

Free music was caused by the shift from analogue to digital storage

As I flick through my Spotify playlist, my mum laughs, “When I was your age we didn’t listen to music on our cellphones, we didn’t even have cellphones.” The music industry is ever changing as a result of developments in technology, but one major development has been the shift from storing music using analogue versus digital. As a result, we now have access to free on demand music. Prior to 1992, the most popular way of listening to music was by the radio, CDs and tapes, and before that there were other types of analogue music. Since then, the consumption of music has changed quickly with developments in technology through the creation of digital methods of storing music. This has led to online streaming. While the concept of music streaming seems modern, it has adapted to keep up with current trends and consumer demands, it has actually been around since the early 2000s.

1 Most teenagers won’t be familiar with analogue forms of music storage, although record players and vinyl records are becoming popular again (<https://www.musictimes.com/articles/81726/20200601/revival-records.htm>). Prior to digital music storage being developed in the late 1980s and 1990s, people originally listened to music on vinyl records, with this technology beginning in the 1800s with the development of gramophones. In the early 1900’s broadcast radio began, making it possible for groups of people to listen to music played live or on a gramophone. In the 1960’s 8-track cassette tapes were developed, which was a much more compact method of listening to music and made it possible for music to become portable. Compact cassette tapes, a much smaller version of the 8-track could hold more music (up to 2 hours). These could be bought blank (to record your own music) or pre-recorded with music from bands on them. An industry around cassette tapes and machines grew until the sale of cassette machines outsold any other machine in the 1970’s. People obviously wanted to be able to listen to music in any setting and the portable nature of cassette tapes and machines helped the consumers to do this. Compact cassettes had poorer sound quality than vinyl and 8 track cassettes, but this improved throughout the 1980s. 2

3 “When I was a teenager we used to listen to the Billboard Top 100 hits on Sunday morning and use a cassette tape to record the top 10 songs from the radio. This meant we could listen to them over and over again for the week until the new songs came out the following Sunday.” (Alex Booker). This was a common experience for young people living in the 1980s before music became digital. Analogue forms of music made it hard to access music unless you went to a record shop and bought it, listened to it on the radio or recorded it (illegally) yourself off the radio. Digital methods made capturing music much easier as files could be shared with friends. All sound is analogue but it was the development of digital ways to store it, rather than analogue that changed the music industry and helped make music free. 4

1 Most people think that mp3s were the beginning of free music, but they weren’t. An early digital format called Linear Pulse Code Modulation (LPCM) was used to put analogue music onto compact discs (CDs). “The compact disc (CD) brought PCM to consumer audio applications with its introduction in 1982. The CD uses a 44,100 Hz sampling frequency and 16-bit resolution and stores up to 80 minutes of stereo audio per disc.” (Wikipedia). The .WAV (called wave) file format was developed by IBM in the 1980’s as an uncompressed audio format to hold LPCM files. These two bits of technology helped pave the way for mp3s. The problem with .wav files was that they were very large and so sharing files was very hard. “Today people can move digital files around very easily but in the 1980s there were only floppy discs that could hold a miniscule amount of data compared to today” (IBM). By 1986, floppy discs could still only hold 1.44 megabytes, and people thought that this was a lot of file size. As people’s interest in sharing music files grew, and the technology changed, it became clear that smaller audio files were needed. This is why the mp3 was developed. 5

6 These developments in the consumption of music wouldn’t have happened had it not been for the creation of the internet, the platform with which music is shared, listened to and talked about, around the world. It is difficult to pinpoint when the internet was first invented because it is such an expansive and ever-changing technology, however there are two pivotal dates in its creation; January 1st, 1989 when ARPANET (Advanced Research Projects Agency Network) took on TCP/IP (Transmission Control Protocol and Internet Protocol) and 1990 when Tim Berners-Lee developed the World Wide Web. Before music streaming services were available, the main ways of listening to music were vinyl records, cassette tapes, CDs and mp3s. The mp3, was the beginning of easily shared, digitised music, as it allowed people to download single songs off the internet by compressing digitally recorded files. In 1995, to maintain the popularity of this method of music consumption, a free mp3 encoder known as 5

'shareware' was released. In the year following this development (1996), music piracy flourished. These pirates however, were not brandishing swords and stealing people's booty, they were much sneakier, perched behind computer screens, downloading free mp3s and sharing these music files on the internet.

6 Come 1998, with the rising popularity of listening to music via mp3, Napster raised their sails and attracted a lot of attention. The launch of Napster meant that people all over the world could easily access almost any song, free but at great cost to the music industry. This music streaming service led to a 50% decline in the CD sales between 2000 and 2007. With free music available at the touch of a button, the popularity of Napster grew rapidly and because people could download single songs instead of whole albums it was a very easy way to find the song you wanted without having to buy a CD and find the song. Napster was the beginning in the transformation of the music industry but as a result of legalities concerning copyright, they met their downfall. However not all was lost, Napster opened the world up to music streaming and revolutionised the industry forever. Some artists, such as Metallica, fought against these changes that were happening in the industry, while other artists were more willing to adapt to the changes, and go with the flow. Bowie, in a 2002 interview had the opinion that, "The absolute transformation of everything that we ever thought about music will take place within 10 years, and nothing is going to be able to stop it. I see absolutely no point in pretending that it's not going to happen." He went on to say that this development was "terribly exciting" but also warned others, whether they liked the idea of it or not, to be prepared because things were going to change no matter what. 7

6 It was evident that while free peer-to-peer music sharing was an extremely contentious practice within the music industry, online music sharing was certainly a direction worth exploring, and as predicted, online music streaming kicked off in the new millennium. This exciting new part of the industry began with the iTunes Store, that was launched by Apple in 2003. The iTunes Store allowed people to access an 'online music library' in conjunction with their mp3 players, for a small \$0.99 per song. This development had customers flocking because they could access all the songs they wanted cheaply, without giving their computers nasty viruses by trying to pirate songs illegally. As a result of the success of the iTunes Store, two years later, Pandora released their own online streaming service. To attract customers, Pandora's streaming service also recommended new music for their customers, based on their recent listening history. This ingenious development in music consumption set the ball rolling, and in the following years, many more music streaming services became available for consumers.

The next development to hit the music world was the 'freemium model'. This model is used by a number of different music streaming services as their 'basic service'. In the freemium model, a basic or downgraded version of the software is offered free of charge, while users who wish to have more features can purchase a premium version. Freemium music streaming is ad-funded in order for the companies to continue making money from the free service. According to Lohan Presencer, of the Ministry of Sound, "Free streaming is killing the music industry". This free service "gives the pirates an alternative", and it means that people can listen to music for free, without breaking any copyright laws. The artists are the ones losing out here, for people that are trying to make their living from their music, free streaming services are not doing them any favours. The rate for Australian artists equates to only half a cent per stream – adding up to about \$5 per 1000 plays. 7

8 Spotify, the most popular streaming service, has more than 60 million active users globally, of which 15 million pay for its premium service. People seem to want ondemand and free music, as show by the rise of streaming services. Research into the Global Music Industry shows that the overall developments in consumption, as a result of developments in technology, have been good in helping people change how they access music.

Bibliography

Hugh Harlow, Professional Practice Fellow, School of Music Production, Otago University

Wikipedia

How Music Got Free by Stephen Witt

Rest of list omitted