

APPLE MUSIC - A CRITICAL REVIEW

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1. A brief history of Apple Music

Apple Music is a digital on-demand streaming service for music and video content, developed by Apple Inc. The service is available on both Apple and non-apple manufactured electronic devices such as computers, mobile phones, tablets, smart speakers, Apple Watch and Apple TV (Apple's own home entertainment system).

Apple Music was publicly announced on the 8th of June 2015 before officially being launched in more than 100 countries worldwide on the 30th June 2015. The company's main headquarters are Cupertino, Culver City and Hollywood, California. First time users of the platform receive a three-month free trial subscription which automatically changes to a paid subscription after the initial three months has finished. Due to being a part of Apple Inc., Apple Music does not have it's own subsidiaries per say, however it does have different sectors within the company for overseeing different genres/territories such as Apple Music Pop, Apple Music Dance, Apple Music Bollywood etc.

The key directors of Apple Music include Oliver Schusser who was recently appointed in April 2018, Jimmy Lovine, Brian Bumery and Trent Reznor. Past directors include Bozoma Saint John who resigned in 2017 and Ian Rogers who resigned in 2015.

In addition to the single-user subscription which is priced at 9.99 GBP per month, the service also offers a family plan at 14.99 GBP which allows up to 6 members to use the same subscription. Interestingly, Apple Music originally intended to be cheaper but was rejected by the music industry. In 2016 Apple Music introduced a student plan which is

reduced to 50% of the regular price of a single-user subscription. Before expanding the student plan to 25 further countries in November 2016, it was initially only available to students in the United States, United Kingdom, Germany, Denmark, Ireland, Australia and New Zealand. Aside from subscription changes, Apple Music also launched a video service in 2015 originally showing exclusive music videos and documentaries from artists, before eventually moving into original video content in April 2017, an attraction to customers as they are able to view content that is unavailable on other streaming services.

Due to Apple Music being under the Apple Inc. umbrella, Apple Music has not made any acquisitions itself, however purchases made by Apple Inc. with the intention of being integrated into Apple Music include Shazam in 2018, an app used to identify songs playing in the background using a mobile phone's microphone. A 3 billion USD deal in 2014 saw Apple Inc. acquire Beats Music and Beats Electronics which lead to the birth of Beats 1, Apple Music's own internet radio station. Other notable acquisitions include Topsy in 2013, Swell in 2014 and data analytics platform Semetric in 2015.

2. Economics

2.1 Products and Customer Base

The only way of using the service long-term is to pay a monthly subscription for it. A normal, single-user subscription is 9.99 GBP per month which allows unlimited, ad-free streaming of all audio and video content. The same user experience is available on a family plan, where up to 6 users can all have their own accounts for a total of 14.99 GBP per month, the attraction to this being it is much cheaper for each user. A third plan is available for students, who can have access to a full subscription for a 50% discount. Finally an annual single-user subscription at 99.99 GBP, which works out at two free months if users pay a higher sum upfront. One large incentive for customers is

all plans are free for the first 3 months, this is Apple Music's attempt to get customers using the service with the hope that they will continue to use the service after the free trial has ended, therefore begin paying for it; similar to the freemium business model. "Give your service away for free, possibly ad supported but maybe not, acquire a lot of customers very efficiently through word of mouth, referral networks, organic search marketing, etc., then offer premium priced value added services or an enhanced version of your service to your customer base" (Wilson, 2006, p.201). This will be discussed more in-depth later.

Aside from different subscription options, another product of Apple Music, is Beats 1 Radio, a 24 hour live internet radio station available exclusively on Apple Music. The station features exclusive interviews hosted by presenters who are all exclusive to the station, such as Zane Lowe and Ebro Darden. A main factor of Beats 1 is users have the ability to skip songs, replay songs and see what song is up next, which is a new experience of listening to radio when compared to the model of traditional radio stations. Users do not need to have an Apple Music subscription to access Beats 1, it is free for all anybody.

From a technology standpoint, Apple Music is integrated into all of Apple Inc.'s devices using iCloud, which means users can listen to their audio content or watch video content across multiple devices. Another feature of this is the ability to use Siri, where users can voice command the service to select artists, playlists, songs and more. Whilst Apple Music is available across most non-apple manufactured devices, features such as Siri and iCloud are only available on Apple Inc. manufactured devices, a strategic attempt to make Apple Music and Apple Inc. products more appealing.

2.2 Major Competitors

The past decade has seen huge changes not only in the way people consume music, but also changes in attitudes when it comes to paying for entertainment. Friedlander (2019) reported that 80% of music industry revenue came from streaming in 2019, and only 9% from digital downloads. Whereas only 5 years ago in 2014, streaming made up only 27%, with 37% going to digital downloads and 32% to physical copies (Friedlander, 2014). This clearly indicates consumers are wanting to listen to music on-demand for what is essentially an “all you can eat” basis, which is exactly what the subscription based streaming model is. As Friedlander (2019) also reported that in 2019 the streaming market is worth \$4.3 billion, a growth of 26% compared to the previous year, it is not surprising that so many companies all want a piece of the pie. Below is an in-depth look into Apple Music’s competition.

2.2.1 Spotify

Founded in 2006, Spotify already had 9 years more experience in the streaming market than Apple Music did when it was founded in 2015. “It (Spotify) set the blueprint of the current streaming market” (Levenson, 2019, p.1). This is a huge advantage to Spotify and plays a large role in why Spotify has the largest market share of all the streaming services, at 36% in 2019 (double the market share of Apple Music which follows in second place). Spotify has subsidiaries in different territories across the world, such as Spotify Mexico, Spotify Asia, Spotify Netherlands to name a few. This means Spotify can focus specifically on different demographics around the world, essentially monitoring the local economy and trends within music and curating content to fit, whereas Apple Music takes a more ‘one size fits all’ approach mainly focusing on the USA, as well as other english speaking markets.

2.2.2 YouTube Music

Founded in the same year as Apple Music, and with more music being played on YouTube’s video platform than all the other streaming platforms combined, YouTube

Music could be a serious threat to the streaming industry. As published by IFPI (cited from IFPI and Music Business Worldwide, 2018) YouTube's video streaming platform hosted 46% of all music streaming in 2017, excluding China. Clearly, YouTube already has a massive amount of traffic already on its platform, a level that Apple Music could not reach anywhere near.

2.2.3 Amazon Music

Unlike the previous streaming platforms mentioned, Amazon Prime Music is the only service that has a different pricing strategy. For 7.99 GBP per month, users can gain access to the basic version of the streaming platform, Prime Music, for free via an Amazon Prime membership, which is possibly Amazon's most valuable asset when it comes to competing in the streaming market. Included in a Prime subscription, users are able to take advantage of products available on Amazon.com. However, to gain access to Amazon Music Unlimited (which has 50 million songs, opposed to Prime Music which only has 2 million) prime members must pay extra 7.99 GBP per month, or 9.99 GBP for non-prime members, which is the same pricing strategy as the other streaming services. Amazon Music has great potential to compete with Apple Music as they already have a huge customer base who are using Amazon.com and Amazon Prime, and they can give an incentive to customers by offering them a discount for Amazon Music Unlimited, as well as making the service compatible with their own smart speaker Amazon Echo, not to mention also being such a powerful company that has the backing and ability to grow quickly.

2.3 Pricing Strategy

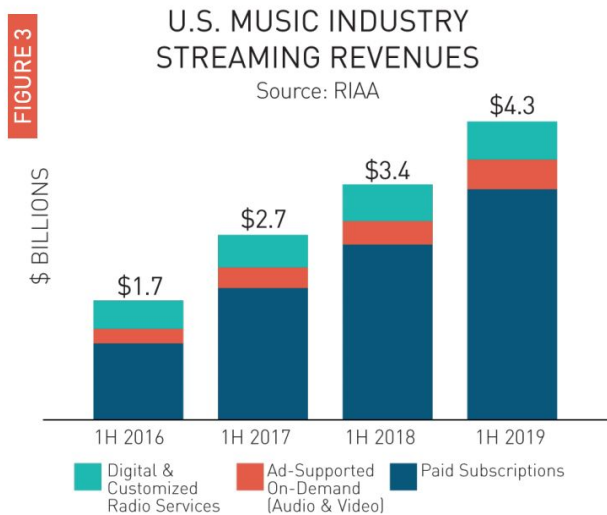
Apple Music chose against having premium and freemium subscriptions like some of their competitors use, and instead only have one paid plan. Users receive 3 months for free before automatically being charged 9.99 GBP per month if they do not cancel their

subscription. This strategy is similar to the freemium model in the sense that users get to use the service for free, however not quite the same, as the freemium model only allows use of limited features but is available forever, usually financially supported by advertisements. So why doesn't Apple Music have a free service? Here is some insight into paid and ad-supported subscriptions.

The main strength of having ad-supported subscriptions includes being able to offer free services which attracts users. However, the cons outweigh the pros. One drawback is during tough economic times, there is less money available, so companies often lower or cut their advertising budget meaning less companies are paying to run advertisements, resulting in less revenue for the company hosting the service where the advertisements are ran (Kokemuller, n.d.).

On the flip side, a benefit of a subscription model is the ability to generate revenue from a customer base who is engaged with the service, which becomes a more secure form of income in tough economic times (Kokemuller, n.d.). Apple Music is unique enough that they are able to confidently *only* charge for their service.

Paid subscriptions are starting to grow more popular than ad-supported subscriptions, and have grown 30% in 2019 at 61.1 million subscribers, whilst ad-supported and limited subscriptions grew 25% year-over-year (Friedlander, 2019). When you combine Apple Music's unique service, and the massively growing market for paid subscriptions, it makes sense for Apple to charge for their streaming service.



Graph 1: Streaming Subscription Revenues

2.4 Market

At an increase of 9.4% in 2019, the music industry is growing. But as IFPI (2019) found, at 34% growth and making up nearly half of the overall total revenue within the music industry, the music streaming market is growing massively. Consumers are not only wanting to listen to music, but are changing the way they listen by choosing to use streaming services.

The music industry has always been a static market in the sense that people want to listen to music no matter what the circumstance. However in previous times if one wanted to find new music, they had to search for it on their own by either scouring the internet, record shops or attending live shows. A major attraction to streaming for music lovers, is streaming services like Apple Music curate their own in-house playlists which have proven massively popular in helping listeners discover new music. Nielsen Music 360 (2017, cited from Richter) reported 27% of people in the USA who were looking for new music 2017 discovered it via streaming services .

2.5 Macro Environment

As mentioned previously, Apple Music charges for its service and does not offer a free alternative. This could be a huge issue if a recession happens, resulting in a higher unemployment rate, which means people have less money to spend. When people have less money, some of the first things they cut from their personal budget are subscriptions and discretionary expenses. While music is an integral part of most people's lives, they could switch to using services that offer a freemium model such as Apple Music's main competitor; Spotify. If enough users of Apple Music were to cancel their subscription, this would eventually lead to Apple Music not having enough revenue coming in and ultimately having to close down. "According to the first Recession Impact report from MIDiA Research, user subscriptions to premium entertainment platforms like Netflix and Spotify could be on the chopping block as cash-conscious consumers migrate to free high-quality alternatives" (Easton, 2019, p.01).

Another part of the macro environment Apple Music faces, is legal issues that are not within Apple Music's control. For music to be available on the service, Apple must enter into agreements with the rights holders of the music, usually the record labels. The catalogs of the 3 major record labels make up the majority of the music available on Apple Music, and so if labels were to decide they wanted a higher royalty payout, and Apple wouldn't agree to pay a higher royalty, labels could ultimately pull their catalog from the service rendering Apple Music almost useless from the perspective of a consumer as the amount of music available on the platform would be reduced massively.

3. Finance

3.1 Short And Long Term Finance

Apple Music reports that it now has 60 million users listening to music on the platform per month as of June 2019 (Watson, 2019). As previously mentioned, Apple Music does not have a free version, so the majority of those 60 million users are paying for the service (taking into account that some may still be in the initial free trial period). When compared to 2018, Apple Music has increased its users by 20%.

As mentioned at the beginning of this review, Apple Music is part of Apple Inc, therefore Apple Music does not have its own financial reporting available and instead comes under the 'services' category of Apple Inc.'s report. Included within the services category are; App Store, Mac App Store, Apple Pay, AppleCare, Apple Arcade, Apple News and Apple Music. In Q4 2019, Apple saw \$12.5 billion in revenue for its services, the amount for the same period in 2018 was \$10.6 billion. The total revenue for Apple Inc in Q4 2019 was \$64 billion, which is an increase of 2% from 2018 (Stassen, 2019). The services revenue was generated from 450 million paid subscriptions. Again, this is a massive increase from what was 330 million in 2018 and Apple also predicts it will reach 500 million paid subscriptions from users in 2020, so we should see an even higher revenue next year. It is worth noting that all of these services are automatically installed on every Apple hardware product, and therefore it is highly likely that as the services grow larger (which is clearly the case, and is happening at a fast rate), hardware may become less relevant and mainly used as a way to grow Apple's services. Eventually, it is a possibility that Apple Music will only be available on Apple hardware devices once Apple feels comfortable they have enough users and enough influence within the streaming industry to make an exclusive move like that, which come full circle should see large increases in revenue for both hardware and services.

It's also worth looking into Apple Inc's other sources of revenue, as this could also affect Apple Music and other services. In Q4 2019, sales for iPhones fell from \$7.3 billion the previous year to \$6.9 billion in 2019 (Stassen, 2019). This is an interesting figure because Apple Music is automatically installed on every iPhone, which is where a large amount of its subscribers listen to music, with over 40 million of its users choosing to listen via mobile over desktop in 2017 (Miller, 2017). So even though the amount of *potential* Apple Music users has fallen, it has not made any negative difference to the amount of active subscriptions. There was also a large increase in revenue for Wearables, Home and Accessories, from \$4.2 Billion in Q4 2018 to \$6.5 billion in the same period for 2019. This is a very good thing for Apple Music, as the platform is pairable with some of the Wearables, Home and Accessories products, which means users of those products could start an Apple Music subscription purely because of the compatibility with their devices, and with an increase of over \$2 billion in sales for Wearables, Home and Accessories products, means the potential of Apple Music is being put in front of a lot of consumers eyes.

Below is a statement of operations for Apple Inc. As you can see, Apple Inc. made a net profit of \$13.69 billion in Q4 2019, and \$55.2 billion for the 12 months prior. In Q4 2018, they made a profit of \$14.25 billion and \$59.53 billion for the 12 months prior. Although Apple made less profit in 2019, this is not necessarily a bad thing as one of the reasons was because Apple invested more money into Research and Development, \$1.98 billion more in 2019, which should prove to be worthwhile over time, as investing into research and development often leads to a new type of product or service, and given Apple's track record, this should be profitable (Ross, 2019). Apple also invested more this year into Selling, General and Administrative, spending \$1.54 billion more in 2019 than in 2018. It's also worth looking at the gross margin, which was 24.4% for Q4 2019, and 25.62% for Q4 in 2018. The gross margin was highest in Q1 2019 at 27.69% as the

company releases a new iPhone within that accounting period which is a large revenue driver. (Apple Inc., 2019).

	Three Months Ended		Twelve Months Ended	
	September 28, 2019	September 29, 2018	September 28, 2019	September 29, 2018
Net sales:				
Products	\$ 51,529	\$ 52,301	\$ 213,883	\$ 225,847
Services	12,511	10,599	46,291	39,748
Total net sales ⁽¹⁾	64,040	62,900	260,174	265,595
Cost of sales:				
Products	35,238	34,697	144,996	148,164
Services	4,489	4,119	16,786	15,592
Total cost of sales	39,727	38,816	161,782	163,756
Gross margin	24,313	24,084	98,392	101,839
Operating expenses:				
Research and development	4,110	3,750	16,217	14,236
Selling, general and administrative	4,578	4,216	18,245	16,705
Total operating expenses	8,688	7,966	34,462	30,941
Operating income	15,625	16,118	63,930	70,898
Other income/(expense), net	502	303	1,807	2,005
Income before provision for income taxes	16,127	16,421	65,737	72,903
Provision for income taxes	2,441	2,296	10,481	13,372
Net income	\$ 13,686	\$ 14,125	\$ 55,256	\$ 59,531

Tabel 1: Statement Of Operations

Below is a balance sheet for Apple Inc. From reading the balance sheet, you can see that Apple saw a large increase in current assets in 2019, being heavily lead by market securities and cash and cash equivalents. Cash and cash equivalents increased by \$22.93 billion, and marketable securities by \$11.32 billion. Apple also saw a change in shareholder's equity, decreasing to \$90.48 billion in 2019 from \$107.14 billion in 2018 (Apple Inc., 2019) One reason for the decrease of shareholders equity is from when President Donald Trump declared he would increase tariffs for China, this is also a reason why sales in Greater China for 2019 were down 15.91% when compared to 2018, as you can see in table 3 (Sheetz, 2019).

Apple's long term investments for the period 2018-2019 have decreased. To have a closer look, non-current assets have fallen by 7.44%. There was a large decrease in

long term marketable securities, a decrease of \$65.45 billion in 2019 compared to twelve months prior. Apple also saw a 9.51% fall in property, plant and equipment. A decrease in long term assets might not be a bad thing, as one of Apple's long term investments are its patents, which may end up being highly profitable in the long term in the form of new products and technologies. One notable long term investment Apple Inc. has made is the acquisition of Intel's 5G modem business. This is a big move as it now allows Apple to have more control over its supply chain, and the acquisition also includes patents from Intel, meaning Apple now owns over 17,000 patents for wireless technologies, cellular standards and modems (Osborne, 2019).

	September 28, 2019	September 29, 2018
ASSETS:		
Current assets:		
Cash and cash equivalents	\$ 48,844	\$ 25,913
Marketable securities	51,713	40,388
Accounts receivable, net	22,926	23,186
Inventories	4,106	3,956
Vendor non-trade receivables	22,878	25,809
Other current assets	12,352	12,087
Total current assets	162,819	131,339
Non-current assets:		
Marketable securities	105,341	170,799
Property, plant and equipment, net	37,378	41,304
Other non-current assets	32,978	22,283
Total non-current assets	175,697	234,386
Total assets	\$ 338,516	\$ 365,725

Table 2: Balance sheet

⁽¹⁾ Net sales by reportable segment:				
Americas	\$ 29,322	\$ 27,517	\$ 116,914	\$ 112,093
Europe	14,946	15,382	60,288	62,420
Greater China	11,134	11,411	43,678	51,942
Japan	4,982	5,161	21,506	21,733
Rest of Asia Pacific	3,656	3,429	17,788	17,407
Total net sales	\$ 64,040	\$ 62,900	\$ 260,174	\$ 265,595

Table 3: Net sales by reportable segment

3.2 Recent Financing plus Investments & Advantages and Disadvantages of Alternative Financing Options

Apple is a publicly owned company and raises a large amount of its capital from shareholders, totalling \$90.48 billion in 2019. This includes \$45.17 billion in common stock at par value plus additional paid in earnings and \$45.89 billion in retained earnings (Apple Inc, 2019). As of September 2019, the total amount of shares for Apple were 4,443,236,000. The company's largest shareholders are institutional shareholders which include The Vanguard Group, Inc. with 324.7 million shares at a 7.31% stake, Berkshire Hathaway, Inc. with 248.8 million shares at a 5.60% stake and BlackRock Fund Advisers with 191.3 million shares with a 4.31% stake. Apple's main individual shareholders include Arthur Levinson with 1.1 million shares, Tim Cook, the CEO of Apple with 878,425 shares and Craig Federighi with 412,571 shares (Edwards, 2019). The institutional investors own a total of 61.6% of the outstanding shares, compared to only 1.07% which individual stakeholders own (CNN Business, 2020). One advantage of having a high institutional shareholder percentage is that institutions, such as mutual funds, hedge funds and private equity firms have a large amount of money available that they are ready to invest with, which would raise capital quickly for Apple (Curtis, 2019). However, one disadvantage of having high institutional ownership is when it comes to selling. Institutional shareholders tend to own large amounts of shares in a company, which is definitely the case for Apple, and so if an institution decides to sell, it is likely the stock will sell-off, meaning a large amount of shares will be sold in a short period of time, this impacts many individual shareholders and makes the share price drop (Curtis, 2019). Ideally, Apple Inc. could have more security if their shareholder's ownership was more evenly split between individual and institutional owners, however it would be far more difficult for individuals to ever buy as many shares as the institutions, as individuals typically do not have anywhere near the amount of cash to invest compared to that of an institution.

Another recent financing activity worth looking into, is in September 2019 when Apple raised its debts by \$7 billion in bonds. Apple is one of the most cash rich companies in the world, with over \$200 million in cash and investment securities. Bond yields are at a very low rate and so it makes sense for Apple to see how much money they can borrow due to their advantages cash position. By raising this debt, it also allows Apple to fund share buybacks (Rogers, 2019). An advantage of doing this, is, if Apple buys back its stock, this reduces the amount of shares that are available on the market, thus increasing the price of shares that it owns, and being able to sell for a higher price in the future than they bought back the shares for initially. By buying back its stock, this also gets rid of cash that Apple would otherwise be taxed on, almost a win-win situation for Apple. However, having said that Apple should be careful not to increase its debts by too much, as this could increase the cost of capital, reducing the present value of the company.

4. Lean Business

4.1 What is Lean Business?

The ultimate goal of applying lean principles in business, is to create maximum value for the customer while using the least amount of resources possible and continuously trying to improve all work processes, purposes and the people involved.

4.2 Applying Lean Business Techniques

One way that Apple Music is applying lean business techniques lies within having a quality assurance team for the user interface and software department. This allows them to catch bugs in the user interface software before it is released to the customer, resulting in the customer perceiving the product as higher value as the interface should run smoothly and there should not be any problems with it. Although having a quality assurance team could be viewed a waste as it doesn't create a direct value for the

customer, it is a necessary waste as it makes sure that the value of the development process doesn't get lost.

Apple Music could apply lean business techniques when they issue new features, versions or updates to the service. They could do this by creating a minimum viable product (MVP), and testing the MVP in the form of a beta version of the platform. By creating a beta, this would enable Apple to quickly release a basic version of the service to a small number of users, in order to test the product and gain feedback before releasing the full version to the public. From the information they gather from the beta, Apple Music would be able to use it to analyse customer behaviour and discover insight for things that work or don't work. Doing this enables Apple to fix any problems and reduce costs early on, whilst they are at small scale, which would be much more expensive to do if the product was available to the mass public.

As Apple Music is part of Apple Inc. it is also worth looking into how lean business techniques are used within Apple Inc.'s structure as the organisation has influence over Apple Music and the same company ethos is applied. One way Apple Inc. uses lean business methods is with its inventory management. In order to clean up its inventory management, Tim Cook closed ten of the company's warehouses, leaving only nine in operation. Apple now only has one central warehouse in the USA and around 154 suppliers globally. By reducing the amount of suppliers, this enables Apple to develop stronger strategies and build better relationships with its vendors. Apple became a leaner company by outsourcing production, as this lowers costs and reduces the amount of overstock. Apple tends to release a new version of its products frequently, which means Apple's products generally have a life cycle of twelve months, depreciating in value for every week they have not been sold. Apple found a solution to this by keeping as low inventory as possible, which means the company has a higher chance of selling every product that is produced. There are a few ways Apple are able

to keep such low inventory, these include storing inventory at retail stores which helps reduce the need for warehouse space, and by using drop shipping to ship products directly from the manufacturer to the customer for products ordered online. Combined, all of these steps massively reduce wastage, shipping costs and storage costs, creating an incredibly lean environment (Clear Spider, 2019).

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5. Bibliography

Apple Inc. (2019). *Apple Inc. Condensed Consolidated Statements Of Operations*. [online] Available at: https://s2.q4cdn.com/470004039/files/doc_financials/2019/q4/Q4-FY19-Consolidated-Financial-Statements.pdf [Accessed 1 Jan. 2020].

Clear Spider (2019). *Inventory Management Leaders: Apple Inc.* [online] Available at: <https://www.clearspider.com/blog-inventory-management-leaders-apple-inc/> [Accessed 4 Jan. 2020].

CNN Business (2020). *Apple Inc Shareholders*. [online] Available at: <https://money.cnn.com/quote/shareholders/shareholders.html?symb=AAPL&subView=institutional> [Accessed 3 Jan. 2020].

Easton, J. (2019). Recession Could Leave Streaming Subscriptions Vulnerable. [Blog] *Digital TV Europe*. Available at: <https://www.digitaltveurope.com/2019/10/30/recession-could-leave-streaming-subscriptions-vulnerable-claims-report/> [Accessed 27 Dec. 2019].

Edwards, J. (2019). *Who Are the Largest Shareholders of Apple? (AAPL)*. [online] Investopedia. Available at: <https://www.investopedia.com/articles/markets/120115/top-5-apple-shareholders.asp> [Accessed 3 Jan. 2020].

Friedlander, J. (2014). *News and Notes on 2014 RIAA Music Industry Shipment and Revenue Statistics*. [online] RIAA, p.1. Available at: https://www.riaa.com/wp-content/uploads/2015/09/2013-2014_RIAA_YearEndShipmentData.pdf [Accessed 24 Dec. 2019].

Friedlander, J. (2019). *Mid Year 2019 RIAA Music Revenues Report*. [image] Available at: <http://www.riaa.com/wp-content/uploads/2019/09/Mid-Year-2019-RIAA-Music-Revenues-Report.pdf> [Accessed 25 Dec. 2019].

IFPI (2019). *IFPI Global Music Report 2019*. [online] Available at: <https://www.ifpi.org/news/IFPI-GLOBAL-MUSIC-REPORT-2019> [Accessed 25 Dec. 2019].

IFPI and Music Business Worldwide (2018). *Audio And Video Streaming Users Vs Revenues 2017*. [online] IFPI, p.1. Available at: <https://www.musicbusinessworldwide.com/more-music-is-played-on-youtube-than-on-spotify-apple-music-and-every-audio-streaming-platform-combined/> [Accessed 24 Dec. 2019].

Kokemuller, N. (n.d.). Advertising Models vs. Subscription Models. [Blog] *Chron*. Available at: <https://smallbusiness.chron.com/advertising-models-vs-subscription-models-70238.html> [Accessed 24 Dec. 2019].

Levenson, J. (2019). Apple Music Vs Spotify: Which Service Is The Streaming King?. [Blog] *Digital Trends*. Available at: <https://www.digitaltrends.com/music/apple-music-vs-spotify/> [Accessed 24 Dec. 2019].

Miller, C. (2017). Apple Music Saw Over 40M Users On Mobile Last Month, Leading Spotify By 10M. [Blog] *9to5mac*. Available at: <https://9to5mac.com/2017/03/29/apple-music-mobile-users-compared-to-spotify/> [Accessed 31 Dec. 2019].

Osborne, C. (2019). Apple Acquires Intel's Modem Business In \$1 Billion Deal. [Blog] Available at: <https://www.zdnet.com/article/apple-acquires-intels-modem-business-in-1-billion-deal/> [Accessed 4 Jan. 2020].

Richter, F. (2019). Radio Rules Music Discovery In The U.S. [Blog] *Statista*. Available at: <https://www.statista.com/chart/2077/music-discovery/> [Accessed 27 Dec. 2019].

Rogers, A. (2019). Why Is Apple Raising \$7 Billion In Debt?. [Blog] *Market Realist*. Available at: <https://marketrealist.com/2019/09/why-is-apple-raising-7-billion-in-debt/> [Accessed 3 Jan. 2020].

Ross, S. (2019). *Why Should You Invest in Research and Development (R&D)?*. [online] Investopedia. Available at: <https://www.investopedia.com/ask/answers/043015/what-are-benefits-research-and-development-company.asp> [Accessed 2 Jan. 2020].

Sheetz, M. (2019). *Apple shares suffer worst week of 2019 as investors fear China trade turmoil threatens iPhone growth*. [online] CNBC. Available at: <https://www.cnbc.com/2019/05/10/apple-shares-falling-as-china-trade-turmoil-threatens-iphone-growth.html> [Accessed 2 Jan. 2020].

Stassen, M. (2019). Apple Services Revenue Hit Record \$12.5BN In Q4 2019. [Blog] *Music Business Worldwide*. Available at: <https://www.musicbusinessworldwide.com/apple-services-revenue-hit-record-12-5bn-in-q4-2019/> [Accessed 31 Dec. 2019].

Watson, A. (2019). *Apple Music subscribers 2019 | Statista*. [online] Statista. Available at: <https://www.statista.com/statistics/604959/number-of-apple-music-subscribers/> [Accessed 30 Dec. 2019].

Wilson, F. (2006). The freemium business model. *A VC Blog, March, 23*, p.201.

Appendix

Graph 1: Friedlander, J. (2019). *Mid Year 2019 RIAA Music Revenues Report*. [online] RIAA, p.1. Available at:
<http://www.riaa.com/wp-content/uploads/2019/09/Mid-Year-2019-RIAA-Music-Revenues-Report.pdf> [Accessed 23 Dec. 2019].

Table 1: Apple Inc. (2019). *Apple Inc. Condensed Consolidated Statements Of Operations*. [online] Available at:
https://s2.q4cdn.com/470004039/files/doc_financials/2019/q4/Q4-FY19-Consolidated-Financial-Statements.pdf [Accessed 1 Jan. 2020].

Table 2: Apple Inc. (2019). *Apple Inc. Condensed Consolidated Statements Of Operations*. [online] Available at:
https://s2.q4cdn.com/470004039/files/doc_financials/2019/q4/Q4-FY19-Consolidated-Financial-Statements.pdf [Accessed 1 Jan. 2020].

Table 3: Apple Inc. (2019). *Apple Inc. Condensed Consolidated Statements Of Operations*. [online] Available at:
https://s2.q4cdn.com/470004039/files/doc_financials/2019/q4/Q4-FY19-Consolidated-Financial-Statements.pdf [Accessed 1 Jan. 2020].