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New Technology
Essay

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

Introduction

Prior to the 20th Century, music was a service-based industry. Music could not be bought and sold as a physical product. The invention of the sound recording transformed the industry into a product orientated one, focused on the buying and selling of physical music recordings in the form of LP's, Cassettes and CD's.

Over the last 20 years, technological advancements and consumer dissatisfaction have shifted the entire music industry from a product back into a service-based industry. The process was a painful one, with enormous drops in revenue as older and more established companies found it hard to adopt the external technological change, especially when their traditional, product-based business model had provided such enormous profits in the years prior. As such, with the advent of these new disrupting technologies, almost every music company related to the production, sale and distribution of physical music in the form of either CDs, LPs or cassettes faced a very similar question. "How to derive value from delivering digital files, which users expect to download for free" (Chesbrough, 2010). It was the industry's answer to this question which caused a rapid shift of business models, ultimately resulting in the music industry primarily becoming a service-based industry, rather than a product-based one.

Primary Technologies of Change

Music has shifted from a product-based industry into a service-based industry due to the combination of a number of key technological advancements, most notably the MP3 format, the internet, and peer-to-peer networks. These external technologies forced the drastic altering of the production, distribution, and consumption of music since 1999.

Music has since become a non-excludable good, causing a shift in the way music companies extract value from users. This huge and rapidly occurring change resulted in the question, how is the recorded sector of the music industry, encompassing artists and music companies, able to earn money from music if listeners expect to either download or stream it for free?

MP3

For the music industry to change from a product to a service-based industry a file format small enough for the storage and distribution of music over the internet was needed. The MP3 was created in 1989, long before its colossal impact with its adoption by Napster. It was created by Karlheinz Brandenburg and a team of researchers from Erlangen-Nuremberg University and the Fraunhofer Institute for Integrated Circuits. It was then made publicly available after the software was stolen by an Australian student (Fraunhofer, 2019). These relatively small files were vital as it allowed music to pass quickly across the internet on what was a very slow (by today's standards) phone dial-up connection. It did this by compressing and decompressing data in audio files which reduced the file size but not damage the quality of the sound recording.

Surprisingly, the MP3 was pronounced dead in 1995 and almost abandoned as a technology, it was seen as commercially unsuccessful (Browning, 2017). It was only the rise of illegal peer-to-peer file-sharing sites such as Napster which revived the technology and brought it into the global mainstream. The MP3 allowed users to stockpile music in a way which had not been possible before and made it almost impossible for copyright owners to enforce their ownership of the music that was being distributed. As the market moved into a streaming/service-based one, MP3s found their place again as the go-to file format for music on their platforms. Therefore, the MP3 has had a significant impact on the music industry, it could be argued that without the MP3 or a similar equivalent, music streaming companies would not be able to exist.

The Internet

Prior to the arrival of the internet, the music industry was in the hands of a few key players, most notably four leading major record labels Sony Music, EMI, Universal Music and Warner Music Group. It was a centralised industry and the internet changed that by accommodating the technology which decentralised music distribution to users and startups based on innovative new technologies. The internet has allowed people to connect from all over the world, artists, fans and businesses can now interact with each other instantly. It acts as a platform for new technologies such as the mp3 and peer-to-peer file sharing, which together made music instantly available for free on a global scale. The internet provides an opportunity to empower independent musicians and record labels, companies such as AWAL and CD Baby capitalised on the opportunity. The internet also allowed consumers to customise or even create their own product or service, such as custom playlists and music channels.

The internet allowed for the spread of ideas through forums, social media and blogs. A new company which suddenly provides the world's music for free can be shared to millions of people in a very short amount of time. Whilst social media provides the opportunity for artists to connect with fans directly, in addition to increasing their chances of being discovered. The platform it offers provides new and more efficient ways to share, buy, download and promote music.

Peer-to-peer File Sharing

In 1999, a peer-to-peer MP3 file sharing service called Napster launched, bringing free music to the world for the first time in history (Independant.ie, 2000). Annual global music sales then declined rapidly by about \$2 billion from 1999 to 2002. This was primarily attributed to

unauthorised online peer-to-peer file-trading sites such as Napster and Kazaa, but also offline piracy (CD ripping), a change in the purchasing priorities of younger consumers from music entertainment to DVD's and video games, and a poor economy (Strauss, 2003). As of June 2003, "The number of infringing music files at any one time on peer-to-peer services is now estimated at 1 billion, compared to 500 million in June 2002" (Cohn).

Once music became freely available through Napster, irreversible disruption had been done. After 4 years of having access to free music through peer-to-peer services, it was clear that this new file-trading behaviour had become embedded in global culture. Information and communication technologies further solidified this trend and consumers no longer became passive recipients of music but now had far greater access and were unwilling to go back to the way things were (Jason Potts, 2008).

From Product to Service

The way music was consumed changed rapidly, it soon became almost impossible to maintain profits of the pre-internet days by using traditional models based on physical music sales (Liebowitz, 2006). Many businesses were forced to re-evaluate their value propositions and had to place emphasis on a more customer-focused model (Teece, 2010). These new business models had to be able to adopt the technological advances affecting the music industry into a model that replaced the falling revenues from physical sales. The music industry eventually had to come to terms with the fact that moving from a product-based model to a service-based one was the only way they might be able to recoup losses from declining physical music sales. As new social media networks and peer-to-peer technology was being developed and released, consumers had now come to expect to receive music content free of charge.

Traditional Business Model

By the end of 1990s the record industry was on an all-time high in terms of total revenue. Controlled by just a small number of key players, global music revenues in 1999 hit its peak at \$21.5 billion (Routley, 2018). In the U.S. CD sales made up 87.9% of total revenue which account for \$12.8 billion (RIAA - U.S. Sales Database, 2019). This traditional business model was almost entirely dependent on the mass production and sale of physical goods, primarily in the form of CDs. Record labels were responsible for signing the artists, ordering the manufacture of CD's and then organising the distribution of the physical music copies through stores, direct mail and early online retailers, in addition to pop up stores at artist live shows. The industry was focused around the selling of music as a product not a service, but at the turn of the century that soon changed due to the rise of a new and innovative way of consuming music.

Renegade Business Model

On June 1st 1999, Shawn Fanning and Sean Park launched Napster, which soon became the fastest-growing application of all time up to that point (Independant.ie, 2000). By February 2001, it reached 26.4 million certified users with many estimates placing the total number at 80 million (Forde, 2019). Napster utilised peer-to-peer file-sharing technology and provided it as a service which allowed users to quickly share MP3s on their computer with

others around the world. It was the first renegade organisation to acquire both brand recognition and loyalty before being shut down by the U.S. court system on July 11th, 2001 (Richtel, 2001).

The characteristics of the renegade business model feature's unauthorised and illegal peer-to-peer digital music file trading. The providing software provides the means for millions of consumers to become unauthorised mass distributors of music for free and bypass copyright owners.

Following Napster's shutdown, Kazaa became the new leader of this new type of file sharing service. By May 2003, over 230 million users had downloaded its software, making it one of the most downloaded programs on the internet (CNN, 2003).

Download Business Model

iTunes was launched in April 2003 by Apple and was the first major success for this new type of music download business model and was seen as a possible answer to the renegade model. 14 million songs were purchased and downloaded within its first 6 months and by July 2004, its 100 millionth download had been reached. It was one of the first to offer legal downloads and took 70% of the market share from illegal downloads (BBC News, 2004). Prices in download business models are far lower than those of the traditional business model. The mp3 technology meant that the cost to replicate a piece of music was zero, it was therefore, a far more cost-effective way of distributing music than physical sales through retail stores. In addition to this, the files were on average a better quality than that of illegal sites, and there is a zero risk of lawsuits. These two competitive advantages are what helped iTunes take such a large portion of the market in such a small amount of time. iTunes was described in 2003 as "the first really useful, and enjoyable, legal music service" (Mossberg, 2003).

Streaming/Service Business Model

The legal approach to answering illegal peer-to-peer music sharing sites proved fruitless. Apple's answer with iTunes was a step in the right direction but it still couldn't match the appeal of the free illegal services. In a 2009 IFPI report, they estimated that around 95% of tracks were being downloaded without payment to rights holders (IFPI, 2009). The market was in need of new business models what could compete with the renegade model. Many established firms found they had severe barriers when shifting from a product to a service-dominated model (Florian Waldner, 2012). Many had to re-evaluate their value propositions in line with the lowered cost of providing information and customer relations due to new technological advancements as well as new competition and customer demands. These businesses often shifted to become more customer-centric (Teece, 2009). Services such as YouTube, Soundcloud and Pandora's interactive radio offered early versions of an on-demand music service, but it wasn't until the launch of Spotify in 2008 that the streaming model we know today was born. It had an all-encompassing catalogue and most importantly, was entirely legal.

This new service-based model has become a proven success, there are now over 200 streaming service DSPs which, by the end of 2018, represented 47% of global revenue (The Music Maze, 2018) (IFPI, 2019). Despite this, as of 2019, music torrenting sites still represent 6.7% of the market, illegal consumption of music hasn't gone away. 38% of all music consumed globally is still through copyright infringement methods, such as stream ripping and peer-to-peer systems (IFPI, 2018). Two reasons are attributed to this, so that the user can listen to music offline and avoid paying for a premium streaming subscription.

Unfortunately, most streaming service business models struggle to be financially sustainable. Spotify only just turned a profit after 10 years since its launch in Q4 of 2018. It is likely that many other services have also been struggling to become profitable. It is worth mentioning that the valuation and momentum of the business are also crucially important factors. A larger market share and territory maturity allow for more opportunities to turn free users into paying subscribers.

The new streaming/music-service market is only 13 years old, therefore the potential of this model and technology has not been fully realised. Although copyright infringing methods are still high, they are on a downwards trend. There is still continuous development on what streaming has to offer which may help attract more users into the streaming ecosystem and away from the renegade businesses.

Summary

For the industry to catch up and exploit technologies offered on the internet, they needed to fulfil the demand for access to all music without limiting consumer choice whilst making it feel free. This resulted in an industry-wide shift from a product orientated business model, in which the sale of physical copies was the primary source of revenue, to a service-based model. This new service-based model is currently providing listeners with a far better-quality service than any previous renegade or download type business could provide. Higher quality sound, AI-enhanced user-specific curation and an option to listen to music for free or pay a monthly subscription to remove advertisements.

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