

New Technology in Music and Creative Entertainment

Assessment Component 1 – 50% Essay (2,500 words)

Critically evaluate how new technology has turned the music industry from a product to a service sector.

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Words: 2,738

Advancements in technology are moving faster than they ever have before, and continuing to speed up from every 46 years since the invention of electricity to every 5 years for the introduction of smartphones to the mass market (Iizuka, 2019). When we think of technology in music, many people's minds may jump to the internet 'killing' the industry with Napster and illegal downloads, which it very nearly did when the platform peaked at 80 million users (Forte, 2019). Like other industries, the music industry has been hugely impacted in recent years as it shifts from the physical to the digital. The world's largest taxi firm owns zero taxis (Uber) and the world's biggest accommodation provider owns zero accommodation (Airbnb) (McRae, 2015). This same can be applied to the music industry, with some of the biggest changes happening in distribution and consumption of music; from physical vinyl records to digital streaming platforms, or DSPs, like Spotify or Apple Music. The digital revolution has seen a power shift from the biggest corporations to the independents who now have a large share of the market, with the independents seeing a growth of 27% and increasing their combined streaming market share to 31.5% in 2020 (Paine, 2021). It's impacted all stakeholders in the music industry, whether you're a fan listening to music as a Spotify subscriber or an A&R manager looking to sign the next big hit. This essay will focus on how tech innovation over recent years has impacted the listening, production and distribution processes in music, giving perspectives from A&R, artists and the fans to critically assess the benefits and potential negative impacts as it moves from being a physical, product-led entity to a digital, cloud-based service.

How listeners discover and consume music has seen dramatic change over recent years. From fans discovering new tracks to an A&R manager discovering the next superstar; without music discovery the industry would never be moving forward. From the fan's perspective, the process of discovering new music has seen radical changes in the past 100 years from the "golden age" of radio between the 1920s and 1950s (Albright, 2015), through to the emergence of music videos on MTV in the 1980s. Nowadays, music discovery has almost all moved to data-driven

service-based digital platforms such as Spotify. Channels like radio and TV tell fans what they *should* be listening to, whereas streaming platforms give users the perceived power to *choose* what they want to listen to and when. Whilst this empowers users with what music they are listening to, there are features on such digital service providers, or DSPs, which have been developed to aid in the discovery of recommended music based on the data these platforms hold on listening habits of their users. These algorithms are promoted in a way to offer personalised experiences to their subscribers, giving them music recommendations which machine learning has picked up on based on what music they have engaged with (Datsenko 2022). However, there have been some concerns raised around an important topic of trust and bias when it comes to algorithmic recommendations. In February 2023, the UK Government deemed it necessary to undertake research and analysis into the impact of recommendation algorithms in the UK's music industry, and ultimately "finds that evidence proving or disproving whether these technologies embed, amplify, or introduce unfair biases is mixed, and at times inconclusive." (Gov.uk, 2023). Whilst this report cannot confirm or deny that there would be algorithm bias on such DSPs as Spotify or iTunes, it does raise concerns around trust in these types of service platforms. The report also highlights an interesting point that there has always been a level of bias in the music industry when it comes to recommendations, and DSPs do not contribute this any further, or any less. Since the golden age of radio, presenters have been recommending music on their broadcast shows, as well as other influential figures such as music journalists writing favourable reviews and articles in music magazines and beyond; "there have always been cultural intermediaries that have shaped what music consumers hear, and how they hear it". (Gov.uk, 2023). As we're in an era where we are seeing a staggering amount of music released more so than before, reported in the region of 100,000 tracks uploaded to DSPs every day, (Willman, 2022) recommendations powered by algorithms play a vital role in ensuring listeners have the best possible experience. Discover Weekly is a feature on Spotify where subscribers can engage with a 30-track playlist, refreshed weekly and based entirely on

music they have been listening to on the platform. Due to its nature, machine learning algorithms continually learn and shape recommendations, meaning they can also be manipulated to ensure fans are likely to listen to music they will enjoy. For example, machine learning algorithms will know what a listener doesn't like if they skip a track, and they'll also know when an artist is highly valued when the listener clicks on their profile on top of listening to their music (Chacksfield, 2023). This ultimately gives fans the power to listen to music which they are more than likely going to enjoy listening to, and without algorithm-based features like Discover Weekly it would be a long and arduous task of sifting through the vast void of new music which is being uploaded every day.

Streaming platforms are becoming more than just a platform for listening to music. They can also be ways to reward the superfans through their dedicated listening, streaming and engagement on the platform. Spotify has been known to reward such superfans, or in other words the platform's top streamers, in a number of ways through the Fan's First program. An example of this is Interpol, who have a huge following in Mexico City, so Spotify launched an intimate event for specially selected fans bringing them closer to the band (Spotify, 2018). I've had a personal experience of this where I was offered a pre-sale link to electronic duo Overmono's upcoming tour, exclusive to top listeners on Spotify. Due to the nature of data and algorithms, this too can also be manipulated. In other words, all a fan would need to do is 'follow' the artist on Spotify and play the artist's tracks a number of times to be placed in the top fans on Spotify to give them a greater chance of receiving rewards such as Spotify exclusive pre-sale ticket links (Huber, 2022).

From an A&R perspective, the way labels and music professionals discover prospective signings has come a long way from attending gigs and scouring demo tapes (West, 2023). Seeing artists perform live is still an important process for scouting talent, although they've more

than likely swapped the demo tapes for a DSP like Spotify. However, just like how fans consume music, the A&R role has also become much more fragmented too. Data-driven A&R plays a vital role in the process, and is often considered the single-most data-driven position in the industry with a vast range of analytic tools on hand to gain insights around an artist's success (Pastukhov, 2021). There are analytic dashboards such as Chartmetric which provide all-in-one, comprehensive data around streaming, social media and audience (Chartmetric, 2023), through to AI-powered platforms such as Sodatone which uses indicative data to 'predict' which unsigned stars have the best chance of success; a platform later acquired by Warner Music Group in 2018 (Ingham, 2018). The use of AI in the A&R process in particular has stirred the debate around whether the 'human element' of discovering unsigned talent will be replaced entirely, however Music Business Worldwide suggests that 'gut vs data' is not a binary choice when it comes to new talent discovery (2018). The music industry is full of rich data across all online and offline channels, from streaming numbers on DSPs through to insights gained from tours - these platforms essentially are used to aid the A&R professional with their decision-making rather than replace the human element entirely. Chaz Jenkins, CCO of Chartmetric, has claimed that A&R has "always been about data" (2020), such as reporting the number of ticket sales and chart positions acquired from market data. He continues to explain that whilst an A&R professional may have claimed to have a 'gut instinct' on a prospective signing, it was actually based on the use of "data", albeit shared in a different way to what platforms like Chartmetric and Sodatone are capable of doing now (2020).

The amount of music uploaded to DSPs every day has been much a speculated number, but recent reports have claimed around 120,000 new music audio files had been uploaded to music streaming platforms per day in the first quarter of 2023 (Stassen, 2023); triple the number that Spotify CEO Daniel Ek claimed there were on Spotify alone just 4 years ago in 2019 (King, 2023). One of the biggest drivers for this boom of music output is the growing accessibility of

music production tools, such as virtual instruments, which are now much more readily available. Virtual instruments are pieces of software which generates a sound on a computer, essentially removing the need to write music using physical instruments in the real world (Edney, 2022). This has opened up exciting opportunities for the independent musician to expand their resources and not be limited by place, time and money in order to create their music. Traditionally speaking, musicians would need to produce their music in a fully equipped recording studio with the help of sound engineers and producers, and these studios were typically owned by large-scale music companies such as RCA studios, Decca and Columbia Records which came about from the 1930s onwards (Chiltern, 2022). Recording music in these studios came at a huge expense too, typically fronted by the record label, with a full length album in 1993 costing anywhere in the region from \$30,000 to \$1 million to record (Colletti, 2016). Nowadays, the bare essentials a musician would need is a computer and a Digital Audio Workstation, or a DAW, such as Logic or Ableton which can both be obtained at a fairly low investment (CD Baby, 2021). Within an artist's chosen DAW, they are able to invest in a vast range of software, such as virtual instruments and effects, and at a very affordable price. Native Instruments are one of the world's leading music production companies offering virtual instruments and effects, with their all-in-one bundle currently priced at £539.99 (Native Instruments, 2023). Within this bundle a musician can access plug-ins for synths, sampled instruments and studio-grade effects, giving independent musicians an impressive suite of production tools in order to craft their work without the need to visit and pay for an expensive studio.

One of the most recent technology shake ups to the music industry is the emergence of AI powered vocals replicating other singers' voices. A song which 'deepfaked' Drake and The Weeknd went viral this year, which neither artist had any involvement in the production (Coscarelli, 2023); a topic which Universal Music Group does not take lightly as they asked in a

statement “which side of history all stakeholders in the music ecosystem want to be on: the side of artists, fans and human creative expression, or on the side of deep fakes, fraud and denying artists their due compensation.” (2023). Whilst there are clear concerns around intellectual property rights for releasing music which ‘borrow’ other singers’ vocals, some artists are deciding to embrace AI rather than back away from it. Earlier this year, musician Grimes had launched a project whereby musicians can earn 50% royalties from original work which uses her vocals in an ‘AI voiceprint’ (Dredge, 2023). More recently, electronic music artist DJ Fresh had launched VoiceSwap; an AI-powered program which enables its users to use approved singers voices but with strict, traceable rules which users must follow including being unable to release music from featured vocal artists outside of demo purposes unless they have the approval from the artist (Dredge, 2023). These two examples are fantastic examples of artists not taking a passive approach when it comes to new technological advancements, and embracing these changes to continue to empower and their creativity.

Once an artist has recorded and produced their work in their home studio, they now have the option to use AI powered tools to master their tracks into final products rather than using the services a mastering engineer traditionally offers. There are many platforms which offer quick and affordable music mastering, such as LANDR who claim over 40 million musicians now use their AI-driven mastering solutions (LANDR, 2023). However, there are some downsides to AI music mastering with the overall sound quality possibly not being to the standard of hiring a mastering engineer in the real world (Murphy, 2022). Whether or not a musician prefers to use the cheaper and more accessible route of AI mastering rather than a human expert in this field is entirely up to the musician, but it’s undeniable that advances in technology have shifted the music production landscape to a digital service industry too.

Now a musician has a finished product ready to be released, with the help of affordable at-home studio equipment, DAWs, plug-ins and AI-powered mastering, the next step is to find a distribution partner to share their music to the world. The way distributors deliver music has changed vastly over the years, and much in line with how fans consume music too; long are the days where vans would be delivering every release to record stores in the format of vinyls and CDs. With music primarily listened to on DSPs and purchases made via digital downloads, there has been a surge in the number of distributors bridging the gap between artist and fans in the digital world. There are many digital distribution platforms to choose from, each one offering their own features at affordable pricing strategies. DistroKid and CD Baby are two of the most popular digital distributors, where an artist can be in complete control of their release schedule. DistroKid offers one of the most attractive features for independent musicians, as they simply charge an annual fee for an unlimited number of releases where artists keep 100% of the royalties of their work. In 2016, DistroKid CEO Philip Kaplan reported that they were “paying out about \$1,000,000 each month in royalties” (St. James, 2016), with these coming from many different musicians rather than just one or two big artists. This is a reflection of the fragmented music landscape, and how more independent musicians are reaping the benefits of being empowered to produce and release music themselves.

In conclusion, the impact of new technology on the music industry necessitates its acceptance and embrace of change. The slow response of major players in the 2000s around Napster's emergence, which ultimately bought the music industry to its knees (Forde, 2019) was a huge lesson to be learnt that new technology must be accepted and adopted, if the wider world are accepting it too. Today we witness major labels actively investing in new technology, like Warner Music Group's acquisition of AI-powered A&R scouting tool Sodaone in 2018 (Stassen, 2020). Nonetheless, concerns persist among major labels regarding copyright issues related to the use of AI voiceprints, with Universal Music Group, being a leading voice by urging streaming sites to

detect uploads that use AI tools to replicate artists' voices (Hern, 2023). Another potential impact of AI voice training is the democratisation of music production, enabling even unskilled individuals to create music effortlessly (DeSignore, 2023). However, it is important to note that listeners generally prefer human approaches to music rather than AI-generated voiceprints of popular artists, as we see fans desiring recognition and rewards for their loyalty, as demonstrated by Spotify's effective use of data to offer exclusive access to rewards such as ticket sale links.

Examining success stories of independent musicians like Chance the Rapper and Macklemore (Delvin, 2022) emphasises how technological advancements empower artists to create and distribute music independently, without the backing of a record label. Platforms like DistroKid facilitate this process, enabling independent musicians to retain 100% royalties and have full control over their music releases. In today's digital landscape, although the number of uploaded tracks is higher than ever, the readily available tools have transformed the perception that success as an independent artist is more attainable.

Bibliography

Albright, D. (2015). *The Evolution of Music Consumption: How We Got Here*. [Online]. Available at: <https://www.makeuseof.com/tag/the-evolution-of-music-consumption-how-we-got-here/>. [Accessed 3 July 2023].

CD Baby. (2021). *How to Record and Produce Music at Home*. [Online]. Available at: <https://diymusician.cdbaby.com/music-career/how-to-record-and-produce-music-at-home/>. [Accessed 10 July 2023].

Chartmetric. (2023). *Homepage*. [Online]. Available at: <https://chartmetric.com/>. [Accessed 10 July 2023].

Chiltern, M. (2022). *Recording Studios: A History Of The Most Legendary Studios In Music*. [Online]. Available at: <https://www.udiscovermusic.com/in-depth-features/history-of-recording-studios/>. [Accessed 10 July 2023].

Colletti, J. (2016). *How Long Is This Gonna Take? The Time and Cost of Recording a Full-Length Album*. [Online]. Available at: <https://sonicscoop.com/how-long-is-this-gonna-take-the-time-and-cost-of-recording-a-full-length-album/>. [Accessed 10 July 2023].

Datsenko, A. (2022). *How to Personalize Audio Experience With Machine Learning*. Available at: <https://wavve.co/how-to-personalize-audio-experience-with-machine-learning/>. [Accessed 10 July 2023].

Delvin. (2022). *15 Successful Independent Artists and How They Made It*. [Online]. Available at: <https://tunepical.com/most-successful-independent-artists/>. [Accessed 10 July 2023].

DelSignore, P. (2023). *How AI Will Change The Music Industry*. [Online]. Available at: <https://medium.com/the-generator/how-ai-will-change-the-music-industry-37cd4305c68e>. [Accessed 10 July 2023].

Dredge, S. (2023). *DJ Fresh Enlists Artists For New Voice-Swapping AI Service*. [Online]. Available at: <https://musically.com/2023/07/06/dj-fresh-enlists-artists-for-new-voice-swapping-ai-service/>. [Accessed 10 July 2023].

Dredge, S. (2023). *TuneCore teams up with Grimes for AI-voiceprint music releases*. [Online]. Available at: <https://musically.com/2023/06/12/tunecore-teams-up-with-grimes-for-ai-voiceprint-music-release-s/>. [Accessed 10 July 2023].

Edney, C. (2022). *What are virtual instruments? How to make digital music*. [Online]. Available at: <https://routenote.com/blog/what-are-virtual-instruments/>. [Accessed 10 July 2023]

Forde, E. (2019). *Oversharing: how Napster nearly killed the music industry*. [Online]. Available at: <https://www.theguardian.com/music/2019/may/31/napster-twenty-years-music-revolution>. [Accessed 10 July 2023].

Gov.uk. (2023). *The impact of recommendation algorithms on the UK's music industry*. [Online].

Available at:

<https://www.gov.uk/government/publications/research-into-the-impact-of-streaming-services-algorithms-on-music-consumption/the-impact-of-recommendation-algorithms-on-the-uks-music-industry>. [Accessed 3 July 2023].

Hern, A. (2023). *Streaming sites urged not to let AI use music to clone pop stars*. [Online].

Available at:

<https://www.theguardian.com/business/2023/apr/12/streaming-sites-ai-copyrighted-music-copycat-tracks>. [Accessed 10 July 2023].

Huber, C. (2022). *How to Get Spotify Presale Codes*. [Online]. Available at:

<https://extrachill.com/how-to-get-spotify-presale-code>. [Accessed 10 July 2023].

liuka, M. (2019). *Inclusive and Sustainable Industrial Development Working Paper Series Democratizing the adoption and use of advanced digital production technologies*. [Online].

Available at:

https://www.researchgate.net/figure/The-pace-of-technology-adoption-is-accelerating-from-46-years-to-5-years-and-speeding-up_fig2_339676993. [Accessed 3 July 2023]

Ingham, T. (2018). *Warner Buys A&R Scouting Tool Sodatone to Boost 'Search for the Superstars of Tomorrow'*. [Online]. Available at:

<https://www.musicbusinessworldwide.com/warner-buys-ar-scouting-tool-sodatone-to-boost-its-search-for-the-superstars-of-tomorrow/> [Accessed 10 July 2023].

Jenkins, C. (2020) Interview with Julie Knibbe. (2020). *“A&R has always been about data”: a deep dive into the role of data in A&R with Chaz Jenkins, CCO at Chartmetric*. [Online].

Available at:

<https://www.music-tomorrow.com/blog/ar-has-always-been-about-data-a-deep-dive-into-the-role-of-data-in-ar-with-chaz-jenkins-cco-at-chartmetric>. [Accessed 10 July 2023].

King, A. (2023). *Are 100,000 Tracks Uploaded Daily to Streaming Platforms? — Not Exactly*.

[Online]. Available at:

<https://www.digitalmusicnews.com/2023/02/10/is-the-100000-tracks-a-day-uploaded-to-dsps-inflated/#:~:text=Both%20Universal%20Music%20Group%20and,these%20DSPs%20are%20self%2Dreporting>. [Accessed 10 July 2023].

LANDR. (2023). *Mastering*. [Online]. Available at:

<https://app.landr.com/library/masteringPreview>. [Accessed 10 July 2023].

McRae, H. (2015). *Facebook, Airbnb, Uber, and the unstoppable rise of the content non-generators*. [Online]. Available at:

<https://www.independent.co.uk/news/business/comment/hamish-mcrae/facebook-airbnb-uber-and-the-unstoppable-rise-of-the-content-nongenerators-10227207.html>. [Accessed 10 July 2023].

Murphy, C. (2022). *On Mastering Music: Should You Hire a Mastering Engineer or Use Automated Mastering?* [Online]. Available at:

<https://www.digitalmusicnews.com/2022/08/22/on-mastering-music-should-you-hire-a-mastering-engineer-or-use-automated-mastering/>. [Accessed 10 July 2023].

Music Business Worldwide. (2018). *In A&R, Gut Isn't A Binary Choice*. [Online]. Available at: <https://www.musicbusinessworldwide.com/in-ar-gut-vs-data-isnt-actually-a-binary-choice/>. [Accessed 10 July 2023].

Native Instruments. (2023). *Komplete 14 Standard*. [Online]. Available at: <https://www.native-instruments.com/en/products/komplete/bundles/komplete-14-standard/>. [Accessed 10 July 2023].

Paine, A. (2021). *MIDiA Research: Indie sector and self-releasing artists lead streaming growth in 2020*. [Online]. Available at: <https://www.musicweek.com/labels/read/midia-research-indie-sector-and-self-releasing-artists-lead-streaming-growth-in-2020/082825/> [Accessed 10 July 2023].

Pastukhov, D. (2021). *Are We At The Dawn of A&R Data Wars?* [Online]. Available at: <https://www.music-tomorrow.com/blog/are-we-at-the-dawn-of-ar-data-wars>. [Accessed 10 July 2023].

Spotify. (2018). *How Spotify Puts Fans First*. [Online]. Available at: <https://artists.spotify.com/en/blog/how-spotify-puts-fans-first>. [Accessed 3 July 2023].

St. James, M. (2016). *DistroKid Can't Wait to Pay You: A Conversation with Founder Philip Kaplan*. [Online]. Available at: <https://performermag.com/band-management/music-promotion/distrokid-philip-kaplan-digital-music-distribution/>. [Accessed 23 April 2023].

Stassen, M. (2022). *Warner Is Signing Double the Number of Artists via AI Driven Tool*

Sodatone. [Online]. Available at:

<https://www.musicbusinessworldwide.com/warner-is-signing-double-the-number-of-artists-via-ai-driven-ar-tool-sodatone-than-it-did-last-year-now-its-hired-a-global-head-of-data-science/>.

[Accessed 10 July 2023].

Stassen, M. (2023). *There Are Now 120,000 New Tracks Hitting Music Streaming Services Each Day*. [Online]. Available at:

<https://www.musicbusinessworldwide.com/there-are-now-120000-new-tracks-hitting-music-streaming-services-each-day//> [Accessed 10 July 2023].

Universal Music Group (2023). Quoted in J. Coscarelli (2023). *An A.I. Hit of Fake 'Drake' and 'The Weeknd' Rattles the Music World*. [Online]. Available at:

<https://www.nytimes.com/2023/04/19/arts/music/ai-drake-the-weeknd-fake.html>. [Accessed 10 July 2023].

West, E. (2023). *How A&R Has Evolved: The Changing Landscape for Indie Artists*. [Online].

Available at: <https://www.indieartistpulse.com/posts/a-and-r-evolution>. [Accessed 3 July 2023].

Willman, C. (2022). *Music Streaming Hits Major Milestone as 100,000 Songs are Uploaded Daily to Spotify and Other DSPs*. [Online] Available at:

<https://variety.com/2022/music/news/new-songs-100000-being-released-every-day-dsps-1235395788/>. [Accessed 10 July 2023].