



Student Name: Lucan Mills

Student Number: 1906671

Module Code: BMTY7001

Module Title: Economics, Planning, and Finance

Title: Report

Lecturer: Judith Shapiro

1. Introduction

2. History of Pandora

3. Economics

3.1 The Market

3.2 Services and Customer Base

3.3 The Macro Environment

3.4 Pricing Strategy

4. Competitors

4.1 Spotify

4.2 Apple Music

4.3 Tidal

4.4 Amazon Music

5. Finance

6. Lean Business

7. Conclusion

8. Bibliography

1. Introduction

In this report, I will be analysing Pandora, the music streaming service based in Oakland, California. Sirius XM Holdings currently own the company. In this report, I will share a brief history of the company, before analysing their position in the current climate. I will discuss their micro and macro environments and explore how their products and services are positioned in the market, whilst reporting on how this compares to their competitors. Since Pandora's inception, it has had to navigate various economic challenges, including turning an annual profit, issues with royalty payments, and growing its paid subscription users. I will also explain lean business models and how Pandora could benefit from implementing such practices.

2. History Of Pandora

Pandora was founded in January 2000 by Will Glaser, Jon Kraft, and Tim Westergren under the name Savage Beast Technologies (Harrison, 2015). The company was first intended as a business-to-business enterprise that utilised the Music Genome Project, a system conceived by Westergren which could analyse the structure of a song and match it to a listener's tastes based on the music traits. "Unlike other projects, such as musicologist Alan Lomax's Global Jukebox, the impetus of the Music Genome Project is

to be a successful commercial venture. To do that, they are not making the mistake of attempting to compete head-on with ventures such as iTunes and Rhapsody. Instead, they are attempting to take advantage of an economic concept called the long tail" (Joyce, 2006). The long tail is a business strategy that allows a business to earn substantial profits by selling lower volumes of unique items to a large customer base, instead of only selling large quantities of a smaller amount of more popular items.

After facing complications due to financial strains, the company decided to focus on the commercial market. It launched Pandora as an internet radio service using the Music Genome Project so users could benefit from personalised assistance. Pandora officially launched in September 2005 after successful beta testing and started as a paid subscription service before implementing a free ad-based service shortly after.

Pandora was floated on the stock market in 2011 with a user base of 48 million monthly users (Curry, 2020), and its growth was a steady year on year improvement. Despite increasing in size, Pandora failed to make a profit due to its advertising income inability to cover the cost of increasingly expensive licensing agreements. After growing its user base to 63 million monthly users in 2019, Pandora was acquired by Sirius XF Holdings for \$3.5 Billion in stock (Porter, 2018).

Pandora is currently the 7th largest music streaming service in the world, with 60.9 million users (Dredge, 2020). In the

last reported accounts from the parent company, Sirius XM Holdings Pandora's revenue was \$1.78 billion. Their main goal is to grow its paid subscription service by implementing new features and services like Pandora Stories, which helps artists connect to users with vocal narratives that can be added curated playlists. Also, Pandora was one of the first companies to explore the podcasting market, and they have now offered a direct upload system so that users can upload their own. In recent years, Pandora made five acquisitions, most notably the purchase of Ticketfly and Rdio in 2015, which made the company considerable losses (CrunchBase, 2020).

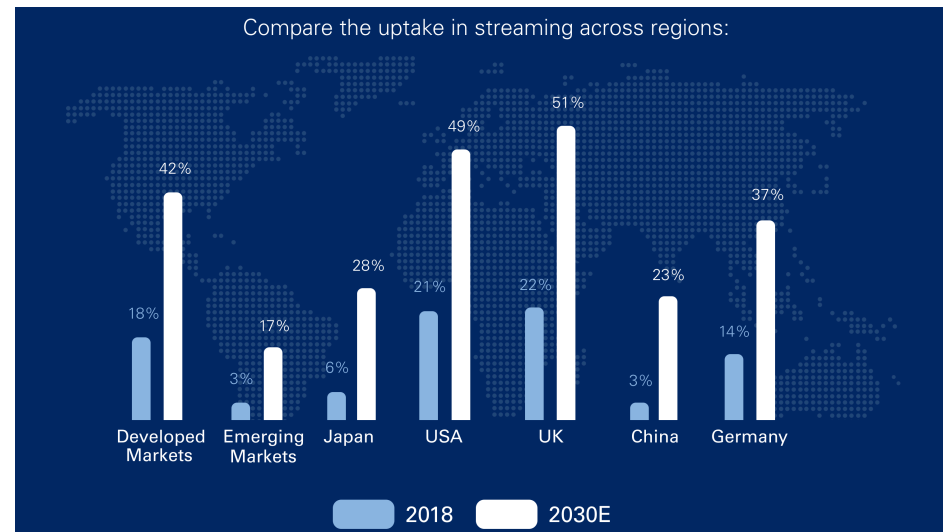
Pandora's mission statement is to enrich people's lives by enabling them to enjoy the music they know and discover music they will love, anytime, anywhere. Pandora has one of the largest user databases at its disposal; the future could see some positive changes.

3. Economics

3.1 The Market

The global music streaming market in 2019 was valued at 20.9 Billion Dollar and is expected to grow at a compound annual rate of 17.8% in the next seven years (Grand View Research, 2020). With over 10 Billion smartphones sold worldwide since 2008 (Statista, 2020), it has become clear that the easy access to new technology and commercial

success of smart devices have given Pandora and other streaming services like Spotify, and Apple Music a very buoyant market to capitalise on. In the first quarter of 2020, the number of music streaming subscribers worldwide amounted to 400 million, up from just under 305 million at the end of the first half of 2019 (Watson, 2020).



(GoldmanSachs, 2020.)

The streaming market has expanded at a tremendous rate and with more emerging markets like India, and Brazil is adding to these numbers, then it is only set to see higher revenues. Goldman Sachs estimate that 21% of smartphone users will be streaming music by 2030, seeing rises of 29% in the UK market alone. Streaming services growth can also be attributed to the development of technology, like voice

recognition and personalisation. This has provided users with the ability to discover, playlist and share music in a completely new way. It is reported that between 20,000 to 24,000 tracks are uploaded to Spotify, Apple Music, Napster and other streaming music service every 24 hours. That is 1 million tracks every six weeks. (Houghton, 2018). With the rise in new music releases and user growth, it has provided the streaming market with a vast customer base, whilst building relationships with the records labels and music providers and giving brands like Pandora the ability to curate special events beyond streaming to try and generate new revenue incomes.

The music streaming market saw a decline in streaming consumption at the beginning of the COVID-19 pandemic; however, this rose again by 2% at the end of April, (Grant, 2020), and global online music streaming subscriptions spiked 35% YoY in Q1 2020 to reach 394 million subscriptions, according to the latest findings from Counterpoint Research. Driven mostly by the increased usage of the OTT platforms as people stayed at home amid the COVID-19 outbreak, (Kumar, 2020). In addition to rising numbers, service providers were able to make stronger connections with users and emerging artists by collaborating on new projects in response to the pandemic, which help grow audiences in their target markets. The next step in the music streaming market would be to develop new features and services in listener customisation and artist toolkits, which improves the industry on both sides. As new technology like 5G expands globally this will give the market

the ability to provide more content at faster speeds, whilst also providing lossless audio quality, which currently is only available at services like Tidal, but at a much higher price point. 5G would also give them the ability to live stream other products using a hologram, augmented reality, and live music videos, without compromising on quality (Bludov, 2020).

The market the ability to provide more content at much faster speeds, whilst also providing lossless audio quality, which currently is only available at services like Tidal, but at a much higher price point. 5G would also give them the ability to live stream other products using a hologram, augmented reality, and live music videos, without compromising on quality (Bludov, 2020).

3.2 Services and Customer Base

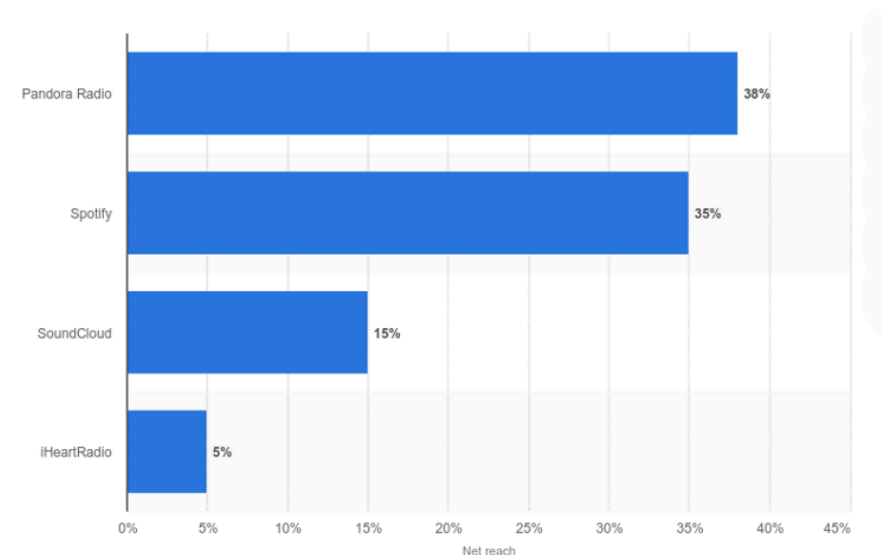
Pandora provides an array of different services within its music streaming platform, arguably the most important of which is the Music Genome project which revolutionised how music was consumed and many credits it for setting the standard in music streaming. The Music Genome Project that drives Pandora can suggest music by analysing over 450 different attributes, including instrumentation, vocals, and tempo, and even vocal harmonies. It also creates users personal radio stations, playlists (if you are a Pandora Premium subscriber) by adding music for you once you have selected a few songs of a similar nature (Waniata and

Kennemer, 2020). These are known as focus traits, and there are over 2000 of these implemented into the system. Pandora was the first to adopt a radio-style model, which was quickly copied by other companies to varying degrees of success. This gained the attention of Sirius XFM who are now the companies owners. These radio stations are operated by a thumbs up, thumbs down model, which will help determine your long term listening patterns. Pandora also introduced a product that would cut out low-quality music, including covers and karaoke versions to give the listener a cleaner experience.

Pandora also provides artist tour information in its product line up with artist commentary for a more personal touch. Pandora provides a free advertised subscription model as well as a new premium subscription service, which provides extra benefits like offline listening. According to Wilson (PCMAG, 2020), the new feature Pandora Stories, sees artists deliver insights into the making of an album. For example, the Mary J. Blige episode celebrates the 25th anniversary of her classic *My Life* album, highlights the processes that led to its creation. Interspersed between her reflections are tracks from the album. Pandora Stories is similar to Slacker Stories, except that artists deliver the information instead of DJs. Pandora is continuously trying to diversify their services to stay competitive in a crowded market.

Pandora's customer base consists of free-to-use accounts as well as paid subscribers, which is something they have been trying to expand over recent years. "Due to the increase in

popularity of other services Pandora have seen a steady decline in their free-to-use customers over the last few years. Pandora ended 2019 with 63.5 million monthly active users, representing an 8.5% decline year-on-year as the service lost 5.9 million listeners. Its total ad-supported listener hours for the year also fell, by 9.5%, to 13.4bn. However, Pandora ended 2019 with nearly 6.2 million 'self-pay' subscribers, having added 251,000 over the course of the year" (Dredge, 2020).



(Statista, 2020).

Pandora's focus on growing its customer base is vital as competition tightens. With new services adapting at a fast pace and total subscriber numbers dropping, Pandora needs to find inventive ways to entice new customers and reengage

their existing ones. However, they can be positive, as, in June 2019, a survey showed that they were the most popular streaming service in the U.S.

3.3 The Macro Environment

The demand for music worldwide has continued to grow at a favourable rate with on-demand streaming consumption hitting 1.15 trillion streams in 2019, which was a rise of 29.3% from 2018. Audio streaming alone accounted for \$745.7 billion of this (Marketing Charts, 2020). The companies economics has changed dramatically in the last few years since music could be shared for free with new technology. Companies like Napster, who promoted piracy were at the forefront and made not paying for music the norm. This, however, has not kept the music industry from providing economic value. It has continued to grow and find new ways to monetise, and streaming has now positioned itself as one of the most crucial income revenues in this new era.

“Streaming now makes up 85% of all revenue in the U.S, with physical sales only commanding 7% — just slightly higher than the 6% made by digital downloads” (Heater, 2020). This year due to the economic difficulties we are facing due to COVID-19, people have been indoors and entertaining themselves in a new way. Paid subscriptions are up 24% year-over-year, and total revenue exceeded a 12% rise, reaching \$2.4 billion in six months. However, due to a drop in ad sales, this has affected the free-to-use platform, that is the most

considerable portion of Pandora’s business model (TechCrunch, 2020).



(BusinessWire, 2020).

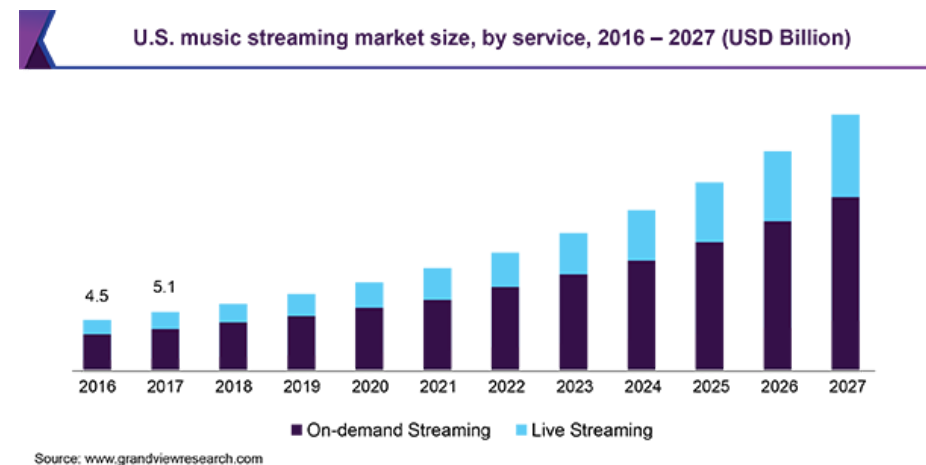
Music streaming is set to record a higher growth rate than global GDP this year, and whilst many industries have been affected by drastic losses, streaming sets to benefit from increased users, listener hours, and a higher advertisement reach. Three main economic growth areas have contributed to this rise. The increase in wearable technology and devices like Amazon Echo, has provided instant access to music like never before, creating a much larger global audience with access to free-to-use as well as users that are prepared to go premium.

The second impact comes from the paid subscriptions have also seen an increase, which is a significant contributor to growth in the market by increasing revenue margins and providing listeners with ad-free music, and exclusive content. The emerging markets are the third factor to be aware and most specifically the Asia-Pacific region, which will reportedly account for 54% of the market share, which is an enormous opportunity (Maida, 2020). Even though their market looks positive, there are some difficulties facing music streaming and Pandora in particular.

Pandora is classed as a non-interactive service because it uses algorithms to build personalised radio stations. This has a significant effect on the company's economics due to the need for compulsory licensing with the Copyright Royalty Board. Pandora has been subject to this licensing fee, and this is a set fee, which is fixed by the CRB. Mike Herring, the Chief Financial Officer of Pandora, revealed that the company must pay a licensing fee of \$20 for every thousand hours of music played. With 70 million active users and counting streaming for roughly 18 hours a month, Pandora is paying fees ranging from \$800,000 to \$900,000 per day (InMusic, 2020). On top of this, Pandora also has to make payments to the relevant performance royalty organisations like ASCAP, meaning over 64% of their annual revenue is spent on royalty payments.

Pandora is seeking to obtain fees equal to other radio stations so that they are on an even footing. With the streaming market set to see steady growth over the next few

years, Pandora needs to make sure they stay competitive and turn a profit in a busy market as streaming revenue is due to rise a further \$52.5 billion in the next seven years. With Sirius XF Holdings purchasing the company, Pandora has managed to incorporate their subscription-based content in with Pandora's successful free-to-use service under one roof, hopefully creating a stronger position in the current economic climate.



(GrandViewResearch, 2020).

Another issue facing Pandora is their weaker position in the streaming market in contrast to multi-sided platforms which can cross-subsidise music streaming with revenues from other products and sources (Towse, 2020). With global attitudes changing towards copyright, and advertising budgets have dropped, it has created new issues for the

streaming services to navigate. All industries have been affected by the reduction in advertising budgets globally, and the music business is no exception. A recent survey shows that around a quarter of media buyers and brands have paused all advertising for the first half of 2020, and a further 46% have reduced spending. This, combined with an approximate one-third reduction in digital ad spending, will affect ad-supported music channels – and therefore, both total industry revenue and individual income for artists (Hall, 2020).

With projected statistics on growth looking healthy and having avoided any negative economic impact, Pandora has the opportunity to revise its strategy and build upon its subscription-based users to increase revenue. With more money and versatile expansion into new sectors they can compete with the likes of Spotify and Apple Music.

“Although output is more important than wealth in the study of macroeconomics, one particular form of wealth - money - occupies a very special place in the field. Money serves many purposes in a market economy” (Moss, 2014).

3.4 Pricing Strategy

Pandora’s pricing strategy is split between its advertising and subscription services, which are offered in varying different tiers. The free-to-use subscription service is by far their most popular option with 63.1 million current users (Smith, 2020),

giving subscribers the ability to listen to music, but you will receive intermittent advertising. The next option is Pandora Plus, at the cost of \$4.99 a month. With this subscription, users can listen to an unlimited number of tracks without restriction. This subscription also allows users to subscribe to various radio stations. The final option is the new Pandora Premium subscription, which is \$9.99 a month. This provides access to unlimited playlists at a much higher audio quality. You can also download music and listen offline (MusicGateway, 2020). Their current paid subscription users are currently 6.8 million, which is something Pandora needs to address to compete and grow revenue.

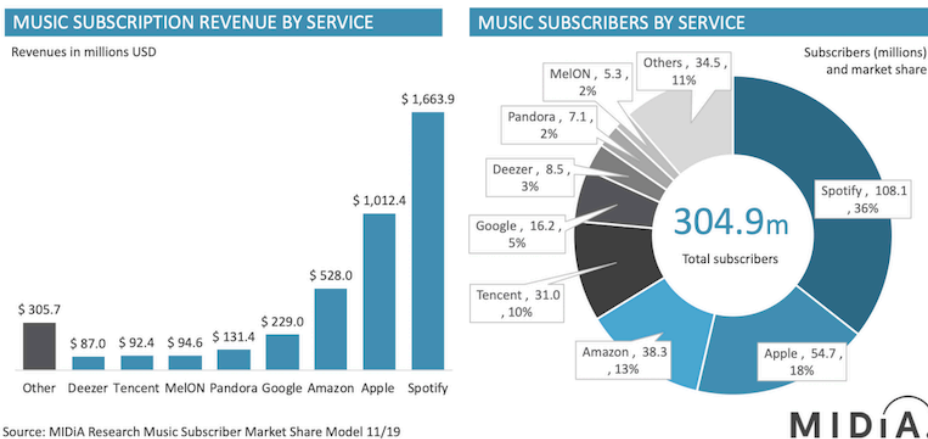
Pandora has recently adopted a less is more attitude when it comes to its advertising strategy and maybe introducing a pricing floor. They would do this by adding a price per ad unit moving forward, which would eliminate some of their low-end advertising that can be a significant turn off to listeners (InsideRadio, 2020). Pandora believes implementing this new pricing strategy would create a better customer experience and would encourage users to listen for longer. This would offset some of the recent drops in active listeners and would improve revenue long term. As Pandora currently attributes 80% of its total income to advertising, it is undoubtedly in their long term strategy to grow this area of the business. “Looking to the future, though, conflicting forces make it difficult to predict whether Pandora will eventually turn a profit” (Tonner, 2017).

4. Competitors

The market share in music streaming has changed dramatically over the last few years. With an array of new technological advances and services becoming available, the market has been spoilt for choice. At the end of 2019, the total number of music streaming subscribers stood at 304.9 million, showing a rise of over 30 million subscribers in only six months (Washenko, 2020). This equated to a 32% year-on-year rise due to the marketing of discounted subscriptions in emerging markets and new offerings including original podcasts, which would entice new listeners to streaming platforms.

Global Streaming Music Subscription Market, H1 2019

Global Streaming Music Subscription Market, H2 2019 (All Revenues Are Label Trade Values)



(Graph 1) (Midia, 2019).

Pandora maintained a market share of 2% since 2018 (See Graph 1) (Midia, 2019), which fell short of its rivals; however, Pandora still maintains a large customer base, and after the Sirius XFM Holdings acquisition they are still one of the largest entertainment companies in the world. All of Pandora's competitors have a similar target audience. Because the market grows at a fast rate, there is an enormous opportunity to take advantage of this with innovation and ingenuity.

4.1 Spotify

Spotify is by far the market leader in this category with 108.1 million subscribers and a market share of 36%. "In 2019, it generated \$ 7.5 billion in revenues through its 4,165 employees" (WhatCompetitors, 2020). Spotify retains 30% of its revenue, and divides the rest between record labels, artists, and licensing deals. Spotify's catalogue has grown to include over 50 million tracks.

Spotify took the opportunity after the fall of Napster to create a brand that delivered high-quality audio, which was legal. They also paid particular attention to consumer needs by introducing back end features like low latency, which helps offer a seamless experience without delays. "By the time Spotify launched in Sweden in 2008, global music industry revenues had fallen to \$16.9B, and the steady decline showed no sign of slowing down. With sales dwindling and few ideas

on how to stop it, the "Big Four" American record labels—EMI, Sony, Universal, and Warner Music—and a couple of smaller labels agreed to make their entire back catalogs available to Ek and his company for use outside the U.S. on a limited basis" (ProductHabits, 2020).

4.2 Apple Music

Apple Music follows suit with the second largest market share at 18% (see Graph 1), whilst also being the only other service to generate over a billion dollars in revenue. Apple Music launched in 2015 when Steve Jobs created the service arm of Apple Inc. The service provides Internet radio in the form of Apple Radio 1 and also provide Siri integration through their devices. Apple has also merged catalogues so users can access all of their music in one place, either from the streaming service, or their collection.

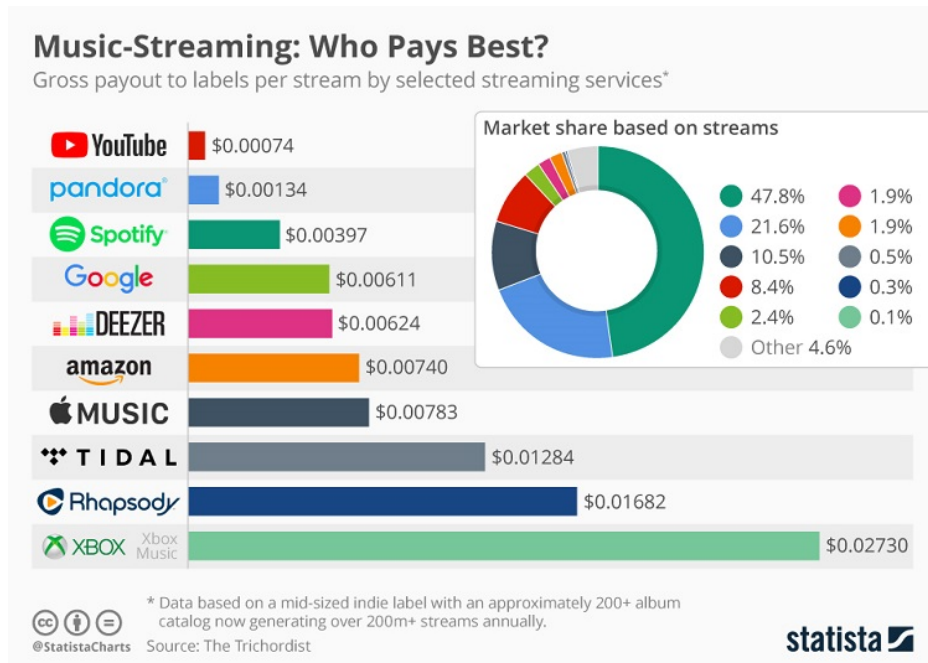
Apple Music follows a similar pattern to its competitors in regards to subscription options. Sign up is free for the first three months, after which you can choose from a few different plans. The Individual plan costs \$9.99 a month. A Family plan, for up to six people, costs \$14.99, and the final plan is for students, which costs \$4.99 per month (Tillman, 2020). In addition to Apple Music's impressive results, their music streamer captured 24% of total paid revenue in the entire industry worldwide (Friedman, 2020).

4.3 Tidal

Tidal is one of the newest streaming platforms to enter the market in 2015 and is available in 54 countries. Tidal grew global revenues by 26.4% year-on-year to \$147.6 million in 2018 (Cirisano, 2020). Tidal stores over 60 million songs and over 250,000 high-quality videos in their catalogue, offering passionate music fans both a premium and high-fidelity sound quality, along with original video series; podcasts; thousands of playlists curated by industry experts, music journalists, and artists; exclusive content; and unique experiences (Tidal, 2020).

One of Tidal's unique selling points is the fact it is artist-owned and operated, which was the brainchild of musician and entrepreneur JAY-Z. It aimed to give the power back to the artists/songwriters and pay them fairer royalties. This was well-received and means Tidal remains one of the highest paying music stream providers in the world (See Graph 2).

Tidal users also benefit from the highest audio quality available by providing lossless FLAC streaming with a High-Fidelity subscription. This gives you a streaming experience of CD quality, which is a good look, but it comes at a price. This subscription costs \$19.99 (Katz, 2020).



(Graph 2) (Statista, 2020).

4.4 Amazon Music

Amazon Music has managed to achieve a 13% market share in recent years since its launch in 2007 (See Graph 1), mainly bolstered by its parent companies massive presence globally. You can gain access to the music service by obtaining an Amazon Prime membership for \$79 a year, and this gives you access to just 2 million tracks. Amazon has also added another free service if you own an Echo device, which allows access to music but also uses advertisement to monetise. If you upgrade to Amazon Music Unlimited, then you benefit

from 40 million songs and ad-free usage. This catalogue is still considerably lower than its competitors, and 20 million less than Pandora. You can also benefit from hands-free listening with Alexa, which rivals Apple Music's Siri.

"As Spotify and Apple Music have been battling for ear-share, Amazon Music has quickly risen to the third spot. Over the last few years, Amazon has grown subscribers at a higher rate than either of them and closed 2019 within 4% market share of Apple Music" (Litterst, 2020).

Amazon Music has also managed to attract an older target audience by diversifying their ad targeting and selling their physical products via Amazon that are so well integrated. The last time both companies reported their demographic breakdown, the 55 or older crowd made up 14% of Amazon Music's subscriber base and only 5% of Spotify's.

Amazon Music recently announced it would be launching podcasts which are proving very popular right now. This news even saw Spotify's share price drop by 1.2%

5. Finance

Sirius XFM Holdings recently posted its Q4 and full-year 2019 operating and financial results on 4th February 2020. They reported total revenue of \$2.1 billion Q4 and \$7.8bn ends of the year, which is an increase of 38% and 35% compared to prior periods. Sirius XFM attributes their revenue increase to

the acquisition of Pandora on 1st February 2019 (Stassen, 2020). In 2007, Pandora's total revenue equalled \$4.18 million. By the end of the fiscal year 2019, Pandora had earned a total revenue of \$1.72 billion. Of that total, \$1.2 billion was generated through advertising. Given that Pandora only counted 6.92 million paying subscribers the previous year, it shows that most Pandora listeners make use of the free service (Statista, 2020).

In 2019, Pandora had the industry's highest per-play royalty rate, at 0.01682 cents per play (Sanchez, 2020), and as expected, royalties remain Pandora's most considerable operating expense. As of 2018, 52% of Pandora's revenue was paid in royalties, slightly down from previous years (Nath, 2020). Pandora's gross profit in 2019 climbed 28% over the previous year to \$624 million, whilst fourth-quarter ad revenue grew \$348 million from \$314 million in the fourth quarter of 2018 (Freidman, 2020).

In 2015 Pandora invested \$450 million in a company called Ticketfly to diversify their profile and expand their services into live music, events, and ticket sales, but it was a technical failure. This proved a bad investment when Pandora sold Ticketfly to Eventbrite for \$200 million only two years later. However, this same year Pandora managed to raise \$480 million in funding from Sirius XM before the rumours of a full buyout was on the table, which coincided with the selling of Ticketfly and a business restructure.

Pandora does face specific issues in its financial setup. For one, digital music streaming companies are under a great

deal of marginal pressure because of rising costs in music licensing. Another issue for Pandora is that it has never managed to expand significantly outside of its home market of the U.S. (Tepper and Lunden, 2020). They have expressed the need to focus on their home market and discontinued the platform in Australia and New Zealand.

6. Lean Business

The lean business model is a process in which a company continually makes adjustments and improvements to maximise the efficiency of the business. A company can avoid wasting time and resources in developing products and services that may not prove successful. More recently, the lean business model is about targeting customer needs and being able to adapt quickly to shifting demands. A company must first create a hypothesis to establish if their return on investment is validated and be able to test their theories, whilst being willing to make the necessary adjustments in order to improve. This can help streamline companies priorities and help them make decisions more efficiently and develop their current plans in real-time. The lean model promotes fluidity and gives the business the means to follow their original route to market or adapt parts of it as the market fluctuates over time and economic changes.

One of the main criticisms of the lean model is its ability to focus the companies attention on the short term plan. When a business focusses solely on its minimal viable products and

quick feedback from customers, it can cause the business to focus on smaller incremental changes which will give an insight into what your target audience wants now. This distracts the company from developing products and services that they believe could be successful and can restrict the creative process by following too many metrics and rules.

“It isn’t the customer’s job to know what they want.” (Jobs, 2012).

The second issue with lean business is the business model canvas. Although the canvas poses some interesting questions, it heavily focuses on what your business will look like at the end of said process and pays little attention to what makes your company unique. A business that prepares for the future, whilst creating products that force change in the market landscape will reach goals and targets more effectively. Often in a companies early development, the economic climate has a significant impact on the day to day running of the business. If close attention is not paid to your environment, you can come unstuck.

Lean business methods could be applied to Pandora if they implemented the correct strategies in their internal business. The streaming market is continuously changing, and this would suit their model well. With the introduction of new services and the offloading of previous investments that were not in their best interest. By creating a hypothesis and using their current large user numbers to redirect their focus on developing their paid subscription-based offering. Pandora

currently operates an unsustainable business model that is difficult to scale. Pandora is still yet to turn an annual profit.

Pandora currently provides value to its customers based on their unique personalisation. The current model encourages Pandora to focus on their free tier service to the considerable advertising income revenue, therefore leaving very little in value to offer to paid subscribers. By implementing lean business methods, Pandora could get fast feedback on what their customers are missing so they can invest in certain areas, whilst capturing the essence of what listeners and artists require. “There is no bigger destroyer of creative potential than the misguided decision to persevere.” (Ries, 2015).

Lean would help channel the companies efforts in the right direction by creating a higher quality product, reducing loss, and a better experience for the customer.

7. Conclusion

In conclusion, Although Pandora remains popular in the U.S. market and continues to score highly in public opinion (previously ranked number one in a survey with Time Magazine) (Taylor, 2014), Pandora is currently facing ever-tightening competition in a fast-moving sector. The business is also battling a declining listener base according to a recent report (Newman, 2020). Pandora must work hard to address this by investing in the development of new services, whilst

expanding the reach of their smaller paid subscription model.

In light of this, Pandora has recently launched new products called Artist Stories, and along with their latest partnership with Walt Disney, are now offering MARVEL inspired superhero podcasts (Romo, 2019).

Since Sirius XFM Holdings purchase of the company in 2018 Pandora have streamlined their management team and have appointed Jim Meyer as CEO. Meyer aims to refresh the company's focus and attempt to convert users into paid subscribers. Whilst this is a challenge, with the right plan and successful merger of the two companies assets, this could be achieved. Pandora is currently in talks with PRO's in the U.S. to reduce licensing costs, giving the company a greater cash flow to invest in new ideas.

By assessing their competition closely and analysing their wins and losses, Pandora must build upon its customer base to attract listeners back to the platform. Suppose Pandora implements effective lean methods and continues to create innovative products. In that case, they could once again command a strong presence in the music streaming market, but there appears to be a long road ahead before Pandora can rebuild their market dominance.

Word Count: 5,058

8. Bibliography

Anthony, S., 2012. A.G. Lafley Vs. Steve Jobs. [online] Harvard Business Review. Available at: <<https://hbr.org/2012/01/usually-the-question-comes>> [Accessed 1 December 2020].

Bludov, S., 2020. Music Streaming Trends For 2020: The Future Of Music Streaming. [online] DataArt Technology Consulting & Solution Design. Available at: <<https://blog.dataart.com/music-streaming-trends-for-2020>> [Accessed 27 November 2020].

Cirisano, T., 2020. Tidal's Global Revenue Rose To \$148M In 2018. [online] Billboard. Available at: <<https://www.billboard.com/articles/business/8550569/tidal-2018-financials-global-revenue-grew-148-million>> [Accessed 28 November 2020].

Crunchbase. 2020. Pandora - Crunchbase Company Profile & Funding. [online] Available at: <<https://www.crunchbase.com/organization/pandora>> [Accessed 30 November 2020].

Curry, D., 2020. Pandora Revenue And Usage Statistics (2020). [online] Business of Apps. Available at: <<https://www.businessofapps.com/data/pandora-statistics/>> [Accessed 24 November 2020].

Dredge, S., 2020. How Many Users Do Spotify, Apple Music And Streaming Services Have?. [online] Musically.com.

Available at: <<https://musically.com/2020/02/19/spotify-apple-how-many-users-big-music-streaming-services/>> [Accessed 24 November 2020].

Dredge, S., 2020. Siriusxm Financials Reveal Latest Numbers For Pandora - Music Ally. [online] Musically.com. Available at: <<https://musically.com/2020/02/05/siriusxm-financials-reveal-latest-numbers-for-pandora/#:~:text=US%20music%20streaming%20service%20Pandora,9.5%25%2C%20to%2013.4bn.>> [Accessed 26 November 2020].

Field, M., 2020. The Best Music Streaming Services: Apple Music, Spotify, Youtube Music And Amazon Music Compared. [online] The Telegraph. Available at: <<https://www.telegraph.co.uk/technology/0/best-music-streaming-services-apple-music-spotify-amazon-music/>> [Accessed 28 November 2020].

Friedman, A., 2020. Apple Music's Success Is Helping The Company Meet A Long Time Revenue Goal. [online] Phone Arena. Available at: <<https://www.phonearena.com/news/spotify-apple-music-had-the-majority-of-music-streaming-subscribers-last-year>> [Accessed 28 November 2020].

Friedman, W., 2020. Sirius XM's Pandora Sees Ad Revenue Rise 10% In 2019, Monthly Users Decline. [online] Mediapost.com. Available at: <<https://www.mediapost.com/publications/article/346611/sirius-xms-pandora-sees-ad-revenue-rise-10-in-20.html>> [Accessed 30 November 2020].

Gateway, M., 2020. Pandora Music - All You Need To Know. [online] Music Gateway. Available at: <<https://www.musicgateway.com/blog/how-to/pandora-music>> [Accessed 28 November 2020].

Goldman Sachs. 2020. Music In The Air: The Show Must Go On. [online] Available at: <<https://www.goldmansachs.com/insights/pages/infographics/music-in-the-air-2020/index.html?cid=sch-pd-google-musicstreaming2020-search>> [Accessed 24 November 2020].

Grandviewresearch.com. 2020. Music Streaming Market Size & Share Report, 2020-2027. [online] Available at: <<https://www.grandviewresearch.com/industry-analysis/music-streaming-market>> [Accessed 27 November 2020].

Grant, K., 2020. The Future Of Music Streaming: How COVID-19 Has Amplified Emerging Forms Of Music Consumption. [online] Forbes. Available at: <<https://www.forbes.com/sites/kristinwestcottgrant/2020/05/16/the-future-of-music-streaming-how-covid-19-has-amplified-emerging-forms-of-music-consumption/?sh=46fa8264444a>> [Accessed 25 November 2020].

Hall, S., 2020. This Is How COVID-19 Is Affecting The Music Industry. [online] World Economic Forum. Available at: <<https://www.weforum.org/agenda/2020/05/this-is-how-covid-19-is-affecting-the-music-industry/>> [Accessed 28 November 2020].

Harrison, J., 2015. *When We Were Small: Pandora*. [online] The Washington Post. Available at: <https://www.washingtonpost.com/business/on-small-business/when-we-were-small-pandora/2015/02/06/11ad75f4-ad5c-11e4-9c91-e9d2f9fde644_story.html> [Accessed 2 December 2020].

Heater, B., 2020. Techcrunch Is Now A Part Of Verizon Media. [online] Techcrunch.com. Available at: <<https://techcrunch.com/2020/09/10/recorded-music-revenue-is-up-on-streaming-growth-as-physical-sales-plummet/>> [Accessed 28 November 2020].

Houghton, B., 2018. 24,000 Tracks Uploaded To Music Streamers Every 24 Hours - Hypebot. [online] Hypebot. Available at: <http://www.hypebot.com/hypebot/2018/06/24000-tracks-uploaded-to-music-streamers-every-24-hours.html?utm_source=feedblitz&utm_medium=FeedBlitzEmail&utm_content=395530&utm_campaign=0> [Accessed 26 November 2020].

<https://www.crunchbase.com>. 2020. [online] Available at: <https://www.crunchbase.com/search/acquisitions/field/organizations/num_acquisitions/pandora> [Accessed 18 November 2020].

IAB. 2020. Coronavirus Ad Spend Impact: Buy-Side. [online] Available at: <<https://www.iab.com/insights/coronavirus-ad-spend-impact-buy-side/>> [Accessed 28 November 2020].

InMusic, 2020. [online] Available at: <<http://quantonemusic.com/2016/01/28/5-facts-about-the-economics-of-various-streaming-services/>> [Accessed 28 November 2020].

Insideradio.com. 2020. Report: Pandora Adopts A 'Less Is More' Strategy.. [online] Available at: <http://www.insideradio.com/free/report-pandora-adopts-a-less-is-more-strategy/article_e1bf7be6-b7f0-11e8-9902-1b92204434d1.html> [Accessed 28 November 2020].

Insights, N. and Streaming, M., 2020. MP'S To Investigate The 'Economic Impact' Of Music Streaming. [online] Charles Russell Speechlys. Available at: <<https://www.charlesrussellspeechlys.com/en/news-and-insights/insights/commercial/2020/mps-to-investigate-the-economic-impact-of-music-streaming/>> [Accessed 28 November 2020].

Joyce, J., 2006. *Home Page - Research & Development World*. [online] Research & Development World. Available at: <<http://www.scientificcomputing.com/blogs/2006/08/pandora-and-music-genome-project-song-structure-analysis-tools-facilitate-new-music-discovery>> [Accessed 2 December 2020].

Juneja, P., 2020. The New Economics Of The Music Industry. [online] Managementstudyguide.com. Available at: <<https://www.managementstudyguide.com/new-economics-of-music-industry.htm>> [Accessed 28 November 2020].

Katz, L., 2020. Tidal Hifi Review. [online] SoundGuys. Available at: <<https://www.soundguys.com/tidal-hifi-review-25846/>> [Accessed 28 November 2020].

King, A., 2020. Pandora Is Losing Subscribers — 88,000 Left The Service Last Quarter. [online] Digital Music News. Available at: <<https://www.digitalmusicnews.com/2020/02/04/pandora-losing-subscribers-q4-2019/>> [Accessed 27 November 2020].

Kumar, A., 2020. COVID-19 Accelerates Music Streaming Market Growth, Global Subscriptions Hit 394 Million In Q1 2020 - Counterpoint Research. [online] Counterpoint Research. Available at: <<https://www.counterpointresearch.com/music-subscriptions-394-million-q1-2020/>> [Accessed 26 November 2020].

Litterst, R., 2020. Amazon Music Is The Dark Horse Of Streaming Apps. [online] Medium. Available at: <<https://marker.medium.com/amazon-music-is-the-dark-horse-of-streaming-apps-736a35549622>> [Accessed 28 November 2020].

Maida, J., 2020. Music Streaming Market To Grow By \$7.47 Billion Amid Recession | Includes Impact Of COVID-19 And Business Continuity Plan For The New Normal | Technavio. [online] AP NEWS. Available at: <<https://apnews.com/press-release/business-wire/entertainment-business-technology-apple-inc-media-79a6655ba0c641b1ace87e59b403a725>> [Accessed 28 November 2020].

MarketingCharts, 2020. [online] Marketing Charts. Available at: <<https://www.marketingcharts.com/industries/media-and-entertainment-111661#:~:text=On%2Ddemand%20streaming%20consumption%20reached,y%2Do%2Dy%20to%20reach%20401.2%20billion.>> [Accessed 28 November 2020].

Moss, D., 2014. *A Concise Guide To Macroeconomics*. 2nd ed. Harvard Business Press, p.33.

Nath, T., 2020. How Pandora And Spotify Pay Artists. [online] Investopedia. Available at: <<https://www.investopedia.com/articles/personal-finance/121614/how-pandora-and-spotify-pay-artists.asp#citation-23>> [Accessed 30 November 2020].

Newman, T., 2020. Siriusxm Q3 2020 Results Show Pandora's Monthly Active Users Shrinking - Routenote Blog. [online] RouteNote Blog. Available at: <<https://routenote.com/blog/siriusxm-q3-2020-results-show-pandoras-monthly-active-users-shrinking/>> [Accessed 1 December 2020].

Palmer, A., 2020. [online] Available at: <<https://www.cnbc.com/2020/09/16/spotify-stock-falls-after-amazon-music-adds-podcasts.html>> [Accessed 28 November 2020].

Porter, J., 2018. Siriusxm Buys Pandora For \$3.5 Billion. [online] The Verge. Available at: <<https://www.theverge.com/2018/9/24/17895332/siriusxm-pandora-acquisition-music-streaming>> [Accessed 24 November 2020].

Product Habits. 2020. How Spotify Built A \$20 Billion Business By Changing How People Listen To Music. [online] Available at: <<https://producthabits.com/how-spotify-built-a-20-billion-business-by-changing-how-people-listen-to-music>> [Accessed 28 November 2020].

Ries, E., 2015. *The Lean Startup*. Paris: Pearson, p.149.

Romo, V., 2019. NPR Cookie Consent And Choices. [online] Npr.org. Available at: <<https://www.npr.org/2019/10/22/772355077/marvel-expands-its-universe-to-superhero-podcasts-on-siriusxm-and-pandora>> [Accessed 1 December 2020].

Sanchez, D., 2020. What Streaming Music Services Pay (Updated For 2020). [online] Digital Music News. Available at: <<https://www.digitalmusicnews.com/2018/12/25/streaming-music-services-pay-2019/>> [Accessed 30 November 2020].

Smith, C., 2020. [online] Expandedramblings.com. Available at: <<https://expandedramblings.com/index.php/pandora-statistics/>> [Accessed 28 November 2020].

Stassen, M., 2020. Siriusxm'S Annual Revenues Were Up 35% In 2019, But Pandora'S Monthly Active Users Fell By Nearly 6M - Music Business Worldwide. [online] Music Business Worldwide. Available at: <<https://www.musicbusinessworldwide.com/siriusxms-annual-revenues-were-up-35-in-2019-but-pandoras-monthly-active-users-fell-by-nearly-6m/>> [Accessed 30 November 2020].

Statista. 2020. Cell Phone Sales Worldwide 2007-2020 | Statista. [online] Available at: <<https://www.statista.com/statistics/263437/global-smartphone-sales-to-end-users-since-2007/>> [Accessed 27 November 2020].

Taylor, B., 2014. By The Numbers: The Streaming Music War (And Who'S Winning). [online] Time. Available at: <<https://time.com/3109273/streaming-music-services-compared/>> [Accessed 1 December 2020].

Tepper, F. and Lunden, I., 2017. Techcrunch Is Now A Part Of Verizon Media. [online] Techcrunch.com. Available at: <<https://techcrunch.com/2017/06/09/pandora-raises-480m-from-siriusxm-sells-ticketfly-to-eventbrite-for-200m/>> [Accessed 30 November 2020].

TIDAL - High Fidelity Music Streaming. 2020. What Is TIDAL?. [online] Available at: <<https://tidal.com/whatistidal>> [Accessed 28 November 2020].

Tillman, M., 2020. What Is Apple Music And How Does It Work?. [online] Pocket-lint. Available at: <<https://www.pocket-lint.com/apps/news/apple/136725-what-is-apple-music-and-how-does-it-work>> [Accessed 28 November 2020].

Tonner, A., 2020. Will Pandora Media Ever Turn A Profit? | The Motley Fool. [online] The Motley Fool. Available at: <<https://www.fool.com/investing/2017/02/28/will-pandora-media-ever-turn-a-profit.aspx>> [Accessed 28 November 2020].

Towse, R., 2020. Dealing With Digital: The Economic Organisation Of Streamed Music - Ruth Towse, 2020. [online] SAGE Journals. Available at: <<https://journals.sagepub.com/doi/full/10.1177/0163443720919376>> [Accessed 28 November 2020].

Waniata, R. and Kennemer, Q., 2020. Spotify Vs. Pandora | Digital Trends. [online] Digital Trends. Available at: <<https://www.digitaltrends.com/music/spotify-vs-pandora/>> [Accessed 27 November 2020].

Washenko, A., 2020. Midia H1 2019 Report: Spotify Takes A Strong Lead In Global Music Subscription Market - RAIN News. [online] RAIN News. Available at: <<https://rainnews.com/midia-h1-2019-report-spotify-takes-a-strong-lead-in-global-music-subscription-market/>> [Accessed 28 November 2020].

Watson, A., 2020. Top U.S. Paid Music Streaming Services By Mobile App Reach 2019 | Statista. [online] Statista. Available at: <<https://www.statista.com/statistics/798715/most-popular-us-music-streaming-services-ranked-by-reach/>> [Accessed 27 November 2020].

Watson, A., 2020. Global Streaming Music Subscribers 2020 | Statista. [online] Statista. Available at: <<https://www.statista.com/statistics/669113/number-music-streaming-subscribers/>> [Accessed 24 November 2020].

What Competitors. 2020. TOP 10 SPOTIFY COMPETITORS In 2020 - What Competitors. [online] Available at: <<https://whatcompetitors.com/spotify/>> [Accessed 28 November 2020].

Wilson, J., 2020. Pandora Review. [online] PCMag UK. Available at: <<https://uk.pcmag.com/services-players/15252/pandora>> [Accessed 27 November 2020].

WIRE, B., 2020. Music Streaming Market Analysis Highlights The Impact Of COVID-19 (2020-2024)| High Growth In Mobile Ad Spending Market To Boost The Market Growth | Technavio. [online] Businesswire.com. Available at: <<https://www.businesswire.com/news/home/20200903005060/en/Music-Streaming-Market-Analysis-Highlights-the-Impact-of-COVID-19-2020-2024-High-Growth-in-Mobile-Ad-Spending-Market-to-Boost-the-Market-Growth-Technavio>> [Accessed 28 November 2020].