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Introduction

The relationship between technological advancement and the entertainment industries is a connection that is often overlooked; however, it is not possible to discuss developments in the music industry without taking into account changes in technology. In the past 20 years, the music industry shifted from being product-based to being service-based. This paper will analyse existent literature to support this thesis, and it will also use examples to show how and why this change happened.

Before diving into the thesis of this essay, it is necessary to make some distinctions. The first one to be made is the difference between products and services. According to Fletcher (2018), the main difference between a product and a service is that services meet the needs of customers (for instance, the delivery of a live show in exchange for tickets), while products allow access to the service (for example, a CD player needed to play a CD). As Civinelli (2020) explains, products enable services, and services support products: there would be no concerts if people did not buy music, and the promotion of live shows helps artists monetise their products (from music to merchandise).

The second distinction regards the music industry, which is not to be mistaken for one single operation. In fact, the music industry is made up of different industries that are closely related: according to Wikström (2013), it can be easily divided into the recorded music industry (which is inherently product-based), the music licensing industry (which is product-based as it deals with copyrights), and the live music industry (which is service-based as there is an exchange of money in return of a performance from an artist).

This paper will enquire on the relationship of the recorded music industry with new technologies on the market throughout the years. It will also take into account how new technology is influencing the wider music industry, arguing how ultimately the music industry is being shaped by developments on the market, rather than finding new and innovative ways to re-market itself.

The Relationship Between Technology and the Recorded Music Industry

The relationship between music and technological advancement dates back to 1877 when Thomas Edison filed a patent for the phonograph, the first medium to be able to record and reproduce musical compositions (Butler, 2012, p. 8). It is also the first known relationship between technological advancement and the recorded music industry. However, the phonograph was

expensive and limited in reproduction time: the wax cylinders used to reproduce music could only allow for 2 minutes of recordings, and there was no way to mass-produce them (Library of Congress, 2022). It was the commercialisation of the radio in the 1920s that saw music entering the homes of millions of people, with 80% of Americans owning one by 1939 (Elon University, 2022). Here we can see the first signals indicating that the music industry is, in fact, subject to changes dictated by technology. If the walkman had not been invented in 1979, people would not have known the need for tailored playlists and soundtracks for their lives as much as they do today.

The examples above show how the music industry was helped by technological developments in its beginning, following the invention of vinyl discs, cassettes, and ultimately CDs. CDs were first publicly launched in 1982 by the Bee Gees after a long period of research carried out by Philips and Sony. The two companies came together in 1979 after Philips first started experimenting with the concept of CD in 1970 (Coldewey, 2015). In the years immediately after the launch of CDs as a medium to listen to music, consumers were still favouring cassettes, as Walkmen and car stereos were at their peak. However, this is the first time that we see the world adapting to innovations brought by the music industry and not vice-versa. As seen in figure 1, the music industry thrived with the sales of CDs, which peaked in 1999 with \$39 billion in global revenues (Hochberg, 2019). 1999 was the strongest year for the recorded music industry, that until then demonstrated its ability to utilise new technological developments in its favour: up until the early 2000s, singles were accessible only by buying the whole CD, thus increasing sales despite the lack of interest in the consumers. This marketing ploy helped direct

consumers to compilations of singles, such as “Now That’s What I Call Music!”, a joint venture between EMI, Sony, and Universal that exceed 200 million sales (EMI Music, Universal Music Group, Sony Music Entertainment, 2010).

On the same year the music industry registered the highest sales of all time, Shawn Fanning created Napster and gave consumers a way to access music for free through a computer, shattering the foundations upon which the recorded music industry was basing its revenue streams until then. With the beginning of the new millennium, consumers did not need to buy CDs to access music anymore.

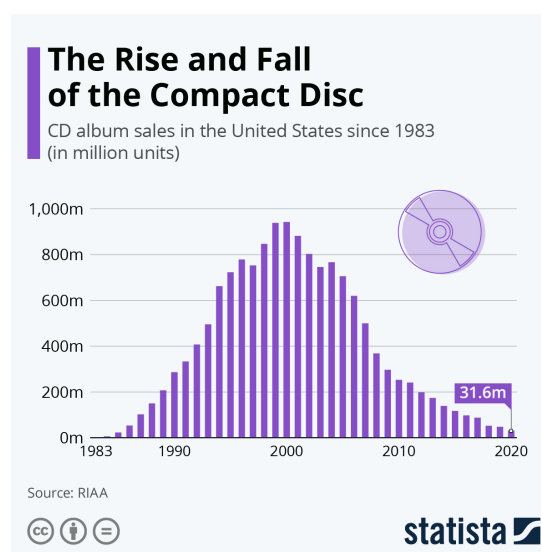


Figure 1

The reception of the music industry was predictably negative, but the numerous lawsuits did not cease the existence of free pirated music websites that anyone could access. It took the industry four years to develop an alternative to piracy: Apple iTunes was launched in 2003 and it brought together the convenience of downloaded music to the convenience of paying just for the songs consumers wanted (as opposed to being forced to purchase albums) (Forde, 2019). According to Wikström (2013), the major labels' attempts at tackling the piracy problem in those years were focussed on avoiding competing with physical sales (which were then considered the most sustainable form of marketing music). The music industry was desperate to keep music in a digital format that they knew how to track and control. A report by Kover (2020, pp. 129-135) highlights major labels' efforts in creating a downloading model on their websites with poor results, as the music would take up to 10 minutes to download. Furthermore, what the recorded music industry could not understand was that consumers would not prioritise fair use or copyright exploitation when choosing how to access music, especially when big names such as Courtney Love were advocating for piracy as a means to end binding major labels contracts (Forde, 2019). Thus, it was not until 2006 that we saw new technologies tackling the newfound need of having music easily accessible from the internet at a competitive cost. When Daniel Ek launched Spotify, the music

industry demonstrated to be completely reliant on external sources to innovate its business model, having waited almost 15 years before starting making revenues again. In fact, data shared by RIAA in figure 2 shows how it was not until 2014 that the industry slowly started recouping revenues. This was due to streaming platforms' efforts at luring customers in, both through premium and freemium (ad-supported) plans that combine the convenience of having music at the tip of your hands to prices that resonate with the free (and illegal) options found on the internet.

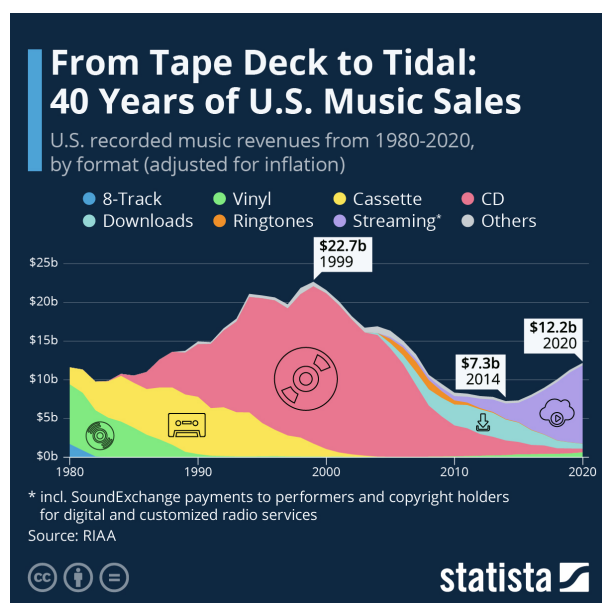


Figure 2

Both the CD and the streaming success demonstrate that the industry can be able to exploit existing technology to stay afloat. However, the industry is also known to be fighting to preserve its product-based business model. Going back to the original statement of “services support products”, it is hard to frame what the product is

nowadays. Technology developed and changed how people consume music, but at the same time, it also shaped how music is made. If back in the day recording songs required professional studios, time, and money, now anyone can make, produce, and master songs with as little as a phone. The departments that thrived the most in the digitalisation of the industry certainly are those of music production programs and digital mastering, which effectively turned their product-based business models into a completely automated service model that anyone can access (Recording Connection, 2022). The convenience of DAWs includes music distribution, which can be accessed for free or for small fees by anyone. The status of record labels also changed, as the services offered by them are easily accessible for free. Moreover, splits on royalty percentages can be easily tracked thanks to services such as Ditto's Bluebox (Smirke, 2020) that operate on blockchain networks. In this way, contracts can be signed online, and payments can be easily collected. The rise of streaming platforms, distribution services, digital mastering, and so on provided independent artists with a range of services that back in the days were only available through record deals, thus making the figure of labels obsolete. The power that is being put back in the hands of musicians, however, increases competition not only among creators but also among service providers.

New Technologies Shaping the Industry

Although the industry's approach to new technologies has always been wary after the mp3 boom and consequent decline in revenues, the latest years have proven to be very valuable when it comes to innovative approaches to marketing music and presenting artists. The 2020 pandemic reshaped the way live music had been thought of since then. If Marshmello's one-off Fortnite gig blew people's minds in 2019 (Goeman, 2019), live-streamed shows became the norm during and after lockdown. The pressure on artists to get into 360 experiences including Spotify canvases, live-streamed concerts, in-game shows, and virtual reality gigs is now more tangible than ever. However, public reception is controversial, as die-hard music fans would rather attend in-person gigs than online experiences (Price, 2022). As argued by Chidekel (2021), the issue with these kinds of technological experiences is the split of monies, as they have to be allocated to the vast number of people contributing to the realisation of such shows.

It is not only the live music industry that has suffered from the Coronavirus outbreak. When the pandemic hit, the music industry suffered unprecedented losses that once more demonstrated its inability to generate revenues if not supported by technology. With gigging cut off by travel restrictions, labels had to find ways to stay afloat. However, their poor hindsight caught them unprepared to support customers demand as much as they could have. Artists were able to entertain

fans through live streams on social media, but more immersive experiences could have been sponsored by labels straight away if they knew how to exploit existent technology. Although relationships with different departments of entertainment technologies are being put in place, the underlying message is that the industry is still reliant on external advancements to make new business plans.

Nowadays, record labels are pushing to integrate new technological advancements in their marketing strategies, such as in the case of virtual assistant technologies the likes of Alexa: consumers can instantly access a library of music, and receive updates and perks through their subscription. These virtual assistant technologies fall into the category of marketing music, which changed completely from the past. Now, artists rely on digital campaigns to market their products, including but not limited to email marketing, automations, giveaways, merch drops, and so on. User data from sales and advertisement can also be tracked to re-market to similar pools of people, providing campaign managers and artists with more power than in the past. A wide pool of similar services is readily available to independent artists, who can now manage their career with no further help from institutions. The development in technologies allowed people to create their websites for free, engage with fans through chatbots and social media automations, and create apps that can be used to promote music. Visionary artists such as Björk found new ways to market their creations through the use of apps - *Biophilia*, Björk's 2011 album, was exclusively made available via app download (Kiss and Needham, 2011). In this case, we can see how an artist was able to exploit existent technologies to their avail, monetising their music on a relatively undiscovered market to generate higher revenues than streaming royalties would do.

Conclusion

The rise of the internet and the subsequent digitalisation of the music industry harmed the product-based model on which the recorded music industry was relying its income upon until then. Digital music shifted the power dynamic, which is now in the hands of the consumer as a service-based and competitive market relying almost completely on marketing stunts, data collection and touring. If the first years of the music industry as we know it brought money, power, and visibility to few, now the market is accessible by anyone, and the money flowing in has to dilate among the various stakeholders. The shift to a digital, service-based industry and the consequent flow of new talents in the market increased competition, resulting in an extremely competitive and hardly accessible environment. On the other hand, major labels fought the digitalisation of the industry, proving to be unable to use the developments in technologies to their avail. If the invention of the CD was heavily

supported by labels, the new medium to listen to music was rejected, although they now hold shares in most streaming companies. In fact, recent years are showing a more proactive approach, however no tangible technological changes are being brought forward by the industry.

Technological developments cannot be fought, as the world is absorbing technology at a faster pace thanks to the availability of the internet. Independent artists do not feel the need of being supported by a record deal as much as they did before, therefore labels should find ways to stay on top of the competition by implementing new services and technologies to their business models.

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