

SPOTIFY'S DIRECT-LISTING IPO¹

Ken Mark wrote this case under the supervision of Professors Craig Dunbar and Stephen Foerster solely to provide material for class discussion. The authors do not intend to illustrate either effective or ineffective handling of a managerial situation. The authors may have disguised certain names and other identifying information to protect confidentiality.

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On the morning of April 3, 2018, Jennifer Wang, a portfolio manager with the hedge fund Super Tech, which focused on growing technology companies, was contemplating an investment in music streaming service Spotify Technology SA (Spotify). The company had planned an unusual direct listing that day on the New York Stock Exchange (NYSE). Unlike typical initial public offerings (IPOs), which used investment banks as underwriters to help firms sell shares in their transition to becoming public companies, Spotify's direct listing would instead have simply made the company's shares eligible for public trading on an exchange, but no capital would be raised. Wang wondered whether her fund should invest in Spotify and if so, what maximum price and investment horizon it should accept. She needed to do her own analysis to establish what she felt was a fair value for Spotify's stock, and her task was complicated by recent equity market turmoil.

MUSIC STREAMING

The music industry included songwriters, performance artists, talent managers, record labels, music broadcast entities (e.g., terrestrial radio, Internet radio, and television), and the live performance segment. The product—recorded songs developed and recorded by artists—was sourced and curated primarily by three major record labels: Sony BMG, Universal Music Group, and Warner Music Group. Together, these three labels controlled 80 per cent of the market for popular music.² These labels signed artists and coordinated the process that produced, manufactured, distributed, and marketed artists' performed songs. Songs were marketed—introduced to the public—when they were featured on broadcast media. Artists were paid royalties for their songs based on a statutory rate in the United States. Recording artist mechanical royalties were set at³ US\$0.08⁴ for each song of five minutes or less in length and \$0.0155 per minute for each song that was more than five minutes long. Record labels generally negotiated artist contracts that paid a percentage of this statutory rate (e.g., 75 per cent). After various promotional and touring costs, artists could receive a net 10 per cent royalty on physical record sales and 5–8 per cent on sales from Internet downloads.⁵

Music streaming was a way for users to consume audio content without having to download the files to their devices. Typically, music streaming required users to have a streaming application (app) and wireless access to the Internet. Prior to music streaming, users had to download audio files in various formats such as MP3, WMA, or AAC. Unlike downloaded music, music streamed was not saved to a

user's hard drive. Instead, the audio files were delivered in small packets, buffered, and played almost simultaneously (see Exhibit 1).⁶

The major players in the music streaming industry included Spotify, Apple Inc. (Apple), Google LLC (Google); and Amazon.com Inc. (Amazon) (see Exhibit 2). As of February 2018, Spotify had 140 million active users of its free service and an additional 70 million paid subscribers in 61 countries.

Apple had dominated the digital download industry following the launch of its iTunes Store in 2003. In 2015, it launched Apple Music, which offered streaming services to consumers at a price of \$9.99 a month for individuals and \$14.99 a month for families of up to six users.⁷ It had a catalogue of 45 million songs and was available in 115 countries. As of February 2018, Apple Music had 30 million subscribers in the United States and 36 million globally. It was growing 5 per cent per month in the United States (faster than Spotify's 2 per cent per month)⁸ and was expected to surpass Spotify in the U.S. market by the summer of 2018.⁹

Google Play Music was Google's music streaming service. It allowed users to listen to customized Internet radio station streams for free and had a paid service with a 40 million-song library.¹⁰ Google Play Music had about 7 million subscribers in total in July 2017. Google also operated another video and song streaming service: YouTube Red. Both Google Play Music and YouTube Red cost users \$10 per month.¹¹

Amazon had two music streaming services—Prime Music and Amazon Music Unlimited—with a combined 16 million paid subscribers. Prime Music, available to Amazon's Prime members, allowed users to stream over two million songs without ads. Amazon Music Unlimited had tens of millions of songs in its library and was available to Prime members for \$7.99 a month and to other customers at \$9.99 a month.¹²

SPOTIFY'S BACKGROUND

Daniel Ek and Martin Lorentzon founded Spotify on April 23, 2006, in Stockholm, Sweden. They launched the public beta version of the Spotify music streaming site in the spring of 2007,¹³ and the company was officially launched on October 7, 2008. Ek was the firm's founder and chief executive officer (CEO), and Lorentzon was its co-founder and chair of the board. Other key executives included Barry McCarthy, the chief financial officer; Chris Maples, the managing director of U.K. operations; and Kate Vale, the managing director and sales director for Australia and New Zealand.¹⁴ In August 2009, when Spotify was valued at \$250 million and had 75 employees, its owners included Bolag Andel Rosello (Lorentzon), which held 28.6 per cent; Instructus (Ek) at 23.3 per cent; Northzone Ventures at 11.9 per cent; Enzymix Systems (F. Hagnö) at 5.8 per cent; Sony BMG at 5.8 per cent; Universal Music at 4.8 per cent; Warner Music at 3.8 per cent; Wellington IV Tech at 3.8 per cent; Creandum II LP at 3.5 per cent; Swiftic (Strigéus) at 2.6 per cent; Creandum II KB at 2.4 per cent; EMI at 1.9 per cent; Merlin at 1.0 per cent; and SBH Capital (B. Hagnö) at 0.8 per cent.¹⁵

On February 22, 2018, Spotify revealed that the shareholders of its ordinary shares included Ek (25.7 per cent); Lorentzon (13.2 per cent); Sony Music Entertainment Ltd. (5.7 per cent); entities affiliated with Technology Crossover Ventures (5.4 per cent); Tiger Global Management LLC (6.9 per cent); and Tencent Holdings Limited (7.5 per cent).¹⁶

Spotify's "freemium" business model offered two services to customers. The first was a basic, free-to-use music streaming service with limited functionality (i.e., a limited number of song skips was allowed, the

sound quality was average, and listeners could not access songs offline) and advertising content interspersed between songs. The premium service was priced at \$9.99 a month (\$5.00 for students), had higher functionality, and did not contain advertising. This premium service also allowed users to listen to songs offline (i.e., to save the songs to their devices) and had enhanced sound quality, with song bitrates increased to 320 kilobits per second.¹⁷ Within the premium service was a family option for up to five members of the same household, priced at \$14.99 a month.¹⁸

Spotify paid out 70 per cent of its revenues to copyright holders; principally, the big record labels. Its focus on negotiating and establishing a system for royalty payments set it apart from its major competitors, such as Grooveshark, and allowed it to avoid infringement lawsuits. However, paying out the majority of its revenues in royalties meant that the firm had to continually seek capital as it grew (see Exhibit 3) and that it had never posted a profit. By September 2016, Spotify had paid out a cumulative total of \$5 billion in royalties to rights holders, and in June 2017, it announced plans to pay more than \$2 billion in guaranteed royalties over the next two years.¹⁹

Acquisitions, Funding, and Financial Performance

In March 2014, Spotify purchased The Echo Nest Corporation, a music intelligence firm, for €49.7 million.²⁰ Echo Nest's capabilities included understanding how users accessed music: it had developed software tools to curate and drive music discovery for users. Other firms Spotify acquired between 2013 and 2017 included Soundtrap AB, Niland API, Mediachain, MightyTV, Sonalytic, CrowdAlbum, Seed Scientific, Tunigo, Preact, and Cord Project Inc., each for an undisclosed sum.²¹ These acquired firms focused mainly on technology that identified songs and their creators (or rights holders), blockchain data solutions that connected apps to media,²² and software that created better-quality personalized song recommendations.

On March 29, 2016, Spotify announced it was raising \$1 billion in convertible debt from a group of investors including the private equity firm TPG, the hedge fund Dragoneer Investment Group LLC, and clients of the Goldman Sachs Group Inc. The annual interest payment on the debt would be 5 per cent per year and would increase by one percentage point every six months until Spotify went public or the rate reached 10 per cent, whichever came first. In addition, the debt was convertible into equity at a 20 per cent discount to Spotify's share price if an IPO were held within a year of the closing of the deal. The discount would continue to increase by 2.5 percentage points every six months after that initial year.²³ Spotify added the \$1 billion to its \$600 million in cash on hand. Prior to raising this current round of convertible debt, Spotify had raised \$1 billion from investors such as Founders Fund; Accel Partners; Technology Crossover Ventures; and Kleiner, Perkins, Caufield and Byers.²⁴

In December 2017, private trades in Spotify stock valued the firm at above \$19 billion.²⁵ This was an increase from the \$16 billion valuation accorded to Spotify in the fall of 2017. Further, in early December 2017, Tencent Music Entertainment, a subsidiary of the Chinese tech giant Tencent, purchased stock in the firm, valuing Spotify at \$20 billion. Some of the Spotify shares in the transaction came from Spotify's convertible debt placement: TPG and Dragoneer were allowed to convert their debt into equity at a \$10 billion valuation and then sell it to Tencent at a \$20 billion valuation. The amount of debt converted was not made public.²⁶

According to Spotify's annual income statements, balance sheets, cash flow statements, and segment information (see Exhibits 4–7), the company generated revenues of €4,090 million in 2017 and had a net loss of €1,233 million. Its revenues had grown 52.2 per cent, from €1,940 in 2015 to €2,952 in 2016, and

another 38.6 per cent from 2016 to 2017. Its net loss had grown 134.3 per cent, from €230 million in 2015 to €39 million in 2016, and another 129.1 per cent from 2016 to 2017.

Disputes and Critics

In October 2014, Taylor Swift's album *1989* was missing from Spotify's playlist, and Swift publicly removed the rest of her song catalogue in November 2014. She stated,

[A]ll I can say is that music is changing so quickly, and the landscape of the music industry itself is changing so quickly, that everything new, like Spotify, all feels to me a bit like a grand experiment. And I'm not willing to contribute my life's work to an experiment that I don't feel fairly compensates the writers, producers, artists, and creators of this music. And I just don't agree with perpetuating the perception that music has no value and should be free.²⁷

Spotify playfully responded with a promoted playlist entitled "What to Play While Taylor's Away."²⁸ By June 2017, Swift, seemingly interested in earning some of the royalties being paid to music streaming artists, put her full playlist back on Spotify.²⁹ A member of another band, Radiohead, had announced in 2013 that "I feel like as musicians we need to fight the Spotify thing," and the band kept its music off of the site.³⁰ But Radiohead relented, and its music was on Spotify by mid-2016.³¹

In late December 2017, Spotify was sued by Wixen Music Publishing Inc. (Wixen). Wixen was alleging that Spotify was using thousands of songs without a license and without compensating the music publisher and was seeking \$1.6 billion in damages—or \$150,000 per song. According to Wixen, while Spotify had signed deals with the music labels to acquire rights to sound recordings of songs, it had failed to acquire the rights for the song compositions. The Wixen lawsuit would be the fourth outstanding lawsuit against Spotify, and the biggest. Others, by songwriter Bob Gaudio and Bluewater Music Services Corporation, collectively represented a few thousand song compositions and, potentially, hundreds of millions of dollars in damages if the maximum of \$150,000 for statutory damages were awarded.³²

Spotify had already settled one lawsuit alleging song composition infringement. In May 2017, Spotify paid \$43 million to settle a class-action lawsuit initiated by a group of songwriters who had accused the streaming service of using their songs without their permission and failing to pay royalties on the music.³³

There were potentially tens of millions of copyrighted song compositions. In statements it made to the United States Copyright Office, Spotify indicated that it was attempting to locate and identify the owners of these songs. In reaching deals with the major publishers, Spotify relied on Harry Fox Agency to advise it on its compliance on the issue of song licenses.³⁴

Preparations for Direct Listing

In July 2017, Spotify executives met with the U.S. Securities and Exchange Commission to explore the process of going public via an IPO (see Exhibit 8). By this time, it had raised \$1 billion in a convertible note and had hired three investment banks to assist with the IPO process: Goldman Sachs Group Inc., Morgan Stanley, and Allen & Company LLC.³⁵ The private discussions progressed, but no IPO was held in 2017.

On February 28, 2018, Spotify filed a prospectus to sell shares on the NYSE. Rather than going public via a traditional IPO process, Spotify was planning a direct listing after regulatory filings were approved. There would be no investor road show (i.e., presentations by management to analysts and potential

investors) before the IPO date, and there would be no quiet period during which analysts, issuers, company insiders, and other parties would be restricted from discussing or promoting the stock. There would also be no stock sales to selected clients coordinated by investment banks. Pundits believed that the major reason Spotify was seeking to list its shares was because of the convertible debt terms.

On March 15, the company live-streamed an unusual investor day event that included a playlist of music such as “I’m Waiting for the Man,” by The Velvet Underground, which announced the appearance of CEO Ek, and ending with “Closing Time,” by Semisonic. Senior executives presented a vision for the company, and the chief financial officer discussed some of the company’s financial aspects.³⁶ Spotify prioritized growth—particularly in mobile, podcasts, and cars—over profits in the short term. Spotify positioned itself in the “discovery” business, as opposed to the “access” business of its competitors. In order to reach as wide an audience as possible, Spotify said its free, ad-supported tier would remain. According to the head of research and development, this offered “Something for nothing. It’s the greatest value proposition in the history of the world.” CEO Ek defended the direct listing by claiming, “I think the traditional model for taking a company public isn’t a good fit for us.”³⁷ It was also revealed that the shares would start trading on April 3.

Spotify’s listing was already being called a non-IPO, since the company would start trading directly and would not be raising any cash or selling shares in the event. It would pay equity capital market fees of \$30 million in total to Goldman Sachs Group Inc., Morgan Stanley, and Allen & Company LLC. These three banks would assist Spotify with the listing.³⁸ The banks could engage in price stabilization following the listing, but they would not have a so-called *greenshoe* option, which would have allowed them as underwriters to buy an additional 15 per cent of shares, to facilitate stabilization. The direct listing would also not include a lock-up period for insiders; this meant that selling volume in the early days of secondary trading would be very unpredictable and could be large.

Spotify’s Valuation

Two common approaches to valuing companies included the discounted cash flow (DCF) analysis and the use of market multiples from comparable firms and recent transactions, such as the ratio of enterprise value to earnings before interest, taxes, depreciation, and amortization (EBITDA). Wang needed a list of peers and key data to estimate Spotify’s value using multiples analysis from comparable firms (see Exhibit 9). She initially selected firms with a range of sizes and implied values but wondered whether she should narrow the set. DCF analysis started with an estimate of a firm’s free cash flows over a set number of years; then, those cash flows were discounted by the firm’s cost of capital to arrive at an estimate of the overall firm value. Interest-bearing debt was subtracted to arrive at an estimate of the equity value.

On March 26, Spotify released guidance that indicated it expected revenue to rise by 22–27 per cent annually in the first quarter of 2018, to between €1.1 billion and €1.15 billion (\$1.37 billion to \$1.43 billion), and by 20–30 per cent over the full year of 2018, to between €4.9 billion and €5.3 billion (\$6.1 billion to \$6.6 billion). Commentators noted that sales growth was forecast to decelerate relative to 2017 growth.³⁹

In estimating Spotify’s equity value using DCF analysis, Wang carefully reviewed the popular blog and analysis of well-known New York University professor and valuation expert Aswath Damodaran.⁴⁰ She used some of his DCF model assumptions, modified with her own assessment, to estimate free cash flows for the next 10 years. She used the 2017 revenue base of €4,090 million and assumed annual growth of 25 per cent for 2018–2022, followed by growth of 20 per cent in 2023, 15 per cent in 2024, 11 per cent in

2025, 8 per cent in 2026, and 5 per cent in 2027. She estimated that Spotify's annual "steady-state" growth rate beyond the next 10 years would be 3 per cent, but she wanted to test a growth rate of 5 per cent as part of her sensitivity analysis.

To determine a discount rate for her analysis, Wang assumed a market risk premium of 5 per cent. Because Spotify was not yet being publicly traded, she compiled data on peer firms to determine an appropriate beta (see Exhibit 9). She noted that Spotify did not have any outstanding interest-bearing debt. Given tax-loss carryforwards, she assumed Spotify would not pay any taxes through 2022 and would then face a 25 per cent tax rate. She assumed there were 178.11 million shares outstanding. Among other assumptions (see Exhibit 10), for simplicity, she assumed a valuation date of December 31, 2017 for discounting purposes.

Economic and Market Conditions

The U.S. economy recorded real gross domestic product growth of 2.6 per cent in the fourth quarter of 2017, down from the third-quarter 2017 growth of 3.2 per cent.⁴¹ The Economist Intelligence Unit forecast growth for the U.S. economy in 2018 and 2019 of 2.3 per cent a year. In January 2018, the Federal Reserve kept its target federal funds rate unchanged at 1.25–1.50 per cent.⁴² This move had been expected by the market; pundits expected the Federal Reserve to continue increasing the federal funds rate as inflation rose.⁴³ In late March 2018, a 10-year U.S. government treasury bond was yielding 2.85 per cent. For comparison, the yields for the other Treasury bonds were as follows: 1.71 per cent for one month; 1.79 per cent for three months; 1.94 per cent for six months; 2.06 per cent for one year; 2.33 per cent for two years; and 2.64 per cent for five years.⁴⁴ In 2017, the Dow Jones Industrial Average had its best-performing year since 2013, advancing by 25 per cent. The Standard and Poor's (S&P) 500 index gained 19 per cent, and the Nasdaq Stock Market (NASDAQ) gained 28 per cent.⁴⁵ A pull-back in stocks in early February 2018 saw the Dow Jones briefly fall by more than 10 per cent from its high. In late March 2018, the Dow Jones had a price-to-earnings (P/E) ratio of 25.2 versus 21.1 a year earlier. It had a dividend yield of 2.24 per cent versus 2.36 a year earlier. The S&P 500 had a P/E ratio of 24.9 versus 24.5 a year earlier and a dividend yield of 1.93 versus 1.97 a year earlier.⁴⁶ The Chicago Board Options Exchange (CBOE) Volatility Index (VIX), a measure of anticipated market volatility, spiked from a muted level of below 10 at the beginning of 2018 to over 37 on February 5, before receding to just below 20 in late March.⁴⁷

In 2017, there had been a global rebound in IPO activity, and 374 IPOs had raised \$141.4 billion, up from 268 IPOs and \$106.3 billion in 2016. IPO activity had yet to reach the highs of 2014, when \$238.4 billion was raised from 413 issues.⁴⁸ However, on March 23, 2018, file-sharing service Dropbox Inc. went public and saw its first-day share price increase by 36 per cent on the same day that the S&P 500 dropped 2 per cent and both Facebook and Amazon fell by over 3 per cent.⁴⁹ In 2017, Snap Inc., which owned the popular social media app Snapchat, surged 44 per cent above its \$17 listing price in the first day of trading, but it had struggled since July of that year to trade above the listing price.

THE INVESTMENT DECISION

The direct-listing date had arrived, and it was decision time for Wang. She was still uncertain about whether her fund should invest in Spotify, particularly given the recent market turmoil. She needed to be comfortable that she would be buying in at a fair price, and she also wondered what the investment horizon should be.

Wang wondered whether Spotify's direct listing was simply a unique occurrence or whether this IPO might also disrupt the traditional underwriting process, just as Spotify had disrupted the music industry. More immediately, she also wondered what would happen in the short term. Stephen Gandel, writing for Bloomberg, captured investors' uncertainty about how Spotify's shares might trade on its first day when he said, "The shares could plunge, soar, or soar and then plunge, or plunge and soar, or not trade at all because of a mismatch between buyers and sellers."⁵⁰

Early on April 3, 2018, the designated market maker on the NYSE, Citadel Securities LLC, set the "reference price" for Spotify's direct listing at \$132. In a traditional IPO, the reference price was the offering price, but in the case of a direct listing, Citadel selected a reference price based on recent private market transactions and independent valuations (see Exhibit 8). Wang settled down in front of her computer at 9:30 a.m., contemplating whether to place an order. Market clearing usually happened fairly quickly, so she knew she only had a bit of time to move ahead if she hoped to get in on the first clearing trade of the day. Given the size of the company and the novelty of the listing process, she suspected market clearing might take longer than expected. By 10:30 a.m., trading had not opened but Citadel Securities had posted an initial bid-ask range of \$145–\$155. A little after 11:00 a.m., the range moved up to \$150–\$160, suggesting that demand was strong. Now Wang wondered whether she should jump in or stay on the sidelines.

EXHIBIT 1: THE EVOLUTION OF MUSIC STREAMING

The music streaming industry emerged around 2000 when a streaming format was created using Adobe's Flash application. The universal adoption of Flash meant that users did not need to download proprietary streaming formats based on Windows (Media Player) or Apple (QuickTime) in order to listen to or view streams of content. The first major company to commercialize music streaming was Pandora Internet Radio, an Internet-based radio station and music recommendation service. Later renamed Pandora Media, the company continued to focus on its business model of providing customized but non-interactive Internet radio stations to listeners, earning the majority of its revenues from advertising.

One of the earliest firms focused on the current interpretation of music streaming—defined as a service that allowed users to select customized playlists of songs and have the audio files played on their devices in real-time—was Grooveshark, which was launched in March 2006. Grooveshark allowed users to sell their MP3 files to each other via a proprietary peer-to-peer network. By April 2008, Grooveshark allowed users to select and play audio files without downloading an application.

One of the biggest issues that Grooveshark and other firms in the nascent industry faced was how to manage copyright infringement issues for music being played. The large record labels such as Universal Music Group, Sony Music Entertainment, and Warner Music Group alleged that Grooveshark allowed its users to upload and share music without paying royalties to copyright holders. Grooveshark was faced with a \$17 billion lawsuit in 2011 and was shut down on May 1, 2015.

Total industry revenues from recorded music were \$4.0 billion for the first half of 2017, up from \$3.4 billion in the first half of 2016. Total revenues from streaming music services accounted for 62 per cent of the market in 2017, or \$2.5 billion. This was up 48 per cent from the first half of 2016.

There were over 30.4 million consumers paying for streaming in the United States, resulting in \$1.7 billion in paid streaming subscription revenues for the first half of 2017. This was up from \$1.067 billion in the first half of 2016. In the same two periods, digital and customized radio revenues were \$493 million and \$407 million respectively, and ad-supported, on-demand music streaming revenues were \$273 million and \$199 million respectively.

The standard business model in music streaming was a “freemium” model that saw one group of users receive a free service with limited features and advertising, while other users paid for a premium service that had more features (e.g., users could fast forward or skip songs) and was ad-free. Spotify offered a \$10 a month unlimited subscription service. Spotify paid about 70 per cent of total revenues to the record labels and other music rights holders. This equated to about \$0.006 and \$0.0084 every time a song was streamed.

Note: All currency amounts are in US\$.

Sources: Created by the case authors using data from Mark Harris, “What Is Streaming Music?,” Lifewire, February 8, 2018, accessed February 27, 2018, <https://www.lifewire.com/what-is-streaming-music-2438445>; Sam Parr, “How Pandora's Founder Convinced 50 Early Employees to Work 2 Years Without Pay,” The Hustle, May 27, 2016, accessed February 27, 2018, <https://thehustle.co/pandora-speech>; Chris Morrison, “Grooveshark Offers P2P Music Downloads — But Is It Legal?,” Venturebeat, December 5, 2007, accessed February 27, 2018, <https://venturebeat.com/2007/12/05/grooveshark-offers-p2p-music-downloads-but-is-it-legal/>; Brittany Spanos, “Grooveshark Shuts Down after Eight Years,” *Rolling Stone*, May 1, 2015, accessed February 27, 2018, <https://www.rollingstone.com/music/news/grooveshark-shuts-down-after-eight-years-20150501>; Joshua P. Frielander, “News and Notes on 2017: Mid-Year RIAA Revenue Statistics,” Recording Industry Association of America, accessed February 27, 2018, <http://www.riaa.com/wp-content/uploads/2017/09/RIAA-Mid-Year-2017-News-and-Notes2.pdf>; “How Is Spotify Contributing to the Music Business?,” Spotify, November 3, 2014, accessed February 27, 2018, <https://wayback.archive-it.org/all/20141103193456/http://www.spotifyartists.com/spotify-explained/>.

EXHIBIT 2: RECORDING INDUSTRY ASSOCIATION OF AMERICA STATISTICS

United States Estimated Retail Dollar Value (In US\$ millions, net after returns)			
			% CHANGE
DIGITAL SUBSCRIPTION & STREAMING	2016	2017	2016-2017
Paid Subscription—Units, Millions	20.2	30.4	50.60%
Paid Subscription—Dollar Value	\$994.9	\$1,487.7	49.50%
Limited Tier Paid Subscription	\$71.7	\$224.7	213.40%
On-Demand Streaming (Ad-Supported)	\$199.3	\$273.2	37.10%
SoundExchange Distributions	\$403.4	\$339.5	-15.80%
Other Ad-Supported Streaming	\$3.7	\$153.1	4021.20%
Total Streaming Revenues	\$1,673.0	\$2,478.1	48.10%
DIGITAL PERMANENT DOWNLOAD			
Download Single—Units, Millions	412.5	316.2	-23.4%
Download Single—Dollar Value	\$496.6	\$384.6	-22.6%
Download Album	\$464.6	\$344.1	-25.9%
Ringtones & Ringbacks	\$21.4	\$16.7	22.0%
Other Digital	\$10.9	\$11.7	7.3%
Total Digital Download Revenues	\$993.5	\$757.0	-23.8%
TOTAL DIGITAL VALUE	\$2,666.50	\$3,235.10	21.3%
Synchronization Royalties	\$100.40	\$118.70	18.20%
PHYSICAL			
CD - Units Shipped, Millions	38.6	35.2	-8.6%
CD - Dollar Value	\$443.5	\$430.6	-2.9%
LP/EP	\$176.1	\$181.7	3.2%
Music Video	\$16.4	\$14.5	-11.3%
Other Physical	\$4.9	\$5.3	10.0%
Total Physical Units	\$46.8	\$43.5	-7.2%
Total Physical Value	\$640.8	\$632.2	-1.3%
TOTAL DIGITAL AND PHYSICAL			
Total Units	515.1	402.2	-21.9%
Total Value	\$3,407.7	\$3,986.0	17.0%
% of Shipments	2016	2017	
Physical	19.0%	16.0%	
Digital	81.0%	84.0%	

Note: CD = compact disc; LP = long playing album; EP = extended playing album

Source: Created by the case authors using data from Joshua P. Friedlander, *2017 Mid-Year RIAA Shipment and Revenue Statistics*, 4, Recording Industry Association of America, 2017, accessed February 27, 2018, <https://www.riaa.com/reports/2017-mid-year-riaa-shipment-revenue-statistics-riaa/>.

EXHIBIT 3: SPOTIFY FUNDING ROUNDS (IN US\$)

Announced Date	Transaction Name	Number of Investors	Money Raised	Lead Investors
June 30, 2017	Secondary Market—Spotify	1		
July 28, 2016	Secondary Market—Spotify	3		
March 30, 2016	Debt Financing—Spotify	2	\$1 billion	
January 27, 2016	Convertible Note—Spotify	1	\$500 million	
January 21, 2016	Secondary Market—Spotify			
November 1, 2015	Secondary Market—Spotify	1	\$150 million	
August 30, 2015	Secondary Market—Spotify	2		
June 10, 2015	Series G—Spotify	16	\$526 million	
November 25, 2014	Secondary Market—Spotify	2		
September 1, 2014	Secondary Market—Spotify	1		
January 1, 2014	Secondary Market—Spotify	1		
November 21, 2013	Series F—Spotify	1	\$250 million	TCV
November 15, 2012	Series E—Spotify	6	\$100 million	Goldman Sachs
January 1, 2012	Secondary Market—Spotify	1		
June 17, 2011	Series D—Spotify	5	\$100 million	Accel Partners
February 1, 2010	Series C—Spotify	1	€11.6 million	Founders Fund
August 4, 2009	Series B—Spotify	3	\$50 million	Horizons Ventures
October 1, 2008	Series A—Spotify	5	\$21.6 million	

Source: Adapted from “Spotify > Funding Rounds,” Crunchbase, accessed February 27, 2018, https://www.crunchbase.com/organization/spotify/funding_rounds/funding_rounds_list.

EXHIBIT 4: SPOTIFY CONSOLIDATED STATEMENT OF OPERATIONS

For the year ended December 31				
(in € millions, except share and per share data)				
		2015	2016	2017
Revenue		1,940	2,952	4,090
Cost of Revenue		1,714	2,551	3,241
Gross Profit		226	401	849
Expenses:				
Research and Development		136	207	396
Sales and Marketing		219	368	567
General and Administrative		106	175	264
Total expenses		461	750	1,227
Operating Loss		-235	-349	-378
Finance Income		36	152	118
Finance Costs		-26	-336	-974
Share in Earnings of Associates and Joint Ventures		—	-2	1
Finance Income/(Costs) - net		10	-186	-855
Loss Before Tax		-225	-535	-1,233
Income Tax Expense		5	4	2
Net Loss Attributable to Owners of the Parent		-230	-539	-1,235
Net Loss per Share Attributable to Owners of the Parent				
Basic and Diluted		-1.62	-3.63	-8.14
Weighted-Average Ordinary Shares Outstanding				
Basic and Diluted		141,946,600	148,368,720	151,668,769

Source: Created by the case authors using data from Spotify Technology SA, Form F-1 Registration Statement as filed with the United States Securities and Exchange Commission on February 28, 2018, F-3, accessed March 29, 2018, https://www.sec.gov/Archives/edgar/data/1639920/000119312518063434/d494294df1.htm#rom494294_20.

EXHIBIT 5: SPOTIFY BALANCE SHEETS

As at December 31 (in € millions)			
	2015	2016	2017
Assets			
Non-current assets			
Property and equipment	81	85	73
Intangible assets including goodwill	73	80	162
Investment in associates and joint ventures	1	0	1
Long term investment	0	0	910
Restricted cash and other non-current assets	21	23	54
Deferred tax assets	4	3	9
	180	191	1,209
Current assets			
Trade and other receivables	244	300	360
Income tax receivable	3	6	0
Short term investments	0	830	1032
Cash and cash equivalents	597	755	477
Other current assets	27	18	29
	871	1,909	1,898
Total assets	1,051	2,100	3,107
Equity/(Deficit) and liabilities			
Equity/(Deficit)			
Share capital	0	0	0
Other paid in capital	797	830	2,488
Other reserves	85	122	177
Accumulated deficit	-653	-1,192	-2,427
Equity/(Deficit) attributable to owners of the parent	229	-240	238
Non-current liabilities			
Convertible notes	0	1,106	944
Accrued expenses and other liabilities	16	10	56
Provisions	8	4	6
Deferred tax liabilities	0	0	3
	24	1,120	1,009
Current liabilities			
Trade and other payables	119	201	341
Income tax payable	5	6	9
Deferred revenue	92	149	216
Accrued expenses and other liabilities	485	673	881
Provisions	15	57	59
Derivative liabilities	82	134	354
	798	1,220	1,860
Total liabilities	822	2,340	2,869
Total equity/(deficit) and liabilities	1,051	2,100	3,107

Source: Created by the case authors using data from Spotify Technology SA, Form F-1 Registration Statement as filed with the United States Securities and Exchange Commission on February 28, 2018, F-5, accessed March 29, 2018, https://www.sec.gov/Archives/edgar/data/1639920/000119312518063434/d494294df1.htm#rom494294_20.

EXHIBIT 6: SPOTIFY CASH FLOW STATEMENTS

For the year ended December 31 (in € millions)			
	2015	2016	2017
Operating activities			
Net loss	-230	-539	-1235
Adjustments to reconcile net loss to net cash flows			
Depreciation of property and equipment	26	32	46
Amortization of intangible assets	4	6	8
Share-based payments expense	28	53	65
Impairment loss on trade receivables	0	15	0
Finance income	-36	-152	-118
Finance costs	26	336	974
Income tax expense	5	4	2
Share in earnings of associates and joint ventures	0	2	-1
Net foreign exchange (gains)/losses	-33	42	-3
Changes in working capital:			
Increase in trade receivables and other assets	-121	-60	-112
Increase in trade and other liabilities	251	245	447
Increase in deferred revenue	25	77	77
Increase in provisions	20	38	8
Interest received	2	5	19
Interest paid	-1	0	0
Income tax paid	-4	-4	2
Net cash flows (used in)/from operating activities	-38	100	179
Investing activities			
Business combinations, net of cash acquired	-7	-7	-49
Investment in associates and joint ventures	-1	-1	0
Purchases of equipment	-44	-27	-36
Purchase of intangibles	-5	-3	-10
Purchase of short term investments	0	-1397	-1386
Sales and maturities of short term investments	0	609	1080
Change in restricted cash	-10	-1	-34
Net cash flows used in investing activities	-67	-827	-435
Financing activities			
Finance lease payments	-4	-5	-4
Proceeds from issuance of convertible notes, net of costs	0	861	0
Proceeds from issuance of new shares, net of costs	474	0	0
Proceeds from issuance of warrants	0	27	9
Proceeds from exercise of share options	6	33	29
Net cash flow from financing activities	476	916	34
Net increase in cash and cash equivalents	371	190	-222
Cash and cash equivalents at January 1	206	597	755
Net foreign exchange gains/(losses) on cash and cash equivalents	20	-32	-56
Cash and cash equivalents at December 31	597	755	477

Source: Created by the case authors using data from Spotify Technology SA, Form F-1 Registration Statement as filed with the United States Securities and Exchange Commission on February 28, 2018, F-7, accessed March 29, 2018, https://www.sec.gov/Archives/edgar/data/1639920/000119312518063434/d494294df1.htm#rom494294_20.

EXHIBIT 7: SPOTIFY SEGMENT INFORMATION (IN €MILLIONS)

	2015	2016	2017
Premium			
Revenue	1,744	2,657	3,674
Cost of revenue	1,492	2,228	2,868
Gross profit	252	429	806
Ad-Supported			
Revenue	196	295	416
Cost of revenue	227	330	373
Gross loss	-31	-35	43
Consolidated			
Revenue	1,940	2,952	4,090
Cost of revenue	1,714	2,551	3,241
Gross profit	226	401	849
<i>Reconciliation of gross profit</i>			
General expenditures, finance income, finance costs, taxes, and share in earnings of associates and joint ventures are not allocated to individual segments as these are managed on an overall group basis. The reconciliation between reportable segment gross profit and loss to consolidated loss before tax is as follows:			
	2015	2016	2017
Segment gross profit	226	401	849
Research and development	-136	-207	-396
Sales and marketing	-219	-368	-567
General and administrative	-106	-175	-264
Finance income	36	152	118
Finance costs	-26	-336	-974
Share in earnings of associates and joint ventures	—	-2	1
Loss before tax	-225	-535	-1233
	2015	2016	2017
<i>Revenue by country</i>			
United States	741	1,173	1,577
United Kingdom	268	342	444
Luxembourg	1	1	3
Other countries	930	1,436	2,066
	1,940	2,952	4,090

Source: Created by the case authors using data from Spotify Technology SA, Form F-1 Registration Statement as filed with the United States Securities and Exchange Commission on February 28, 2018, F-26, accessed March 29, 2018, https://www.sec.gov/Archives/edgar/data/1639920/000119312518063434/d494294df1.htm#rom494294_20.

EXHIBIT 8: NYSE LISTING STANDARDS AND TRADING FOLLOWING IPOs AND DIRECT LISTINGS

To list shares for trading on the New York Stock Exchange (NYSE) through a traditional firm-commitment initial public offering (IPO), which involved satisfying requirements of the *Securities Act* of 1933 and the *Securities Exchange Act* of 1934, a company had to demonstrate an aggregate market value of publicly held shares of at least US\$40 million. That valuation was determined as the offering price in the IPO multiplied by the number of shares to be outstanding after completion of the IPO. The offering price also had to exceed US\$4.

A firm not previously completing an SEC registered public share offering might also list on the NYSE without contemporaneously selling securities and meeting all related legal requirements; this allowed public trading of shares previously created through private placements. For such “direct listings,” the NYSE required a higher minimum number for the aggregate market value of publicly traded shares. The firm had to provide a valuation developed by an independent valuation agent. If the company’s unregistered securities actively traded in a trading system for unregistered securities operated by a national securities exchange or registered broker dealer (e.g., a “private placement market” such as SharesPost), the NYSE required that the minimum of the independent agent valuation and the valuation implied from recent transactions in a private placement market be at least US\$100 million. Under a NYSE rule change approved February 8, 2018, by the SEC, a firm could list on the NYSE without having recent trading in a private placement market if the independent agent valuation of the firm exceeded US\$250 million.

The processes through which trading commenced on the NYSE for IPOs and direct listings were similar. Each firm selected a designated market maker (DMM), who was required to set the clearing price for the first trade on the exchange. That clearing price was based on orders to buy and sell received by the DMM. If the DMM anticipated that the clearing price would change by 5 per cent or more from a “reference price,” it had to first publish a pre-opening indication of the clearing price to market participants. For traditional IPOs, the reference price was the IPO offering price; for direct offerings, the reference price was the recent price in a private placement market, if one existed, or the number implied by the independent valuation. The DMM might also publish order imbalance information. After publishing the pre-opening indication of the clearing price, it had to wait at least three minutes for the market to react before finalizing the opening price and commencing trading. The DMM could revise the pre-opening indication of a clearing price, in which case the waiting period could be extended. Once the DMM was satisfied that an opening price that would allow orderly clearing of trades had been identified and the requisite waiting period had passed, formal trading could commence.

Although market clearing on the first day of trading for IPOs and direct listings looked similar, there were important differences in terms of how the firms got to that first trading day. In an IPO, the issuer retained investment banks to first conduct due diligence and prepare filing documents (S-1s for domestic issuers and F-1s for foreign issuers). Under the *Securities Exchange Act* of 1933, domestic firms pursuing a direct listing were required to file Form 10 with the SEC. Foreign firms were required to file Form 20-F(R). Firms could also register under the *Securities Act* of 1933 using Form S-1 or F-1. The issuer could use an investment bank to help prepare those documents and navigate the SEC approval process, but that was not required. While regulatory filings were being reviewed by the SEC, issuing firm executives, underwriters, and potential investors met at roadshows. The underwriters solicited indications of interest from investors and gained insights regarding an appropriate price. For a direct offering, there was no roadshow, so a potentially important first step in price discovery was missing.

EXHIBIT 8 (CONTINUED)

There were two other important differences between IPOs and direct listings that could potentially have an effect on secondary market trading. First, IPOs generally included lockups that precluded certain insiders from trading for some period. Direct IPOs had no lockups, so the number of insiders trading was not limited. The resulting supply and demand imbalances in the early aftermarket could be large and unpredictable. A second important difference related to underwriter stabilization. In an IPO, underwriters were permitted to post stabilizing bids in order to prevent early price declines. Such stabilizing activities were possible for a direct IPO, should the filing firm retain an underwriter; however, the costs savings relative to an IPO could be significantly diminished, given the costs of stabilization and resulting legal liability. Stabilization would be more challenging in a direct offering compared to a traditional IPO, given features of share issuance. To facilitate stabilization in an IPO, the underwriter was permitted to oversell the offering using an overallotment (or *greenshoe*) option. Stabilizing bids could then be covered by the oversold shares. Since direct offerings involved no share sales, it was more costly (and riskier) for the underwriter to post stabilizing bids.

Note: For an advisor to be considered independent, it could not control more than 5 per cent of the shares of the issuer. The advisor was also required to have not provided any investment banking services to the issuer within the past 12 months.

Sources: Created by the case authors using data from United States Securities and Exchange Commission, Release No. 34-820627: Self-Regulatory Organizations; New York Stock Exchange LLC; Notice of Filing of Amendment No. 3 and Order Granting Accelerated Approval of Proposed Rule Change, as Modified by Amendment No. 3, to Amend Section 102.01B of the NYSE Listed Company Manual to Provide for the Listing of Companies that List Without a Prior Exchange Act Registration and that Are Not Listing in Connection with an Underwritten Initial Public Offering and Related Changes to Rules 15, 104, and 123D, February 2, 2018, accessed February 27, 2018, <https://www.sec.gov/rules/sro/nyse/2018/34-82627.pdf>; Bob Bryan and Hollis Johnson, "Snap Just Went Public—Here's a Behind-the-Scenes Look at What a Typical IPO Is Like," Business Insider, March 2, 2017, accessed February 27, 2018, www.businessinsider.com/what-happens-during-an-ipo-on-nyse-snap-ipo-2017-3#and-then-comes-the-waiting-17 (for a description of the opening process for the E.L.F. IPO in 2016, in which the article indicated the average waiting time to market opening was approximately 11 minutes); Alan Jones, "Demystifying Direct Listing," PwC's Deals (blog), June 9 2017, accessed February 27, 2018, <http://usblogs.pwc.com/deals/demystifying-direct-listings/>; John C. Coffee Jr., "The Spotify Listing: Can an 'Underwriter-less' IPO Attract Other Unicorns?," CLS Blue Sky Blog, January 16, 2018, accessed February 27, 2018, http://clsbluesky.law.columbia.edu/2018/01/16/the-spotify-listing-can-an-underwriter-less-ipo-attract-other-unicorns/#_ednref1 (for a discussion of the differences between IPOs and direct listings and their relative pros and cons).

EXHIBIT 9: KEY DATA FROM COMPARABLE FIRMS (IN US\$)

Company Name	Close Price (3/28/18)	Shares Outstanding	Market Capitalization	LTM ¹ Net Debt	Total Enterprise Value	LTM Tangible Value ² /Share	LTM Total Revenue	LTM EBITDA	LTM 1 Year Total Revenues Growth %
Alibaba Group Holding Limited	178.91	2,569.5	459,705.2	-15,074.3	456,971.0	9.38	36,081.5	14,222.7	57.71%
Amazon.com, Inc.	1,431.42	484.1	692,960.7	13,161.0	706,121.7	22.70	177,866.0	15,039.0	30.80%
Apple Inc.	166.48	5,074.0	844,721.7	45,247.0	889,968.7	26.01	239,176.0	74,174.0	9.65%
Baidu, Inc.	223.10	348.2	77,675.0	-11,997.8	68,388.2	42.96	13,485.5	4,361.8	20.21%
Comcast Corporation	33.28	4,644.5	154,569.2	61,119.0	217,888.2	-9.97	84,526.0	27,812.0	5.13%
eBay Inc.	40.11	1,012.1	40,594.5	4,152.0	44,746.5	3.13	9,567.0	2,941.0	6.55%
Facebook, Inc.	153.03	2,905.0	444,552.3	-41,711.0	402,841.3	18.67	40,653.0	23,228.0	47.09%
Netflix, Inc.	285.77	433.9	124,009.5	3,676.6	127,686.1	-15.67	11,692.7	910.6	32.41%
Pandora Media, Inc.	4.96	254.9	1,264.2	-227.8	1,527.2	0.04	1,466.8	-289.0	5.92%
The Walt Disney Company	98.54	1,503.7	148,172.2	21,414.0	174,522.2	3.29	55,704.0	16,912.0	0.96%
Time Warner Inc.	94.20	779.9	73,462.0	21,123.0	94,621.0	-8.49	31,271.0	9,081.0	6.66%
Twenty-First Century Fox, Inc.	35.88	1,852.5	66,165.3	13,985.0	82,104.3	-2.15	29,351.0	6,540.0	4.59%
Twitter, Inc.	28.45	748.1	21,284.5	-2,609.4	18,675.1	5.12	2,443.3	344.8	-3.41%
Wayfair Inc.	65.14	88.5	5,765.1	-204.5	5,560.6	-0.58	4,720.9	-174.2	39.66%
Company Name	LTM EBIT Margin %	NTM Revenue ³	NTM EBITDA ³	5 Year Beta	TEV/Total Revenues LTM - Latest	TEV/EBITDA LTM - Latest	P/TangBV LTM - Latest	NTM TEV/Forward Total Revenue (Capital IQ)	NTM TEV/Forward EBITDA (Capital IQ)
Alibaba Group Holding Limited	31.30%	50,077.4	21,196.8	2.58	13.10	44.20	19.70	9.13	21.56
Amazon.com, Inc.	2.30%	233,498.4	26,976.2	1.55	4.00	47.00	63.10	3.02	26.18
Apple Inc.	26.90%	263,346.4	80,278.7	1.18	3.70	12.00	6.40	3.38	11.09
Baidu, Inc.	18.50%	15,953.0	4,214.0	1.77	5.20	16.30	5.40	4.29	16.23
Comcast Corporation	20.80%	89,550.3	29,456.6	1.16	2.60	7.80	NM ⁴	2.43	7.40
eBay Inc.	23.70%	10,962.0	3,721.6	1.06	4.70	15.20	12.80	4.08	12.02
Facebook, Inc.	49.70%	55,284.6	33,601.3	0.66	9.90	17.30	8.20	7.29	11.99
Netflix, Inc.	7.20%	15,862.5	1,923.0	0.96	10.90	140.20	NM	8.05	66.40
Pandora Media, Inc.	-23.00%	1,505.8	-98.2	-0.40	1.00	0.00	111.40	1.01	NM
The Walt Disney Company	25.30%	58,771.3	17,847.8	1.31	3.10	10.20	30.00	2.97	9.78
Time Warner Inc.	26.80%	32,566.3	9,448.4	0.92	3.00	10.60	NM	2.91	10.01
Twenty-First Century Fox, Inc.	20.40%	31,296.1	7,492.9	1.26	2.80	12.60	NM	2.62	10.96
Twitter, Inc.	1.90%	2,704.5	964.7	0.80	7.60	54.20	5.60	6.91	19.36
Wayfair Inc.	-4.80%	6,242.3	-99.1	1.27	1.20	0.00	NM	0.89	NM

Notes: ¹ LTM = last 12 months; EBITDA = earnings before interest, taxes, depreciation, and amortization; ² Tangible book value = assets, net of goodwill and other intangibles, less liabilities; ³ NTM = next 12 months; NTM financials were consensus (average) analyst forecasts as compiled by Standard & Poor's Capital IQ; ⁴ NM = not measurable. Source: Created by the case authors using data from "Spotify—Quick Comparable Analysis," Standard & Poor's Capital IQ, accessed March 29, 2018.

EXHIBIT 10: ADDITIONAL DISCOUNTED CASH FLOW ASSUMPTIONS

Year	EBIT Margin*	Capital Expenditures Less Depreciation Plus Increases in Working Capital**
2018	-2.08%	255.63
2019	-0.41%	319.53
2020	1.26%	399.41
2021	2.94%	499.27
2022	4.61%	624.08
2023	6.28%	624.08
2024	7.95%	561.68
2025	9.63%	473.68
2026	11.30%	382.39
2027	12.97%	258.11

Notes: EBIT = earnings before interest and taxes; * EBIT as a percentage of revenue, as assumed in Damodaran's model; negative margins in 2018 and 2019; ** in € millions; as indicated in Damodaran's model as "reinvestment" in order to preserve the sales-to-capital ratio at 4.0.

Source: Case writer estimates and Aswath Damodaran, "Stream On: An IPO Valuation of Spotify," published in Musings on Markets (blog), March 16, 2018, accessed March 29, 2018, <http://aswathdamodaran.blogspot.ca/2018/03/stream-on-ipo-valuation-of-spotify.html>.

ENDNOTES

¹ This case has been written on the basis of published sources only. Consequently, the interpretation and perspectives presented in this case are not necessarily those of Spotify or any of its employees.

² Heather McDonald, "The Big Three Record Labels," *The Balance*, November 13, 2017, accessed February 27, 2018, <https://www.thebalance.com/big-three-record-labels-2460743>.

³ A mechanical royalty arises when music is sold or streamed. In contrast, performance royalties arise when music is performed publicly. Streaming services like Spotify pay both mechanical and performance royalties.

⁴ All currency amounts are in US\$ unless specified otherwise.

⁵ Lee Ann Orbringer, "How Music Royalties Work," *HowStuffWorks*, May 24, 2003, accessed February 27, 2018, <https://entertainment.howstuffworks.com/music-royalties6.htm>.

⁶ Mark Harris, "What Is Streaming Music?," *Lifewire*, February 8, 2018, accessed February 27, 2018, <https://www.lifewire.com/what-is-streaming-music-2438445>.

⁷ Caitlin McGarry, "Apple Music Turns iTunes into a Streaming Service," *Macworld*, June 8, 2015, accessed February 27, 2018, <https://www.macworld.com/article/2932738/apple-music-turns-itunes-into-a-streaming-service.html>.

⁸ Anne Steele, "Apple Music on Track to Overtake Spotify in U.S. Subscribers," *Wall Street Journal*, February 5, 2018, accessed February 27, 2018, <https://www.wsj.com/articles/apple-music-on-track-to-overtake-spotify-in-u-s-subscribers-1517745720>.

⁹ Andrew Liptak, "Apple Music Is Set to Surpass Spotify in Paid US Subscribers This Summer," *The Verge*, February 4, 2018, accessed February 27, 2018, <https://www.theverge.com/2018/2/4/16971436/apple-music-surpass-spotify-us-subscribers>.

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¹¹ Jonathan Vanian, "Google Play Music and YouTube Red May Merge," *Fortune*, July 27, 2017, accessed February 27, 2018, <http://fortune.com/2017/07/27/google-play-music-youtube-red/>.

¹² Hugh McIntyre, "Report: Amazon Is the Third-Largest Company in On-Demand Streaming Music," *Forbes/Media & Entertainment* (blog), October 27, 2017, accessed February 27, 2018, <https://www.forbes.com/sites/hughmcintyre/2017/10/27/report-amazons-prime-music-is-the-third-biggest-on-demand-streaming-music-platform/#ec7efbb46ba3>; and "Amazon Music Unlimited," Amazon, accessed February 27, 2018, <https://www.amazon.com/gp/dmusic/promotions/AmazonMusicUnlimited>.

¹³ Rasmus Fleischer, "Writing the Early History of Spotify," *Copyriot*, June 14, 2017, accessed March 28, 2018, <https://copyriot.se/2017/06/14/writing-the-early-history-of-spotify-excerpt-from-a-forthcoming-book/>.

¹⁴ "Company Overview of Spotify Limited," *Bloomberg*, accessed February 28, 2018, <https://www.bloomberg.com/research/stocks/private/people.asp?privcapId=49444968>.

¹⁵ Michael Arrington, "This Is Quite Possibly the Spotify Cap Table," *Tech Crunch*, August 7, 2009, accessed February 27, 2018, <https://techcrunch.com/2009/08/07/this-is-quite-possibly-the-spotify-cap-table/>.

¹⁶ Spotify Technology SA, *Form F-1 Registration Statement as Filed with the United States Securities and Exchange Commission on February 28, 2018*, 147, accessed March 29, 2018, https://www.sec.gov/Archives/edgar/data/1639920/000119312518063434/d494294df1.htm#rom494294_20.

¹⁷ Ulyssesstone, "Spotify's Latest Statement on Sound Quality and Bitrate," *Spotify Classical Playlists* (blog), September 23, 2011, accessed February 27, 2018, www.spotifyclassical.com/2011/09/spotify-latest-statement-on-sound.html.

¹⁸ "Premium for Family," Spotify, accessed February 27, 2018, https://support.spotify.com/us/account_payment_help/premium_for_family/premium-for-family/.

¹⁹ Peter Kafka, "Spotify Has Guaranteed to Pay Big Music Labels Billions over the Next Two Years," *Recode*, June 15, 2017, accessed February 27, 2018, <https://www.recode.net/2017/6/15/15807382/spotify-revenue-2016-financials-guarantee-payment-universal-merlin>.

²⁰ € = EUR = euro; €1.00 = US\$1.22 as of April 2018.

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²⁴ *Ibid.*

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