



How business models and other factors affect the Stock Price- A Case study on Spotify

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Abstract. The popularity of online music streaming services has risen exponentially since the rise of the digital age. Since the shift from MP3s to online music playing services have begun, there have been more than 60 streaming services accounting for more than 1 trillion streamed songs per year just in the U.S. The author will be focusing on Spotify, one of the largest and most pioneering streaming services on the market. The case of Spotify's methods of income are peculiar, moving away from the conventional methods of generating income such as required membership fees but rather through ad revenue and Premium memberships. In this paper, the author will be exploring will be focusing on the stock values of Spotify since its launch in 2018, while examining its influence on consumers through non-price determinants such as the impact of Co-Vid 19 or the shift in preferences to influencer content.

Keywords: Popularity of online music, Digital age, Spotify.

1 Introduction

The world has had significant changes in its method of consumption for music, each change exponentially faster than the former. From basic productions of ostinatos and rhythms of the Paleolithic Period to Gregorian chants, the author views this period to be defined by basic instruments, with some of the firsts dating back “to more than 35,000 years ago (the Neanderthal flute)”^[1], hymns passed down orally with no definitive musical notation, and a method of consumption being for festivities. The development of music from Gregorian chants until the Present day, while containing another 5 stages only, amasses to less than a tenth of the duration of the first period. From around 600 CE to 1600 CE was the period marked by musical consumption for the church and other religious parties. From the Baroque Period to the late Classical era, the period was defined by the consumption of music coming from noble or royal families, notably the Esterházy family for Haydn and the Salzburg court for Mozart. From the 19th century, concerts became more popular with the likes of Paganini and Liszt becoming some of the first “pop stars” as we know today. The recording era first blossomed in the

1900s, going through a number of output devices such as the gramophone to MP3s until eventually being transferred entirely online using a database.

It is quite easy to spot a negative relationship here in the influence of music in terms of quantity demanded and the relative cost, defined by the author as the total expenditure in terms of price, time and other factors such as opportunity cost, of a hearing of music. Using a simple demand curve like below, we can see the relationship of the quantity demanded and pricing being a strong negative relationship.

Now that we are in the digital era, the influence of the consumer (being a globalized and interlinked community) reaches the highest point, with consumer benchmarks such as the loyalty of users, number of users, and quantity consumed per time period being elemental factors for stock pricing changes.

Spotify has, since its development, used a business model to grow the attachment of consumers to its product on the premise of the product being ‘free’, and instead using external ad revenue and ‘premium’ user types to generate income. This model is known as the “freemium model”, where users get an array of limited features which prove enough for usage, but to use quality of life or more advanced features, the premium version must be purchased [2]. In Spotify’s case, the user gets access to all the songs in Spotify’s database, but with the detriment of ‘unskippable’ ads, restrictions on downloading and a limited number of skipping options per day. The online nature of Spotify has attracted over 550 million regular users until Q2 of 2023. This is reflected in the stock price since its launch in 2018, propelling the usage of not just Spotify but other streaming platforms such as SoundCloud and YouTube Music.

In this paper, the author’s main focus will be to examine these factors and how well the corporation influences consumer’s ideas and purchases from the launch of Spotify to the Present day mainly through its stock price. This factor is the clearest indicator for the author to analyze the influence of Spotify on consumers both in its business model and non-price determinants. This paper will focus on the business model of Spotify and explain which non-price factors along with a specific business model which incorporated the long tail led to the substantial increase in stock price from late 2020 to early 2021.

2 Business Models

Business Models in this thesis are defined as the stratagems that the enterprise, Spotify in this case, uses to generate revenue. In this thesis, we will explain other non-price determinants unrelated to the Business Model in a separate subsection, focusing only on business decisions that lead to revenue.

Here, we must talk about the long tail. The long tail is a business strategy that allows companies to realize significant profits by selling low volumes of hard-to-find items to many customers” [3]. First coined by Chris Andersen, the long tail theory can be seen as a byproduct of the digital environment, and due to mass distribution across the internet and the change in the means of production of goods, there should be a larger profit margin. Due to these factors, we can conclude that the digital music industry displays the long-tail phenomenon, where low prices, fast and easy storage and many service

platforms present a long-tail advantage in music consumption. Music streaming services, therefore, “should be attempting to achieve the long tail effect from the long run and develop market models based on this phenomenon and the importance of consumer experience and demand.”^[4] Initially, once a target audience enters the market, they are exposed to two different types of services:

(1) Use an ad-free service business plan that is offered by the likes of NetEase music, accounting for 206.7m active users in China.

(2) Using services such as Spotify that use free and premium services. This freemium model is “undeniably the most popular model in online services”. In this thesis, we will be focusing on the latter. On the premise of being free, the demand for the product would, without a doubt, increase. By having no additional requirements, except in Spotify’s case, setting up an account, the free version is a method of attracting consumers and boosting customer loyalty. The effects of customer loyalty cannot be overstated, with a prominent example being Apple. While being a pricier alternative in the digital product markets, although having many and arguably much more cost-effective substitute goods, the factor of customer loyalty still incentivizes customers to purchase their products despite being a Veblen Good. While the free experience does give (limitedly) five out of the nine factors (Audio Quality, Ads, Offline Listening, Skips, Mobile Streaming, Speaker compatibility, Song selection, playlists, and exclusive content)^[5] for free, the paid version will offer a much more immersive customer experience and is both satisfactory for customers (them being the ones who chose the premium model) and for the enterprise generating revenue.

Another benefit of the freemium model is the influence of customer propagation. Compared to older forms of music venues, the influence that a customer can spread is exponentially larger. In older venues, popularity is a factor that cannot be spread easily, with slow and ineffective methods such as mail being the only way. The sphere of influence of a certain person can only be so large. However, with the development of the internet and succeeding it, the World Wide Web, the interconnectedness of the world makes it surprisingly easy to spread this information. In essence, by spreading one’s views on the internet, one is spreading it in a network of 5.3 billion people. This powerful propagation method of the network “should not be underestimated in marketing”^[6].

However, a study has shown that the free services, “because they do not offer users full mobility in their music consumption - can lead to a stimulation in alternative music consumption channels that offer mobility, such as licensed and unlicensed downloading”.

Spotify’s business models find various ways to present the company’s premium model to the free users, thereby creating revenue. While the author used to think that Spotify generated about half of its revenue from ads and half from premium accounts, in fact, “Spotify makes 91% of its revenue from subscriptions and the other 9% from advertisements. Of the revenue it generates, Spotify keeps 30% and splits the remaining amount between licensing, music deals, and paying to the artists”.^[7] The main method of income, therefore, is any subscription model that Spotify offers, of which four main types are discounting the free version:

(1) Premium Individual: For USD 10.99 per month, a user gets access to a Spotify Premium account, with unlimited access to all features.

(2) Premium Duo: For USD 14.99 per month, two users can access two Spotify Premium accounts with unlimited access to all features, provided they live in the same address.

(3) Premium Family: For USD 16.99 per month, 6 Premium accounts are made, with access to Spotify Kids (blocking explicit music) and unlimited access to all other features, provided they live in the same address.

(4) Premium Student: Provided one currently study at a verifiable higher institution, a user gets access to all features, along with the Ad-supported version of Hulu, for only USD 5.99 a month.

The free version, or the Ad-supported version, is by far the most used version by the 551 million users of Spotify. In contrast, only 220 million users have purchased Premium Accounts, accounting for just 40% of the total users. Spotify, therefore, relies on a plethora of advertisements to incentivize the general population to purchase a Spotify Premium account. Spotify officially states that the main source of revenue from Ad-Supported Users is “from the sale of display, audio, and video advertising delivered through advertising impressions across our music and podcast content”. Spotify offers a particular option of a ‘free trial’ of its Premium features by signing up. Interestingly, since the initial signup requires financial information from the user, the Premium subscription “will automatically continue after the trial period expires, and if you do not want to be charged for it, you have to cancel before it ends. By doing all the above, they create a habit in users, who then find it hard to cope with the limitations and are more likely to pay for one of the Premium plans, driving the growth of paid memberships”.

We can see the impact of technology on the methods of music distribution. With technology leading to an increase in the efficiency of the production of the product (or distribution, in this case), we can find a decreasing cost of production and a rightward shift of the supply curve, leading to more demand for a certain product due to the decreased costs of production. With 59.6% of the world’s population able to access the internet, the impact of the general consumer’s taste is undeniably elemental to shifts in the demand for Spotify’s products.

As examples, we will be talking about Spotify’s acquisition of podcasts, which began in 2018 but showed a podcast ad revenue increase of 627%. A podcast is “a digital audio file made available on the Internet for downloading to a computer or mobile device, typically available as a series, new installments of which can be received by subscribers automatically”. These podcasts can be broadcast by anyone, from famous personas to ordinary people. This new communication medium has steadily increased since its rise in popularity in 2014, seeing the number of podcast listeners reach 464.7 million.

Spotify’s acquisition of Podcasts started in the 2010s to the early 2020s, when they acquired a multitude of Podcasts, which not only means they do not need to reel in a brand new fanbase with their podcasts, but the acquisition of podcasts also means that Spotify can quickly and effectively build “another sizable revenue channel to expand on as many of these shows already generate recurring monthly revenue.” Spotify further attracts customers by offering “exclusive content that is not offered anywhere else” and

slowly integrates its customers into its platform. In a newly and relatively uncharted market, Spotify's acquisition of shows such as "The Joe Rogan experience" "The Ringer", and "Bill Simmons' Podcast" makes it known that "they [Spotify] are on track to become the biggest player in the podcasting world." This massive shift of different fanbases shows that Spotify is redesigning its platform to be somewhat of a hub for communication across all audio services. In a 2020 report, Spotify announced that "their active users listening to podcasts has gone up from 19% to 21% and the content that they're listening to has more than doubled."

Despite these different sources of revenue, Spotify has not made a profit-making business model. Although generating 3.042 billion euros in just Q2 of 2023, for the past 25 quarters, Spotify has only broken even or generated profit seven times. Other music streaming services are experiencing similar losses, with Amazon Music and Apple Music struggling with similar matters. Although Spotify has shown signs of promise, the overall net income loss of the enterprise does raise questions about its business model and the competition in this industry in general. Since its launch on the NYSE in April 2018, Spotify has more than doubled its launch price of USD 147.92 in 2021 but has since rested on USD 153.53 as of September 29, 2023.

3 Non-price Determinants

Similarly, to the analysis of Spotify's business model, there are several non-price determinants that have shifted the demand of Spotify for consumers. Here the author will define non-price determinants as every other factor that either doesn't involve active price changes by Spotify or is not a change in Spotify's business model. Examples of this include the demographic of the audience and the shift in consumer taste. The word "non-price determinants" will also be referring to the factors that shift demand, since it is the demand of the consumer that is most measurable indicator of success (whether it be through quarterly result analysis or stocks).

Here are the basic non-price determinants that influence demand:

- (1) Complementary Goods
- (2) Consumer Taste
- (3) Income
- (4) Demographic of buyers
- (5) Consumer Expectations
- (6) Substitute Goods in the market

The author will be adding another non-price determinant to the list, being the impact of the consumer's environment. This can be defined by, but not limited to, the impact of the environments of the consumer's society, whether it be political environments or physical environments (such as the impact of Covid to our lives).

The author will be focusing on two main non-price determinants due to the belief that these factors are most influential in terms of the influence of the factors to the firm's success:

- (1) Impact of consumer's environment
- (2) Demographic of buyers

Firstly, the impact of the consumer’s environment is quite apparent: the limitations of CoVid-19 left us in need of online streaming services, such as the need for television streaming or audio streaming as substitutes for moviegoing and concerts. However, despite the popular opinion that the lockdown is beneficial for the online platforms due to much more enforced restrictions, the decrease in music consumption on platforms such as Spotify “upends the popular expectation that online media platforms would benefit from the restrictions put in place during the pandemic, in part because this type of music consumption is not standalone entertainment, but complements activities that declined during lockdowns, such as commuting”.

Supposing that this true, it becomes quite apparent that the impact of the consumer’s environment in this scenario is negative. Since complements are goods that are often purchased or used together, the restriction of activities will inevitably lead to challenges presented to the online music industry, *ceteris paribus*. This can be presented by the aggregated loss of 838 million dollars from Q1 to Q3 of 2020.

Lastly, the relevance of the targeted age group of Spotify is also one that many previous researchers debated about. It has been established by the firm that Spotify can make personalized playlists based on factors such as the genre of music that the customer listens to the most frequently but equally importantly, the age group of the Spotify customers. Figure 1 is the graph of Monthly Active Users from Spotify.

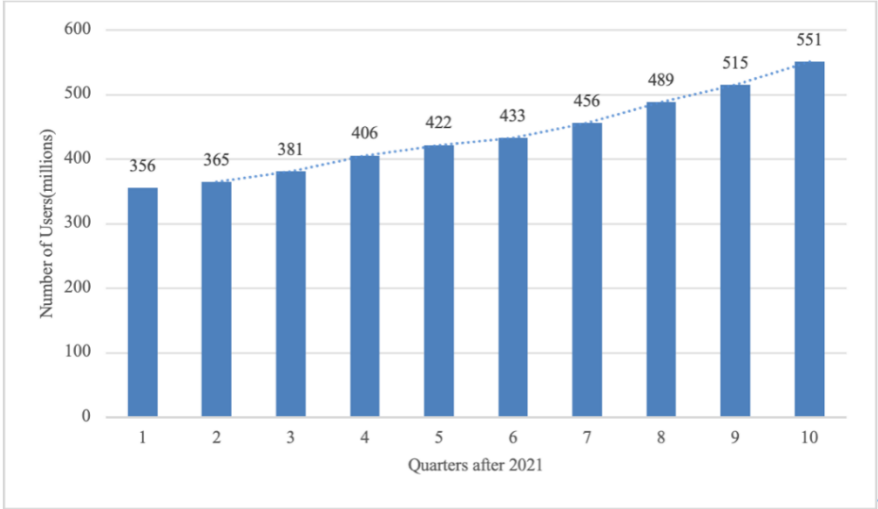


Fig. 1. Spotify's MAU growth in Quarters after 2021

According to a 2021 report by Inês Gomes et. al, an overwhelming number of respondents (sampled from 500 Spotify Users) come from the 18 to 25 age group, and other reports also have reported that of all the internet users, the demographic of the ages 18-24 are 85% more likely to use or visit Spotify in 2023. This is directly correlated to the age group of users on social media such as Instagram (see Figure 2).

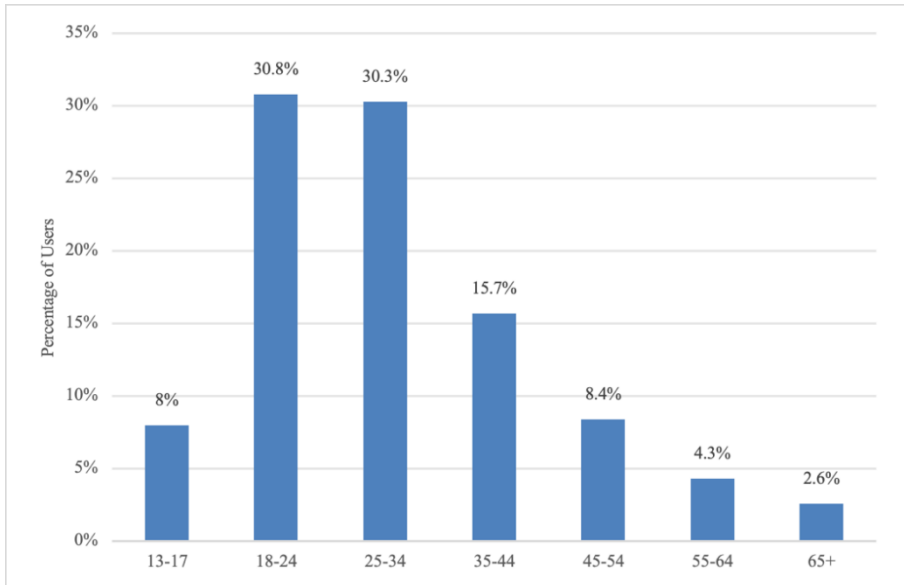


Fig. 2. Instagram's user age group distribution

The correlation between these large social hubs directly displays the ability to share information, and the 95 million posts a day from these users from just Instagram means that information can be shared at a phenomenal rate.

We can respectively categorize these non-price determinants into two large factors of Price Elasticity of Demand:

- (1) Time
- (2) Number of Substitutes in the Market

Firstly, the small number of substitutes in the market (The author here defines Spotify as not only a music streaming platform, but as a hub with a multitude of different audio files that are applicable to the platform. In this case Spotify is one of the only services that give this service) mean the price will be less elastic. Secondly, despite the fact that as time passes, a product will become more elastic than before, due to the limited number of substitutes in the audio streaming market, the author concludes that the service provided is highly inelastic. Therefore, for the firm the appropriate strategy in terms of gaining revenue would be to increase the relative price of the product (i.e.: The premium subscriptions). As we can see from 2021, the cost of Spotify has gone from 9.99\$ to 10.99\$, reflecting Spotify's increase in total revenue (also seen from the Quarterly Reports, with Spotify's revenue going from 1.85 billion USD in Q1 of 2020 to 2.66 billion USD in Q1 of 2022) therefore being highly successful for the Firm.

4 Results and Evaluation

Before examining the results of the stock prices, all listed prices of not only Spotify but for all other composites and firms will be and should be assumed as United States Dollars (USD).

Since the opening price of 158.48 in April 2018, the stock price of Spotify has gone to a maximum of 364.59 and eventually dropping back to around the opening price (160.53) in October. Fig. 3 below is the stock chart of Spotify (NYSE: SPOT) from its opening price up until Present day:

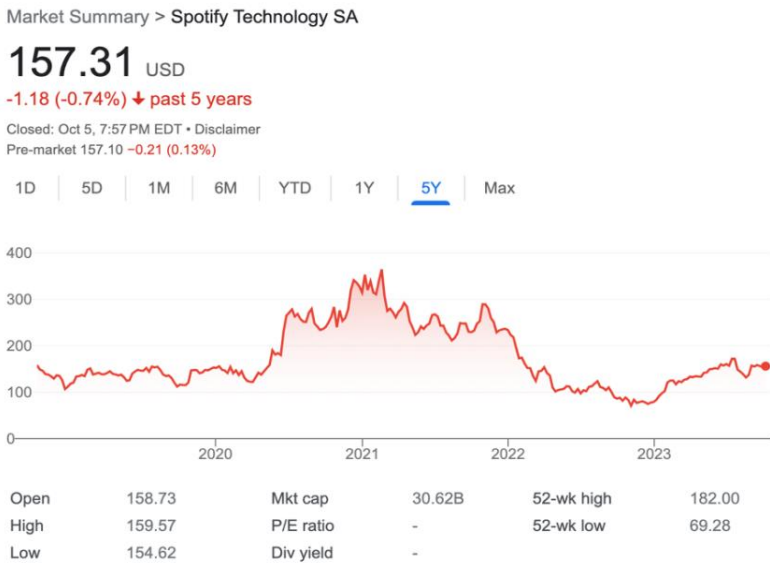


Fig. 3. iv: The stock prices of Spotify for the last five years (October 2018 to Present Day).

Source:

https://www.google.com/finance/quote/SPOT:NYSE?sa=X&ved=2ahUKewi2_oWxkuGBAxV0h1YBHf7EDlwQ3ecFegQIJxAX&window=MAX

This author reports that over the course of the pandemic and the acquisition of a multitude of podcasts, during the quarterly financials from 2021 Q1 to 2022 Q1, Spotify’s actual EPS was situated at around -0.17 USD, meaning although the company was losing money, its business decisions along with the pandemic allowed Spotify to stay relatively secure amidst the earnings loss. Spotify’s stock price furthered shot from 145.14 USD in March 2020 to 218.56 USD in January of 2022. This is a 50.59% net increase of its stock price in the span of two years. This is not to mention the highest price of 364.59 USD reached in February 2021, at the height of its podcast purchasing “hype”.

A comparison between Spotify and its audio streaming substitute, Deezer (owned by Warner Music Group Corp) during approximately the same period of time (Warner

Music Group Corp opened in NASDAQ only in June 2020), there is only a 6.1% increase from 29.94 USD at its launch price until 31.79 USD during March 2022 (see graph below). This revenue making ability of Spotify puts the firm well ahead of other substitutes, again showing how both the acquisition of podcasts and the business model itself heavily contribute towards Spotify's success against other competitors. Here the author does not analyse more well-known music streaming services such as Apple Music and Amazon Music due to two reasons: One being that both of these streaming services do not have a separate listed sub-company under any marketplace. Another being that the fame of its parent services, Apple's Technologies and Amazon's E-commerce services can have an effect on the popularity of the music services, therefore rendering the comparison unfair. Again, there should be consideration that Spotify is not going up against the most well-known of music streaming services, but this comparison with Deezer still shows the extent of Spotify's success especially during these past two years (see Fig. 4).



Fig. 4. The stock graph of Warner Music Group Corp, one of the companies that own Deezer.

Source: <https://www.google.com/finance/quote/WMG:NASDAQ?window=MAX>

However, the extended success of Spotify over the past two years cannot be solely attributed to Spotify. Further investigation by the author reveals that the Fed cut the funds rate “by a total of 1.5 percentage points at its meetings on March 3 and March 15, 2020”. This action provided by the Fed is quite clear in that the aim of the action was to increase monetary circulation and to “support spending by lowering the cost of borrowing for households and businesses”, Forbes further concurred with this statement, stating that the FOMC “delivered two huge rate cuts at unscheduled emergency meetings in March 2020, returning the federal funds target rate range of zero to 0.25%”. Investors -especially businessmen and the bourgeois- have borrowed money from banks amounting to a net total of \$900 billion, in which they have poured this money “into equity exchange-traded and long-only funds in 2021 -- exceeding the combined total from the past 19 years”. A short examination of Apple's stocks, as an example,

and the NYSE composite reveals that both companies have similar stock alignments to Spotify (see Fig. 5).

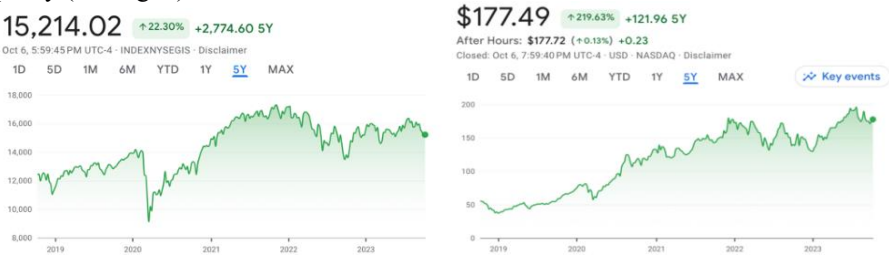


Fig. 4. The respective stock graph of Apple and NYSE Comp. Both have the similar rise in price from 2020-2022. Source: <https://www.google.com/finance/quote/AAPL:NASDAQ?window=5Y>, <https://www.google.com/finance/quote/NYX:INDEXNYSEGIS?window=5Y>

Using basic differentiation (considering the graph of two singular points is linear, we will use $\frac{d}{dx}(ax + b) = a$ to get the respective derivatives of the 3 graphs from a certain point in time. The derivative of Spotify’s graph is still significantly higher than the derivatives of Apple and the NYSE Composite during the same period (Here the author uses the time period of the steepest increase from March 2020 (i.e.: the beginning of the pandemic) until 2021), showing that despite the Fed decreasing the fund rate, there is still a significant portion of the increase of Spotify’s stocks is due to the firm’s own business model and decision making.

Our model will be revolved around predicting the stock prices of Spotify around the NYSE Index. Here is the table(Table 1) of Spotify, the NYSE Composite and Apple below:

Table 1. The table of Spotify, the NYSE Composite and Apple. Data taken from Google Finance

Months	Spotify	NYSE	Apple	Spotify%	NYSE%	Apple%
1	152.5	13917.05	74.36	-	-	-
2	154.5	13931.93	80	1.01	1.00	1.08
3	145.1	12352.03	72.26	0.94	0.89	0.90
4	122.12	9880.63	60.35	0.84	0.80	0.84
5	144.84	11058.57	72.27	1.19	1.12	1.20
6	184.28	12641.44	82.88	1.27	1.14	1.15
7	271.49	11991.52	91.03	1.47	0.95	1.10
8	252.12	12765.84	111.11	0.93	1.06	1.22
9	248.21	12966.14	120.96	0.98	1.02	1.09
10	240.28	12749.79	113.02	0.97	0.98	0.93
11	276.1	13218.67	118.69	1.15	1.04	1.05
12	319.77	14417.33	122.25	1.16	1.09	1.03

After finding the stock price (in USD) of the three firms, I decided to find the percent change from a month to a previous month's price (here in the Decimal Format) of each of the three stocks studied:

For the data, the number below corresponds to the month of the year in 2020 (we took the value of the first week of the month). We know that Spotify's acquisition of Podcasts started in the Spring of 2020, and this corresponds to the 7% higher increase in Spotify's stocks against NYSE's. During July of 2020, the increase from the previous month reached a historical high of 52% higher increase. Below is the plotted graph of the percent change of the stocks.

By placing the NYSE as the independent variable and Spotify's stock value as the dependent variable, considering *Ceteris Paribus* we can graph the Percent change in Spotify's stock value to the overall percent change of NYSE:

$$y=1.19x-0.12$$

By plotting in all the variables, we find the regression line to be approximately this equation. Below(Fig. 6) is the equation in graphed form:

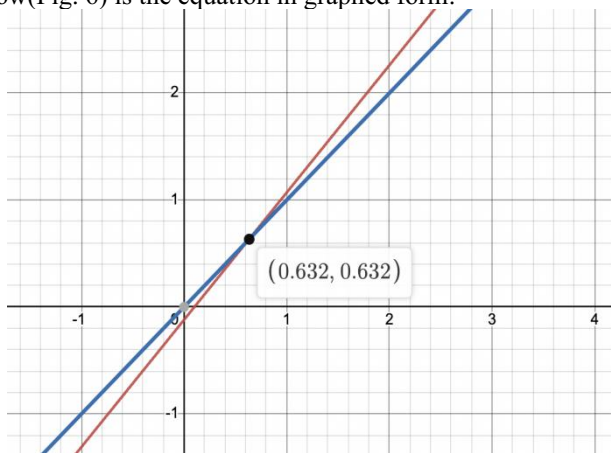


Fig. 6. The red line is our line, while the blue line is the function $y=x$, with the point where the % change of NYSE is equal to the % change of Spotify shown above (0.632,0.632)

5 Conclusion

This study is, in short, a detailed analysis in the extent of the impact of Spotify on the consumers on different determinants, from business decisions and models to non-price determinants influencing the power of Spotify. The easiest way that the author finds to show this effect that is decently direct is through the stock market. Since the stock market is powered through the expectations of the consumer on the company, it is one of the most direct ways to compare the influence and the success of this company. This author has analyzed the problem from two perspectives: from the business models and from the non-price determinants. The business model is the direct result of the company's own decisions and is one of the clearest ways to measure success, while non-

price determinants can aid the author in finding the factors that are beyond the company's control, whether positively or negatively impacting the firm. The author has concluded that the success of Spotify is overpoweringly higher than its competitors but limited in terms of stock market returns. The author has stated that in the music streaming industry it is extremely difficult for a company to break even, and Spotify has achieved those numerous times. In addition, Spotify's stock price in 2020-2022 also fully reflects the success of the company, rising from 145 USD to 364 USD, more than double the price in March 2020. Our model also reflects the same growth, having nearly 20% higher percent growth per month relative to the NYSE index. However, we must account for the non-price determinants including Co-Vid and the demographic of the users bringing both positive and negative impacts towards the firm, with Co-Vid taking a negative toll and the relatively young age groups that use Spotify (which calls for many loyal users). Lastly, the USA Fed's decision to lower the fund rates greatly boosted the stock market's capital, which led to not only Spotify but nearly every other firm having somewhat of an increase in stock price during the same period Spotify had its growth. In conclusion, the author believes that although Spotify's success is enormous and actually quite magical in comparison with its competitors, the near myriad of non-price determinants and other factors make me believe that the extent of the success of Spotify is not as much as the numbers say so.

References

1. Rocha, Álvaro, et al. *Trends and Applications in Information Systems and Technologies: Volume 2*. Springer Nature, 2021. (Gomes et. al.'s paper was taken from this collection)
2. Edmans, Alex, et al. *Music Sentiment and Stock Returns Around the World*. 2021.
3. Yalin Zhang. *A Comparison of Profit Models of Digital Music Platforms*. 2023. Beijing Foreign Studies University, MA thesis.
4. Wessel, David, and Eric Milstein. "What Did the Fed Do in Response to the COVID-19 Crisis?" *Brookings*, 17 Dec. 2021.
5. University, Carnegie Mellon. "Music Streaming Consumption Fell During COVID-19 Lockdowns - News." *Carnegie Mellon University*, <https://www.cmu.edu/news/stories/archives/2021/july/music-streaming-down-during-pandemic.html>. Accessed 2 Oct. 2023.
6. Kumar, Vineet Vineet Kumar. "Making 'Freemium' Work." *Harvard Business Review*, 1 May 2014, <https://hbr.org/2014/05/making-freemium-work>.
7. Tepper, Taylor. "Federal Funds Rate History 1990 to 2023." *Forbes*, 26 July 2023, <https://www.forbes.com/advisor/investing/fed-funds-rate-history/>.

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