 1987

Digital Audio Tape (DAT)

- 1991

MiniDisc (MD)

- 1992

Digital Compact Cassette (DCC)

- 1996

DVD-Audio (DVD-A)

- 1997

MP3 Peer to peer file sharing

- 1999

Super Audio CD (SACD)

- 1999

Napster/ first Peer to Peer file sharing platform

- December 1999

Shazam smartphone music recognition app

- 2000

USB

- 2001

Apple iPod

- October 2003

Apple iTunes launch

- 2005

Dual Disc (DD)

- 2005

Download sales surpass physical sales

- October 2007

iPhone launch

- February 2009

Spotify Launch

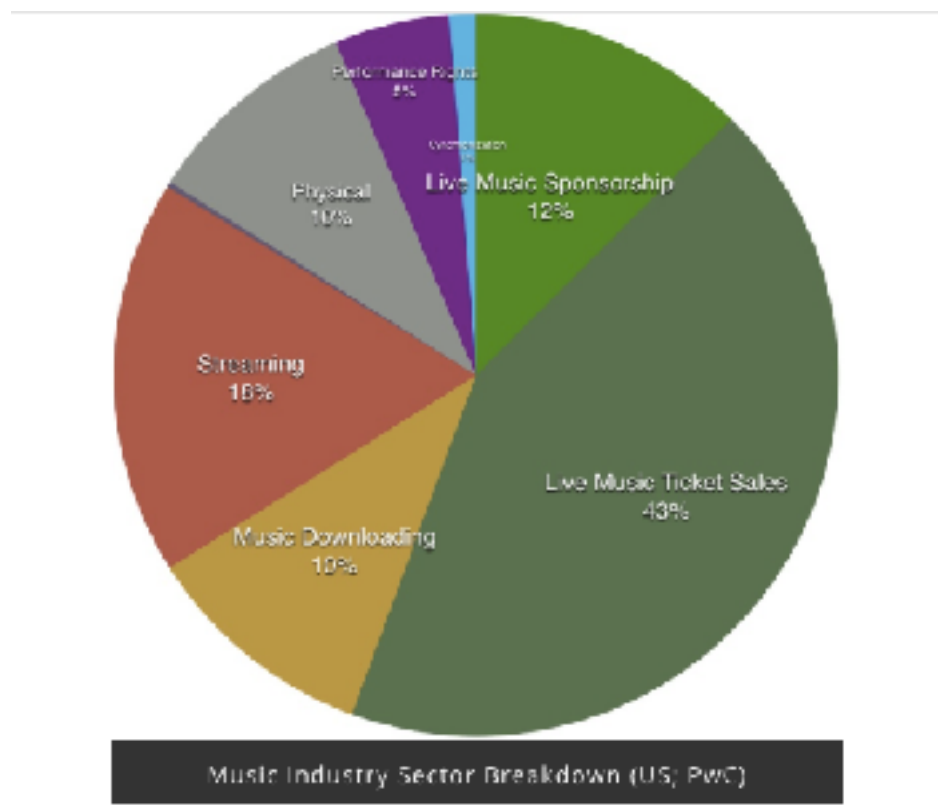
- 2013

Blu-ray (High Fidelity Pure Audio)

(VF team 2015) (Andrew McCormick 2009)

Music Industry Evolution through technology:

Now hundreds and thousands of tracks available to fans right under their fingertips through streaming services that it used to take time, money and effort to fans to collect and have their music on demand not so long ago. Digital distribution and the streaming platforms are one of the most prominent disruptions caused since the Music Industry's start in the 1880s to date.



(Paul Resnikoff 2017)

Another notable expansion, especially in the last decade, is the live tour /performance sector. The USA music industry alone now worth \$72 billion and the most of the revenue is generated by the live performance sector. According to the above chart, 55% percent of all the revenue generated from the music industry is made from the live performance sector.

As the streaming services started to dominate the industry the infrastructure of the industry is naturally changing and as a result causing some sectors grow more than the others. In the old centralised world the significant portion of the revenue is generated by the physical

sales compared to the present industry it is generated by the streaming and live performance sectors. This illustrates just how much the industry is shifting and changing its infrastructure as the digital realm is taking over.

As the live performance sector started to grow, so is the branding, sales of merchandise is expanding making it even more profitable.

Streaming services offered a solution to the chaotic online piracy and brought it back under control. The rise of the internet and MP3 files have created the file-sharing platforms at the beginning of the digitalisation of the audio, however, with it came the online music piracy through illegal file-sharing. This process also changed the dynamics between major corporations and the music consumers. (Ian Michael Dobie 2001)

Internet users no longer needed to buy physical music formats from the stores when the digital downloadable music is available within seconds. From this development, the consumer ethos has switched creating a new wave of consumers who enjoy music on demand via streaming platforms. The music industry that traditionally rested on major corporation's shoulders is now shifting into a decentralised new digital industry thanks to the creative blockchain platforms like Tokit and Ethereum. (SingularDTV 2108)

Although no one could foreshadow the rise of the blockchain technology at the beginning of the digital realm, some experts believe this is an inevitable evolution. Now that the first pioneers of the blockchain technology is here and already starting to produce some promising results by creating online multi-smart contract platforms.

A good demonstrative example of this change is a blockchain ecosystem platform "Tokit".

What is Tokit?

Tokit is short for "Tokenise it" is a decentralised first blockchain multi-smart contract platform for artists and creators to connect with their fans directly. Tokit brings the first step towards implementing blockchain technology in the Music Industry. It is the next biggest disruption, a token-based crowdfunding platform that is bringing a new type of digitalised and decentralised ecosystem industry providing opportunities to artists to find their audiences.

An alternative industry that is transparent, uncensored, peer to peer and generates instantaneous revenue, rewards and results. This platform is for anyone who got a creative idea to start their very own tokenised ecosystem project campaign within minutes. It provides an opportunity for fans to buy into their favourite artist's token enabling them to become a part of their favourite artist's creative work process. By purchasing the project tokens, fans are not only helping their artists to complete their projects without financial tires but also get to have a chance to invest in their favourite artist's creative work through programmable tokens to enjoy rewards and royalties for years to come with their artists as the IP token start to generate revenues and bonuses. It also helps to build a lifelong Super-fan connection, as an intimate, interactive fan-artist relationship start to shape up more solid bond that is more robust than the accustomed ways. It also helps to create a sense of community belonging to fans as the tokens represent a part of a project and the artist represent a community.

There are no middlemen, salesmen, lawyers that might deter one's creative work. This is to empower artists to take control over their intellectual property. There are artists like Imogen Heap and Grammatic fronting this revolutionary new digital industry. With no or little coding experience, anyone can create project campaigns within a few simple steps away. The token represents artist's IP rights, and the royalties, rewards, bonuses programmed into it at the start of the project that is embedded digitally. Any changes made will be recorded into un-deletable data that offer transparency to the fans. You can buy, sell, transfer and import your tokens from the launch pad and be able to witness your project develop and generate revenue and rewards in the real time. No more time-consuming wait for royalty calculations by the collection societies and negotiations through intermediaries like lawyers and salespeople etc...

Created with Ethereum SingularDTV is structured around three type of applications - development, production and distribution. Used together aimed to encourage artists, producers and creators to a new horizon. Thanks to blockchain's data-network convergence and consensus algorithm it is possible to create a platform that runs through such software.

(SingularDTV 2018)

Technologies that revolutionised the Music Industry:

The arrival of the Sony's Walkman transformed the way we used to listen to music. It was world's first pocket-sized portable audio player pushed to the masses in 1978 thanks to the Sony's co-chairman Masaru Ibuka. Sony's Walkman which will turn to bittersweet 40 on 1 July 2018, is a product that changed the way people listen to music forever, a stepping stone to a new technological breakthroughs. Gave us an opportunity to listen to music via a portable device in the comfort of our own privacy through the headphones while on the go. It is not only made music more accessible but also caused a significant changes to the way we exercise and live our everyday lives. Since then decades on Apple's iPod made on it's way to our portable device list causing a mass adaptation by offering a great more music containing capacity and superior functional advantages like fast forward/rewind and finding tracks from the library of music etc... But Walkman is not considered to be the first official portable audio player following to the Regency TR-1 in 1954, a radio player that could play music on the go for 20 hours through 22.5-volt battery live lifespan.

(Matt Peckham 2014)

And now new multi-functional smart devices like smartphones and iPads have replaced iPods and Walkmans as it offers the same functions as portable players plus internet access enabling purchases of concert tickets, downloads and instant music streaming and more...

The digital streaming software means millions of tracks at your disposal anytime anywhere without the need of the storage of music files in your smartphones. Since then few decades on from the arrival of the portable devices to having now music on demand via streaming services it evolved significantly. (SingularDTV 2016)

From having a limited number of tracks stored in the magnetic tapes to now having 837 years worth of music streamed on streaming platforms like Deezer every day in over 180 countries according to the Global Music Reports. (IFPI 2018)

Evolution of the music industry:

A music technology evolution could go back 40000 years to the discovery of first invention flute bone found in Slovenia. The music industry that started with the invention of phonograph evolved through the technological advances like mp3 and beyond. And now as

we arrived on the verge of blockchain technology that is about to rewrite the way the music business rules once again let's take a look at how technological advances revolutionised the music industry.

The Phonograph

The first recorded music was invented in 1877 by Thomas Edison by etching music into tinfoil discs, and when played back by the metal needle it read back the music then the sound was amplified by the horn-shaped metal speaker. This invention was a first breakthrough technology that started the journey of the music industry. With the recorded music along came record labels who quickly began distributing and monetising the products shaped up the music industry as we know now. This newfangled invention continued for the next 125 years through vinyl and CDs phase.

Radio

The next mass music spreading medium invented in 1920 that first used as a Morse airwave coding communications tool in maritime communications that developed into what we know now as a radio. It introduced with only 2 stations in the USA and the music stations used a microphone on the phonograph to broadcast the music to the masses. This created popularity among musicians and laid the fundamentals of the music industry.

Television

Invented in 1950 the Television gave music its visuals. Suddenly all the pop music fans had visuals on the tunes they loved hearing on the radio. The fans could finally put a face to a singer's voice that they liked and that concept developed into a music video with plots and curations to pop songs. It also enshrined artist management, development, distribution and mechanical licensing etc...

Along came superstars through the super-fans.

Now the blockchain technology is dawning this traditional infrastructure of the music industry is yet again to be written in a new way.

Electric Instruments

The arrival of electric guitar invented by Beauchamp and Rickenbacker in 1931 became an integral part of the development of pop music culture as a whole. An electric guitar is one of the 4 main pieces of instruments that form a typical pop band.

Synthesisers:

Synthesisers are the most revolutionary of all the electronic instruments invented. Synths evolved through time creating strange and unusual new sounds to the music by modulating different circuits and sound waves. There is 4 main type of synths used widely that are additive, subtractive, FM and Sample based synths. All different types create different kinds of sounds and imitate real instruments by adjusting the sound waves and modulative parameters. Because of the synth sounds new kind of pop music genres were born and led to the immense development of electronic music genres that we hear today.

Tapes and CDs:

Thanks to the tapes and CDs we have enjoyed music on demand by portable devices. The fans waited and depended on Radio and TV's scheduled programs to hear the glimpse of their favourite tunes. The arrival of these physical formats has changed the way we listen to our favourite tunes forever shifting to music on demand.

MP3 / Peer to peer trading

It enabled first decentralised music digital downloading platform. The rise of Napster provided music fans a platform to exchange music files by downloads peer to peer without going through the centralised accustomed system.

The iPod

One of the most music industry disruptive technologies ever invented was Steve Jobs' invention of iPod. It made MP3 file sharing mainstream and forced major corporations to accept the digital download sales model at the costly pricing of only 99c per download per track that also caused acute fall in major label revenues.

Streaming

Daniel Ek successfully launched the streaming services into the mainstream with his invention of streaming platform Spotify on 7 October 2008 and today streaming is the paddle of the music industry's global revenue stream.

Blockchain

Today in 2018 we are entering a new industry, a new technologically driven era and on the verge of rewriting the history of the music industry's evolution reaching its culmination point for the centuries to come. The blockchain is going to get rid of all the intermediaries, direct access to music creators, creating an intimate and exciting new relationship that would transform the way music industry used to be. (SingularDTV 2018)

Conclusion:

I read a great many articles to extensively research the way technological advances influenced and transformed the music industry and its shift from production to service sector. As the music development is an inseparable partner of the technological development, the music industry will always be dependent on the technological developments. Through my studies from the infant stages of the music industry and the cause of its roots has always been technology and so the technology and music advancement walk together hand in hand along with its sectors whether it is business or creative. Now that blockchain is going to change the core infrastructure of the music industry's conventional ways we are yet to witness just how much technology is going to change the industry from what it is now to the decade to come.

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