



LISBON
SCHOOL OF
ECONOMICS &
MANAGEMENT
UNIVERSIDADE DE LISBOA

**MASTER OF SCIENCE IN
FINANCE**

**MASTERS FINAL WORK
PROJECT**

EQUITY RESEARCH:
SPOTIFY

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OCTOBER 2019

Abstract

The present Master Final Work is an Equity Research of Spotify Technology.

The choice for Spotify has three key reasons. First, Spotify is changing the way music is consumed by providing accessibility to all music in the world instead of ownership of CD's or files. Second, applies new technologies to the music market, using machine learning and analytics to understand music and consumers. Third, I am a loyal customer and a music fan who uses Spotify every single day.

An equity research report consists in forecast a stock's price target for the year end of 2020, and comparing it with the current price in order to conclude if the stock is over valued or undervalued.

To provide a price target for Spotify, we started to analyse the business model and the company's strategy and to identify its key drivers of profitability. Additionally, is key to study the macroeconomic framework and the industry where the company acts in order to evaluate its competitive positioning.

Based on the analysis performed and the data gathered, the following step is to determine the assumptions to forecast the company's accounts for the next 6 years. Once the forecasts are performed, we applied two valuations models in order to obtain the price target: the Discounted Cash Flow method (DCF) and the Subscription Based Companies (SBC) valuation model.

The price target obtained by the DCF was USD178.52, with an upside potential of 34.2%, and USD174.43 for the SBC model, with an upside potential of 31.2%.

Finally, a risk assessment was performed in order to identify the main risks that impact the valuation and the company's business.

Resumo

Este Trabalho final de Mestrado trata-se de uma *Equity Research* sobre a empresa Spotify Technology.

A escolha do Spotify prende-se com três razões principais. Primeira, o Spotify está a alterar a forma como a música é consumida, mudando de o paradigma de consume de posse da música, em CD's ou ficheiros, para acesso a toda a música do mundo. Segundo, é uma empresa que usa as novas tecnologias, como *machine learchine* e analítica avançada, para compreender quer os consumidores quer a música propriamente dita. E terceiro, sou um cliente fiel e um grande fã de música, que utiliza o Spotify todos os dias.

Uma *Equity Reasearch* consiste em determinar o preço alvo da ação de uma empresa no final de 2020 e, comparando com o preço atual, determinar se o seu valor está sobreavaliado ou subavaliado. Desta forma, é possível fazer uma recomendação aos investidores relativamente à compra ou venda da ação.

Para calcular o preço alvo do Spotify, iniciámos o relatório com uma análise do modelo de negócio e das estratégias da empresa, de forma a determinar as principais fontes de valor do negócio. Além disso, é fundamental efetuar uma análise macroeconómica e da indústria onde a empresa tem atividade, com vista a avaliar o seu posicionamento competitivo.

Com base nas análises enumeradas e nos dados recolhidos, o passo seguinte foi determinar os pressupostos para efetuar a previsão das contas da empresa para os próximos 6 anos. Após as previsões, aplicamos dois modelos de avaliação de empresas com o objetivo de obter o preço alvo: o modelo *Discounted Cash Flow (DCF)* e o modelo *Subscription Based Companies (SBC)*.

O preço alvo obtido pelo primeiro modelo foi 178,52USD com um potencial de crescimento de 34,2%, enquanto que o segundo modelo obteve um preço alvo de 174,43USD com um potencial de crescimento de 31,2%.

Por fim, foi efetuada uma avaliação de risco de forma a identificar os principais riscos que poderão impactar o preço calculado.

Key words

- Music streaming
- Monthly active users
- Average revenue per user
- Churn rate
- Subscription based companies
- Wright holders
- Podcast

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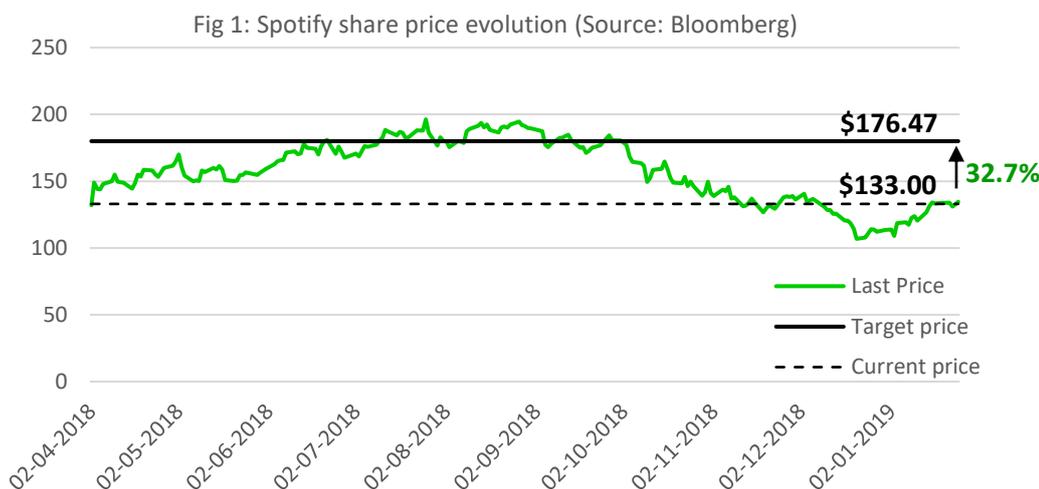


SPOTIFY: The Netflix of Audio

YE2020 price target of **176.47USD** | **Buy** recommendation | **Medium** risk

01. Research Snapshot

The present equity research report supports a price target of USD176.47 for Spotify shares at the end of 2020, which corresponds to an upside potential of 32.7%. Hence, since the share is undervalued, it concludes with a BUY recommendation. The price target is the simple average of two different models that presented similar target prices: USD178.52 using Discount Cash Flow method and USD174.43 using Subscription Based Companies valuation model. We considered a medium-high risk investment due to the uncertain impact that adverse economic conditions might have on Spotify.



Spotify is the market leader of a recent industry – audio streaming service – where competes with the larger tech companies of the world: Apple, Google and Amazon.

Subscription payments of Spotify Premium segment is the main source of revenue (89.7%) of the company. For a profitable and sustainable premium segment, Spotify aims to attract and retain customers. To attract new subscribers, Spotify includes free segment, which allows everyone to use the app, but with advertising commercials. In order to retain customers, the company continuously improves the user experience and customer personalization through R&D investment, leveraged the data collect from subscribers.

Despite Spotify has been presenting negative results, this analysis considers that the company will benefit from high scale gains in the long term.

Fig 2: EBIT in EURm (source: Spotify and author)



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02. Business Description

Spotify Technology S.A. is a digital audio distributor that provides on-demand access to millions of music tracks and podcasts. Its ambitious goal is to provide all the world's music instantly to everyone, wherever and whenever they want. Spotify works as a social media of music as well, where customers can manage their music library, share songs and self-created playlists with their friends. Furthermore, Spotify's well known and unique algorithm proposes artists and tracks to customers based on their listening history, making really easy to discover new artists and songs and increasing the customer engagement and experience. Additionally, Spotify provides a wide range of categories of podcasts and a small offer of audiobooks. Spotify is available on an app for smartphones, desktops and tablets and through its website, being currently in 79 countries worldwide (most of Europe, most of the Americas, Australia, New Zealand and parts of Africa and Asia).

Created in 2006 by Daniel Ek and Martin Lorentzon in Stockholm, Sweden, Spotify appeared to disrupt completely the music industry and how music is consumed. The streaming service was launched in 2008 only in Scandinavian countries, while licensing deals with the major labels started to be closed. Rapidly entered in the British market. While the company was growing in European countries, Spotify initiated its commercialization in the US market in 2011, with a key partnership with Facebook, which opened the door of the world to Spotify. With a higher range of content to offer, Spotify experienced an exponential growth between 2012 and 2018, achieving a CAGR of 60% in the number of subscribers. However, Spotify still records operating losses due to the high costs on royalties and low prices. Throughout its history, Spotify acquired some key strategic companies: The Echo Nest, Seed Scientific, CrowdAlbum, Sonalytic, MightyTV, Niland, SoundTrap, Loudr and, more recently, Gimler Media and Anchor. In 3rd April of 2018, Spotify went public with an IPO on the NYSE. The company fiscal address locates in Luxembourg City, despite its headquarters remaining in Stockholm.

Spotify Free

It is a free user service ad-supported. Customers can't pick the track they want, it has to be played on shuffle mode, and there is a limit of tracks that customers can skip. Additionally, tracks can't be downloaded, therefore it only can be listen online. Furthermore, customers can't opt for high quality audio option. Revenue is generated through the sale of audio and video advertising and represented 10.3% of Spotify's total revenue (Fig. 3) in 2018YE. However, free MAUs (Monthly Active Users) made up more than a half of total MAUs (Fig. 4). This segment recorded continuously negative gross margin, becoming positive in 2017 due to changes in data policies to improve show advertising effectiveness.

Spotify Premium

Paid-for service and the ultimate music experience. Paying customers can listen to music on-demand and offline, by downloading the tracks, on all platforms, in high quality audio and ads free. Additionally, there are two more sub-plans of Premium. First, Spotify Family is available for six members maximum and reduces drastically the premium per subscriber. Second, Spotify Student for half the price a college student has access to Spotify Premium, in order to engage young customers to Spotify and to create an important bound and dependence on the app. Revenue is generated through subscription fees, paid directly by subscribers or partners (generally telecom companies). This segment represents 89.7% of total revenues, despite of having a lower weight on total MAUs (46.4%). Its revenue grew at a CAGR of 39.6% since 2015, recording a gross margin of 26.6% in 2018YE.

Fig 3: Weight on revenues per segment (source: Spotify)

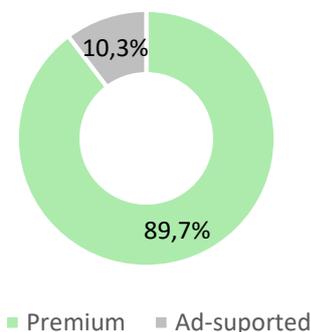
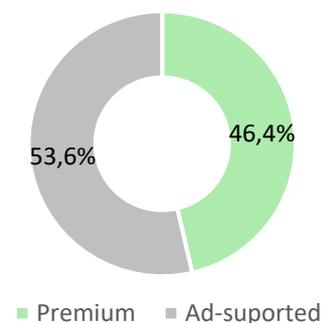


Fig 4: Weight on MAUs per segment (source: Spotify)



	Spotify Free 0 USD/month	Spotify Premium 9.99 USD/month* 30 days free trial
Shuffle play	✓	✓
Listen offline	✗	✓
No ads interruptions	✗	✓
Unlimited skips	✗	✓
High quality audio	✗	✓

*Prices change from country to country

Source: Author, Spotify

Key Drivers of Profitability

Monthly Active Users (MAUs) and Number of Subscribers

MAUs are the number of users who listened to any track for at least one millisecond in the last thirty days. This indicator is particularly important to Spotify Free: the higher the number of MAUs, the more companies will advertise through Spotify. Additionally, the firm states that 60% of free users went Premium between 2014 and 2016, making Ad-supported plan a core driver to acquire subscribers. Subscription fees make up the bulk of Spotify's revenue (Fig. 5 and 6), therefore one main objective is to increase the number of subscribers. Spotify accounts for 96mn subscribers (2018YE), which grew at a CAGR of 62.6% since 2014. Building a large and loyal subscriber base is key in order to leverage a spreading effect of license costs, reducing license costs per user relatively to the average revenue per user.

Average Revenue per User (Fig. 7)

Increasing the number of subscribers is not enough to ensure profitability, it must be sustainable. ARPU of Spotify is continuously decreasing due to family and student plans introduction and to internationalization expansion to countries with lower purchasing power. Therefore, decreasing customer acquisition costs per user allied to an increasing subscriber base, leads to a growing brand value and competitiveness. This dynamic gives a high importance to the scalability of business.

Customer retention (Fig. 8)

Because companies compete for customers, retention plays a key role on subscription-based business model. Retention is evaluated by the churn rate (percentage of subscribers to a service who discontinue their subscription within a given period). When the churn rate is higher/lower than new customers rate, then a company is losing/acquiring subscribers. Companies invest on personalization strategies in order to increase customer loyalty and, consequently, to reduce the churn rate. Spotify Family plan had a significant impact on churn rate, which decreased from 7.7% to 5.2% until 2018, while the number of premium subscribers were increasing by a CAGR of 50.8%.

Content license

Spotify depends on acquiring content licenses from several major and minor content owners and other rights holders in order to provide its service. License music rights are extremely complicated, each country has its own regulations, and are a key part of Spotify business. Spotify gets two classes of licenses. First, Sound Recording License agreements, which cover the rights to a certain recording. In this case, Spotify renegotiated deals with the major record companies in 2017: Universal Music Group, Sony Music Entertainment Group (owner of more than 5% of Spotify shares), Warner Music Group and Music and Entertainment Rights Licensing Independent Network (Merlin) for digital recordings from independent labels. Second, Musical Composition

Fig 5: Premium subscribers by region in 2018 (source: Spotify)

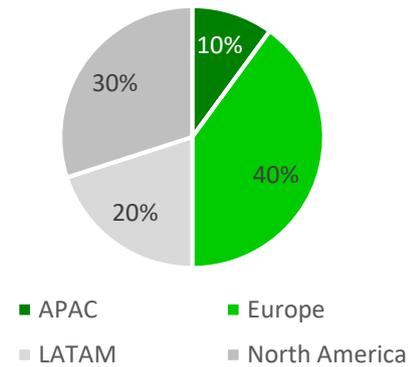


Fig 6: MAUs by region in 2018 (source: Spotify)

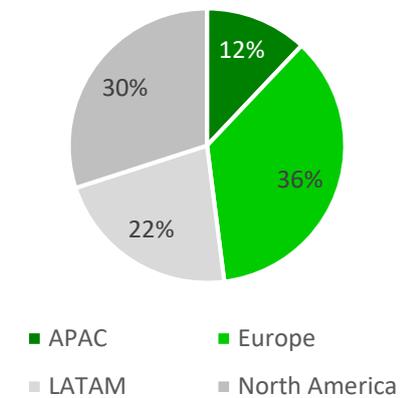
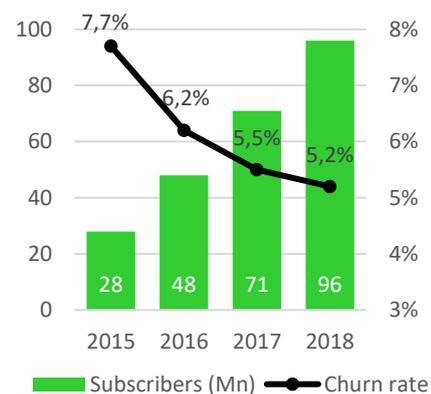


Fig 7: ARPU in €/month (source: Spotify)



Fig 8: Churn rate and premium subscribers (source Spotify)



License Agreements to cover who own the rights to the song, which are divided into performance rights, paid to song publishers, and mechanical royalties paid to songwriters when a song is reproduced (Appendix 14). Royalties are calculated using negotiated rates based on subscription and advertising revenue earned, or usage measure or a combination of both.

R&D and Sales&Marketing Expenses

Both represented nearly one fourth of the total revenues in 2018 and together play a key role on subscribers acquisition and retention strategy. R&D enhances the functionalities of existing products and allows the creation of new ones, improving the user experience and, consequently, retaining subscribers and reducing the churn rate. Sales and marketing expenses aims to enlarge subscriber base. Both expenses are increasing, but at a slower pace than revenue, reducing their weight on the cost structure (Fig. 9).

Company Strategies

Spotify as a subscription-based company

Spotify provides the major part its service on a subscription basis, guaranteeing a stable cash flow at low distribution costs. A key concept related to this business model is **customer franchise**, which is the cumulative perspective that customers held after a long exposure to a service (source: Time to Change Your Investment Model by Feng Gu and Baruch Lev). Supported by its streaming content, Spotify has been building its customer franchise through customer acquisition (campaigns and special plans, such as Spotify Family and Spotify Student), engineering (Spotify’s Discover Weekly service provided by its algorithm), brand development and R&D through a high increase of sales and marketing and R&D expenses.

Business scalability

Spotify’s business model supports profitability at scale, therefore its strategy **prevails speed of growth instead of efficiency**, as is pointed out by Reid Hoffman and Chris Yeh in the book Blitzscaling. The goal is to generate substantial revenues as the number of subscribers expands, improving margins at scale. The introduction of Spotify Family aims this objective. It resulted in an outstanding increase of subscriber base, despite its negative switching effect (already premium subscribers changed to Spotify Family, decreasing their fees). For the next years, Spotify plans to follow two strategic lines in order to achieve business scale:

- **Business model to acquire and retain (Fig. 10).** By increasing its base of subscribers, Spotify collects more data about listening habits of its users. This data can be leveraged to personalize offer in the shape of listening proposes, with new artists, songs and playlists that fits each customer’s music taste. Personalization is key for a better customer experience and, consequently, lower churn rate and more customer acquisition.
- **Emerging markets as a key target.** Monthly payments are different country by country. For instance, Spotify premium is MEP100 (approximately USD5) in Mexico and USD9.99 in the US, creating a Spotify international price index. This pricing strategy of adapt prices according to the local purchasing power suits perfectly in emerging economies due to their high population and low purchasing power. Additionally, these countries haven’t had the strongest digital music environment, but Spotify offers a superior experience and value proposition than piracy. Therefore, emerging markets present one big growth opportunities. In 2018, Spotify expanded its footprint to 79 countries after launching its service across 13 new locations in the Middle East and North Africa (Appendix 15).

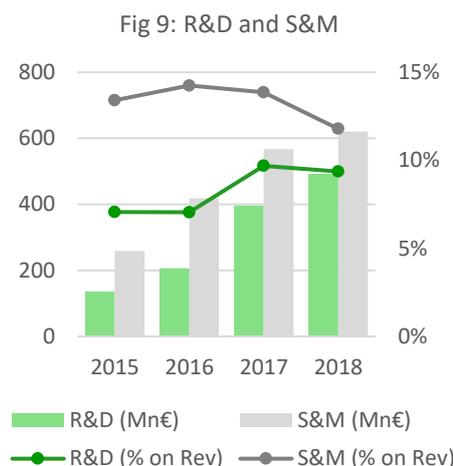
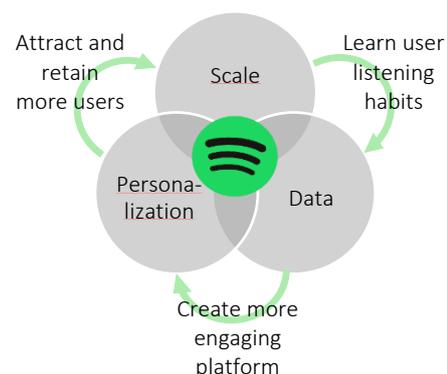


Fig. 10: Spotify business model



Expanding Business

- **Focus on Podcast segment.** In February of 2019, Spotify announced the acquisition of two companies related to podcast production: Gimler Media, an advertising and famous podcast creator, and Anchor, an audio platform for podcast creators to share their work. Additional M&A podcast related are expected in 2019, summing a total of USD500mn deals. With this move, Spotify intends to become both the premier producer of exclusive podcasts and the leading platform for podcast creators. Furthermore, it will help the firm to find new users, generate more revenue and increase its margins, since produce and license podcasts is cheaper than music. Moreover, it demonstrates how Spotify is still switched on growth mode and market share gain.
- **Spotify as a label company.** Despite Daniel Ek stated in mid-2018 Spotify is not “acting like a record label”, the natural and logical path for the company is to become one. On one hand, Spotify would decrease drastically its license costs and, on the other, artists would receive a higher share of revenue and maintain their presence on Spotify platform.

Advertising is a trigger for growth

- **Spotify for Brands** is a platform to manage Spotify relationship with advertisers. Through what streaming customers listen, Spotify learns more about them, which leverage the effectiveness of advertising campaigns. Furthermore, Spotify offers a large range of ad experiences allied to measurements of the impact on customers. For example, the Reebok case. Spotify’s app leverages the connection between music and exercise by providing people with playlists made up of the best songs for sports activities, all voted on by people who use the app. Moreover, Reebok also got some of sponsored athletes to choose their favorite workout music.
- **Spotify Ad Studio** is an advertising platform that allows advertisers to create and manage their audio ad campaigns. Ads must be approved by Spotify. Additionally, advertisers can target listeners in terms of location, genre, playlist and fans. By provide ad audio tools, including a voiceover service, Spotify shortens the path between advertisers and the company in an easy and direct way.

Partnering as key part of Spotify’s business model (Fig. 11)

Spotify opted to build a partnership portfolio to compete, increasing its presence on the daily lives of customers. For instance, Spotify partnered with Facebook to enter into the US market, where it was completely unknown. There was a change of each party unique resources: Facebook delivered access to a new channel for Spotify to reach an outstanding number of potential new subscribers, and Spotify delivered an additional value proposition to Facebook by offering legally shareable music.

Relation with artists

Some top artists (e.g. Thom York, Taylor Swift) criticized stream music distribution, particularly regarding how much artists get paid for the streaming of their music. Spotify partnered with Bandpage (online service that integrates an artist’s social media) and created the Spotify for Artists, which is increasing indie musicians’ value. Independent artists often license their music to streaming companies by using third-party distribution companies like TuneCore as intermediary. Spotify’s new strategy seeks to cut those distribution services by allowing artists to license the same music directly to Spotify, decreasing license costs and enlarging the artists’ share of royalties (for example the singer VIAA). Additionally, there is no exclusivity involved and artists maintain ownership of their master recordings, which is rarely the case under label contracts. Moreover, was launched a playlist submission feature, which enables artists, labels, and their teams to submit unreleased music directly to Spotify’s editorial team for consideration for inclusion on owned & operated playlists. Hence, Spotify is working as a door for smaller artists to be known by music consumers. In

Figure 11: Spotify partnerships
(Source: Spotify and Author)

Spotify portfolio partnerships	
Car manufacturers	– Tesla
	– Ford
	– Volvo
	– BMW
Ride sharing	– Uber
Airlines	– Virgin America
Connected devices	– Samsung
	– PlayStation
	– Philips
	– Roku
Social networks	– Facebook
	– Twitter
	– Bandpage
	– Tinder

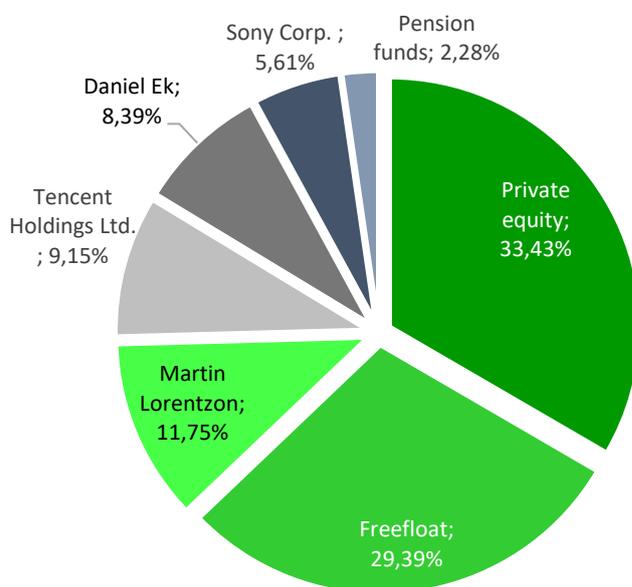
mid-2018, there was 200 thousand artist in the platform, twice as much as in the beginning of the year.

Shareholder Structure

In August of 2019, the shareholder structure of Spotify was composed as shown in Fig. 12. Despite there is not any majority in the shareholders structure, Spotify founders, Daniel Ek and Martin Lorentzon, hold 80.4% of vote rights because their shares have super voting power, allowing both to maintain the control of the company after the IPO. This strategy was used before by Facebook and Alphabet.

Important to mention that one of the big3 music labels, Sony Corp., holds 5.61% of shares. Tencent Holdings Ltd., the Chinese streaming company, holds 9.15%, while Spotify holds 9% of Tencent Music Entertainment, after a share swap agreement in December 2017.

Fig 12: Shareholder structure (source: Markets Insider)



03. Management and Corporate Governance

The board is composed by nine members, the two co-founders, Daniel Ek and Martin Lorentzon, and seven independent directors, according to NYSE rules that ensures no conflict of interests between the directors and the company. Additionally, the board has two standing committees: an Audit Committee, to ensure the integrity of the Spotify's financial statements and to oversight risk management and the company's performance, and a Remuneration Committee to carry out the Board's responsibilities regarding the compensation of executive officers. Both committees' composition includes one non-executive director and two members of the management team. Finally, the Statutory Auditor is Earnest and Young S.A.

The co-founder of Spotify Daniel Ek accumulates the function of CEO and Chairman of the board of directors, being the only executive director. Before Spotify foundation, Mr. Ek founded Advertigo, an online advertising company, and was responsible for various senior roles at Tradera, an auction company lately acquired by eBay. Additionally, was CEO at Stardoll, a fashion and entertainment community for pre-teens. The other co-founder, Martin Lorentzon, is a member of the board and was Chairman between 2008 and 2016. His path went through digital and internet businesses as well. They are both considered non-independent directors. Therefore, both are highly experienced in marketing and digital business and are strongly committed with their Spotify project, which fits perfectly in the firm's DNA and strategic plan.

Besides Mr. Lorentzon, the other non-executive members are all experienced in technology, innovation and marketing functions, whose inputs can be highly leveraged by Spotify.

The Chairman holds almost one fourth of the company's shares, making him an important but not a unique piece in the decision making.

It is also important to mention the key role played by Spotify CFO, Barry McCarthy, hired in July of 2015. He served as Netflix from 1999 to 2010, being an expert in digital entertainment and streaming services. His inputs and experience can provide financial stability to Spotify's growth as it was performed in Netflix.

Fight against piracy

Spotify presents itself as a **legal alternative to piracy** by creating a sustainable environment for artists and music consumers. The company built a bridge that connects creators and fans that provides artists access to millions of monthly active users worldwide, increasing culture diversity among fans.

IT education

Spotify founders wrote an open letter to Sweden government asking for inclusion of programming in middle school. Furthermore, created **Spotify for Developers**, allowing any developer to explore audio features and in-depth audio analysis of tracks with data supplied by the company.

04. Industry Overview and Competitive Positioning

World Economy Overview – Political and Economic Drivers

Spotify launch coincided with the financial crisis of 2008, therefore its initial growth phase followed the world economy recovery. IMF forecasts indicate that the world economy is stabilizing, despite the negative trend of advanced economies' GDP growth rate (Fig. 13). Since more than 70% of its revenue is generated in North America and Europe, a GDP slow down affects negatively private consumption and customers' purchasing power. Emerging markets forecasted growth has a large positive impact from China economy. However, this is an inaccessible market for streaming firms due to Chinese online censorship laws and local market saturation (Alibaba, Tencent and Baidu).

Additionally, Spotify may face severe consequences due to **political uncertainties** worldwide. Since 11% of revenues in 2018Q3 came from the UK, the uncertainty from BREXIT may have high impacts on Spotify revenue. Furthermore, 20% of Spotify subscribers are in Latin America region, which is living in an adverse political and economic framework (Brazil, Argentina, among others).

Exchange rate exposure

Spotify's global presence exposes the company to exchange rate risk. Fig. 14 shows the impact of currency volatility on year over year revenue growth rate throughout 2018 quarters. Growth rates of the first two quarters were negatively impacted by 11pp and 8pp, respectively. Spotify uses foreign exchange forward contracts to hedge transaction exposure on a case-by-case basis. Recent years' exchange rates evolution has been favoring Spotify, with EUR recording valorization in terms of other main currencies. For the next years, the political uncertainties referred before can bring a higher volatility into the forex market.

Interest rate

Spotify holds interest-bearing assets, primarily short-term debt securities, exposing the company to interest risk. According to the company sensitivity analysis, if interest rates increase 100bp, then interest income would decrease EUR5mn in 2018Q3.

Inflation rate

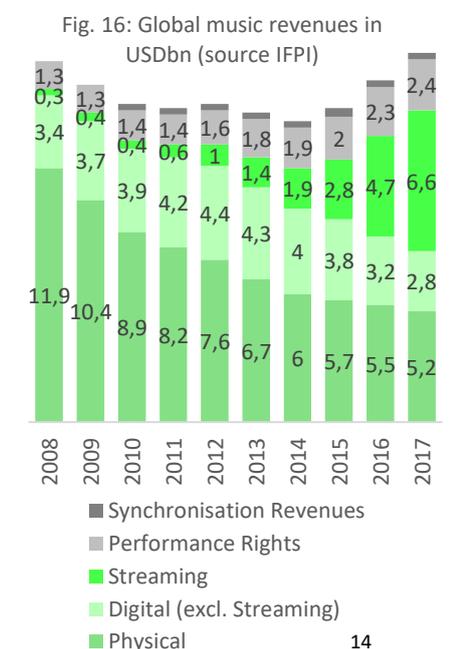
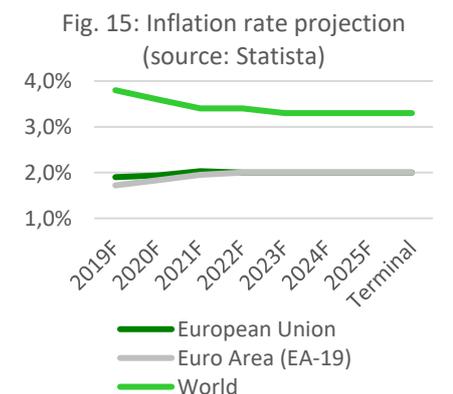
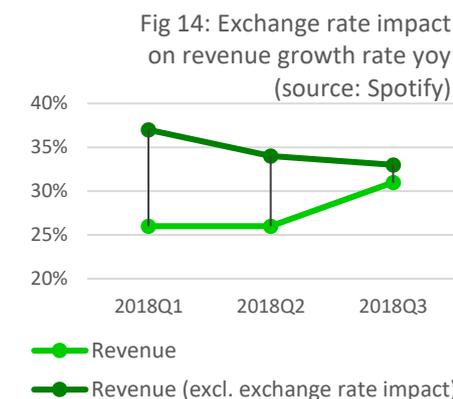
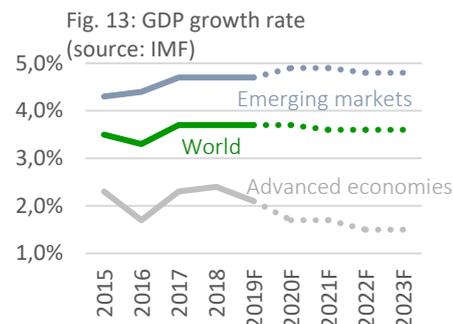
Since purchasing power is a key driver for Spotify business model, an increase of inflation rate will reduce it and might have a negative impact on the company revenue. Fig. 15 indicates a decrease of inflation rates until the end of 2019, time when the negative trends inverts and starts to grow.

Global Music and Streaming Market Overview

Music industry is recovering from the losses of the past 15 years, since 2017YE total revenue represents only 68.4% of the market's peak in 1999 (US music market annual revenue fell from USD14.6bn in 1999 to USD6.3bn in 2009). However, RIAA states in its mid-year 2018 report that record industry is "growing again, driven by a competitive paid subscription market". Streaming services is saving music industry by changing consumption to a new paradigm: **accessibility over ownership**.

Streaming is boosting the music market (Fig. 16)

Streaming music is an emerging business, making very difficult to evaluate its current and future prospects. In 2017, global music market recorded one of the highest growth rates in twenty years, 8.1%, driven by the continuously outstanding performance of streaming music, which became the single largest revenue source, with a share of 38.2%, after an increasing at a CAGR of 41% since 2008. Note that, the start growing period coincides with the one of Spotify. The other sources of revenue are losing strength to streaming, mainly digital downloads (CAGR of -2.1%), which will lose Apple's contribution since it plans to exit music downloads by 2019, and physical



(CAGR of -8.8%), namely CDs, since the market niche of vinyl increased 13% in the 1st semester of 2018 in the US, according to IFPI (Recording Industry Association of America).

The main reason for the last decade of losses of music industry is **piracy**. File sharing was introduced in 1999, which coincides perfectly with the decline of music sales in the US. It is estimated that piracy takes away from music stakeholders USD12.5bn per year in revenue. Streaming competes with piracy by providing a more organized and curated product with a better user experience. However, piracy still is a major issue for music industry: 38% of music consumers access unlicensed music (Fig. 17), particularly in emerging markets like India and Mexico still have a 90% piracy rate, meaning that there are a lot of potential consumers who could turn into music streamers.

Technology penetration is key

As smartphones become more advanced, the content consumed on them evolves as well. Smartphones usage base will continue to rise at a CAGR of 7.35% worldwide until 2020. Additionally, 5G introduction allows customers to use internet in densely crowded spaces or locations where bandwidth is low, such as the subway. As these technologies evolve, streaming music will increase in accessibility and quality too.

Supply

Record labels are reporting high revenue, since streaming emerged. According to Music Business Worldwide, the known big3 (Sony, Universal and Warner) registered an average revenue of USD19mn a day from streaming services throughout 2018.

Despite some artists’ critics, streaming firms rapidly proved them wrong and showed great advantages to artists. When a listener plays a song, the artist gets a tiny amount of money. If a listener adds a song to his own playlist that can mean it will be repeatedly heard over a lifetime. If a song is added to one of Spotify’s playlists, the artist can expect millions of plays. Therefore, streaming brought royalties for eternity, which doesn’t happen on other music products.

Demand (source: Statista – Music streaming outlook)

In 2017, streaming music became the most relevant source of revenue in music industry and forecasts indicate that this positive trend is here to stay. It is expected a clear increase of the number of users of streaming music worldwide, mainly in the US, where is forecasted a CAGR of 7.7% until 2023 and a penetration rate of almost 60% after 2020.

The ARPU is expected to decrease in the US, since revenues increase pace is lower than that of the increase number of users. The competition in the American market is a probable reason for this dynamic, obliging streaming firms to practicing lower prices to capture the maximum number of users as possible. Forecasts indicate that the Worldwide ARPU will decrease as well. Emerging markets are a key target for streaming companies, however, they will have to practice lower prices in order to have a high penetration rate, decreasing ARPU. Additionally, group and special plans may have contributed for this trend as well.

For Europe, revenue is expected to grow at a CAGR of 6.8% with penetration rate achieving 20%. The base of users will increase as well, but with a more stable ARPU comparing with the US.

Competitive Positioning

Streaming music market is highly **competitive**, for the high number of competitors, and **concentrated**, since the four largest players represent 75% of the total of subscribers. Spotify is by far the market leader in terms of subscribers, recording a

Fig. 17: % of consumers that accessed unlicensing music (source: IFPI)

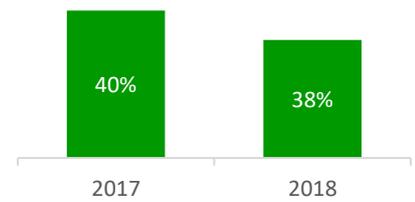
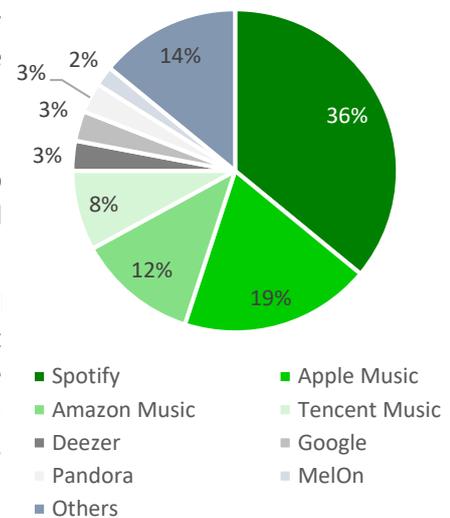


Fig. 18: Subscribers Market Share Worldwide 2018S1 (source: MIDiA Research)



market share of 36% in the 1st semester of 2018, almost the double of the second player, Apple Music.

Competitors

We can distinguish the market into kinds of firms. On one hand, streaming music firms are associated to the biggest tech companies in the world: Apple Music, Amazon Music, Tencent Music and Google Play Music allied to YouTube Red. These companies present the huge advantage of being subsidiaries of large resources tech groups, securing other sources of revenues that only streaming firms don't have. On the other hand, there are other competitors that compete exclusively in the streaming music market: Spotify, Pandora and Deezer.

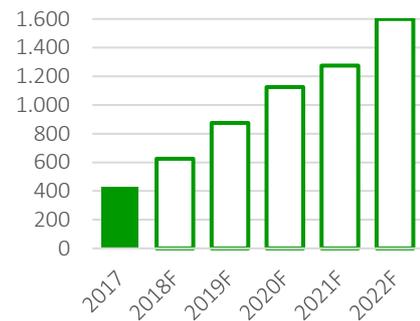
Podcast market, a growing opportunity (Fig. 19)

Audio streaming firms plan to do to radio shows what Netflix did to TV shows. PWC states in its Global Entertainment & Media Outlook 2018-2022 that podcasting is poised to grow into a nine-figure component of the global media landscape. PWC states that 61% of podcast listeners made a purchase resulting from podcast ads and forecasts a CAGR of around 30% until 2022.

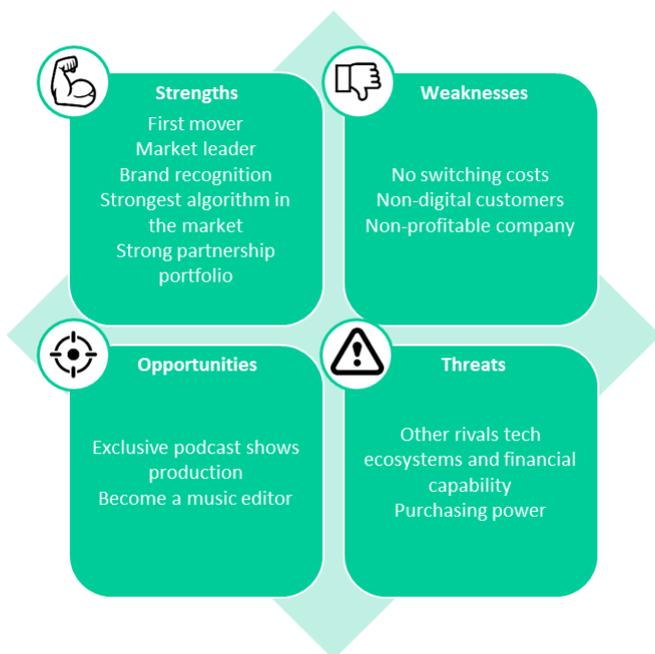
According to podcastinsights.com, 80% of podcast consumers listen to all or most of each podcast episode and follow 7 shows per week on average. Comparing to music listeners, podcast listeners are more loyal, affluent, educated and have a higher purchasing power. Moreover, according to Edison Research, 26% of total Americans and 33% of Americans aged between 25 and 54 listen to podcasts monthly, which is a young audience. Smartphone is the most used device to follow podcasts and its increasing penetration rate forecasts indicate that there will be more potential clients. Hence, this is a market in expansion with positive perspectives for growth.

With Gimlet and Anchor acquisitions, Spotify became the second larger podcasting platform and its data indicates that podcast users spend nearly twice the time on the platform. Spotify forecasts that more than 20% of all its listening will be non-music content, leveraging the opportunity for differentiation through the creation of exclusive content.

Fig. 19: Podcast advertising revenue worldwide in USDmn (source PWC)



SWOT Analysis



5 Forces of Porter (Fig. 20)

Threat of new entrants – Low [2]

In order to offer a complete library to call the attention of customers, streaming firms face a heavy initial investment on content licensing and close deals with a huge number of copyright owners. Since it launched, Spotify spent USD9.76bn in royalties to artists, music labels and publishers. Additionally, this new market didn't prove to be profitable yet, which increases the risk of investment. Therefore, streaming music market faces high barriers to entry, reducing the threat of new entrants.

Bargaining Power of Suppliers – Low [2]

The launch of streaming firms saved the deteriorated music industry, including labels. The partnering environment lived between Spotify and labels suggests that the role played by each side each side is clearly defined: labels produce, Spotify distributes. Therefore, is unlikely that labels use their power to affect Spotify negatively. For instance, in 2016 Spotify negotiated copyrights agreements with the major four labels in order to reduce its payments. New contract allowed to Spotify to improve its gross margin drastically (Fig. 21), meaning that labels are in fact interested in Spotify economic viability and recognize its importance in music ecosystem. However, equilibrium doesn't work so well with smaller and independent labels. The rumors about Spotify becoming a label and the streamer new strategy of signing directly with a few indie artists might affect this relationship. On the other side, some artists see this move as good news.

Bargaining Power of Buyers – High [4]

As most subscription business models, customers don't face any switching costs, which highly increase their bargaining power and forces streaming firms to offer extra value to their streaming services. However, customers are forced to rebuild their playlists if they change their stream provider. At this moment this force didn't affect much Spotify, since its brand recognition and customer experience are bounding clients to the company.

Threat of Substitute Products – Low [2]

Fig. 16 shows how streaming took over the global music market in high speed way. Therefore, we see clearly a preference of customers for streaming services rather than the traditional ones. However, YouTube represents the major threat for streaming companies. It offers nearly the same content for free, without restrictions and registrations. Moreover, YouTube content is supplied by its users, avoiding the payments directly to copyright owner regarding content licensing. If copyright regulations remain as they are today, YouTube will maintain its operations, while streaming firms will keep struggling to acquire YouTube clients. Additionally, piracy still represents a barrier for streaming firms to grow.

Rivalry Among Competitors – High [4]

With its partnering strategy and strong brand recognition, Spotify achieved the market leader position. However, the company sees some disadvantages comparing with its main rivals. First, streaming is the only source of revenue of Spotify, on the contrary of Apple Music and Amazon Music, which streaming music represents only tiny piece of a giant business. Second, those rivals have much larger amounts of cash ready to be invested if any opportunity appears. Third, because the majority of users play Spotify on smartphones, they download Spotify's app from Google Play Store and Apple Store, which takes a share of Spotify's revenue directly to its rivals. For instance, Spotify and Amazon accused Apple for anticompetitive practices due to its subscription policies used to punish third-party music services that use Apple's platform.

Fig 20: 5 Forces of Porter (source: Author)

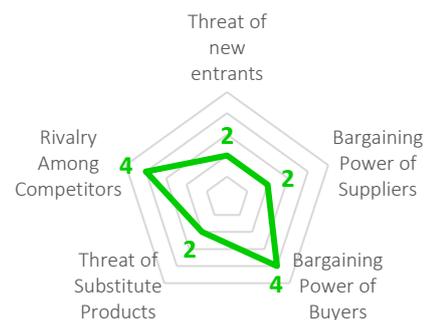
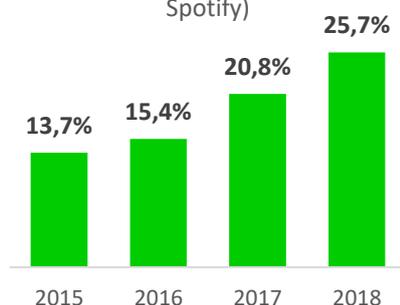


Fig 21: Gross margin (source: Spotify)



05. Investment Summary

As mentioned before, this report conclusion is a BUY recommendation for Spotify shares, with a price target of USD176.47, corresponding to an upside potential of 32.7% comparing to the price verified at 08-29-2019 (USD133.00). There are two main reasons for the company's undervaluation. First, Spotify's strategy of prevailing fast growth over efficiency is pressuring its operating margins. For instance, Spotify has never presented a positive EBITDA. Second, as mentioned previously, audio streaming industry did not prove to be profitable yet, which is unattractive to potential investors and creates a pessimism environment regarding Spotify.

Spotify is the worldwide market leader in audio streaming industry, enjoying high first mover gains and, more importantly, high returns for the R&D investments of the past years – the company is building a loyal customer base with low churn rates through continuously user experience improvement. The forecasted increasing number of premium subscribers and MAUs is reflected in the revenue forecast for premium and ad-supported segment with CAGR of 8.7% and 17.2%, respectively (Fig. 22). It is estimated that while business gains scale, margins will improve, turning Spotify into a profitable company.

Moreover, Spotify registered two M&A operations by acquiring Gimlet Media and Anchor, two podcast related companies. This move aims at two objectives. First, increases the podcasts content, enlarging and diversifying Spotify offer which attracts more subscribers. Second and more importantly, the streaming service aims to produce exclusive podcast shows in partnership with the acquired companies. This strategy is similar to what Netflix did with TV shows and movies. For instance, former US president Barack Obama and Michelle Obama are producing a series of podcasts exclusively for Spotify.

Company valuation

In order to perform a firm valuation, we used two methods: Discounted Cash Flow method and Subscription Based Companies valuation method. The table below resumes the output of each valuation model application. To be noted that the results obtained in DCF and SBC are close – which price target differs by USD4.08.

	DCF	SBC	Multiples
EV (in USDmn)	29,247.39	28,578.36	77,000.48
Price target (in USD)	178.52	174.43	204.52
Upside potential	34.2%	31.2%	53.8%

Company risks

The main identified risks are related to the uncertainty related to Spotify capability to achieve a profitable scale level. Additionally, the unknown impact of economic variables, such as, inflation, lost purchasing power, among others, brings another dose of uncertainty in this investment. Key risks impact were computed through a sensitivity analysis and a Monte Carlo simulation.

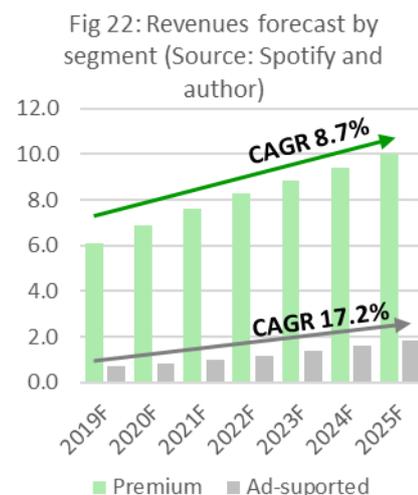
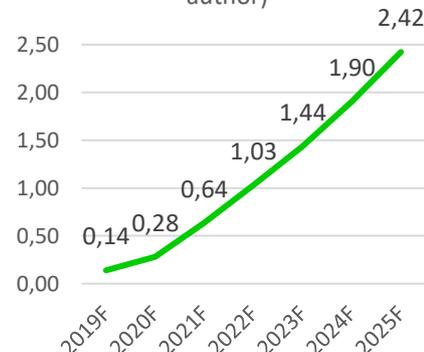


Fig. 23: EPS (source: Spotify and author)



06. Valuation

For the company's valuation, it was applied the following valuation methods:

- The **Discounted Cash Flow** (DCF) was chosen due to the amount of public information available, which allows the estimation of the company's enterprise value. Additionally, Spotify presents a zero dividend policy and, according to its Annual Report of 2018, it is expected to remain as is.
- A valuation method specific to subscription based enterprises, published by Feng Gu and Baruch Lev in the paper *Time to change your investment model*. The goal to use this investment model is to shift the focus from the operating earnings to the company's strategic assets, which corresponds to a long term view of the business and its value creation. Additionally, it uses non-GAAP measures, avoiding accounting manipulation in earnings calculations as occurs in DCF valuation.
- Additionally, for a relative valuation model, the Market Multiples was applied in order to use a valuation method comparable with Spotify market peers.

Forecast analysis

Addressable market

The first step to estimate the addressable was collect the world population data and its growth forecast by region where Spotify holds economic activity: APAC (excluding China), Europe, LATAM and North America. Data is presented in Appendix 1 and was collected from PopulationPyramid.net.

After knowing the population by region, it is required to estimate the share of population who is a music listener. According to IFPI – Music Consumer Insights 2018 report, 70% of inquired people worldwide considers that music is important in their life. We applied this percentage to each region population, given the number of music listeners by region (Appendix 2).

The third step was to estimate the audio streaming adoption by music listeners. According to IFPI – Music Consumer Insights 2018 report, audio streaming adoption by region was the following:

- APAC (excluding China) – 55.7%;
- Europe – 59.7%;
- LATAM – 48.2%;
- North America – 74.5%.

Note that each rate was computed using the audio streaming adoption simple average for the countries included in the inquiry that belong to each area. For instance, North America region is composed by USA and Mexico and each country audio streaming adoption is 68% and 81%, respectively. Hence, North America audio streaming adoption is the average of the two rates presented, corresponding to 74.5% in 2018.

The following step is to forecast the audio streaming adoption for the analyzed period. Smartphones are the most used device for listen to streaming services, hence smartphone adoption evolution is considered the main driver for audio streaming adoption. The Global System Mobile Association estimates the smartphone adoption for 2017 and for 2025 by region. Using each rate, we computed the respective CAGR and the smartphone adoption for the years in between (Appendix 3).

In order to apply the smartphone adoption growth to forecast audio streaming adoption, we used the formula below. The results are presented in Appendix 4.

$$Audio\ adoption_T = \frac{Audio\ adoption_{T-1} * Smartphone\ adoption_T}{Smartphone\ adoption_{T-1}}$$

By applying the audio streaming adoption to each region music listeners for each year, we achieve the audio streaming potential market by region for the period under analysis (Appendix 5), which corresponds to the Spotify addressable market.

To be noted that China is excluded from this analysis due to its censorship laws and Tencent Music Entertainment strong presence.

MAU estimation

In order to estimate Spotify MAU, it is necessary to estimate Spotify MAU market share by region and apply that share to each region addressable market. In 2018, Spotify market share of MAU (weight of Spotify MAU on the addressable market) was the following (full table is presented in Appendix 6):

Region	2018	Long Run	Rationale behind long run market share
APAC	2.0%	15.0%	Strong competitors on main countries (Japan and South Korea); high potential due to the large addressable market; Spotify considers a key target region
Europe	24.1%	30.0%	Impact of new copyright laws on Youtube will allow Spotify to capture new clients
LATAM	20.6%	25.0%	High potential market and a key target for Spotify, but is a low income region
North America	32.5%	32.5%	High competitive market with low margin for market share improvements

Each year growth rate was computed dividing the difference between long run and 2018 market share by 8 years (all period dimension). For instance, for APAC market share (15%-2%)/8 years equals 1.6pp, meaning that 2019 market share is equal to 3.6% (2%+1.6pp).

Revenues

Total revenues is the sum between premium segment and ad-supported segment (Fig. 24).

The **premium segment** (Appendix 7) is the product between the number of premium subscribers and ARPU.

The number of premium subscribers was estimated using the following formula:

$$\text{Number of premium subscribers}_t = \text{Number of premium subscribers}_{t-1} * (1 - \text{Churn rate}_t) + \text{MAUs}_{t-2} * \% \text{MAUs who became premium in the last 24 months}$$

The formula can be divided into two parts:

- First, $\text{Number of premium subscribers}_{t-1} * (1 - \text{Churn rate}_t)$ represents the number of premium subscribers who did not give up on the service, meaning that they still pay for subscriptions. The target churn rate for music listeners is 5%. Spotify stated in the 1st quarter earnings call that podcast listeners are twice as loyal as music listeners – podcast churn rate of 2.5%. Additionally, Spotify estimates that, in the long run, 20% of total premium subscribers will be exclusive podcast listeners. In conclusion, the target long run churn rate is the following:

$$5\% * 80\% + 2.5\% * 20\% = 4.5\% \text{ (Fig. 25).}$$

- Second, $\text{MAUs}_{t-2} * \% \text{MAUs who became premium in the last 24 months}$ represents the MAUs signed the premium service. The percentage of MAUs who became premium in the last 24 months is a KPI identified by Spotify, which is assumed to decrease 5% year over year, following the trend verified since 2015 when Spotify Family was introduced (Fig. 26).

Spotify's ARPU has been decreasing since 2015 due to the launch of Spotify Family and the entrance in low income markets. Since these two trends are expected to remain in next years with the entrance in low income markets and the proliferation of Spotify Family, it is considered a long run target ARPU of 3€/month (Fig. 27).

Fig 24: Revenue growth per segment (source: author)

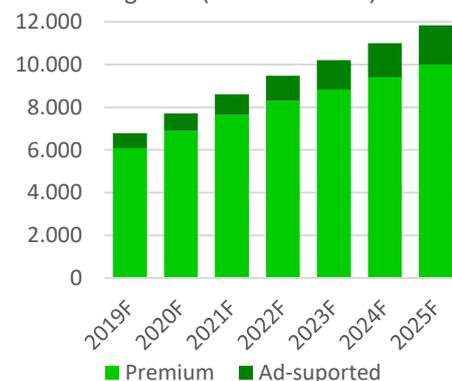


Fig. 25: Churn rate (source: author)

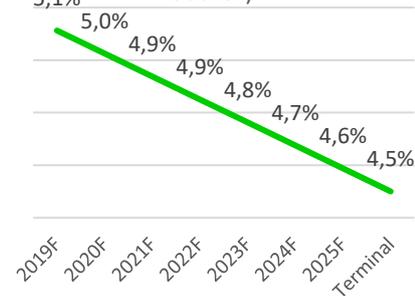
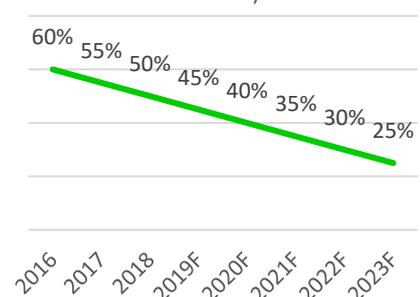


Fig. 26: % of MAUs who became Premium last 24 months (source: Spotify and author)



The **ad-supported segment** (Appendix 8) revenue is the sum of two components:

- **Music ad revenue.** The multiplication of the number of MAUs, the average amount of time each MAU spends on Spotify and the revenue generated per hour listen. According to the Company, each MAU listens to Spotify approximately 25 hours/month or 300 hours/year in 2018. Therefore, the revenue per MAU was 0.02 EUR/hour, which is assumed to be constant over the analyzed period.
- **Podcast ad revenue.** PwC Podcast Advertising Revenue Study forecasts an ad-revenue CAGR of 29.7% for podcast industry (2018F-2022F). We expect that Spotify will collect around 20% of podcast industry revenue until 2022F. It is assumed that the podcast ad revenue grows as the same rate of music ad revenue after 2022F.

Cost of Revenues

In 2018, it represented 74.3% of total revenues, meaning a gross margin of 25.7%, which is growing since 2015. Spotify targets a gross margin of 32.5% in the long run. Therefore we assumed a constant grow until the company achieves the target in the terminal period.

Operating Expenses

The long term target ratio for R&D expenses to revenues is 15%, as stated in Spotify Investors' Day, representing an increase compared to the past years. This trend is caused by the investment on exclusive podcast content and strategy to continuously improve user experience.

Sales and marketing expenses are expected to decrease to a 10% target ratio to revenues, following the trend of recent years. The company's global positioning and brand value allow Spotify to reduce this expense.

CAPEX (Fig. 28)

In order to accommodate anticipated future growth, Spotify invested in new and existing leased offices spaces €145Mn in 2018 and €200Mn in 2019. According to the Annual Report 18, the Company expects that after the investment, offices are suitable to support future growth. Hence, after 2019, it is assumed a replacement CAPEX of 3% of P&E to represent office materials, namely, IT materials. Note that it seems a low CAPEX spending for the projected growth, however, tech firms do not need machineries or factories, since its investment is focused on R&D.

Depreciations and Amortizations (D&A) (Fig. 29)

Depreciations forecast depends directly on property and equipment account, which is composed by Spotify leased offices, which useful life is 17 years and depreciates in straight line method. Since P&E accounts for €364Mn in 2019YE, including the CAPEX investment, depreciations are considered €21.4Mn per year.

Amortizations are estimated through the average ratio between amortization and intangible assets of the last 3 years, corresponding to an amortization rate of 25.1%.

Net Working Capital (NWC) (Fig. 30)

Changes in NWC are expected to increase in next years. This occurs because current assets are linked to revenues and current liabilities are linked to COGS and operational expenses. Since it is predicted that revenues growth faster and costs, the same is predicted regarding current assets and liabilities, implying a decreasing NWC.

Fig. 27: monthly ARPU in EUR (source: author)

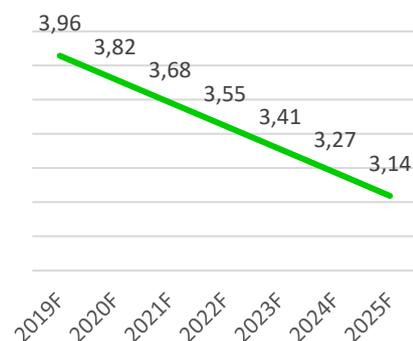


Fig. 28: CAPEX evolution



Fig. 29: D&A forecast (source: author estimates)

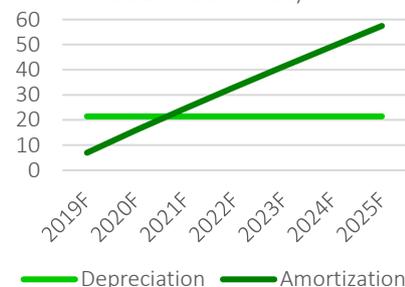
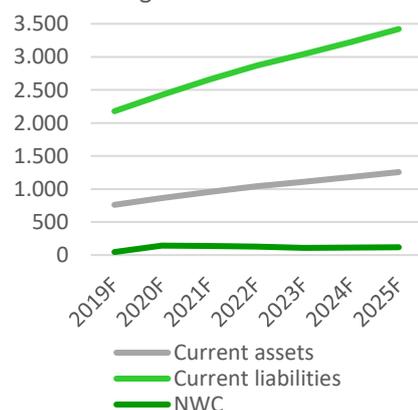


Fig. 30: NWC evolution



DCF Model Valuation

According to the DCF Model application to the forecast performed, the target price for Spotify in 2020YE is USD178.52, corresponding to an upward of 34.2% comparing to the share price in 08-29-2019 (USD133). Hence, Spotify share price is undervalued and is recommend to **BUY**. The valuation period considered is 6 years plus the terminal value. All DCF Model calculations are explained below.

Note that the calculations performed are in EUR and the share price was converted to USD at an exchange rate of 1.10388, according to XE Corporation website in 08-30-2019.

Free Cash Flows to the Firm (FCFF)

The FCFF were calculated according to the estimates presented before in the forecast analysis topic. The formula used and the corresponding values are presented below.

$$FCFF = EBIT * (1 - T) + D\&A - NWC, change - CAPEX$$

	2020F	2021F	2022F	2023F	2024F	2025F
EBIT*(1-t)	-97.8	-41.4	19.8	86.9	155.8	232.5
D&A	37.2	45.9	54.3	62.6	70.7	78.8
NWC, change	149.0	-30.6	-9.1	-21.3	4.7	4.8
CAPEX	11.4	11.1	10.8	10.5	10.2	9.8
FCFF	-221.0	23.9	72.4	160.3	211.7	296.7

Fig 31: FCFF (source: Author)



Weighted Average Cost of Capital (WACC)

The WACC rate is the discount rate of the DCF model and was computed as followed:

$$WACC = r_E * \left(\frac{E}{E + D} \right) + r_D * \left(\frac{D}{E + D} \right) * (1 - T)$$

	2020F	2021F	2022F	2023F	2024F	2025F	Terminal
Cost of Equity	7.24%	7.38%	7.05%	6.63%	6.22%	5.84%	5.48%
Cost of Debt	4.38%						
Weight of Equity	39.2%	38.4%	40.3%	42.8%	45.6%	48.6%	51.7%
Weight of Debt	60.8%	61.6%	59.7%	57.2%	54.4%	51.4%	48.3%
Tax rate	18.0%	18.0%	18.0%	18.0%	18.0%	18.0%	18.0%
WACC	5.02%	5.05%	4.98%	4.89%	4.79%	4.68%	4.57%

According to European Union website, the corporate tax rate of Luxembourg, the Spotify fiscal address, is 18%.

Cost of Equity (r_E)

The cost of equity is the return required by shareholders in order to invest in a company. In this equity research, the cost of equity was estimated using the CAPM as followed:

$$r_E = r_f + \beta * (MRP - r_f)$$

	2020F	2021F	2022F	2023F	2024F	2025F	Terminal
Cost of Equity	7.24%	7.38%	7.05%	6.63%	6.22%	5.84%	5.48%
Risk free rate	-0.62%	-0.62%	-0.62%	-0.62%	-0.62%	-0.62%	-0.62%
Levered Beta	1.46	1.48	1.42	1.34	1.27	1.20	1.13
Market Risk Premium - USA	5.40%	5.40%	5.40%	5.40%	5.40%	5.40%	5.40%

The **risk free rate** (r_f) considered is a AAA rated bond collected from the ECB.

Levered beta was collected from Damodaran: Entertainment industry levered beta was 1.33 in 2019. Thereafter, it was computed through the formula below:

$$\beta_L = \beta_U * [1 + \frac{D}{E} * (1 - T)]$$

The **market risk premium** was collected from Pablo Fernandez paper *Market Risk Premium and Risk-Free Rate used for 59 countries in 2018: a survey*. Note that it was considered the MRP of USA because Spotify is listed in New York Stock Exchange.

Cost of Debt (r_D)

The cost of debt refers to the effective rate a company pays on its current debt. It was calculated using the credit spread method with formula below:

$$r_d = r_f + \text{Default Spread}_{\text{Country}} + \text{Default Spread}_{\text{Company}}$$

	2020F	2021F	2022F	2023F	2024F	2025F	Terminal
Cost of Debt	4.38%	4.38%	4.38%	4.38%	4.38%	4.38%	4.38%
Risk free rate	-0.62%	-0.62%	-0.62%	-0.62%	-0.62%	-0.62%	-0.62%
Country Default Spread	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Credit Risk Spread	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%

Country Default Spread

According to Damodaran table (updated in January of 2019) regarding country default spread, Sweden presents a CDS of 0.0%.

Credit Risk Spread

Spotify convertible notes interest rate were 5.0%, which was assumed to be the credit risk spread.

Terminal Value

The long run growth rate of revenues was assumed to 3%. The rationale behind this assumption lays on two considerations. First, the long run inflation for Europe is 2%. Second, it was added 1% because Spotify has the leading technology in the music streaming market which represents an important competitive advantage. On the paper Economic Growth and Equity Investing, Bradford Cornell attributes 1% to the impact of technological advances on economic growth. Additionally, concludes that a long run growth rate of 3% is unlikely in developed countries, however, since Spotify is investing on emerging economies, the company has an additional margin to grow.

Subscription Based Companies (SBC) valuation model

As mentioned before, Spotify provides its service on a subscription basis, ensuring a stable cash flow at low distribution costs.

According to the SBC Model, the target price for Spotify in 2020YE is USD174.43, corresponding to an upward of 31.2% comparing to the share price in 02-28-2019 (\$133). Therefore, Spotify share price is undervalued and is recommend to **BUY**. The valuation period considered is 6 years and does not include the terminal period.

As DCF model, the calculations were performed in EUR and were converted to USD at an exchange rate of 1.10388.

This valuation model has three components:

$$\text{SBC valuation} = \text{New customers} * \text{Avg customer duration} * \text{Gross Margin per user}$$

- New Customers acquired between 2025F and 2018;
- The average customer duration, which is given by $1/\text{Churn rate}$;
- Gross margin per user is given by the total gross margin divided by the number of customers in 2025F.

The table below summarizes the data used to perform the model calculations. To be noted that the discount factor used is the same used in DCF model, meaning that considers a WACC rate of 4.57% for 2025F.

SBC Valuation Model	
New customers (between 2025 and 2018)	87.4
Customers in 2018	125.9
Customers in 2025F	213.3
Average customer duration	21.80
Gross Margin per user	18.86
Enterprise Value in 2025F	35,928.06
Discount factor	0.80
Enterprise Value in 2020F	28,578.26
Number of shares outstanding	180.9
Price Target EUR	158.02
Exchange rate EUR/USD (08-30-2019)	1.10388
Price Target USD	174.43
Stock price on 12-31-2018	133.00
% Variation	31.2%

Market Multiples Approach

Before entering into the market multiples approach, is key to consider the following notes. In streaming music market there is no pure comparable to Spotify. On one hand, other only audio streaming companies are much smaller companies compared to Spotify and have different business models (e.g. Pandora). On the other hand, the larger Spotify rivals use audio streaming as a secondary business (e.g. Apple, Google and Amazon), which become impossible to segment properly. Additionally, those companies present different strategies and structures, hindering a comparison to Spotify.

Moreover, we forecast negative values for Spotify EBIT, EBITDA and Earnings in 2019, which results in a negative enterprise value for those multiples. For this reason, the multiple considered was enterprise value to sales.

The peer group was collected from Reuters website and gathers the following companies: Netflix, Facebook, Alphabet and Uber. The enterprise to sales multiple for this peer group is 7.0, as the table below summarizes.

Peers	EV (USDbn)	Sales (USDbn)	EV/Sales
Netflix	125.0	15.8	7.9
Facebook	522.9	55.8	9.4
Alphabet	844.1	136.8	6.2
Uber	52.9	11.3	4.7
Average	-	-	7.0

Source: Yahoo Finance website, data refers to 2018YE

Applying the multiple to Spotify sales of 2018YE, we obtained an enterprise value of USD37bn or a price per share of USD204.59, meaning an upside potential of 53.8%.

In conclusion, the market multiples approach states that Spotify stock price undervalued, however in much larger scale than DCF and SBC models.

07. Financial Analysis

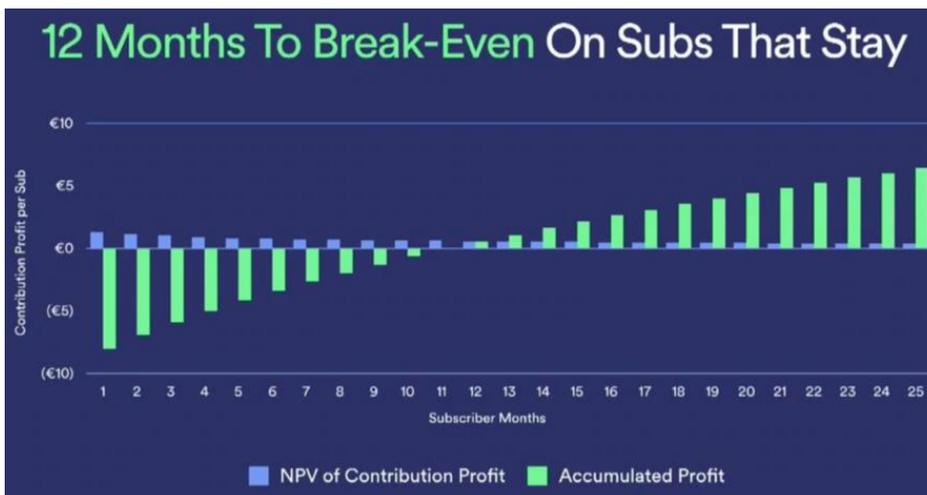
Business growth and profitability

Fast growth has pressured Spotify operating margins. Fig. 32 shows the EBITDA to Revenues ratio evolution. After the improvements until 2018YE, the ratio declines again due to the expected investment in exclusive podcast creation, becoming positive after 2021.

Despite margin deterioration, it is expected that Spotify continues to invest in growth and scale, because it is a great enabler for margin expansion. As mentioned before in Spotify business model, scale allows Spotify to collect more data and to know more about its customers, which allows a more personalized service, improving the user experience, which attracts and retains customers.

According to Barry McCarthy in Spotify investor's day, a premium subscriber becomes profitable 12 months after subscription (Fig. 33). This insight shows two issues. First, it is key to invest in R&D to increase retention and reduce churn rate through a better user experience, supported by machine learning and artificial intelligence. Second, Spotify is losing money when a new subscriber joins the premium segment, which is causing the recent negative results. Hence, the entrance in new markets and the investment in R&D to drive faster growth is a clear investment in margin expansion and profitability in future years.

Fig. 33: Profitability per user (Source: Spotify investor's day March 2018)



In order to evaluate if the business model is working, Spotify uses the LTV to SAC ratio (Lifetime Value of a Subscriber to Subscriber Acquisition Cost ratio). As long as this ratio is higher than 1, Spotify is increasing its enterprise value by adding one more subscriber, even though the company loses money immediately after he joins the service. Fig. 34 shows a highly positive evolution of LTV to SAC ratio. Below are presented the formulas used to calculate the LTV and the SAC:

$$LTV = \frac{ARPU - \text{Gross Margin per Subscriber}}{\text{Churn rate}}$$

$$SAC = \frac{\text{Gross Margin} + S\&M \text{ expenses} + G\&A \text{ expenses}}{\text{Number of subscribers}}$$

Fig 32: EBITDA/Rev (source: Spotify and author)

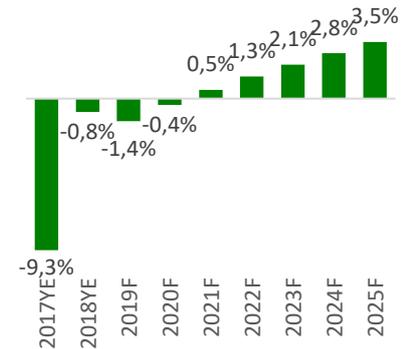
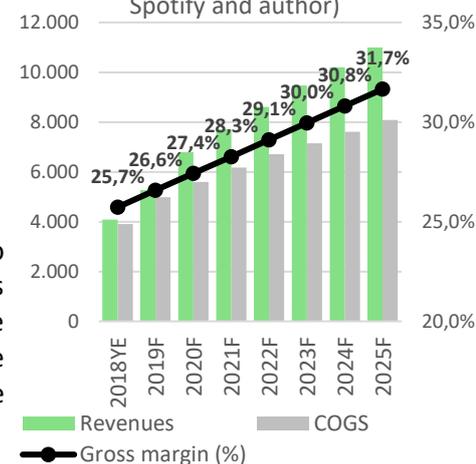


Fig 34: LTV/ SAC (source: Spotify and author)



Fig 35: Gross Margin (source: Spotify and author)



As fig. 35 shows, these positive projections result in an increase of revenues faster than gross margin and, consequently, an improvement of gross margins. Long term gross margin target is 32.5%.

Revenues and operational margins improvements reflect the positive results in ROE as it is shown in fig. 36.

Assets structure (Fig. 37)

In 2018, Spotify assets were mainly composed by short term assets. We expect that this trend inverts in 2019 due to the M&A operations of Gimlet Media and Anchor. Those two acquisitions summed a total of €320Mn, generating a goodwill of €282.5Mn, since the total funding amount of each company was respectively €25Mn and €12.5Mn, according to Crunchbase website. Both operations were fully financed by cash, decreasing the current assets and increasing the non-current assets. After 2020, it is forecasted that the amount of current assets returns to 2018 levels, as business matures and Spotify accumulates the cash and equivalents generated.

As Fig. 38 shows, liquidity ratios decrease until 2020 after the M&A operations and start to grow thereafter, when EBITDA becomes positive. Note that, current ratio and quick ratio present similar values, following the cash ratio trend. This occurs due to the weight of cash in Spotify asset structure, which is common among tech firms. According to Moody's, the top five American tech companies (Apple, Microsoft, Google, Cisco Systems, and Oracle) held 32% of all corporate cash in US in 2016.

Capital structure (Fig. 39)

In 2018, Spotify financed its assets mainly through debt (51.7% weight on total capital structure), presenting a debt to equity ratio of 1.07. The forecasted low net income and the share repurchase program will impact equity negatively. It is estimated that equity weight on capital structure will decrease until 2021F, when the shares repurchase program finishes and the net income presents a growth acceleration. Forecasts indicate that, in 2025, debt to equity ratio and capital structure will be at similar levels of 2018.

Fig 36: ROE (source: Spotify and author)

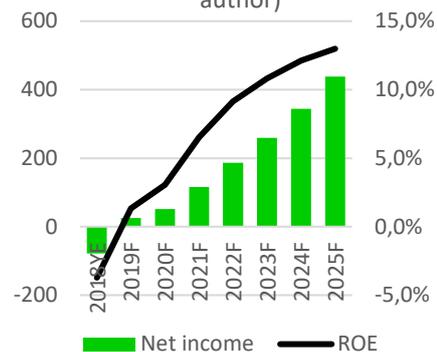


Fig 37: Assets structure (source: Spotify and author)

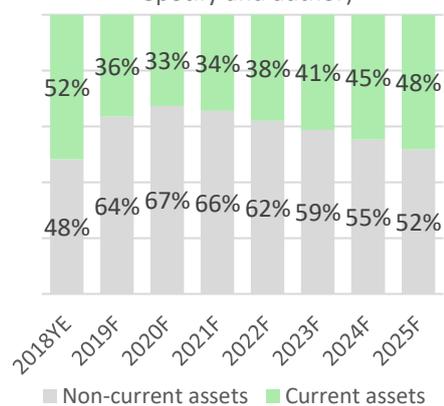


Fig 38: Liquidity ratios (source: Spotify and author)

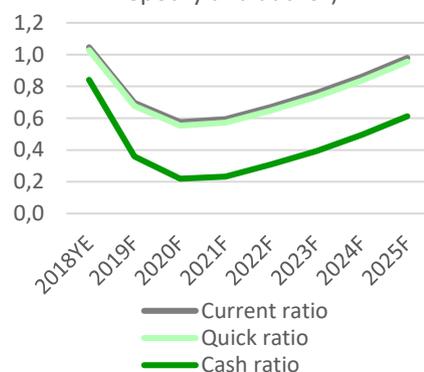
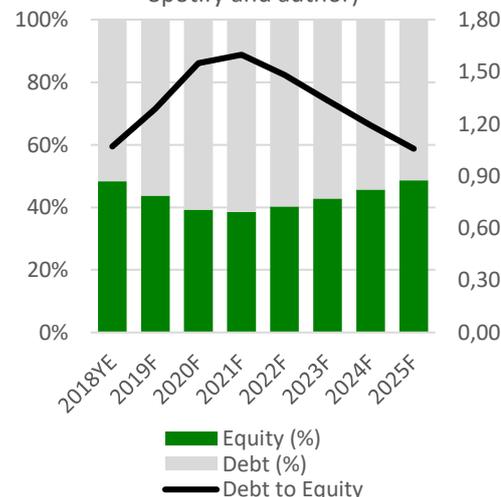


Fig. 39: Capital structure (source: Spotify and author)



08. Investment Risks

Below are presented the main risks that Spotify faces alongside with the corresponding risk matrix.

Corporate Risk | Achieving scale (CR1)

Spotify growth is supported by attracting new customers and retaining current customers, which depends on the ability to deliver a high user experience through R&D investments on leading technologies. If the company fails to expand its user base until profitable levels, the all business is in risk to be successful.

Corporate Risk | Copyrights (CR2)

To stream tracks and podcasts, Spotify must ensure that copyrights of the authors are fully secured. The process to obtain licenses is complicated and depends on third parties, which negotiate the terms agreements that allows Spotify to stream their content. Terms include royalty rates, which increase have a highly impact on business margins, affecting the company's prospects of profitability.

Market & Economic Risk | Investors and Capital (MER1)

Audio streaming service is a recent business that did not prove to be profitable yet. Numerous analysts point this argument as a reason to not invest in Spotify shares. This is unattractive to investors and can difficult fund raising from equity and from debt as well.

Market & Economic Risk | Competition (MER2)

Despite Spotify's growth, its main competitors are the big tech companies of the world, namely, Amazon, Apple and Google. These three groups offer the corresponding audio streaming platforms preloaded in their own produced devices, gaining a significant competitive advantage over Spotify.

Market & Economic Risk | Consumers Purchasing Power (MER3)

Spotify was launched after the financial crisis of 2008 and its high growth years were after 2011 with the Facebook partnership. Hence, Spotify grew in a favorable economic environment and never faced a financial crisis. As mentioned before, Spotify has low switching costs, which can lead to high churn rates if customers' purchasing power is suddenly impacted by adverse economic conditions.

Market & Economic Risk | Exchange Rate Fluctuations (MER4)

As the international expansion continues, Spotify increases its exposure to more currency exchange rates. Despite royalties are paid in USD and EUR, an increasing part of total revenue is received mainly in USD, EUR, SWK, AUD and GBP. In order to reduce the impact of exchange rates fluctuations, Spotify uses hedging strategies through foreign exchange forward contracts and options.

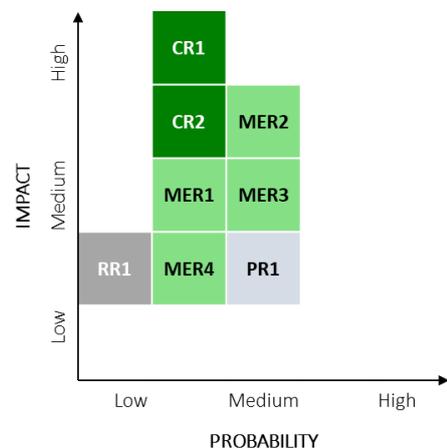
Political Risk | BREXIT (PR1)

The UK is an important market for Spotify in terms of revenues and music culture and production. Some Spotify suppliers and key partnerships (e.g. SKY) are English companies. BREXIT unpredictable consequences are a natural risk for the company's stability. Additionally, the Spotify's subsidiary Spotify Ltd is located in London and is responsible for sales, marketing, contract research and development and customer service, accounting for 266 employees in 2017.

Regulatory Risk | Copyrights (RR1)

As mentioned before, the process to obtain the required licenses to stream content involves many right holders (Appendix 14), some of whom are unknown. Additionally, Spotify faces complex legal and tax issues across different legal frameworks.

Fig. 40: Spotify risk matrix (source: Author)



Moreover, copyright licenses are in discussion in the European Union, affecting mainly YouTube. However, new rights and laws can be created and affect negatively Spotify business model.

Monte Carlo Simulation (Fig. 41)

A 30,000 trials Monte Carlo simulation was computed in order to stress the DCF price target. We obtained a mean of 178.52€, a median of 178.51€ and standard deviation of 4.10%. It resulted in a nearly symmetric distribution with a skewness of -0.67. The variables were chosen due to the model susceptibility to the variables:

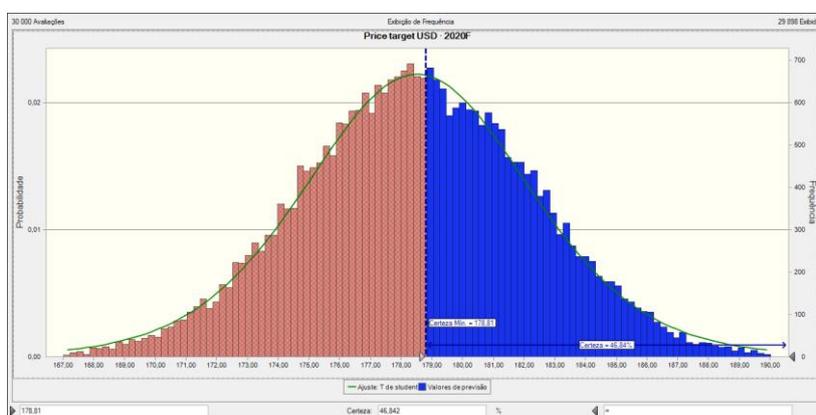
Variables	Assumption	Standard deviation
Terminal growth rate	3%	0.05%
WACC rate	4.57%	1.5%
Churn rate	4.5%	1%
ARPU	3.00USD	0.1USD

Sensitivity Analysis

The G of revenues presents a high weight on DCF model valuation. Hence we decided to perform a sensitivity analysis to this variable alongside with the WACC rate for the terminal period. As we can see in the table below, an increase of 5 basis points (0.05%) of the G revenues leads to an increase of 3.3% in the price target, maintaining the WACC rate as is.

		G of revenues								
178.52		2.80%	2.85%	2.90%	2.95%	3.00%	3.05%	3.10%	3.15%	3.20%
WACC - Terminal period	3.77%	286.76	302.35	319.72	339.22	361.24	386.32	415.14	448.61	487.95
	3.97%	238.20	248.83	260.46	273.23	287.31	302.93	320.34	339.87	361.94
	4.17%	203.80	211.53	219.86	228.87	238.65	249.31	260.96	273.76	287.87
	4.37%	178.17	184.04	190.30	197.00	204.20	211.93	220.28	229.31	239.11
	4.57%	158.33	162.94	167.82	173.00	178.52	184.39	190.67	197.38	204.59
	4.77%	142.52	146.24	150.15	154.28	158.64	163.25	168.14	173.33	178.86
	4.97%	129.62	132.68	135.89	139.26	142.79	146.52	150.44	154.57	158.94
	5.17%	118.90	121.47	124.14	126.94	129.87	132.94	136.15	139.52	143.07
	5.37%	109.85	112.03	114.30	116.66	119.13	121.70	124.38	127.18	130.12

Fig. 41: Monte Carlo Simulation (source: Author)



Scenario Analysis

One the main invector's uncertainties regarding Spotify future results is the capability to attract and retain a sufficient number of premium subscribers to turn the business profitable. Therefore, a scenario analysis was performed in order to evaluate the impact of the number premium subscribers on the price target calculated on the DCF model. We built four scenarios, two positives and two negatives. The results show that the number of subscribers has a considerable impact on the price target. If this variable grows less 20% then the forecasted values, the price has a negative impact of nearly 5%. Additionally, we can see that negative scenarios have a higher absolute impact on the price than the positive ones.

Scenario Summary	Negative 2 (-20%)	Negative 1 (-10%)	Current Values	Positive 1 (+10%)	Positive 2 (20%)
Changing Variables:					
Premium subscribers in 2019F	100.7	113.3	125.9	138.5	151.1
Premium subscribers in 2020F	115.7	130.2	144.7	159.1	173.6
Premium subscribers in 2021F	129.1	145.3	161.4	177.5	193.7
Premium subscribers in 2022F	140.7	158.2	175.8	193.4	211.0
Premium subscribers in 2023F	149.8	168.5	187.2	205.9	224.7
Premium subscribers in 2024F	159.8	179.7	199.7	219.7	239.6
Premium subscribers in 2025F	170.7	192.0	213.3	234.7	256.0
Price Target	169.8	174.4	178.5	182.0	184.7
Each scenario impact on price target	-4.9%	-2.3%	-	2.0%	3.4%

09. Appendices

Appendix 1 – World population by region

Source: www.populationpyramid.net

Region	Notes	2018	2019F	2020F	2021F	2022F	2023F	2024F	2025F	Terminal
APAC (excl. China)	mn of people	3,166.0	3,202.6	3,210.1	3,272.7	3,307.2	3,339.7	3,372.3	3,404.8	3,404.8
Asia	mn of people	4,519.0	4,560.0	4,598.0	4,636.0	4,673.0	4,708.0	4,742.0	4,775.0	4,775.0
China	mn of people	1,394.0	1,399.0	1,430.0	1,406.0	1,409.0	1,412.0	1,414.0	1,415.0	1,415.0
Oceania	mn of people	41.0	41.6	42.1	42.7	43.2	43.7	44.3	44.8	44.8
Europe	mn of people	739.5	739.7	739.7	739.6	739.4	739.1	738.6	738.1	738.1
LATAM	mn of people	654.0	660.3	666.5	672.6	678.5	684.4	690.0	695.6	695.6
North America	mn of people	365.9	368.6	371.3	373.9	376.5	379.2	381.7	384.3	384.3

Appendix 2 – Music listeners by region

Source: www.populationpyramid.net and IFPI - Music Consumer Insights 2017

Region	Notes	2018	2019F	2020F	2021F	2022F	2023F	2024F	2025F	Terminal
APAC	mn of people	2,216.2	2,241.8	2,247.1	2,290.9	2,315.0	2,337.8	2,360.6	2,383.4	2,408.0
Europe	mn of people	517.7	517.8	517.8	517.7	517.6	517.4	517.0	516.7	516.5
LATAM	mn of people	457.8	462.2	466.6	470.8	475.0	479.1	483.0	486.9	491.2
North America	mn of people	256.1	258.0	259.9	261.7	263.6	265.4	267.2	269.0	270.9

Appendix 3 – Smartphone adoption by region

Source: The Mobile Economy 2018 report by GMS Association

Region	Notes	2018	2019F	2020F	2021F	2022F	2023F	2024F	2025F	Terminal
APAC	% Mobile connections	59.2%	61.5%	63.8%	66.2%	68.8%	71.4%	74.2%	77.0%	79.9%
Europe	% Mobile connections	71.3%	72.6%	73.9%	75.3%	76.7%	78.1%	79.5%	81.0%	82.5%
LATAM	% Mobile connections	62.7%	64.4%	66.2%	68.1%	70.0%	71.9%	73.9%	76.0%	78.1%
North America	% Mobile connections	81.3%	82.6%	84.0%	85.3%	86.7%	88.1%	89.5%	91.0%	92.5%

Appendix 4 – Audio streaming adoption by region

Source: IFPI - Music Consumer Insights 2018

Region	Notes	2018	2019F	2020F	2021F	2022F	2023F	2024F	2025F	Terminal
APAC	% Music listeners	55.7%	57.8%	60.0%	62.3%	64.7%	67.2%	69.8%	72.4%	75.2%
Europe	% Music listeners	59.7%	60.8%	61.9%	63.0%	64.2%	65.4%	66.6%	67.8%	69.0%
LATAM	% Music listeners	48.2%	49.5%	50.9%	52.3%	53.8%	55.3%	56.8%	58.4%	60.1%
North America	% Music listeners	74.5%	75.7%	76.9%	78.2%	79.5%	80.7%	82.1%	83.4%	84.7%

Appendix 5 – Audio streaming addressable market

Source: Author estimation

Region	Notes	2018	2019F	2020F	2021F	2022F	2023F	2024F	2025F	Terminal
Total	mn of people	1954	2035	2107	2205	2295	2388	2485	2585	2692
APAC	mn of people	1234	1296	1349	1428	1498	1571	1647	1726	1811
Europe	mn of people	309	315	320	326	332	338	344	350	357
LATAM	mn of people	221	229	238	246	256	265	275	284	295
North America	mn of people	191	195	200	205	209	214	219	224	230

Appendix 6 – Spotify MAUs estimation by region

Source: Author estimation

Region	Notes	2018	2019F	2020F	2021F	2022F	2023F	2024F	2025F	Terminal
APAC	Market share of MAU	2.0%	3.6%	5.3%	6.9%	8.5%	10.1%	11.8%	13.4%	15.0%
Europe	Market share of MAU	24.1%	24.9%	25.6%	26.3%	27.1%	27.8%	28.5%	29.3%	30.0%
LATAM	Market share of MAU	20.6%	21.2%	21.7%	22.3%	22.8%	23.4%	23.9%	24.5%	25.0%
North America	Market share of MAU	32.5%	32.5%	32.5%	32.5%	32.5%	32.5%	32.5%	32.5%	32.5%
APAC	MAUs in Mn	24.8	47.1	70.9	98.3	127.4	159.1	193.5	230.9	271.6
Europe	MAUs in Mn	74.5	78.2	82.0	85.9	89.9	94.0	98.2	102.5	107.0
LATAM	MAUs in Mn	45.5	48.5	51.6	54.9	58.3	61.9	65.6	69.6	73.7
North America	MAUs in Mn	62.1	63.6	65.1	66.6	68.2	69.8	71.4	73.0	74.7

Appendix 7 – Premium segment

Source: Author estimation and Spotify data

	Notes	2018	2019F	2020F	2021F	2022F	2023F	2024F	2025F	Terminal
MAUs who became premium in the last 24 months	%	50.0%	45.0%	40.0%	35.0%	30.0%	25.0%	25.0%	25.0%	20.0%
Churn rate	%	5.2%	5.1%	5.0%	4.9%	4.9%	4.8%	4.7%	4.6%	4.5%
Total	Mn of subscribers	96.0	125.9	144.7	161.4	175.8	187.2	199.7	213.3	223.4
APAC	∕n of subscribers	9.6	22.7	40.0	55.9	70.1	82.0	94.7	108.3	119.0
Europe	∕n of subscribers	38.4	45.5	46.2	46.7	46.8	46.6	46.5	46.4	46.1
LATAM	∕n of subscribers	19.2	25.2	26.4	27.3	28.0	28.4	28.9	29.5	29.8
North America	∕n of subscribers	28.8	32.5	32.1	31.6	31.0	30.3	29.7	29.1	28.5
ARPU	EUR/ year	49.1	47.5	45.9	44.2	42.6	40.9	39.3	37.6	36.0
Premium revenues	Mn EUR	4,717.00	6,016.60	6,890.22	7,636.46	8,298.29	8,829.74	9,396.62	9,999.73	10,299.72

Appendix 8 – Ad-supported segment

Source: Author estimation and Spotify data

	Notes	2018	2019F	2020F	2021F	2022F	2023F	2024F	2025F	Terminal
Ad-supported MAUs	Mn MAUs	111.0	111.5	125.0	144.3	168.0	197.5	229.0	262.6	303.7
Number of listening hours	Hours listen/year	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0
Revenue per MAU	Eur/hour	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Music ad-supported revenues	Mn EUR	542.00	544.41	610.29	704.38	820.16	964.55	1,118.29	1,282.44	1,482.73
Revenues worldwide	EUR Mn	581.92	754.75	978.91	1,269.65	1,646.73	NA	NA	NA	NA
Spotify Market share	%	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%
Podcast ad-supported revenues	Mn EUR	-	150.95	195.78	253.93	329.35	387.33	449.07	514.98	595.41
Ad-supported revenues	Mn EUR	542.00	695.36	806.07	958.30	1,149.50	1,351.88	1,567.35	1,797.42	2,078.14

Appendix 9 – Income Statement

INCOME STATEMENT	Forecasted period							
	2019F	2020F	2021F	2022F	2023F	2024F	2025F	Terminal
Revenue	6,653.8	7,708.7	8,611.4	9,467.3	10,205.0	10,991.5	11,829.0	12,377.9
Premium	6,016.6	6,890.2	7,636.5	8,298.3	8,829.7	9,396.6	9,999.7	10,299.7
Ad-supported	637.2	818.4	974.9	1,169.0	1,375.3	1,594.9	1,829.3	2,078.1
Cost of Revenue	4,885.6	5,594.9	6,177.2	6,711.0	7,147.5	7,605.3	8,084.7	8,355.1
Gross Margin	1,768.2	2,113.8	2,434.2	2,756.3	3,057.5	3,386.1	3,744.3	4,022.8
R&D	798.5	955.0	1,101.4	1,250.1	1,391.1	1,546.9	1,718.7	1,856.7
Sales and Marketing	768.5	872.2	954.4	1,027.9	1,085.5	1,145.3	1,207.5	1,237.8
General and administrative	299.1	315.7	332.8	350.8	369.4	389.0	409.6	431.3
EBITDA	-97.8	-29.1	45.5	127.5	211.4	304.9	408.5	497.0
Depreciation	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
Amortization	6.9	15.8	24.5	32.9	41.2	49.3	57.4	65.8
EBIT	-119.3	-50.5	24.1	106.0	190.0	283.5	387.1	475.6
Finance income	148.4	114.3	118.3	123.9	129.9	140.9	153.3	103.4
Finance costs	-2.3	-1.5	-1.8	-2.5	-3.4	-4.6	-6.0	-7.7
Share in earnings of associates and joint ventures	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Financial Result	146.1	112.7	116.5	121.4	126.5	136.3	147.3	95.8
EBT	26.9	62.3	140.6	227.5	316.5	419.9	534.4	571.4
Tax	4.8	11.2	25.3	40.9	57.0	75.6	96.2	102.8
Net income attributable to owners of the parent	22.0	51.0	115.3	186.5	259.5	344.3	438.2	468.5

Appendix 10 – Balance sheet

BALANCE SHEET	Forecasted period							Terminal
	2019F	2020F	2021F	2022F	2023F	2024F	2025F	
Property and equipment	381.3	371.3	361.1	350.5	339.6	328.3	316.7	304.8
Intangible assets	62.9	97.6	131.2	164.3	196.6	229.0	262.3	294.6
Goodwill	428.4	428.4	428.4	428.4	428.4	428.4	428.4	428.4
Investment in associates and joint ventures	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Long term investments	1,785.6	1,893.9	2,005.3	2,119.5	2,236.0	2,359.2	2,489.2	2,562.7
Tencent Music and Entertainment	1,748.1	1,856.4	1,967.8	2,082.0	2,198.5	2,321.7	2,451.7	2,525.2
Gimlet and Anchor	37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5
Restricted cash and other non-current assets	67.5	70.1	72.9	75.9	78.9	82.0	85.3	88.7
Deferred tax assets	8.3	8.6	9.0	9.3	9.7	10.1	10.5	10.9
Non-current assets	2,734.0	2,870.0	3,008.0	3,147.9	3,289.2	3,437.0	3,592.5	3,690.2
Trade and other receivables	707.2	809.8	897.6	975.3	1,037.8	1,104.4	1,175.3	1,210.6
Income tax receivable	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Short term investments	404.2	268.6	314.1	448.2	609.1	813.3	1,065.3	1,365.9
Cash and cash equivalents	372.9	259.4	302.1	431.8	586.7	783.0	1,024.4	1,262.6
Other current assets	45.3	52.5	58.6	64.4	69.5	74.8	80.5	84.2
Current assets	1,529.6	1,390.3	1,572.3	1,919.7	2,303.1	2,775.6	3,345.6	3,923.4
Total Assets	4,263.6	4,260.3	4,580.3	5,067.6	5,592.3	6,212.6	6,938.0	7,613.6
Other paid in capital	3,873.2	3,948.4	4,028.5	4,109.1	4,191.3	4,275.1	4,360.6	4,447.8
Treasury shares	-422.4	-767.8	-882.9	-882.9	-882.9	-882.9	-882.9	-882.9
Other reserves	909.1	920.2	932.1	944.1	956.3	968.7	981.4	994.4
Accumulated deficit	-2,483.0	-2,431.9	-2,316.6	-2,130.1	-1,870.6	-1,526.3	-1,088.1	-619.5
Equity attributable to shareholders	1,877.0	1,668.9	1,761.1	2,040.1	2,394.1	2,834.6	3,371.0	3,939.7
Convertible notes	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Accrued expenses and other liabilities	164.7	160.3	155.9	151.3	146.6	141.8	136.8	131.6
Deferred rent	164.7	160.3	155.9	151.3	146.6	141.8	136.8	131.6
Borrowings	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other accrued liabilities	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Provisions	8.2	8.3	8.5	8.6	8.8	9.0	9.2	9.4
Deferred tax liabilities	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-current liabilities	172.8	168.7	164.4	160.0	155.4	150.8	146.0	141.0
Trade and other payables	439.9	502.0	553.0	599.8	638.1	678.3	720.4	744.3
Income tax payable	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.9
Deferred revenue	334.2	382.7	424.2	460.9	490.5	522.0	555.5	572.1
Deferred advertising revenue	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Deferred subscription revenue	334.2	382.7	424.2	460.9	490.5	522.0	555.5	572.1
Accrued expenses and other liabilities	1,322.2	1,489.3	1,627.9	1,756.0	1,862.4	1,974.1	2,091.3	2,161.5
Accrued fees to rights holders	1,054.7	1,207.8	1,333.5	1,448.7	1,543.0	1,641.8	1,745.3	1,803.6
Accrued salaries, vacation and related taxes	59.2	68.0	75.8	83.4	90.3	97.8	105.9	111.9
Accrued social charge for options RSUs	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0
Borrowings	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other accrued expenses	144.3	149.5	154.6	159.8	165.1	170.5	176.2	182.0
Provisions	42.8	43.6	44.5	45.4	46.3	47.2	48.2	49.1
Derivative liabilities - Warrants	69.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Current liabilities	2,213.9	2,422.8	2,654.8	2,867.5	3,042.8	3,227.3	3,421.1	3,532.9
Total Liabilities	2,386.7	2,591.4	2,819.2	3,027.5	3,198.2	3,378.0	3,567.0	3,673.9
Total Equity and Liabilities	4,263.6	4,260.3	4,580.3	5,067.6	5,592.3	6,212.6	6,938.1	7,613.6

Appendix 11 – Cash flow statement

CASH FLOW STATEMENT	Forecasted period							Terminal
	2019F	2020F	2021F	2022F	2023F	2024F	2025F	
Net Income	22.0	51.0	115.3	186.5	259.5	344.3	438.2	468.5
Depreciation & Amortization	28.4	37.2	45.9	54.3	62.6	70.7	78.8	87.2
Change in NWC								
Trade and other receivables	-307.2	-102.7	-87.7	-77.8	-62.5	-66.6	-70.9	-35.3
Other current assets	-7.3	-7.2	-6.1	-5.8	-5.0	-5.4	-5.7	-3.7
Trade and other payables	12.9	62.1	51.0	46.8	38.3	40.2	42.1	23.9
Income tax payable	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Deferred revenue	76.2	48.5	41.5	36.8	29.5	31.5	33.5	16.7
Accrued expenses and other liabilities	246.2	167.1	138.6	128.1	106.4	111.7	117.2	70.2
Provisions	0.8	0.8	0.9	0.9	0.9	0.9	0.9	1.0
Deffered taxes	-2.3	-0.3	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4
Cash from operations	69.8	256.7	299.0	369.5	429.6	527.1	633.9	628.1
CAPEX	-205.9	-11.4	-11.1	-10.8	-10.5	-10.2	-9.8	-9.5
Intangible assets	-42.2	-50.4	-58.2	-66.0	-73.4	-81.7	-90.7	-98.0
Goodwill	-282.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Investment in associates and joint ventures	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Long term investments	-139.6	-108.4	-111.4	-114.1	-116.6	-123.1	-130.0	-73.6
Restricted cash and other non-current assets	-2.5	-2.6	-2.8	-2.9	-3.0	-3.2	-3.3	-3.4
Income tax receivable	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Short term investments	510.8	135.6	-45.5	-134.1	-160.9	-204.3	-252.0	-300.6
Cash from investing	-159.8	-37.2	-229.0	-328.0	-364.5	-422.4	-485.8	-485.1
Convertible notes	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Accrued expenses and other liabilities	79.7	-4.3	-4.4	-4.6	-4.7	-4.9	-5.0	-5.1
Provisions	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Derivative liabilities - Warrants	-268.8	-69.7	0.0	0.0	0.0	0.0	0.0	0.0
Change in Equity	-239.1	-259.1	-23.1	92.5	94.4	96.3	98.2	100.2
Cash from financing	-428.1	-333.0	-27.4	88.1	89.8	91.6	93.4	95.2
Cash in the beggining	891.0	372.9	259.4	302.1	431.8	586.7	783.0	1,024.4
Change in Cash	-518.1	-113.5	42.7	129.7	154.9	196.3	241.4	238.2
Cash in the end	372.9	259.4	302.1	431.8	586.7	783.0	1,024.4	1,262.6

Appendix 12 – Assumptions detail

Source: Author estimation and Spotify data

	Notes	2019F	2020F	2021F	2022F	2023F	2024F	2025F	Assumption
Income statement									
Gross Margin	%Rev	26.6%	27.4%	28.3%	29.1%	30.0%	30.8%	31.7%	Spotify estimates a long run gross margin of 32.5% of revenues
R&D	%Rev	12.0%	12.4%	12.8%	13.2%	13.6%	14.1%	14.5%	Spotify estimates a target R&D to Revenues ratio of 15%
Sales and Marketing	%Rev	11.5%	11.3%	11.1%	10.9%	10.6%	10.4%	10.2%	Target Sales and Marketing to Revenues ratio of 10%
General and Administrative	yoy	3.8%	3.6%	3.4%	3.4%	3.3%	3.3%	3.3%	Includes Spotify subsidiaries expenses, mainly with salaries. Expected inflation rate worldwide (source: Statista)
Depreciation	EUR Mn	21.4	21.4	21.4	21.4	21.4	21.4	21.4	Leases are valued at 364.20 EUR Mn and have a useful life of 17 years. Depreciation calculate using the straight line method
Amortization	Amort. rate	25.1%	25.1%	25.1%	25.1%	25.1%	25.1%	25.1%	Historical average amortization rate
Finance income	%Short term inv.	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	Historical average of interest income weight on short term investments
Finance costs	%Short term inv.	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	Historical average weight of interest costs on short term investments
Marginal tax rate	%EBT	18.0%	18.0%	18.0%	18.0%	18.0%	18.0%	18.0%	Corporate tax rate in Luxembourg
Balance sheet									
Assets									
Property and equipment (P&E)	yoy	93.7%	-2.6%	-2.8%	-2.9%	-3.1%	-3.3%	-3.5%	Spotify leases its offices. In 2018, leased an office in World Trade Center and invested €145mn in build-outs. In 2019, is expected an increase in CAPEX related to these build-outs. These offices are expected to support future growth. Depreciation thereafter.
Replacement CAPEX	%P&E	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	Historical replacement CAPEX
Intangible assets	%R&D	5.3%	5.3%	5.3%	5.3%	5.3%	5.3%	5.3%	Intangible assets are composed by Internal development costs and patents. Historical average weight of intangible assets on R&D expenses
Goodwill	yoy	193.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	Goodwill generate from the acquisition of Gimlet and Anchor
Long term investments	yoy	8.5%	6.1%	5.9%	5.7%	5.5%	5.5%	5.5%	Includes Tencent Music Entertainment, which growth rate follows the PIB of China projections. Also includes the investment in Gimlet and Anchor
Restricted cash and other non-current assets	yoy	1.9%	1.9%	2.0%	2.0%	2.0%	2.0%	2.0%	Expected inflation rate
Deferred tax assets	yoy	1.9%	1.9%	2.0%	2.0%	2.0%	2.0%	2.0%	Expected inflation rate
Trade and other receivables	%Rev	11.8%	11.8%	11.8%	11.8%	11.8%	11.8%	11.8%	Historical average weight of trade and other receivables on revenues
Other current assets	%Rev	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%	Historical average weight of other current assets on revenues
Equity									
Other paid in capital	yoy	1.9%	1.9%	2.0%	2.0%	2.0%	2.0%	2.0%	Expected inflation rate
Treasury shares	EUR Mn	-422.4	-767.8	-882.9	-882.9	-882.9	-882.9	-882.9	Share repurchase program
Other reserves	yoy	1.9%	1.9%	2.0%	2.0%	2.0%	2.0%	2.0%	Expected inflation rate
Liabilities									
Provisions - non-current	yoy	1.9%	1.9%	2.0%	2.0%	2.0%	2.0%	2.0%	Expected inflation rate
Trade and other payables	%COGS	6.3%	6.3%	6.3%	6.3%	6.3%	6.3%	6.3%	Historical average weight of trade and other payables on COGS
Income tax payable	yoy	1.9%	1.9%	2.0%	2.0%	2.0%	2.0%	2.0%	Expected inflation rate
Deferred revenue	%Rev	5.6%	5.6%	5.6%	5.6%	5.6%	5.6%	5.6%	Historical average weight of deferred revenue on revenues
Accrued fees to rights holders	%COGS	21.6%	21.6%	21.6%	21.6%	21.6%	21.6%	21.6%	Historical average weight of accrued fees to right holders on COGS
Accrued salaries, vacation and related taxes	%OPEX	3.2%	3.2%	3.2%	3.2%	3.2%	3.2%	3.2%	Historical average weight of accrued salaries, vacation and related taxes on operational expenses (R&D, M&S and G&A)
Provisions - current	yoy	1.9%	1.9%	2.0%	2.0%	2.0%	2.0%	2.0%	Expected inflation rate
Derivative liabilities - Warrants	EUR Mn	69.7	0.0	0.0	0.0	0.0	0.0	0.0	Assumes that warrants are exercised at maturity: €263.3Mn in 10-17-2019 and €69.7Mn in July-2020

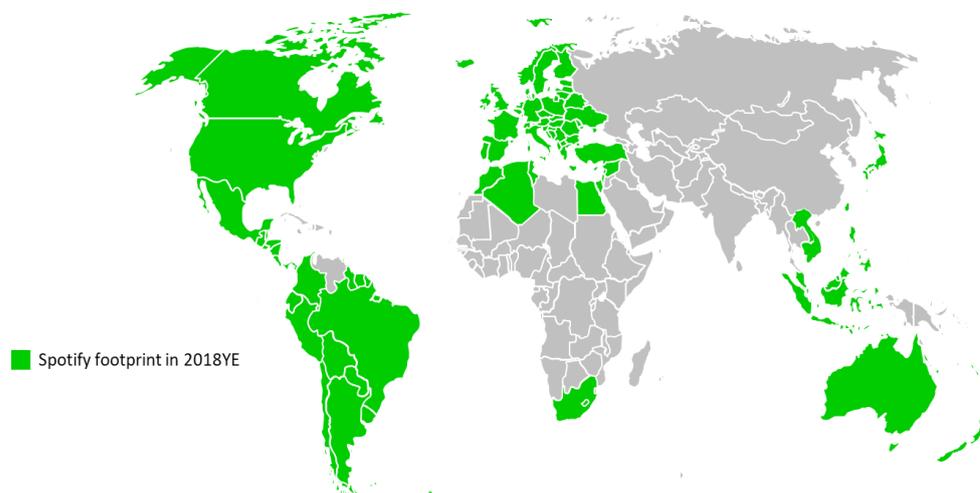
Appendix 13 – Ratio analysis

Ratio Analysis	2018	2019F	2020F	2021F	2022F	2023F	2024F	2025F	Terminal
Liquidity Ratios									
Current ratio	1.05	0.69	0.57	0.59	0.67	0.76	0.86	0.98	1.11
Quick ratio	1.03	0.67	0.55	0.57	0.65	0.73	0.84	0.95	1.09
Cash ratio	0.84	0.35	0.22	0.23	0.31	0.39	0.49	0.61	0.74
Efficiency Ratios									
Total Assets Turnover (x)	1.41	1.55	1.81	1.95	1.96	1.91	1.86	1.80	1.70
Accounts Receivables Turnover (x)	1.05	1.28	1.07	1.05	1.04	1.03	1.03	1.03	1.01
Collection Period (days)	508.06	418.65	500.89	508.67	513.47	518.70	518.67	518.67	527.01
Payables Turnover (x)	2.87	2.99	2.98	2.96	2.96	2.94	2.95	2.96	2.92
Payables Period (days)	140.45	131.64	129.90	128.86	128.13	127.69	127.30	126.94	126.94
Profitability Ratios									
Gross Profit Margin (%)	25.7%	26.6%	27.4%	28.3%	29.1%	30.0%	30.8%	31.7%	32.5%
EBITDA Margin (%)	-0.8%	-1.5%	-0.4%	0.5%	1.3%	2.1%	2.8%	3.5%	4.0%
EBIT Margin (%)	-1.0%	-1.8%	-0.7%	0.3%	1.1%	1.9%	2.6%	3.3%	3.8%
Net Profit Margin (%)	-1.5%	0.3%	0.7%	1.3%	2.0%	2.5%	3.1%	3.7%	3.8%
ROA (%)	-1.8%	0.5%	1.2%	2.5%	3.7%	4.6%	5.5%	6.3%	6.2%
ROCE (%)	-2.5%	-5.8%	-2.7%	1.3%	4.8%	7.5%	9.5%	11.0%	11.7%
ROE (%)	-3.7%	1.2%	3.1%	6.5%	9.1%	10.8%	12.1%	13.0%	11.9%
EPS (x)	-0.43	0.12	0.28	0.64	1.03	1.44	1.90	2.42	2.59
R&D/Revenues (%)	9.4%	12.0%	12.4%	12.8%	13.2%	13.6%	14.1%	14.5%	15.0%
SG&A/Revenues (%)	17.2%	16.0%	15.4%	14.9%	14.6%	14.3%	14.0%	13.7%	13.5%
Solvency Ratios									
Long- and short-term Debt Ratio (%)	4.4%	7.8%	7.0%	6.2%	5.6%	5.1%	4.7%	4.3%	4.0%
Long-term Debt Ratio (%)	2.2%	4.1%	4.0%	3.6%	3.2%	2.8%	2.4%	2.1%	1.9%
Debt to Equity Ratio (x)	1.07	1.27	1.55	1.60	1.48	1.34	1.19	1.06	0.93
Equity Multiplier (x)	2.07	2.27	2.55	2.60	2.48	2.34	2.19	2.06	1.93
Debt to EBITDA	-52.17	-24.40	-89.14	61.92	23.75	15.13	11.08	8.73	7.39
Interest Coverage Ratio (x)	-9.16	-52.64	-33.55	13.70	42.21	55.67	62.20	64.84	62.13
Value Creation and Cash Flow Ratios									
Lifetime Value of a Subscriber (LTV)	162.5	175.7	178.2	183.1	186.1	188.7	191.9	195.7	193.4
Subscriber Acquisition Cost (SAC)	47.3	46.9	46.2	46.0	45.9	45.8	45.5	44.9	NA
LTV/ SAC	3.4	3.7	3.9	4.0	4.1	4.1	4.2	4.4	NA
Economic Value Added (EVA)	NA	-197.2	-133.7	-77.4	-22.7	31.1	89.5	152.7	203.5

Appendix 14 – How Spotify licenses and pays for music rights

To better explain how Spotify licenses the music rights for streaming, take the example of the song “I will always love you”. A version of this song was performed by Whitney Houston for the soundtrack of the movie “The Bodyguard”. On one hand, the recording rights are owned by Arista Records, a subsidiary of Sony Music Entertainment. On the other hand, the lyrics and melody of the song were created by Dolly Parton. In conclusion, Spotify pays Arista Records the recording rights, which gives a percentage to Whitney Houston. Additionally, Spotify pays Dolly Parton because he is the publisher and songwriter.

Appendix 15 – Spotify footprint worldwide



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Level of risk	SELL	REDUCE	HOLD/ NEUTRAL	BUY	STRONG BUY
High risk	0%≤	>0% & ≤10%	>10% & ≤20%	>20% & ≤45%	>45%
Medium risk	-5%≤	>-5% & ≤5%	>5% & ≤15%	>15% & ≤30%	>30%
Low risk	-10%≤	>-10% & ≤0%	>0% & ≤10%	>10% & ≤20%	>20%