IN THE UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

MELISSA FERRICK, et al., Plaintiff, vs. SPOTIFY USA INC., et al., Defendants.	No. 1:16-cv-08412 (AJN)

CORRECTED

EXHIBIT B-1 TO THE DECLARATION OF JOAO DOS SANTOS IN SUPPORT OF PLAINTIFFS' MOTION FOR FINAL APPROVAL

VOLUME 1 of 7

Exhibit B-1

1 "Spotify: A Global Streaming Leader"

2 "Spotify Showing Momentum Ahead of Possible Listing"

3 "Exclusive Report: Spotify Artist Payments Are Declining in 2017, Data Shows"

4 "Spotify Research Report: The Rock Star of Streaming Services"

5 TuneCore Blog: How We're Getting Your Mechanicals From Streams"

6 "Spotify Hit With $150 Million Class Action Over Unpaid Royalties"

7 "Publishers Said to Be Missing as Much as 25 Percent of Streaming Royalties"

8 "Independent labels claimed 35% market share in the US last year … by ownership"

9 "Understanding and Measuring the Illiquidity Risk Premium"

10 "Pandora Media Corp – Spotify Sub Leap Evidence of Expanding Market For On-Demand"

11 "US' Music Streaming Royalties Explained"

12 Consolidated Financial Statements as of December 31, 2016 and Independent Auditor's Report

13 "Exclusive Report: Spotify Artist Payments Are Declining in 2017, Data Shows"

14 "Independent labels have a 37.6% global market share, says new report"

15 "An International Legal Symposium on the World of Music, Film, Television and Sport: Enterprise Valuation"

16 "A Primer for Valuation of Music Catalogs"

17 "Music Publishing's Steady Cash Lures Investors"

18 "Spotify, Valued at $13 Billion, to Launch Direct Listing on NYSE: Sources"

19 "Inside Spotify's Financials: Is There a Path to Profitability Or an IPO?"

20 "Global Music Investing 2.0: More Options = More Subs"

21 "Spotify's Product Roars Ahead Amid Business Model Challenges"

22 "Streaming Music Topic Primer"

23 "Mechanical and Performance Royalties: What's the Difference?"

24 "64 Amaxing Spotify Statistics and Facts (October 2017)"

25 "Apple Music Saw Over 40M Users On Mobile Last Month, Leading Spotify by 10M"

26 "Big Publishers Feeling Cheated After Spotify's Small Publisher Deal"

27 "Spotify Now Processes Nearly 1BN Streams Every Day"

28 "Spotify's Losses Grow Despite Revenue Doubling in 2012"

29 "The Spotify Settlement with NMPA: What it Means for Music Publishers"

30 "Spotify Music-Streaming Service Launches in U.S."

31 "Spotify vs. Apple Music: Which Service is the Streaming King?"

1

COWEN AND COMPANY

Equity Research

Internet

Spotify: A Global Streaming Leader

June 29, 2016

Spotify is a global streaming leader with 100MM Monthly Active Users (MAUs) globally, including 30MM+ paid Premium Subscribers.

We estimate Spotify had about 42MM U.S. MAUs in May 2016, comprised of approximately 34MM Ad-Supported Users and 8MM Premium Subscribers.

Our proprietary survey suggests Spotify's Premium Subscribers are highly engaged and loyal to the service.

We estimate Spotify will exit 2021 with about 81MM global Premium Subscribers and $7.6B in revenue, up from 28MM and $2.2B in 2015.

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COWEN DATA SCIENCE INITIATIVE

Equity Research

Industry Update

June 29, 2016

- Internet: Internet & New Media
- Internet: E-Commerce

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Spotify: A Global Streaming Leader - Ahead Of The Curve Series

The Cowen Insight

We highlight Spotify in this report as a global leader in streaming music and a significant contributor to the recorded Music Industry's growth going forward. Based on our proprietary survey data, we view Spotify as the leading US paid On Demand music platform, with a loyal and engaged user base. This report is published in tandem with our broader music industry deep dive report (LINK).

Spotify Hits 100MM MAUs Globally

In June 2016, Spotify confirmed to *The Wall Street Journal* that it had 100MM Monthly Active Users (MAUs) globally, up from 89MM at the end of 2015. In March '16, CEO Daniel Elk announced the service was up to 30MM Premium Subscribers, up from 28MM at the end of 2015. While Ad Supported users still comprise the majority of active users, we believe this pool of users is an important piece of Spotify's on-boarding strategy of: 1) Migrating music listeners away from piracy and other platforms by offering free On Demand streaming (with ads and slightly less functionality); and then 2) Convert the free, Ad Supported users to Premium Subs.

Survey: We Estimate Spotify Had~42MM Total U.S. Users In May 2016

In order to better understand Spotify's presence in the U.S., the #1 global music market in terms of music revenue, we leveraged our proprietary monthly Internet Survey of 2,500 U.S. consumers. Based on our survey, we estimate Spotify had about 42MM U.S. users in May 2016, comprised of approximately 34MM Ad Supported Users and 8MM Premium Subscribers. As a comparison, our survey suggests Apple Music had about 4MM U.S. Paid Subscribers in May 2016. We note that neither Spotify nor Apple breakout US users or Subs.

As part of our survey, we asked Premium Spotify Subscribers a variety of usage and satisfaction questions, and results were overwhelmingly positive overall. More than 70% of subs identified themselves as "heavy" or daily users, while over 80% indicated they use the service more than five hours per week. Furthermore, 90% were either very satisfied (65%) or somewhat satisfied (25%).

Why Major Labels Want Spotify To Succeed

The major record labels, namely Universal Music, Sony Music, Warner Music, want Spotify to succeed and grow into a sustainable business in our view given: 1) the major record labels collectively own a minority stake in the company; 2) Spotify has grown into a major source of revenue; and 3) Spotify could combat piracy.

We Estimate Strong Premium Sub Growth '16-'21

We estimate Spotify's WW subs rise from 39MM in '16 to 81MM in '21 (37% of WW paid On Demand subs). While not a formal forecast of financial results, based on the underlying assumptions we have outlined, we assume Spotify will grow revenue from approximately $3.3 billion in revenue in 2016, up 54% y/y to $7.6 billion in 2021, a 18% CAGR.

Spotify: A Global Music Leader

Spotify is a streaming music service that provides users on demand access to a catalog of millions of songs (estimate 30MM+) across a variety of devices. Spotify offers 2 tiers or ways of listening: i) a free ad-supported tier (estimate ~70% of its user base), and ii) a premium subscription tier for a monthly fee of $9.99 and a family plan for multiple users for $14.99 per month (~30% of users). Some of the perks that come with Spotify Premium include ad-free listening and the ability to download music to your device for offline listening. Founded in Stockholm, Spotify is considered the global paid streaming leader and was last valued at $8.5BN (June 2015).

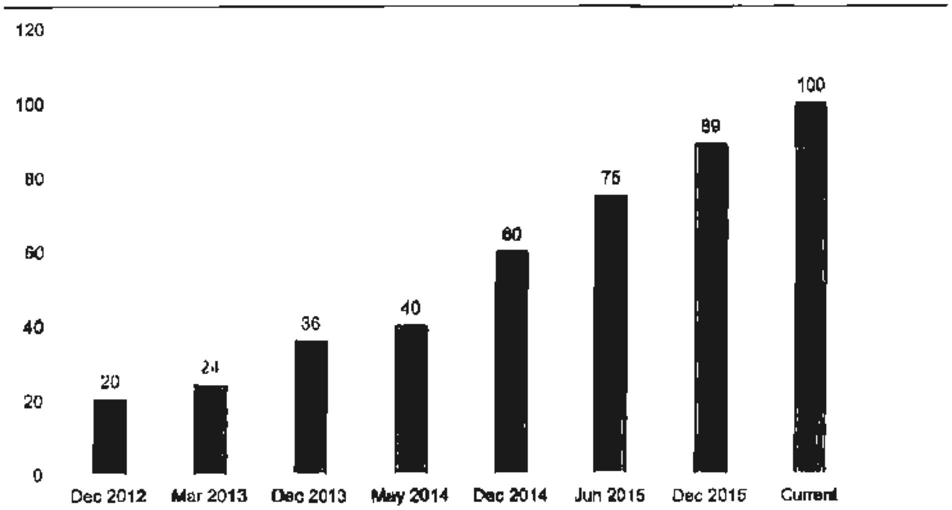
We highlight Spotify in this report as the global market leader in paid streaming music and a driver of music industry growth for the foreseeable future. Based on our proprietary work, we believe Spotify is not only the global industry leader, but also the paid streaming leader in the US, with a loyal and engaged user base.

Data Overview: In this report, because Spotify is a private company, we relied on our proprietary monthly survey work of 2,500 US consumers as well as several industry sources and publications including i) Recording Industry Association of America (RIAA), ii) International Federation of the Phonographic Industry (IFPI), iii) Music Business Worldwide (MBW) and iv) Spotify press releases.

Sizing Up Spotify's Current Global User Base

Spotify exited 2015 with 89MM global monthly active users (MAUs), up from a reported 75MM MAUs in June 2015 and 60MM MAUs at the end of 2014. Most recently, Spotify confirmed to the WSJ that it had 100MM MAUs globally (as of June 2016).

Figure 1 Spotify WW Monthly Active Users (MM)

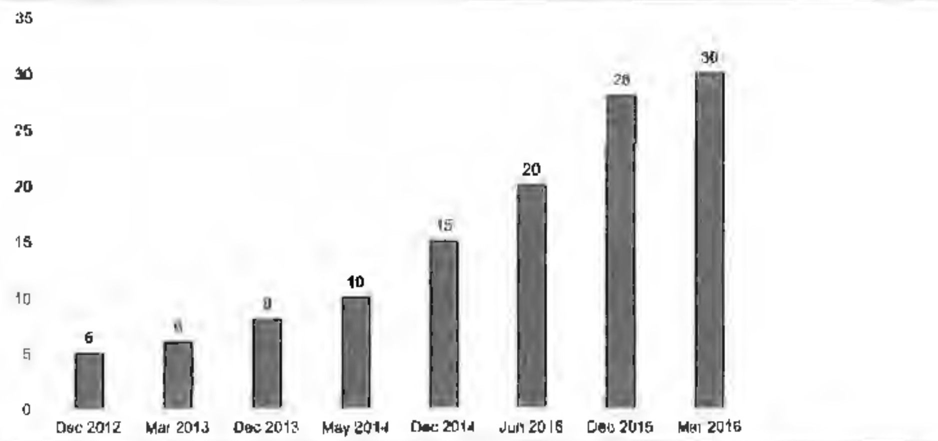


Source: Company reports, WSJ, Cowen and Company

Spotify Premium Subscribers Continue Rapid Growth

Spotify ended 2015 with over 28MM Premium Subscribers users, or ~31% of its 89MM active users, up from 15MM and 8MM Premium Subscribers at the end of 2014 and 2013, respectively, representing nearly 90% y/y growth for consecutive years. In March 2016, CEO Daniel Elk announced the service was up to 30MM Premium Subscribers, and assuming Spotify has maintained a similar growth trajectory, it could have ~32MM subs today (June 2016).

Figure 2 Spotify WW Premium Subscribers (MM)

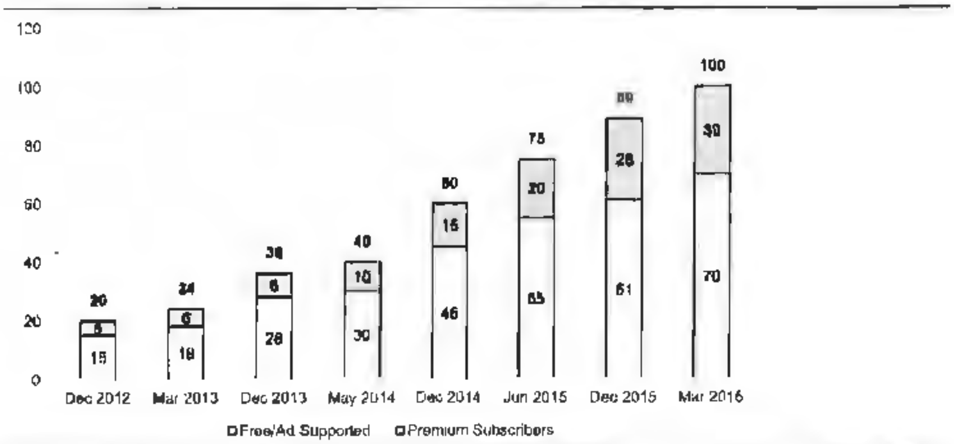


Source: Company reports and Cowen and Company

Ad Supported Users Still Account for Majority of Active Users

Despite the rapid growth of Premium Subs, free-ad supported users still make up a significant portion of the active user base, accounting for nearly 70% of users as of the end of 2015. That said, the pool of free users is an important piece of Spotify's LT strategy which essentially involves 2 steps: 1) Migrate consumers/music listeners away from piracy and other free consumption platforms by offering free on demand streaming (with ads and slightly less functionality), and then 2) Convert the free-ad supported users to Premium Subs.

Figure 3 Spotify Monthly Active Users: Free/Ad Supported vs. Premium (MM)

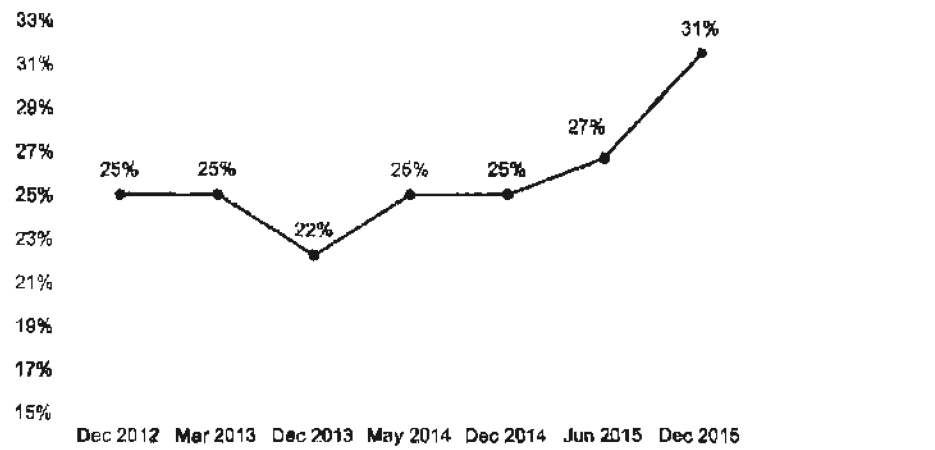


Source: Company reports and Cowen and Company

All Part of the Plan: Paid to Free Conversion Improving

We can gauge the success of Spotify's 2 step plan by looking at the paid to free conversion over time. As illustrated below, paid conversion has steadily improved since the end of 2013, jumping 6% y/y in 2015, an acceleration vs. the +3% y/y in 2014, implying Spotify's strategy could be starting to take hold.

Figure 4 Spotify Paid to Free Conversion



Source: Company reports and Cowen and Company

Survey Suggests Spotify Had ~42MM US MAUs in May '16

In order to better understand Spotify's presence in the US, the #1 market in the world in terms of music revenue, we leveraged our proprietary monthly Internet/Consumer Survey of 2500 US consumers. Based on our survey, we estimate Spotify had ~42MM US Monthly Active Users in May '16, comprising: i) ~34MM Ad Supported Users and ii) ~8MM Premium Subscribers. We note Spotify does not break out active users or Premium Subs in the US and the following are our estimates.

Survey: Spotify Has 34MM Free/Ad Supported Users in the US

According to our survey, ~19% of respondents listened to Spotify via the free/ad-supported tier in May '16, which we estimate translates to ~34MM Free/Ad Supported Users in the US. As the table below shows, usage is much greater among the younger age cohorts, especially Millennials.

Figure 5 Spotify US Streaming Free Subs Estimate

	18-24	25-34	35-44	45-54	55-64	65+	Total
US Population (MM)	30.1	41.2	38.9	44.0	38.0	41.5	234.7
X Internet Penetration	80%	80%	80%	80%	80%	80%	
X % "Yes, I use Free/Ad Supported"	36.6%	27.5%	22.5%	14.0%	9.0%	2.1%	
Spotify Free Subs (MM)	8.8	9.1	7.2	4.9	2.7	0.7	33.5

Source: Cowen proprietary Consumer Internet Survey, n=~2500, May 2016

Survey: Spotify Has ~8MM Premium Subscribers in the US

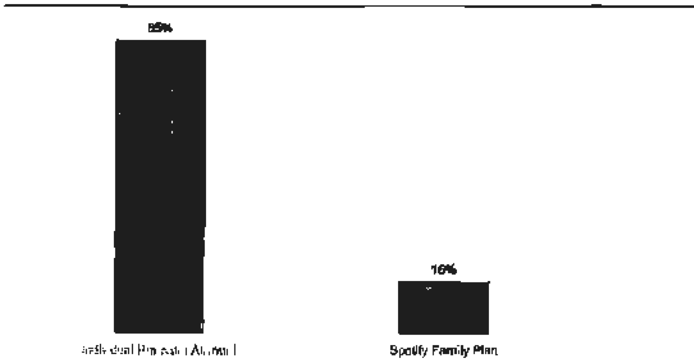
Our survey suggests Spotify had ~6.6MM paid subscriptions in the US at the end of May '16, which we think translates to a little over 8MM Premium Subscribers, given the dynamic of Family Plans. Our understanding is that the majority of music streaming subscription services, including Spotify, report Subscriber numbers and not necessarily subscription numbers. Subscriber numbers include those Subs that are part of a Family Plan but not paying for their own subscription. Based our survey, ~15% of Spotify subscriptions in the US are Family Plans, and we assume there are 2.5 Subscribers per Family Plan.

Figure 6 Spotify US Paid Subscriptions Estimate (MM)

	18-24	25-34	35-44	45-54	55-64	65+	Total
US Households (MM)	8.3	20.7	21.3	24.5	22.9	28.0	125.7
X Internet Penetration	80%	80%	80%	80%	80%	80%	
X % "Yes, I'm a Paid Sub"	15.3%	14.8%	10.4%	5.0%	0.7%	1.2%	
Spotify Subs (MM)	**1.0**	**2.5**	**1.8**	**1.0**	**0.1**	**0.3**	**6.6**

Source: Cowen proprietary Consumer Internet Survey, n=~2500, May 2016

Figure 7 What type of Spotify account do you pay for?



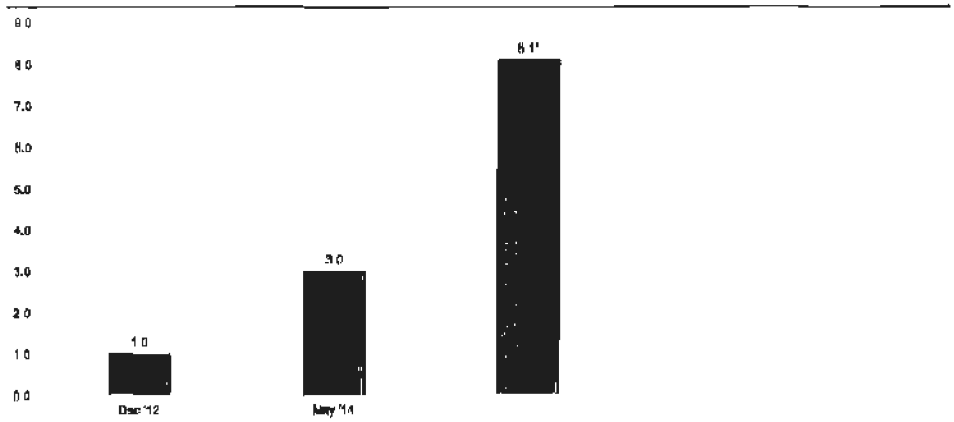
Source: Cowen proprietary Consumer Internet Survey, n=~2500, May 2016

Figure 8 Spotify US Premium Subscribers Estimate (MM)

Subscriptions	6.6	*Cowen Survey*
x Family Plan %	15%	*Cowen Survey*
= Family Subscriptions	1.0	*Calculation*
x Subscribers per Family Plan	2.5	*Cowen Estimate*
= Family Subscribers	2.5	*Calculation*
+ Individual Subscribers		
= Total US Subscribers	8.1	*Calculation*

Spotify Has Added ~5MM Net US Premium Subs Over Last 2 Years

Figure 9 US Premium Subscriber Growth Dec. '12 – May '16 (MM)



Source: Company reports and Cowen and Company

Survey: Estimate Spotify Could Add 4.5MM US Gross Subs NTM

Based on our proprietary survey data from May '16, we estimate Spotify could add 4.5MM gross US Premium Subscribers over the next twelve months. Our 4.5MM gross adds estimate comprises two cohorts: 1) Former Spotify Premium Subs or "Former Subs" and 2) Never been Spotify Premium Subs or "Never Been Subs." We estimate roughly 600K Former Subs and 2.9MM Never Been Subs are likely to sign up for Spotify Premium over the NTM based on the % of each cohort that suggested they would re-sign/sign up. We then assumed a percent (17.5%) that would sign up for a Family Plan and a number of Subscribers per Family Plan (2.5) to arrive at our 4.5MM estimate.

Figure 10 US Gross Adds Analysis – NTM

Gross Ads Next 12 Months	
Gross Ad Calculation (Former Subs)	
US Internet Homes	110.0
x Former Spotify Subs (%)	2.4%
= Former Spotify Subs	**2.6**
x % Could Re-Sign - NTM	22.7%
= Potential Gross Adds - NTM	**0.60**
Gross Ad Calculation (Never Been Subs)	
US Internet Homes	110.0
x Never Been Spotify Paid Subs	79.7%
= Never Been Spotify Paid Subs	**87.7**
x % Likely to Sign up	3.3%
= Potential Gross Adds - NTM	**2.9**
Total Gross Ad Calculation	
Potential Gross Adds - NTM (Former)	0.6
+ Potential Gross Adds - NTM (Never Been)	2.9
= Total Potential Gross Subscription Adds	**3.5**
x Family Plan %	17.5%
= Family Subscriptions	**0.6**
x Subscribers per Family Plan	2.5
= Family Subscribers	**1.5**
+ Individual Subscribers	2.9
= Total Potential Gross Subscriber Adds	**4.5**

Figure 11 US Churn Analysis

Churn Calculation	
Churn Calculation	
Former Spotify Subs	**2.6**
x Actual Churn - LTM	68.8%
= Spotify Subs Churn LTM	**1.8**
/ Months/Yr	12.0
= Spotify Subs Monthly Churn	**0.2**
/ Spotify Paid Subs (Reported LTM - Avg)	7.0
= Spotify Paid Subs Monthly Churn	**2.2%**

Source: Cowen proprietary Consumer Internet Survey, n=~2500, May 2016

Survey: Estimate Spotify Exits '16 with 9.5MM US Premium Subs

Assuming similar or slightly lower monthly US Premium Sub churn as that calculated above and a steady trajectory of gross adds, we estimate Spotify could exit 2016 with ~9.5MM US Premium Subscribers.

Figure 12 Spotify US Premium Subscriber Forecast (MM) – 2016E

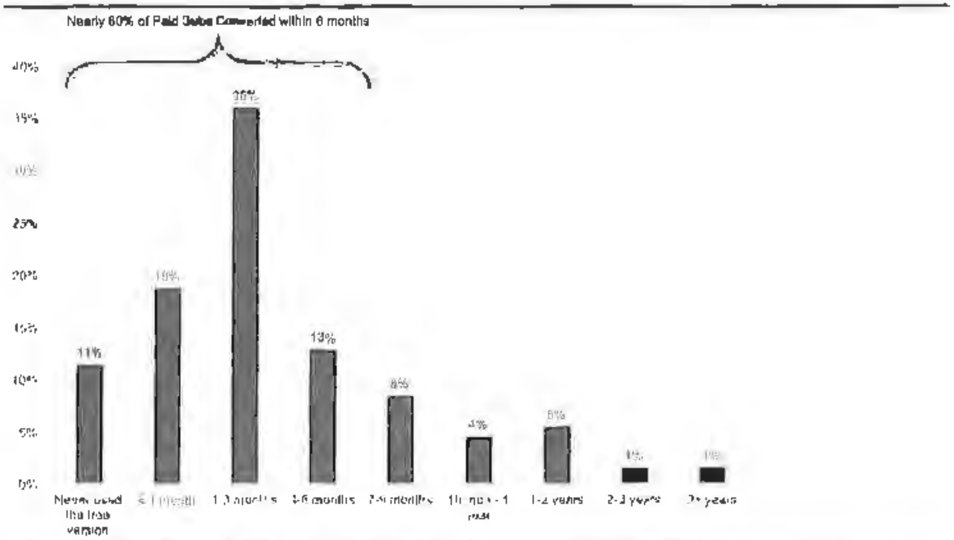
	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16
Premium Subs (BOP)	**7.0**	**7.2**	**7.5**	**7.7**	**7.9**	**8.1**	**8.3**	**8.5**	**8.7**	**8.9**	**9.1**	**9.3**
+ Gross Sub Adds	0.400	0.400	0.400	0.400	0.375	0.375	0.375	0.375	0.375	0.375	0.375	0.375
- Sub Cancellations	0.158	0.159	0.165	0.170	0.175	0.179	0.184	0.188	0.192	0.196	0.200	0.185
= Net Sub Adds	**0.243**	**0.241**	**0.235**	**0.230**	**0.200**	**0.196**	**0.191**	**0.187**	**0.183**	**0.179**	**0.175**	**0.190**
+ Premium Subs (BOP)	7.0	7.2	7.5	7.7	7.9	8.1	8.3	8.5	8.7	8.9	9.1	9.3
= Premium Subs (EOP)	**7.2**	**7.5**	**7.7**	**7.9**	**8.1**	**8.3**	**8.5**	**8.7**	**8.9**	**9.1**	**9.3**	**9.5**

Source: Cowen proprietary Consumer Internet Survey, n=~2500, May 2016

Spotify's Ability to Convert Free Users Will Be Key Long Term

As discussed previously, one of the key determining factors of Spotify's success over the long term will be its ability to convert its free/ad-supported users to Premium Subscribers, in our view. According to our Survey, nearly 90% of US Premium Subs used the free/ad-supported version before upgrading to Premium. That said, our survey also suggests that early conversion seems to be crucial as ~60% of Premium Subs upgraded within the first 6 months.

Figure 13 How long did you use the free version before upgrading to premium?



Source: Cowen proprietary Consumer Internet Survey, n=~2500, May 2016

Discounting One Way to Drive Paid Conversion

Spotify's preferred tool to drive paid conversion seems to be through discounted plans, primarily through offering 3 months of Premium for $0.99. To the best of our knowledge, Spotify has run the $0.99 special on four seperate occasions, including currently through the end of June '16. The company also offers a discounted Student Plan ($4.99/month) and a Family Plan ($14.99/month) for up to 6 family members.

Figure 14 Discounted Subscription Plans

Source: Spotify

Spotify Subscriber & Revenue Forecasts

Premium Subscriber Forecast

Spotify reported 28MM subscribers ending 2015, up significantly from 15MM subscribers in 2014. Per our survey data, we estimate Spotify will exit 2016 with ~33.6MM global paid subs, with 9.5MM US subs and 29.7MM International subs. We estimate Spotify has about 54% of total US On Demand streaming subs and expect that to rise model over time to 62% by 2021. Overall, we estimate Spotify's global subs rise from 33.6MM in 2016 to 78MM in 2021, an 18% CAGR.

Figure 15 Spotify Streaming Subs and % of Total Subs, US / Int'l / WW, '15-'21E

	2015	2016E	2017E	2018E	2019E	2020E	2021E	CAGR '16-'21
US Subs (BOP)	3.225	6.000	9.500	12.350	14.820	16.673	18.340	25.0%
US Subs (EOP)	6.000	9.500	12.350	14.820	16.673	18.340	19.257	15.2%
US Subs (AVG)	4.613	7.750	10.925	13.585	15.746	17.506	18.798	19.4%
Int'l Subs (BOP)	11.775	22.000	29.700	36.383	42.749	51.299	56.429	20.7%
Int'l Subs (EOP)	22.000	29.700	36.383	42.749	51.299	56.429	62.072	15.9%
Int'l Subs (AVG)	16.888	25.850	33.041	39.566	47.024	53.864	59.251	18.0%
Total Subs (BOP)	15.000	28.000	39.200	48.733	57.569	67.972	74.769	21.7%
Total Subs (EOP)	28.000	39.200	48.733	57.569	67.972	74.769	81.329	15.7%
Total Subs (AVG)	21.500	33.600	43.966	53.151	62.771	71.370	78.049	18.4%
% of Total Calc.								
Spotify US Subs (EOP)	6.0	9.5	12.4	14.8	16.7	18.3	19.3	
Total US Streaming Subs (EOP)	12.5	17.7	21.3	24.5	26.7	28.8	30.9	
Spotify US Subs as % of Total	48.0%	53.6%	58.1%	60.6%	62.4%	63.7%	62.4%	
Spotify Intl Subs (EOP)	22.0	29.7	36.4	42.7	51.3	56.4	62.1	
Total Int'l Streaming Subs (EOP)	55.5	70.7	84.8	102.8	126.1	154.5	189.1	
Spotify Int'l Subs as % of Total	39.6%	42.0%	42.9%	41.6%	40.7%	36.5%	32.8%	
Spotify WW Subs (EOP)	28.0	39.2	48.7	57.6	68.0	74.8	81.3	
Total WW Streaming Subs	68.0	88.4	106.1	127.3	152.8	183.3	220.0	
Spotify WW Subs as % of Total	41.2%	44.3%	45.9%	45.2%	44.5%	40.8%	37.0%	

Source: Company reports, IFPI, Cowen and Company

Spotify Revenue Forecast

Spotify reported revenue of $2.2BN in 2015, +80% y/y, driven by growth in On Demand subscription revenue. While not a formal forecast of financial results, based on the underlying assumptions we have outlined, we assume Spotify will grow from approximately $3.3 billion in revenue this year to $7.6 billion in 2021.

Figure 16 Spotify Revenue Forecast (MM): 2016E-2021E

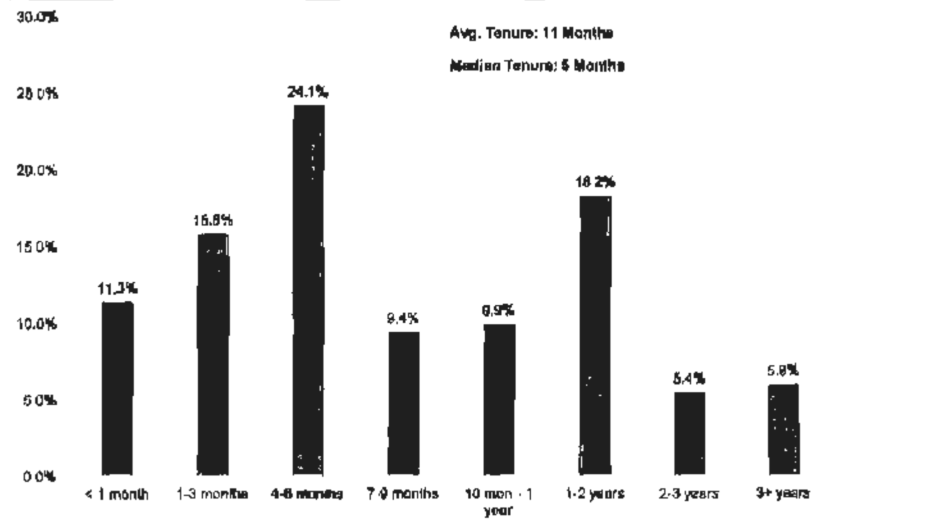
	2013	2014	2015	2016E	2017E	2018E	2019E	2020E	2021E	CAGR '16-'
Advertising	$76.6	$111.0	$220.0	$316.6	$418.5	$513.5	$591.3	$666.6	$751.8	18.9
Subscription	$761.7	$1,099.5	$1,960.0	$3,032.4	$3,928.3	$4,725.2	$5,552.6	$6,281.6	$6,835.1	17.6
Other	$0.9	$4.8	$5.7	$5.7	$5.7	$5.7	$5.7	$5.7	$5.7	0.0
Total Revenue	$839.2	$1,215.0	$2,185.8	$3,354.8	$4,353.5	$5,244.5	$6,149.5	$6,954.0	$7,592.5	17.1
Y/Y % Change										
Advertising	—	45.0%	98.2%	43.9%	32.5%	22.4%	15.1%	12.8%	12.8%	
Subscription	—	44.4%	78.3%	54.7%	29.5%	20.3%	17.5%	13.1%	8.8%	
Other	—	423.1%	20.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Total Revenue	73.7%	44.8%	79.9%	53.6%	29.8%	20.5%	17.3%	13.1%	9.2%	

Source: Company reports, IFPI, Cowen and Company

Survey Suggests Engaged & Loyal Premium Subscriber Base in the US

Subscriber Tenure: We asked current US Spotify Premium Subscribers how long they've been on the service. Overall, the average tenure of Premium subs is ~11 months, while the median tenure is ~5 months.

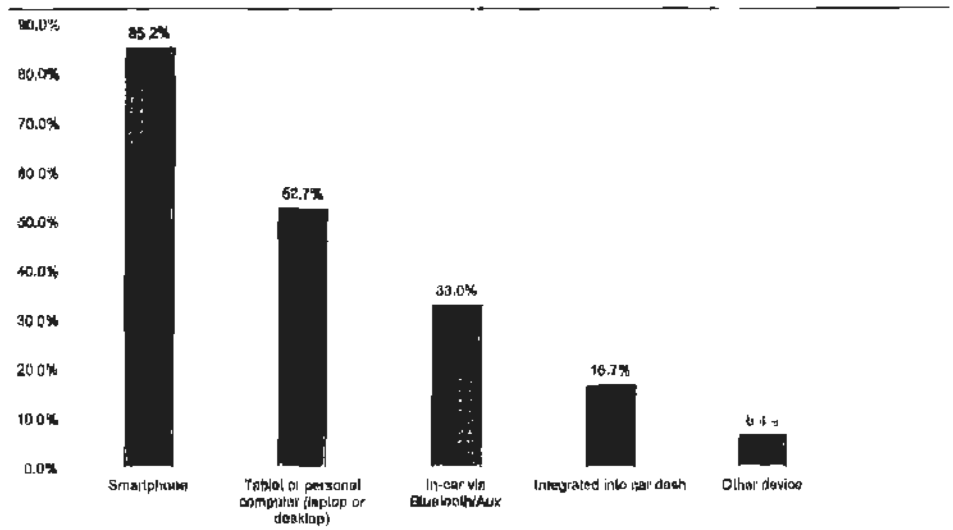
Figure 17 How long have you been a Spotify subscriber? (%)



Source: Cowen proprietary Consumer Internet Survey, n=~2500, May 2016

85% of Subscribers Listening on their Smartphones: We asked current Subs which devices they used to listen to Spotify and overall, ~85% of Subs said they listened on their smartphone (mobile) in May '16, followed by tablet/personal computer with 53% of Subs. Interestingly, in car usage scored fairly well with 33% of Subs listening via Bluetooth/Aux cord and 17% of Subs listening via in car dash. Subs listened through 2 devices on average.

Figure 18 What devices do you use to listen to Spotify?

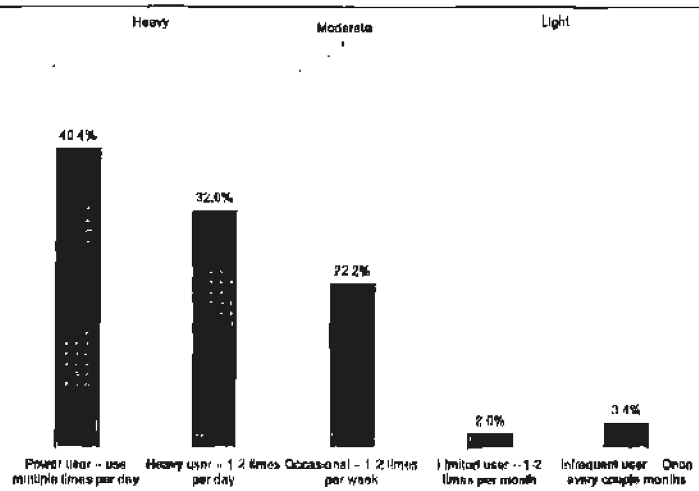


Source: Cowen proprietary Consumer Internet Survey, n=~2500, May 2016

Over 70% of Premium Subs Identify Themselves as "Heavy" Users

We asked Premium Subs to describe their level of Spotify usage in terms of uses per day/week/month, and found that over 70% of Subs identified themselves as "heavy" users, which includes those listening multiple times per day and 1-2 times per day. 22% of Subs were occasional or "moderate" users, listening 1-2 times per week, while only ~5% of Subs were "light" users.

Figure 19 Spotify User Type

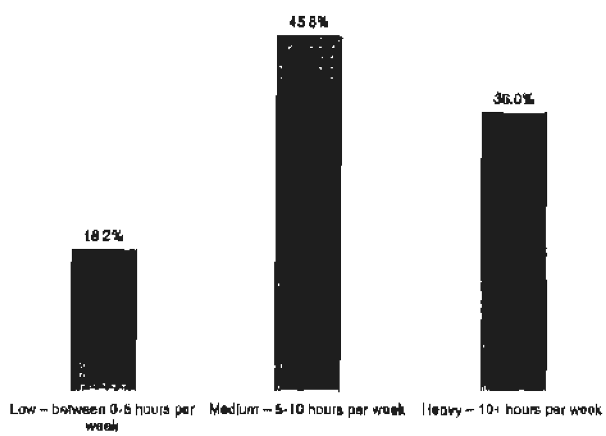


Source: Cowen proprietary Consumer Internet Survey, n=~2500, May 2016

Over 80% of Premium Subs Are Listening 5+ Hours per Week

In addition to asking about the frequency of use, we also asked Premium Subs to classify their usage in terms of hours per week. Overall, 36% of Subs said they used the service over 10 hours per week, while~46% of Subs said 5-10 hours per week, followed by~18% of Subs using it <5 hours per week.

Figure 20 How would you classify your Spotify usage?

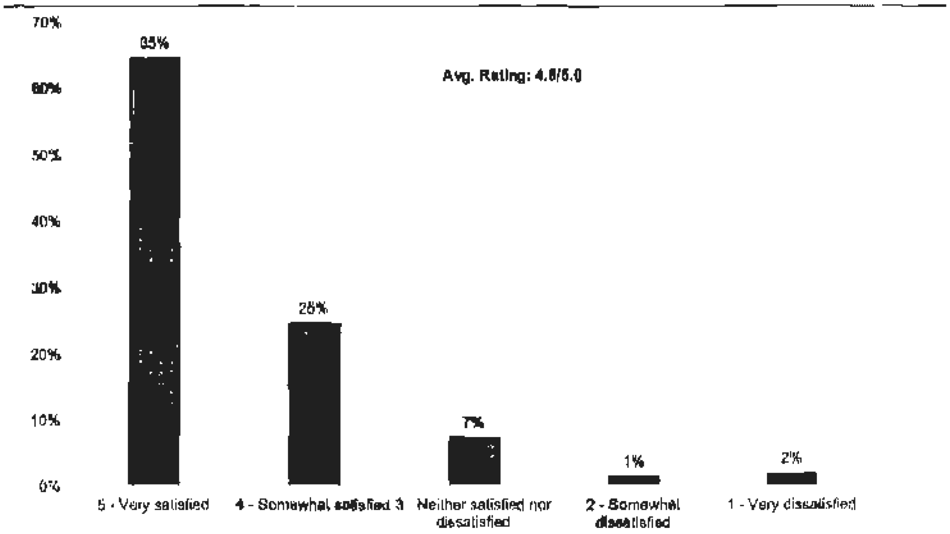


Source: Cowen proprietary Consumer Internet Survey, n=~2500, May 2016

90% of Premium Subs Very/Somewhat Satisfied with the Service

Overall satisfaction with Spotify seems to be overwhelmingly positive among current Premium Subs, as 90% of Subs indicated they were either very satisfied (65%) or somewhat satisfied (25%), which helped push the overall rating to 4.5/5.0.

Figure 21 Overall, how would you rate Spotify?

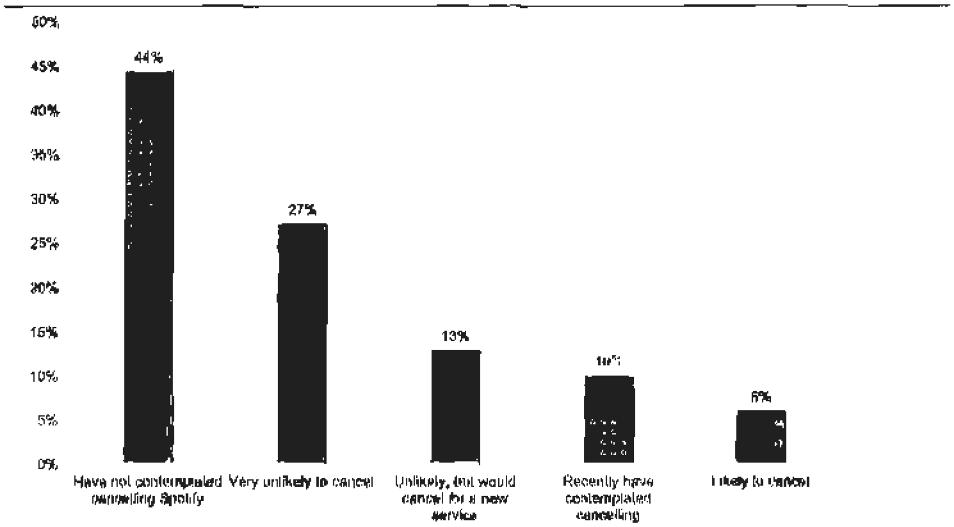


Source: Cowen proprietary Consumer Internet Survey, n=~2500, May 2016

Majority of Premium Subs Unlikely to Cancel

Given the relatively high satisfaction among Premium Subs, it was not surprising that 71% of Subs either have not contemplated canceling (44%) or were very unlikely to cancel (27%).

Figure 22 How likely are you to cancel your subscription in the next 3 months?



Source: Cowen proprietary Consumer Internet Survey, n=~2500, May 2016

Our View: A Healthy Spotify Is Good for the Major Labels

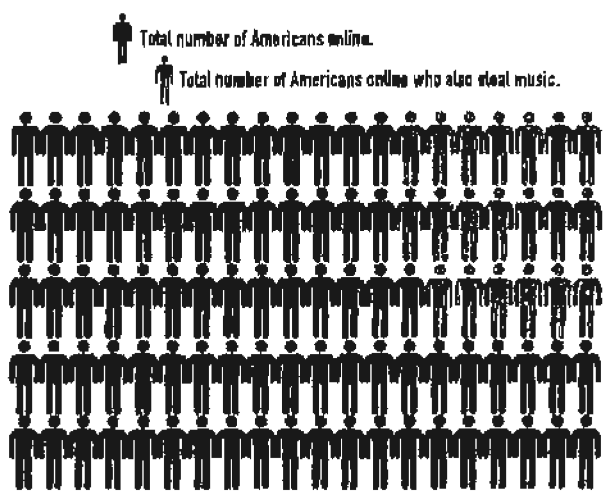
There has been no shortage of press speculation surrounding the ongoing rate negotiations between the record labels and a number of music services, including Spotify. The major record labels, namely Universal Music, Sony Music, Warner Music, and EMI Group, want to see Spotify succeed and grow into a sustainable, profitable business.

First and foremost, the major record labels collectively own ~20% of Spotify to the best of our knowledge (it is unclear if the labels' ownership has been diluted due to subsequent fundraising rounds including the most recent $1BN debt raise in March '16). As minority owners, the labels stand to directly benefit if/when Spotify reaches a scale in which it can operate profitably. If the current royalty structure (~70% of gross revenue plus up fronts) makes profitability unachievable, it would be in the best interests of the labels to bring that percentage down, in our view, as Spotify is increasingly a driver of label revenue.

Second, Spotify has quickly grown into a major source of revenue for the record labels. For Warner Music Group, streaming became the largest source of revenue in its recorded music business for the first time during its most recent fiscal quarter. As we discussed in great detail throughout this report, we expect On Demand streaming to drive music revenue growth long term, with Spotify playing a crucial role.

Finally, Spotify (along with all of the streaming services for that matter) is helping the music industry fight arguably its biggest problem, ie music piracy. Music piracy has long plagued the record labels because it prevents them from monetizing the consumption of their artist's content. According to a study commissioned by MusicWatch, over 50MM Americans are actively pirating music. While the illegal downloading/listening of music will never completely go away, Spotify's convenient and easy to use platform should help lure some listeners back to the paid ecosystem, generating incremental revenues for the record labels in the process.

Figure 23 50MM+ Americans Actively Pirating Music



Source: Digital Music News

Appendix 1: Spotify Financial Model Details

Figure 24 Spotify Income Statement 2013-2015 (Euro, MM)

(Euro, MM)	2013	2014	2015
Subscription Revenue	677.9	978.6	1,744.4
Advertising Revenue	68.2	98.8	195.8
Other Revenue	0.8	4.3	5.1
Total Revenue	**746.9**	**1,081.7**	**1,945.3**
Cost of Revenue	614.5	876.1	1,623.6
Gross Profit	**132.4**	**205.6**	**321.7**
Research & Development	72.7	121.0	143.3
Sales & Marketing	110.8	173.0	246.5
General & Administrative	40.0	76.7	116.4
Operating Income (Loss)	**(91.1)**	**(165.1)**	**(184.5)**
Finance Income	39.4	25.5	28.2
Finance Costs	(2.1)	(18.6)	(11.1)
Share in earnings of JVs	0.1	(0.4)	2.6
Pre-Tax Income (Loss)	**(53.8)**	**(158.6)**	**(164.8)**
Income Tax	(2.1)	(3.7)	(8.3)
Net Income (Loss)	**(55.9)**	**(162.3)**	**(173.1)**
Y/Y % Change			
Subscription Revenue	81.0%	44.4%	78.3%
Advertising Revenue	22.9%	44.9%	98.2%
Other Revenue	348.1%	434.2%	17.6%
Total Revenue	**73.6%**	**44.8%**	**79.8%**
Cost of Revenue	59.0%	42.6%	85.3%
Gross Profit	**202.4%**	**55.3%**	**56.4%**
Research & Development	91.6%	66.4%	18.4%
Sales & Marketing	104.9%	56.1%	42.5%
General & Administrative	39.7%	91.9%	51.8%
Operating Income (Loss)	**18.5%**	**81.1%**	**11.8%**
Net Income (Loss)	**(33.2)%**	**190.5%**	**6.7%**
% of Total Revenue			
Cost of Revenue	82.3%	81.0%	83.5%
Research & Development	9.7%	11.2%	7.4%
Sales & Marketing	14.8%	16.0%	12.7%
General & Administrative	5.4%	7.1%	6.0%
Margins			
Gross Margin	17.7%	19.0%	16.5%
Operating Income Margin	(12.2)%	(15.3)%	(9.5)%

Source: Company reports

Figure 25 Spotify Expenses by Nature Breakdown 2013-2015 (Euro, MM)

(Euro, MM)	2013	2014	2015
Royalty, Distribution, and Other Costs	602.9	882.5	1,633.3
Streaming Content Expense	0.0	0.0	15.0
Personnel Costs	114.0	180.9	243.4
Travel Costs	11.6	16.8	21.8
Advertising and Public Relations	45.6	68.8	87.3
External Consulting Fees	30.5	38.8	49.1
Facilities Fees	15.5	25.0	33.4
Other Expenses	8.8	15.1	15.7
Depreciation and Amortization	9.2	19.0	30.8
Total Expenses	**838.0**	**1,246.8**	**2,129.8**
Y/Y % Change			
Royalty, Distribution, and Other Costs	60.2%	46.4%	85.1%
Streaming Content Expense	-	-	-
Personnel Costs	47.2%	58.8%	34.5%
Travel Costs	65.7%	45.4%	29.5%
Advertising and Public Relations	634.3%	50.7%	27.0%
External Consulting Fees	72.8%	27.0%	26.8%
Facilities Fees	42.7%	61.8%	33.5%
Other Expenses	4.7%	71.3%	4.2%
Depreciation and Amortization	183.4%	107.5%	62.4%
Total Expenses	**65.2%**	**48.8%**	**70.8%**
% of Total Revenue			
Royalty, Distribution, and Other Costs	80.7%	81.6%	84.0%
Streaming Content Expense	0.0%	0.0%	0.8%
Personnel Costs	15.3%	16.7%	12.5%
Travel Costs	1.5%	1.6%	1.1%
Advertising and Public Relations	6.1%	6.4%	4.5%
External Consulting Fees	4.1%	3.6%	2.5%
Facilities Fees	2.1%	2.3%	1.7%
Other Expenses	1.2%	1.4%	0.8%
Depreciation and Amortization	1.2%	1.8%	1.6%
Total Expenses	**112.2%**	**115.3%**	**109.5%**

Source: Company reports

Appendix 2: Financing History

Figure 28 Spotify Funding Rounds (13) - $2.56BN Overall

Date	Round	Amount	Lead Investor	# of Investors
Oct-08	Series A	$21.6		4
Aug-09	Series B	$50.0		3
Feb-10	Series C	€ 11.6	Founders Fund	2
Jun-11	Series D	$100.0	Accel	3
Jan-12	Secondary Market	-		1
Nov-12	Series E	$100.0	Goldman Sachs	6
Nov-13	Series F	$250.0	Technology Crossover Ventures	1
Jan-14	Secondary Market	-		1
Nov-14	Secondary Market	-		2
Jun-15	Series G	$526.0		13
Aug-15	Secondary Market	-		1
Jan-16	Convertible Note	$500.0		0
Mar-16	Debt Financing	$1,000.0		2
Total		$2,559.2		

Source: CrunchBase

Appendix 3: Key Management Team Members

Daniel Ek (CEO & Co-Founder)

Daniel Ek, a serial entrepreneur and technologist who started his first company in 1997 at the age of 14, co-founded Spotify in 2006 together with Martin Lorentzon. As the CEO of Spotify, Daniel's role is to guide the vision and strategy of the company as it grows. Leading the management team, Daniel is also responsible for nurturing a passionate working environment for everyone at Spotify. Prior to Spotify, Daniel founded Advertigo, the online advertising company acquired by TradeDoubler, having previously held senior roles at Nordic auction company Tradera (acquired by Ebay). Daniel was also CTO at Stardoll, the fashion & entertainment community for tweens.

Martin Lorentzon (Chairman of the Board & Co-Founder)

Martin first struck up his partnership with Daniel Ek when Tradedoubler, Europe's largest affiliate sales network (founded by Martin), acquired Daniel's company Advertigo in 2006. As chairman, Martin has been on the company's board of directors since July 2006. His responsibilities include creating and implementing strategy, budgets and goals. Previously, Martin held senior roles at Telia, Altavista, Cell Ventures and NetStrategy. He is currently on the TeliaSonera board.

Barry McCarthy (CFO)

Barry McCarthy is Spotify's Chief Financial Officer, with overall responsibility for the company's financial affairs. Before joining Spotify as CFO in July 2015, Barry was a private investor and served on the board of directors of several private companies, including Spotify and two public companies, including Pandora and Chegg, where he served as Chairman of the Audit Committees of the Board. Since November 2011 Barry has also served as an Executive Adviser to Technology Crossover Ventures. From 1999 to 2010 Barry served as the Chief Financial Officer and Principal Accounting Officer at Netflix, steering the company through its initial public offering in 2002. Prior to his time at Netflix, Barry served in various management positions in management consulting, investment banking and media and entertainment.

Ticker	Rating	Price*	Price Target	Ticker	Rating	Price*	Price Target
GOOG	Outperform	$680.04	$940.00	AMZN	Outperform	$707.95	$830.00
P	Market Perform	$12.06	$10.00				

*As of 06/28/2016

Valuation Methodology And Risks

Valuation Methodology

Internet:

Our valuation methodology is primarily based on Discounted Cash Flow analysis, comparable company multiples such as EV/FCF, EV/EBITDA, and P/E, and sum-of-the-parts analysis (for companies with ownership stakes in other equities or significant assets such as patents/IP). However, this varies by company; for instance, we will often use EV/Revenue for high-growth companies that have recently entered the public equity markets.

Investment Risks

Internet & New Media:

The industry in which our companies operate is fiercely competitive and technological change is rapid. All of our companies face the risk that they are unable to keep pace with new innovations or that new innovations impact competitive positioning. Additionally, our companies are international operators and are therefore exposed to currency fluctuations and other factors associated with operating in a foreign territory. Finally, our names sit within the advertising industry more broadly and are exposed to the same seasonality and macro trends as the rest of the group, including competition from TV and other offline channels.

E-Commerce:

The industry in which our companies operate is fiercely competitive and technological change is rapid. All of our companies face the risk that they are unable to keep pace with new innovations or that new innovations impact competitive positioning. Our companies are international operators and are therefore exposed to currency fluctuations and other factors associated with operating in a foreign territory. Finally, our names sit within traditional commerce and retail space and are exposed to the same seasonality and macro trends as the rest of the industry, including competition from offline retailers.

Addendum

Stocks Mentioned In Important Disclosures

Ticker	Company Name
GOOG	Alphabet
AMZN	Amazon.com
FB	Facebook
P	Pandora Media

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Assumption: The expected total return calculation includes anticipated dividend yield

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Rating	Count	Ratings Distribution	Count	IB Services/Past 12 Months
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Hold (b)	324	41.33%	13	4.01%
Sell (c)	10	1.28%	0	0.00%

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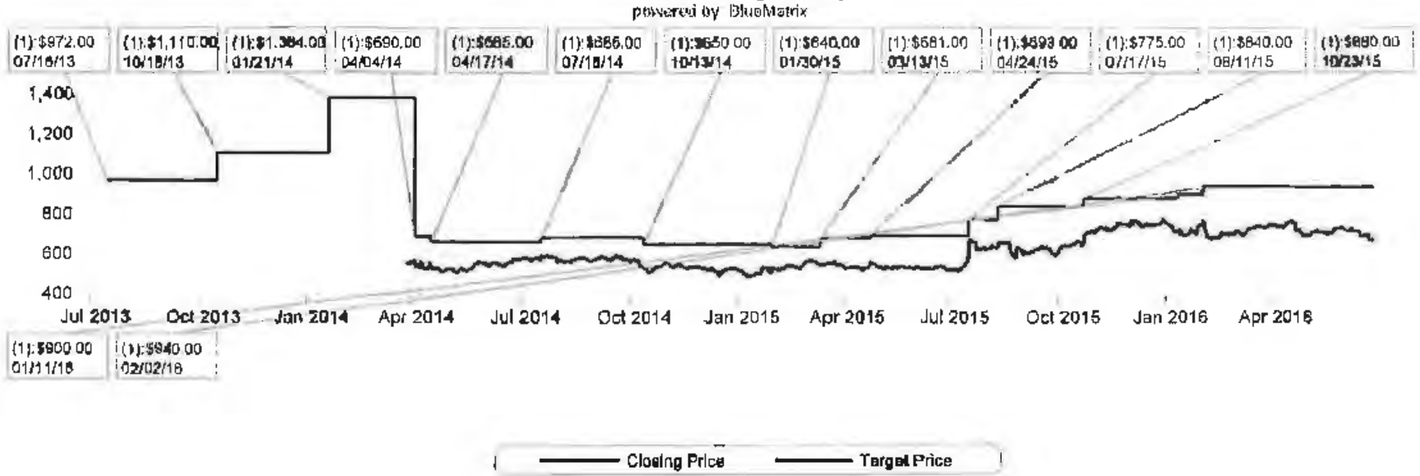

Amazon.com Equity Research Rating History as of 06/28/2016

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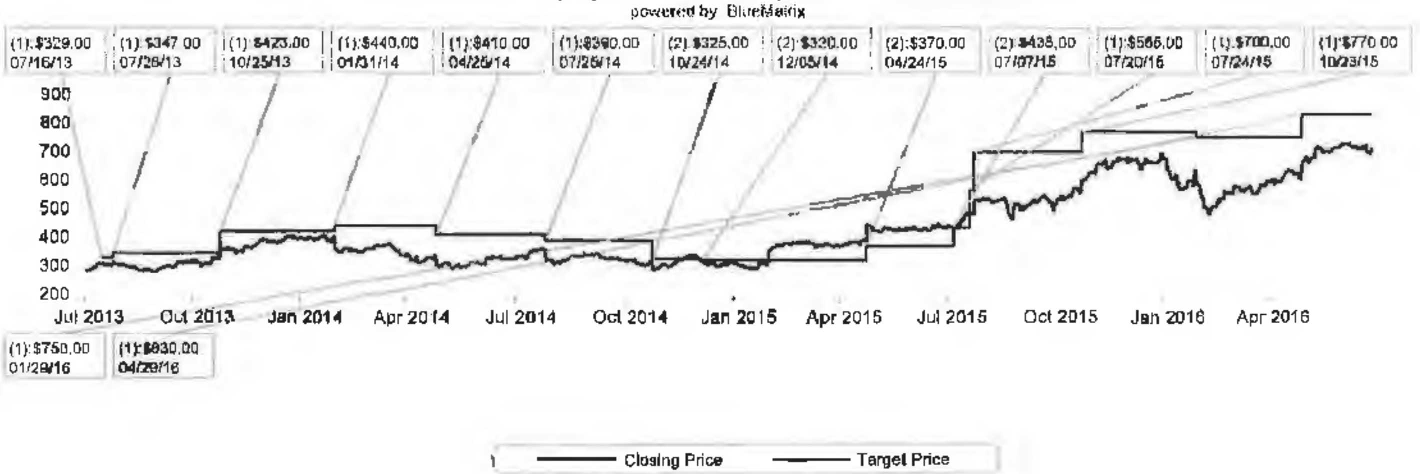

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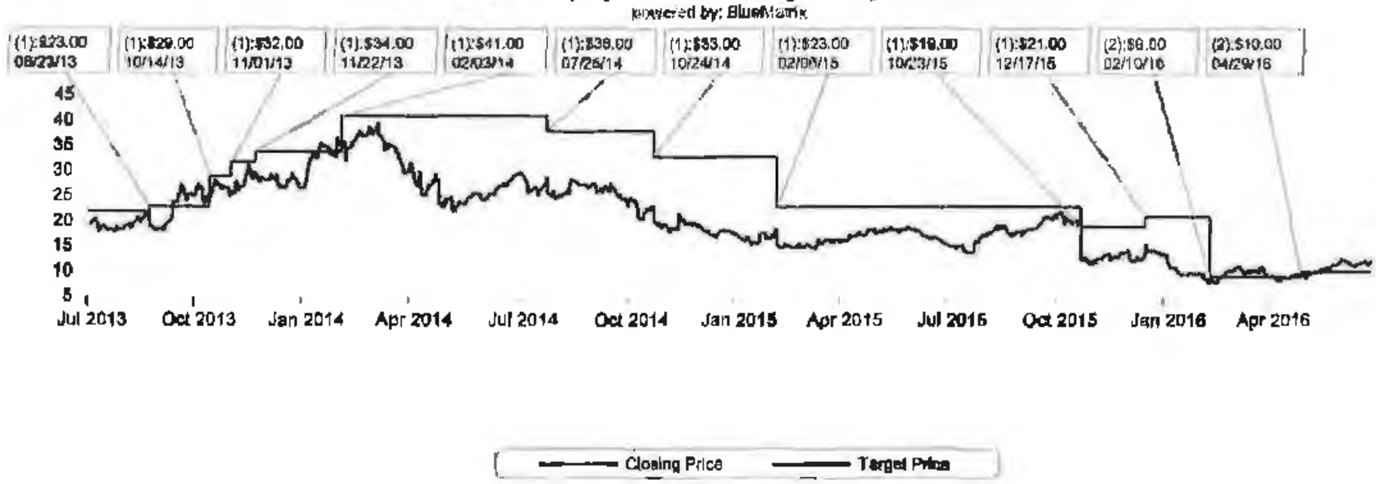

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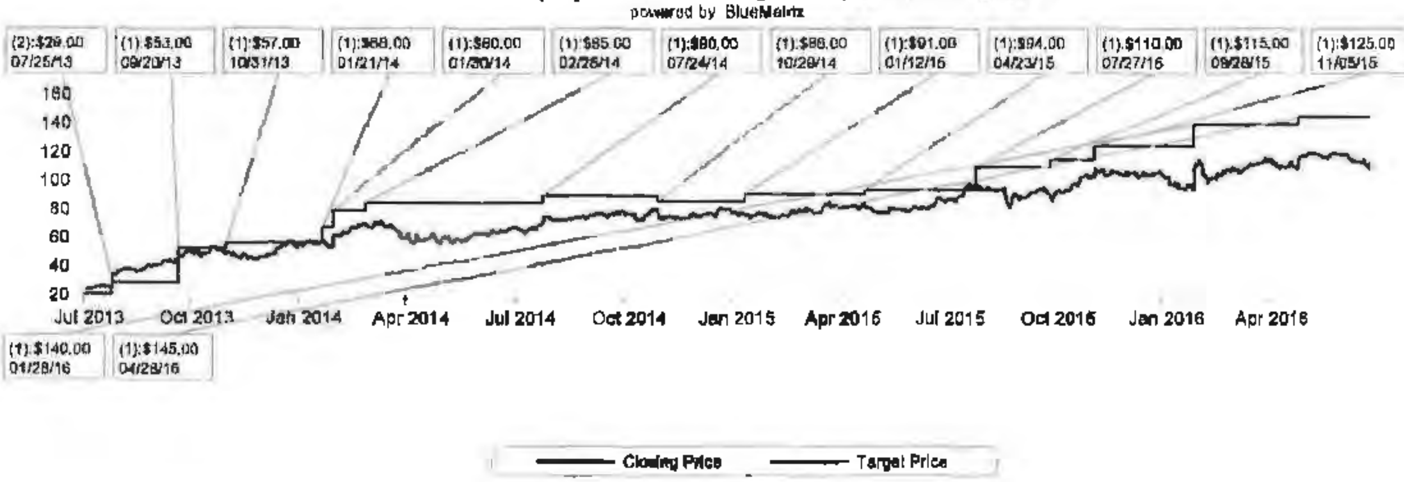

Legend for Price Chart:

I = Initiation | 1 = Outperform | 2 = Market Perform | 3 = Underperform | UR = Price Target Under Review | T = Terminated Coverage | $xx = Price Target | NA = Not Available | S=Suspended

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What's Inside

'hat's Incremental To Our View

TVI: Destiny 2 Metacritic score at 84 vs Destiny 1 at 76; Candy Crush Saga/Soda Saga the #1/#4 top ossing U.S. mobile gaming apps. NFLX: Won't get future 'Star Wars' or Marvel Films, but T-Mobile deal ›uld add 1 million domestic subs. P: Spotify/Hulu partner on a $5 bundle for students. LGF.B: 'Hitman's ›dyguard' Domestic box reached ~$65m vs our $60m target.

ctivision (ATVI, Buy)

Destiny 2 Metacritic Score Stands At 84 Vs Destiny 1 At 76 (+). The score is for PlayStation and can change as more Critic reviews come in (6 reviews to date vs Destiny 1 at 95). Expect Xbox score shortly.

Other: 1) Candy Crush Saga and Soda Saga are #1 and #4 top grossing game apps on iPhone for August into September per App Annie (+); 2) Crash Bandicoot #4 in Australia/New Zealand; 3) ATVI unveiled its new eSports arena.

etflix (NFLX, Hold)

Netflix Won't Get Future 'Star Wars,' Marvel Films (-). DIS will retain rights to Lucas, Marvel, Pixar, Disney films for its pending OTT service set to launch 2H19 (see our note HERE).

Other: 1) T-Mobile (TMUS, $62.74, Buy; Miller) deal could add 1 million domestic subs – see our note HERE (+); 2) Hulu and Spotify are partnering on a $5 bundle for students (-); 3) Facebook (FB, $170.95, Buy; Squali) could spend $1b on original video content (-); 3) Star India's Hotstar launched SVOD service in the U.S and Canada (-); 4) AMC Networks is readying Spanish OTT service (-).

andora (P, Buy)

1) Spotify and Hulu are partnering on a $5 bundle for students (-); 2) Facebook offers hundreds of millions of dollars for music rights to enable Facebook users to legally upload songs in their video posts.

ions Gate (LGF.B, Buy)

1) 'The Hitman's Bodyguard' Domestic box office gross reached ~$65m vs our $60m target; 2) LGF's final film for the quarter, 'American Assassins', set to release this weekend (9/15).

Activision Blizzard (ATVI, Buy)

Destiny 2 Metacritic Score Stands At 84, Up From Destiny 1 At 76 (+)

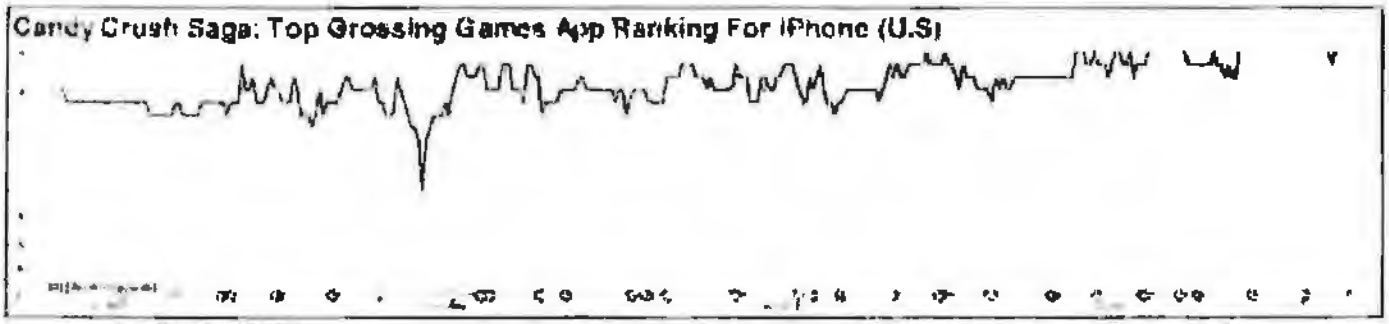
(10 September 2017 – Metacritic)

- The score is based on 6 Critic reviews to date for the PlayStation platform. The score can change as more Critic reviews come in, e.g. Destiny 1 Metacritic score of 76 was based on 95 Critic reviews for the PlayStation platform. Expect Destiny 2 Metacritic score for Xbox to register shortly (Destiny 1 Metacritic score on Xbox was 75 based on 11 Critic reviews).
- The Destiny 2 User score (based on reviews from gamers, i.e. non-professional Critics) stands at 6.0 on PlayStation vs Destiny 1 at 6.1/5.5 on PlayStation/Xbox.

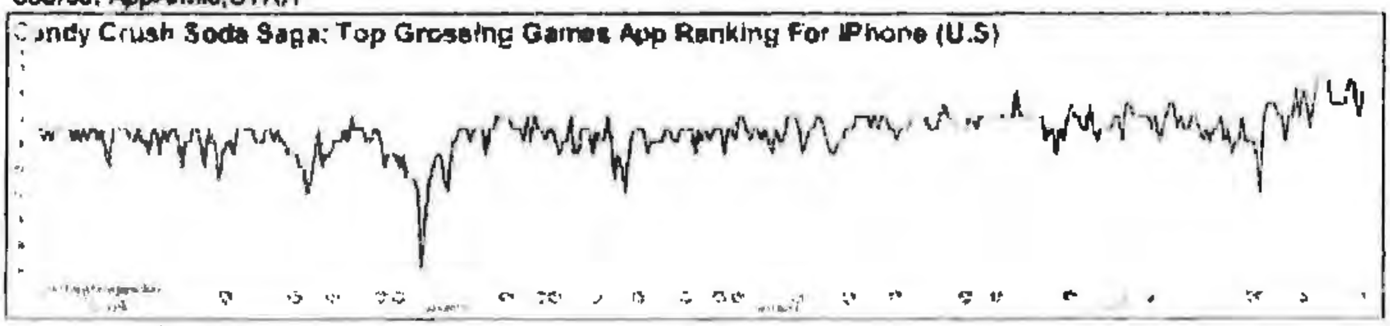
Candy Crush Saga The Top Grossing Mobile Gaming App Over Last Month In The U.S. (+)

(8 September 2017 – AppAnnie)

- Candy Crush Saga is #1 grossing mobile gaming app for most of August and September (see exhibit below). Candy Crush Soda Saga is at #4.



Source: AppAnnie;STRH



Source: AppAnnie;STRH

Top 10 Best-Selling Physical Games For The Week Ended September 3 Revealed For Australia/New Zealand

(6 September 2017 – IGEA)

- Crash Bandicoot N. Sane Trilogy is at #4 in Australia and #2 in New Zealand. This is down from #1 position in both countries in July and August as the release ages).

Blizzard Unveils Live Event Arena

(8 September 2017 – Blizzard)

- The new facility, Blizzard Arena Los Angeles, has been built to support competitive events. This arena will open its doors the weekend of October 7–8 to host the Overwatch Contenders Season One Playoffs.

Lions Gate (LGF.A/LGF.B, Buy)

'The Hitman's Bodyguard' Domestic Box Office Gross Reaches ~$65m (+)

(10 September 2017 – ComScore)

- The movie took in ~$5m over the weekend and has now surpassed our domestic gross box office target of $60m.

'American Assassins' Set To Release This Weekend (September 15)

(10 September 2017 – Lions Gate; STRH)

- The movie, a co-production between CBS Films and LGF (distributed by LGF), is based on a 2010 novel and stars Dylan O'Brien, Michael Keaton, Taylor Kitsch, and Sanaa Lathan.

Netflix (NFLX, Hold)

Netflix Won't Get Disney 'Star Wars,' Marvel Films (-)

(7 September 2017 – Variety)

- Disney announced that it will retain rights to Lucas and Marvel films, starting with the 2019 slates, with the films to be part of the company's pending OTT service set to launch in 2H19. Recall Disney previously announced that it will not renew its pay-1 film deal with NFLX for Disney and Pixar films (see our note HERE).

T-Mobile Deal Could Add 1 Million Domestic Subs (+)

(6 September 2017 – T-Mobile)

- T-Mobile USA will bundle free Netflix with select wireless plans. We estimate this deal could provide a ~1%/~5% lift to total revenue/EBITDA – see our note HERE.

Spotify/Hulu To Offer Discounted Bundle To Students (-)

(7 September 2017 – TechCrunch)

- Will offer U.S college students both services for $4.99/month. The bundle includes access to Spotify Premium, Spotify's on-demand music service, and Hulu's "Limited Commercials" plan.

Facebook Could Spend $1b On Original Video Content (-)

(8 September 2017 – Wall Street Journal)

- The $1b figure covers potential spending through 2018. Facebook recently bid more than $600 million for the digital rights to stream cricket matches in India from 2018 to 2022.

Star India's Hotstar Launches SVOD Service In U.S and Canada (-)

(6 September 2017 – Rapid TV News)

- Star India is owned by 21st Century Fox. Hotstar offers international subscribers multi-lingual programming from Star India's channel bouquet such as Star Plus, Star Jalsha, and Asianet, Fox Star-produced Indian films, and originals. Hotstar also carries live sports, including badminton, hockey, and cricket.
- The over-the-top (OTT) service will cost US$9.99 per month in the US, and CAD 12.99 in Canada.

AMC Networks Readying Spanish OTT (-)

(7 September 2017 – Advanced Television)

- Branded *Selekt*, the new SVOD service will be integrated into the platforms of Spanish operators Telefónica, Vodafone, and Orange. It will likely be priced between €5 and €10.

Pandora Media (P, Buy)

Spotify/Hulu To Offer Discounted Bundle To Students (-)

(7 September 2017 – TechCrunch)

- Will offer U.S college students both services for $4.99/month. The bundle includes access to Spotify Premium, Spotify's on-demand music service, and Hulu's "Limited Commercials" plan.

Facebook Offers Hundreds Of Millions of Dollars For Music Rights

(5 September 2017 – [illegible])

- This will allow Facebook users to legally upload songs in their videos.

Companies Mentioned in This Note

Facebook, Inc. (FB, $170.95, Buy, Youssef Squali)
T-Mobile US, Inc. (TMUS, $62.74, Buy, Greg Miller)
AMC Networks Inc. Class A (AMCX, 56.61,NR)
Telefonica SA (TEF-MCE, 10.766762,NR)
Vodafone Group Plc (VOD-LON, 2.8180802,NR)
Orange SA Sponsored ADR (ORAN, 16.64,NR)
Twenty-First Century Fox, Inc. Class A (FOXA, 27.79,NR)
Walt Disney Company (DIS, 101.93,NR)
Spotify (Private, NR)
Hulu (Private, NR)

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S = Sell
D = Drop Coverage
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T = Transfer Coverage

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· CS – Coverage Suspended
*Total return (price appreciation + dividends); **Price targets are within a 12-month period, unless otherwise noted; ***Low Beta defined as securities with an average Beta of 0.8 or less, using Bloomberg's 5-year average

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Hold/Neutral	279	39.86%	Hold/Neutral	58	20.79%
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August 30, 2017 | Equity Research

WELLS FARGO SECURITIES

Pandora Media, Inc.

P: Spotify Gains Continue, But Pandora Maintains Ad-Supported Hrs Lead

Market Perform/V/$10

Internet
Overweight

Company Note

- **Pandora listening hour update based on Triton Digital data.** Based on our analysis of Triton Digital's June Domestic Ranker (released today), P listener hours declined 2.7% YoY in June, comparing to an estimated 3.4% decline in May and -5.8% in April (see Exhibit 1 in body of this note). Based on P's most recent 10-Q and WFS estimates, we believe Pandora's ad-supported hours declined ~12% in June, consistent with May, though a modest improvement from April. Off-setting this decline, we believe P's subscriber based listening hours (Plus and Premium) grew 62% in June, accelerating from estimated 56% in May and 50% in April. With June's growth, we believe subscription hours now likely represent ~21% of total P listening, up from 13% in June'16.
- **Spotify momentum continues, though P maintains comfortable lead in ad-supported hrs.** Though Pandora has a broad set of competitors in the streaming music space—including Apple, Google, Amazon etc.—Triton Digital's monthly streaming audio tracker includes only Spotify among direct competitors. For June, our analysis of Triton data points to 53% y/y growth in total streamed hours for Spotify, the second straight month of accelerating growth (50% in Apr, 51% in May), and the seventh consecutive month of year/year growth above 40%. Though Spotify's public filings don't allow us to distinguish between ad-free and ad-supported hours, we applied comments made by Spotify executives to ad-supported vs. subscription hour listening trends seen with Pandora to estimate Spotify's split of ad-supported vs. subscription listening. The output suggests that though Spotify has now nearly matched Pandora in the U.S. with regard to total hours streamed, that Pandora maintains a significant—if slowly shrinking—advantage when it comes to ad-supported hours of ~75%.
- **Advertising competition heating up.** Though we believe Pandora maintains several significant advantages over Spotify as a digital advertising platform, we believe the competitive pressure is building. Ad agency contacts inform us that Spotify has increased its outreach to national radio buying groups in addition to pitching digital media planners and buyers. And while we believe Spotify has not yet elected to build out a local market salesforce, local Spotify inventory is available through an ad-network selling relationship with Triton Digital. Further strengthening Spotify's advertising hand has been the company's first-mover status in rolling out a programmatic buying platform for national audio ads, and more recently a self-serve platform for marketers, neither of which are currently offered by Pandora. Though we believe Pandora now trails Spotify in terms of these more advanced offerings, Pandora's scale and local selling infrastructure gives P a substantial advantage in addressing the relatively untapped—though slower moving in terms of digital adoption—local market. Looking ahead, we expect P's new management team to focus on improving P's ad platform in order to more significantly leverage its leading scale in ad-supported listening.

USD EPS	2016A	2017E Curr.	2017E Prior	2018E Curr.	2018E Prior
Q1 (Mar.)	($0.20)	($0.24) A	NC	NE	
Q2 (June)	(0.12)	(0.21) A	NC	NE	
Q3 (Sep.)	(0.07)	(0.06)	NC	NE	
Q4 (Dec.)	(0.13)	0.05	NC	NE	
FY	($0.51)	($0.45)	NC	$0.00	NC
CY	($0.51)	($0.45)		$0.00	
FY P/EPS	NM	NM		NM	
Rev.(MM)	$1,385	$1,483		$1,659	

Source: Company Data, Wells Fargo Securities, LLC estimates, and Reuters
NA = Not Available, NC = No Change, NE = No Estimate, NM = Not Meaningful
V = Volatile, ⅌ = Company is on the Priority Stock List

Ticker	P
Price Target/Prior:	$10/NC
Price (08/30/2017)	$8.08
52-Week Range:	$6-15
Shares Outstanding: (MM)	251.0
Market Cap.: (MM)	$2,028.1
S&P 500:	2,367.34
Avg. Daily Vol.:	6,555,530
Dividend/Yield:	$0.00/0.0%
LT Debt: (MM)	$342.0
LT Debt/Total Cap.:	24.0%
ROE:	0.0%
3-5 Yr. Est. Growth Rate:	25.0%
CY 2017 Est. P/EPS-to-Growth:	NM
Last Reporting Date:	07/31/2017 After Close

NC = No Change
Source: Company Data, Wells Fargo Securities, LLC estimates, and Reuters

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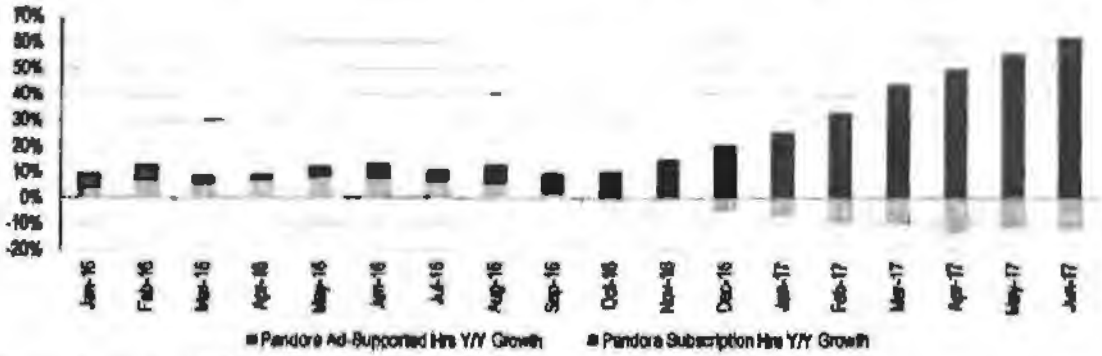
Please see page 6 for rating definitions, important disclosures and required analyst certifications. All estimates/forecasts are as of 08/30/17 unless otherwise stated. 08/30/17 19:31:58 ET

Exhibit 1. Pandora Estimated Monthly Listener Hours (6 a.m. - Midnight Daypart)

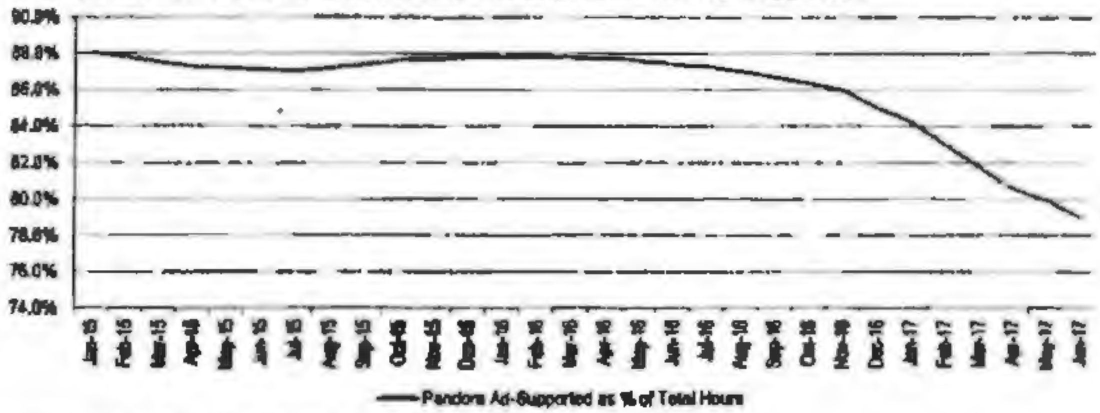
Source: TritonDigital, Wells Fargo Securities, LLC estimates

Exhibit 2. Estimated Growth of Pandora Ad-Supported and Subscription Hours



Source: Company reports, TritonDigital, Wells Fargo Securities, LLC estimates

Exhibit 3. Pandora Subscription Hours Gaining Share vs. Ad-Supported

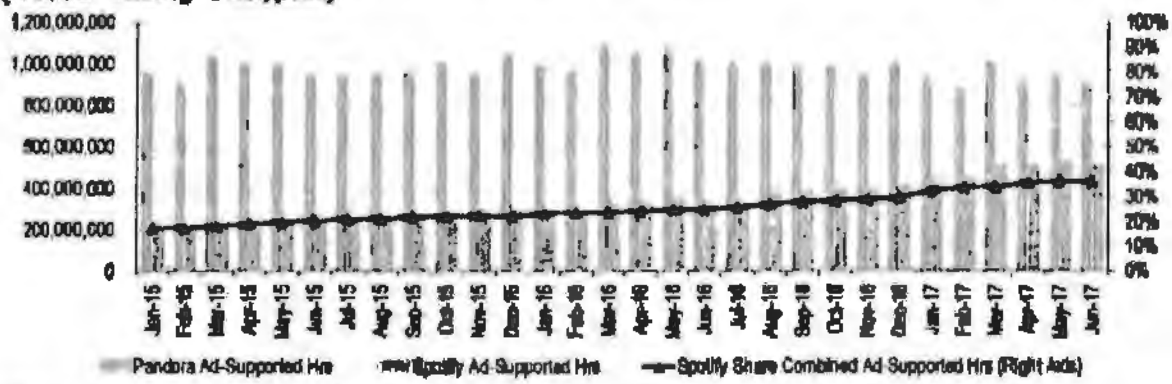


Source: Company reports, TritonDigital, Wells Fargo Securities, LLC estimates

Exhibit 4. Pandora vs. Spotify U.S. Listener Hours (6 a.m. - Midnight Daypart)

Source: TritonDigital, Wells Fargo Securities, LLC estimates

Exhibit 5. Pandora vs. Spotify: Estimated Ad—Supported Listener Hrs, Spotify Share (6 a.m. - Midnight Daypart)



Source: TritonDigital, Wells Fargo Securities, LLC estimates

Exhibit 6. Pandora Income Statement

$MM except share and per share amounts	2015A	2016A	1Q17A	2Q17A	3Q17E	4Q17E	2017E	2018E
Non-GAAP Revenue	1,164.0	1,384.8	316.0	376.6	401.8	400.8	1,493.2	1,658.5
- Subscription Return Reserve	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
= GAAP Revenue	1,164.0	1,384.8	316.0	376.6	401.8	400.8	1,493.2	1,658.5
Advertising Revenue	748.3	1,072.5	223.3	276.2	286.4	315.9	1,109.3	1,201.7
Subscription Revenue	320.6	235.8	64.9	80.9	74.8	85.4	297.4	456.8
Ticketing Revenue	10.3	66.6	27.8	19.7	14.6	0.0	76.1	0.0
Total Cost of Revenue	691.4	888.6	230.7	245.8	254.4	231.1	959.0	958.4
Cost of Revenue - Content Acquisition Costs	610.4	734.4	187.4	195.9	194.6	202.5	780.5	844.0
Cost of Revenue - Other (ex-SBC)	74.5	95.2	24.7	36.6	17.2	28.6	107.2	114.4
Cost of Revenue - Ticketing Service (ex-SBC)	7.1	59.1	18.6	20.5	13.2	0.0	52.3	0.0
Gross Profit	472.2	496.2	85.3	130.8	147.4	179.7	544.2	700.1
Total Operating Expenses	642.3	815.0	200.1	402.4	201.8	190.4	1,003.7	838.6
Product Development (ex-SBC)	60.9	110.7	31.7	31.8	30.6	26.6	118.7	107.8
Marketing and Sales (ex-SBC)	345.4	433.1	111.6	100.8	112.6	104.2	439.2	456.1
General and Administrative (ex-SBC)	124.3	132.5	37.2	49.7	28.8	26.6	137.1	132.7
Stock-Based Compensation	111.6	138.5	29.6	38.6	31.0	33.0	133.2	142.0
Restructuring and Other	0.0	0.0	0.0	155.5	0.0	0.0	155.5	0.0
GAAP Operating Income	($170.0)	($318.8)	($114.8)	($267.5)	($54.4)	($11.7)	($459.4)	($138.5)
Other Income/Expense	(1.2)	(24.4)	(7.2)	(7.3)	(7.2)	(7.3)	(29.0)	(30.0)
Pre-tax Income (Loss)	(171.2)	(343.2)	(131.8)	(274.9)	(61.6)	(20.0)	(488.4)	(168.5)
Tax Expense	1.6	0.2	(0.5)	(3.3)	(0.4)	0.0	(1.0)	2.2
Net Income - GAAP	(169.7)	(343.0)	(132.3)	(278.1)	(62.0)	(20.0)	(489.4)	(168.1)
EPS - GAAP	($0.79)	($1.49)	($0.58)	($1.20)	($0.26)	($0.08)	($2.03)	($0.69)
Non-GAAP Net Income	$20.6	($117.7)	($57.2)	($80.4)	($10.2)	$19.8	($107.7)	$0.4
Non-GAAP EPS	$0.09	($0.51)	($0.24)	($0.33)	($0.04)	$0.08	($0.48)	$0.00
Common Shares Outstanding								
Basic	213.8	230.7	237.9	241.3	242.3	243.8	241.1	244.1
Diluted	223.2	239.9	247.8	250.9	252.0	253.0	250.7	253.8
EBITDA Calculation								
GAAP Operating Income	(170.0)	(318.8)	(114.8)	(267.5)	(54.4)	(11.7)	(459.4)	(138.5)
+ Depreciation & Amortization	34.8	60.8	17.7	17.4	16.4	19.4	70.8	83.0
+ Stock Based Compensation	111.6	138.8	29.6	38.6	32.0	33.0	133.2	142.0
+ Other Adjustments	85.3	0.0	4.2	167.2	0.0	0.0	163.4	0.0
Adjusted EBITDA	61.7	(119.5)	(71.3)	(44.3)	(4.8)	39.7	(89.8)	86.5
Growth Rates								
Non-GAAP Revenue (YoY)	28.4%	19.0%	6.5%	9.9%	6.5%	4.3%	7.3%	11.0%
Adjusted EBITDA (YoY)	-11.2%	-331.4%	24.1%	116.4%	-80.7%	-250.8%	-24.8%	-196.3%
Margin Analysis								
Gross Margin	40.6%	35.8%	27.0%	35.8%	36.8%	43.9%	36.7%	42.2%
GAAP Operating Margin	-14.6%	-23.0%	-36.3%	-71.0%	-14.3%	-3.2%	-31.0%	-8.3%
Adjusted EBITDA Margin	4.4%	-8.6%	-22.6%	-14.4%	-1.0%	9.7%	-6.1%	5.2%
Costs as a % of Non-GAAP Revenue								
Cost of Revenue	58.4%	64.2%	73.0%	64.5%	61.4%	56.5%	63.3%	57.8%
Product Development	5.3%	8.0%	10.0%	8.4%	7.6%	6.5%	8.0%	6.5%
Marketing and Sales	29.7%	31.3%	35.3%	26.7%	29.9%	25.8%	31.0%	27.5%
General and Administrative	10.7%	9.6%	11.8%	13.2%	7.6%	6.5%	9.2%	8.0%
Stock Based Compensation	9.6%	10.0%	9.4%	10.2%	8.4%	8.1%	9.0%	8.6%

Source: Company reports, Wells Fargo Securities, LLC estimates

Price Target

Price Target: $10 from NC

Our price target reflects a 1.6x EV-to-Sales multiple on our 2018E revenue estimate of $1.66B. Risks include the high cost of content licensing, competition for users, and failure to meet paid subscription growth targets.

Investment Thesis

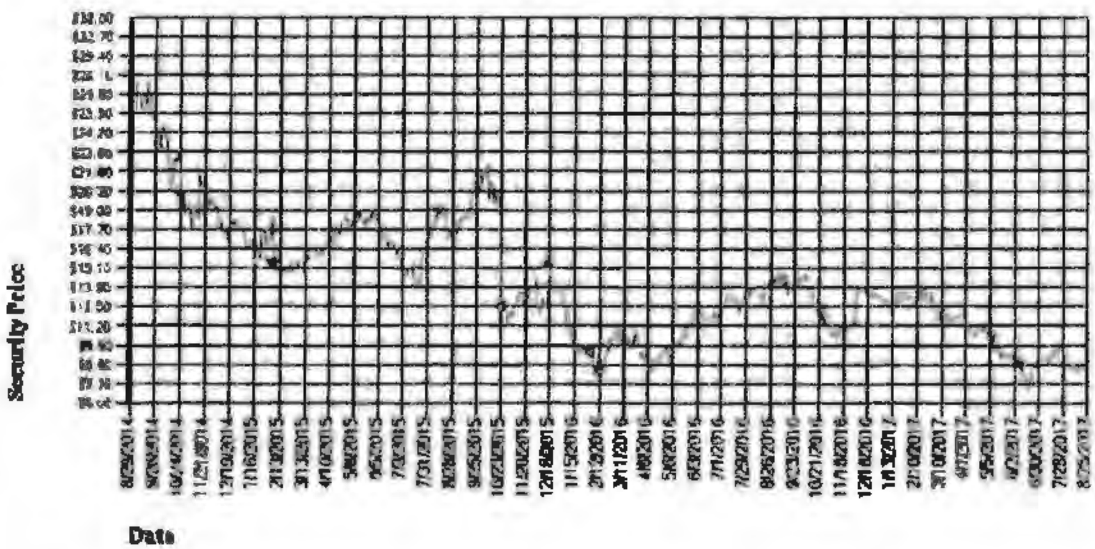
We believe the strength of Pandora's ad platform positions the company well to continue share gains vs. terrestrial audio ad competitors, and we expect P's new subscription products to see significant adoption. However our positive product view is tempered by uncertainties surrounding execution and competition.

Company Description

Pandora Media, Inc. is a market-leading provider of Internet radio services. Founded in 2000, Pandora provides its listeners with a completely personalized radio experience that promotes music discovery. Pandora offers its music to end users on an either a free, but advertising supported model, or subscription basis. The product can be easily accessed by nearly any Web-connected device including the PC, tablet, smartphone, and hundreds of consumer electronics devices such as TVs and Blu-ray players.

Required Disclosures

Pandora Media, Inc. (P) 3-yr. Price Performance



	Date	Published Price ($)	Rating Code	Price Target	Val. Rng. Low	Val. Rng. High	Close Price ($)
	8/29/2014		Stable:				
	8/26/2014	NA	1	NE	34.00	40.00	27.32
•	10/24/2014	22.12	1	NE	29.00	31.00	20.00
▼•	2/6/2015	18.41	2	NE	15.00	17.00	15.24
•	10/12/2015	20.21	2	NE	22.00	24.00	20.21
•	10/23/2015	19.19	2	NE	14.00	16.00	12.35
•	12/17/2015	13.44	2	NE	15.00	17.00	15.26
•	2/2/2016	9.69	2	NE	12.00	14.00	9.43
•	2/12/2016	9.09	2	NE	10.00	12.00	8.00
•	9/8/2016	14.63	2	NE	14.00	16.00	14.28
•	10/26/2016	12.18	2	NE	12.00	14.00	11.77
•	5/8/2017	10.40	2	12	12.00	14.00	10.40
•	6/9/2017	8.52	2	10	12.00	14.00	8.52

Source: Wells Fargo Securities, LLC estimates and Reuters data

Symbol Key
- ▼ Rating Downgrade
- ▲ Rating Upgrade
- • Price Target/Val Range Change
- ◆ Initiation, Resumption, Drop or Suspend
- ■ Analyst Change
- ● Split Adjustment

Rating Code Key
- 1 Outperform/Buy
- 2 Market Perform/Hold
- 3 Underperform/Sell
- SR Suspended
- NR Not Rated
- NE No Estimate

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- Wells Fargo Securities, LLC maintains a market in the common stock of Pandora Media, Inc.

P: Risks include the high cost of content licensing, competition for users, and failure to meet paid subscription growth targets.

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2=Market Perform: The stock appears appropriately valued, and we believe the stock's total return will be in line with the market over the next 12 months. HOLD
3=Underperform: The stock appears overvalued, and we believe the stock's total return will be below the market over the next 12 months. SELL

SECTOR RATING
O=Overweight: Industry expected to outperform the relevant broad market benchmark over the next 12 months.
M=Market Weight: Industry expected to perform in-line with the relevant broad market benchmark over the next 12 months.
U=Underweight: Industry expected to underperform the relevant broad market benchmark over the next 12 months.

VOLATILITY RATING
V = A stock is defined as volatile if the stock price has fluctuated by +/-20% or greater in at least 8 of the past 24 months or if the analyst expects significant volatility. All IPO stocks are automatically rated volatile within the first 24 months of trading.

As of: August 30, 2017

43% of companies covered by Wells Fargo Securities, LLC Equity Research are rated Outperform.	Wells Fargo Securities, LLC has provided investment banking services for 47% of its Equity Research Outperform-rated companies.
55% of companies covered by Wells Fargo Securities, LLC Equity Research are rated Market Perform.	Wells Fargo Securities, LLC has provided investment banking services for 35% of its Equity Research Market Perform-rated companies.
2% of companies covered by Wells Fargo Securities, LLC Equity Research are rated Underperform.	Wells Fargo Securities, LLC has provided investment banking services for 26% of its Equity Research Underperform-rated companies.

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Industry Update

June 27, 2017

Internet: Applications and Media

Spotify Showing Momentum Ahead of Possible Listing

Spotify added 20mn paying subscribers in the last year, more than the 18mn added in the best year at Netflix (NFLX, Buy, $157.50, $195 PT), a similarly priced media service. Content costs are still very high, estimated to be 68% of revenue last year, but licensing renewals are said to be about 600bps lower (after windowing concessions made by Spotify). We see other structural pathways for continued content cost and gross margin improvement over time. Assuming reports on licensing are correct, subscriber growth continues at high rates and the model continues to scale, we illustrate a scenario of $1.7Bb of net profit by 2022. We think the stock would likely trade at 20x to 25x forward earnings, which could make it a +$35bn company in 4-years. We look forward to more disclosure as a direct listing appears to be coming later this year. We are neither participating in the offering of Spotify nor are we initiating coverage with this report. We are not making any stock recommendations in this report. *Reach out to your MKM rep. for a copy of the most recent financial filings (2016 annual) as well as a working subscriber model and framework for evaluating earnings potential.*

Impressive subscriber momentum

- In March, Spotify reported that it had reached 50mn paying subscribers, adding over 20mn new paid members in one year. This is a meaningful acceleration from 13mn additions in 2015 and 5mn in 2014.
- In mid-June the company disclosed that total active users reached 140mn. While there is still a wide discrepancy between free, ad-supported and paying subscribers, the conversion ratio appears to be improving materially.
- We estimate that Spotify is now converting over 70% of net new users to net paying users, up from around 55% last year, 40% in 2015 and 25% in 2014. This has been point of contention with music labels in the past, but patience appears to be paying off.

Subscription revenue is 90% of revenue, but the advertising business is also growing fast

- The U.S. is now 40% of revenue, from 30% two years ago. This implies around 19mn U.S. subs at end-2016 with about 9mn in the UK/ Sweden and 20mn elsewhere around the world.
- Implied subscriber ARPU implies a surprisingly large y/y decline. We assume this is impacted by foreign exchange and some mix shift to student plans. This could also be an even greater Q4-loaded year than we have modeled.

Still loss making

- Spotify recorded non-GAAP losses of about $520mn for 2016 on revenue of $3.2bn. Losses were about $290mn greater than in 2015 despite 52% revenue growth. Cash gross margin of 15.1% was up about 160bps.

Content costs set to improve

- Content costs have been reportedly in the 68-69% range, with 58% to labels and 10-11% to publishers. After being out of contract with all three major labels for an extended period (multiple years), Spotify renewed with Universal Music Group in April.
- Reports suggest that UMG may be worked down to around 52%, but Spotify offered a major concession on windowing. UMG artists will now be able to release new material to only paid members for up to two weeks before it becomes available to free listeners.
- We think changes in industry structure are diminishing value proposition of labels to artists and that artists should increasingly look to license directly to the major platforms. This could materially increase the compensation to artists and lower content costs to Spotify over time.
- We also think a recent acquisition of a blockchain technology company (Mediachain) could lead to meaningful improvement in gross margin. It may be possible to use blockchain technology to disintermediate third parties from reporting and payments between Spotify and rights holders. This could improve transparency and speed of payment to artists while lowering cost of revenue.

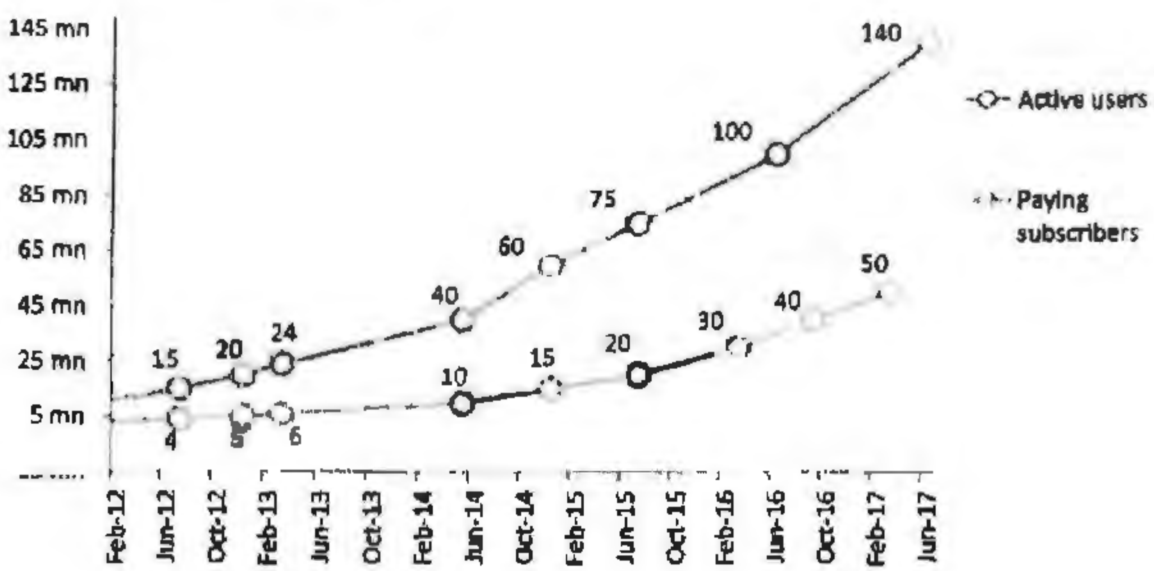
Significant earnings potential by our illustrative framework

- There have been several media reports suggesting that Spotify may forgo a formal IPO process in favor of a direct listing (supposedly on the NYSE).
- While still not profitable, this significant earnings power is why the company is reported to be having little problem raising money at $13bn valuation.

Potential direct listing late 2017

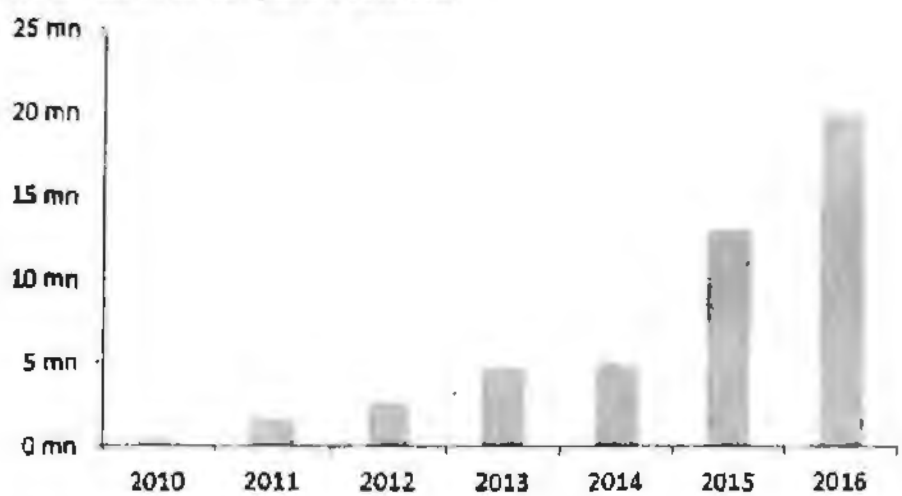
- There have been several media reports suggesting that Spotify may forgo a formal IPO process in favor of a direct listing (supposedly on the NYSE).
- Comments in early June by board member and co-founder during a radio interview in Sweden suggested the IPO is definitely not being considered, but the direct listing is were revoked by the company's official spokesperson. She also confirmed that the company has hired bankers Morgan Stanley, Goldman Sachs and Allen & Co. to advise in the process.

Spotify Reported User Milestones



Source: company reports

Acceleration in net paid additions



Source: company reports

We are neither participating in the offering of Spotify shares nor are we initiating coverage/making any stock recommendations.

Of potential comps, we're asked most often how we would compare Spotify with Netflix

Content exclusivity: The subscription video space is evolving toward content exclusivity. This makes competing services more complementary than substitutes. The music space has more limited opportunity for exclusivity (pre-releases, side-tracks/deep cuts, live performance, etc.), making the services more substitutive.

Addressable market: Many investors/observers have noted that while there is a strong precedent for subscription video, most consumers are not willing to pay for music. **We disagree.** The recording industry peaked at about $27bn in physical media sales in 1999, which inflation adjusted is about $40bn today. We think there is also a strong precedent for consumers paying for music, it's just that the format has changed and for the better to the consumer.

Universal appeal: We think both services have global appeal but that music may travel even better than filmed entertainment.

Content costs: The cost of music licensing is the by far the biggest swing factor on earnings power and valuation for Spotify. It has been reported that Spotify's recent licensing renewals will lower content costs from 58% to 52% so long as minimum subscriber thresholds are met. We interpret this as only the sound recording rights, not the publishing rights (another 10-12%).

end 2016	Spotify	Netflix	Pandora	SiriusXM
Paying subscribers	**48 mn**	**89 mn**	**4 mn**	**31 mn**
y/y additions	*20 mn*	*18 mn*	*0 mn*	*2 mn*
Total users	*126 mn*	*94 mn*	*81 mn*	*31 mn*
Revenue	**$3,247 mn**	**$8,288 mn**	**$1,298 mn**	**$4,725 mn**
Subscription ARPU	**$6.76**	**$8.61**	**$4.71**	**$11.23**
Ad ARPU	$0.40	$0.00	$1.19	$0.38
Content spending	2,208	5,100	734	850
Other cost of revenue	540	667	101	715
Total cost of revenue	**$2,748 mn**	**$5,767 mn**	**$836 mn**	**$1,565 mn**
Gross margin	***15%***	***30%***	***36%***	***67%***
Content spending	*68%*	*62%*	*57%*	*18%*
Other cost of revenue	*17%*	*8%*	*8%*	*15%*
Other COR per user	*$4.29*	*$7.11*	*$1.25*	*$22.82*
shares		445 mn	255 mn	4,847 mn
stock price		$158	[illegible]	$5.30
Market cap	**$13 bn***	**$70 bn**	**52 bn**	**$26 bn**

** media reports for current financing round/Note: Pandora (P, Neutral, $8.28, $10 FV); Sirius XM (SIRI, Not Rated)*
Source: FactSet, company reports, MKM estimates

We are neither participating in the offering of Spotify shares nor are we initiating coverage/making any stock recommendations.

Can Spotify continue to leverage content costs lower?

Many investors fall back to the adage that "content is king" without considering the changing dynamics of the music industry. It's true that music services like Spotify have no business without access to licensed music for which there is no substitute.

Spotify is already by far the largest platform and growth is accelerating. As this continues, it's becoming increasingly conceivable, in our view, that Spotify could cut out the labels and go directly to musicians, expand their economics considerably while lowering overall content costs.

In April, the company renewed with Universal Music Group (the largest major label) and with Merlin (the largest independent label (MERL.LN, Not Rated)). It has been reported that the deal with UMG will allow for content costs to improve by about 600 bps. Spotify will give UMG unprecedented access to data, but Spotify also made a major concession on windowing. Going forward, Universal artists will have the option to release new albums only on the Premium service for two weeks, withholding new material from ad-supported listeners.

The role of the music label is diminishing, but economics are not

Artists have historically relied on music labels to provide marketing and distribution of their works and on music publishing groups as toll collectors for the scattered royalty streams around the globe. However, a lot has changed in the music business. Physical media is all but dead. Radio and MTV are no longer relevant platforms for music discovery or artist promotion. Music labels spending on A&R is nothing compared to two decades ago. There are now a very small number of growth platforms for consumption, of which Spotify is the largest.

All of these trends suggest that the value-add of major labels and publishing groups to musicians is becoming increasingly marginalized. Economic relationships, however, have not changed much.

It has been reported that major label artists receive about 20% of the total streaming royalty, while the music label and publisher (often the same company) take the huge majority of the royalty. Most artists don't understand how streaming economics work, but many complain that they see so little for their participation, have very little transparency and often have lengthy waiting periods before being paid. Much of the criticism of the artist community is directed toward the services like Spotify.

A report by a Los Angeles based law firm (Manatt, Phelps & Phillips) published in 2016 suggested that *artists not signed to a major label* can expect to receive nearly 4x the royalty from streaming compared to a major label artist.

In late 2014, after Taylor Swift very publically pulled her catalog from streaming services like Spotify, CEO Daniel Ek disclosed in a blog post here that the works of top artists were being paid over \$6mn per year. Given the massive subscriber growth, on 2017 numbers this would imply about \$22.5mn to a top artist. The framework provided by Manatt, Phelps & Phillips suggests that top artists will be receiving around \$4.5mn in 2017 from Spotify, while their music labels and publishers receive about \$18mn. Artists should be questioning the value the traditional music industry is providing to them in the streaming world.

Through Spotify, artists can now reach over 140mn listeners. Include just three other platforms – YouTube, Apple Music and Pandora – and we think artists have the potential to reach several hundred million listeners. As these services continue to grow, the value proposition of the label will continue to diminish.

Blockchain is another interesting development

Spotify incurs significant expense from third parties (i.e., payments firm Adyen) to handle measurement and settlement of transactions between music labels and publishers.

It is believed that Spotify's recent acquisition of blockchain technology company Mediachain Labs is an effort to create a new mechanism to handle payments that could significantly reduce its costs and provide a better, more transparent system for creators and rights holders.

Blockchain is most well known as the foundation for the cryptocurrency Bitcoin. It provides a digital ledger distributed across a network of computers, providing transparency for network participants without a centralized authority. We think this could disintermediate third-party vendors, provide more transparency and speed up payments to artists. This could also remove another point from the value chain that labels and performance rights organizations provide to artists, increasing the potential for disintermediation.

Spotify: Illustration of Potential Earnings Power

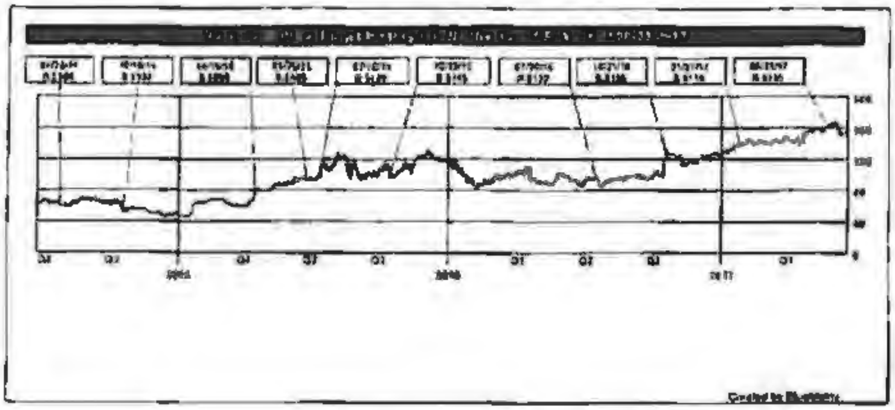
	2016	2017	2018	2019	2020	2021	2022
Total users (mn)	126	159	187	211	233	251	267
Paid subscribers (mn)	48	68	88	106	122	136	148
Subscription revenue (mn)	$2,920	$5,059	$7,390	$9,796	$12,215	$14,226	$16,100
Advertising revenue (mn)	$327	$327	$468	$597	$727	$860	$998
Total revenue	**$3,247**	**$5,386**	**$7,858**	**$10,393**	**$12,942**	**$15,086**	**$17,098**
Music licensing	68%	65%	63%	62%	61%	60%	60%
Other COGS per user	$4.29	$4.00	$3.50	$3.30	$3.20	$3.10	$3.00
gross margin	*15%*	*23%*	*29%*	*31%*	*33%*	*35%*	*35%*
Product development	*6.5%*	*6.3%*	*6.1%*	*6.0%*	*6.0%*	*6.0%*	*6.0%*
Sales and marketing	*13.9%*	*13.6%*	*13.3%*	*13.0%*	*12.5%*	*12.0%*	*11.5%*
General and admin.	*5.1%*	*4.8%*	*4.6%*	*4.5%*	*4.5%*	*4.5%*	*4.5%*
Tax rate			*10%*	*25%*	*25%*	*25%*	*25%*
Net profit (mn)	**($329)**	**($80)**	**$330**	**$608**	**$995**	**$1,396**	**$1,707**

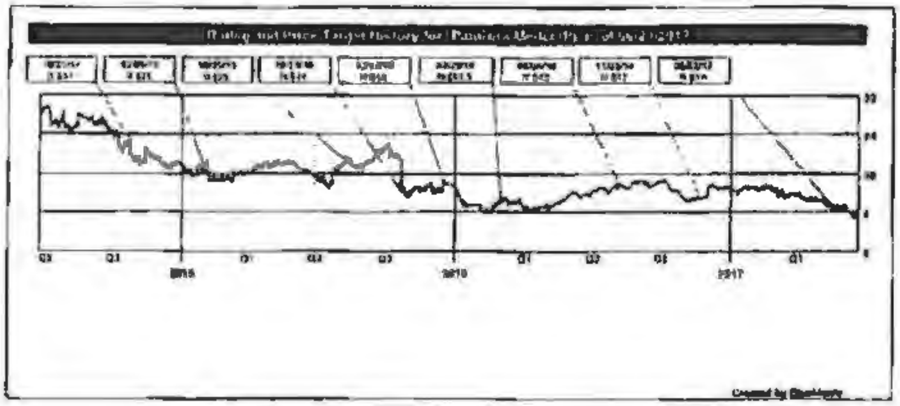
Source: company reports, MKM estimates

We are neither participating in the offering of Spotify shares nor are we initiating coverage/making any stock recommendations.

Other Public Companies Mentioned:

Company Name	Ticker	Price	Rating	PT/FV
Netflix, Inc.	NFLX	$158.02	Buy	195.00
Pandora Media	P	$8.28	Neutral	10.00





Valuation Methodology:

NFLX: Our 12-month price target of $195 per share assumes 22.5x forward EPS in 2020E, discounted at 25% per year.

P: We arrive at our fair value estimate with the assumption that media reports of LMCA floating a $15 offer and that the stock would collapse back to $9 if deal speculation were to disappear. Our $10 fair value estimate is the midpoint of these scenarios.

Risks:

NFLX: There are inherent risks that the target price for any security will not be realized, especially in emerging growth markets. In addition to general market and macroeconomic risks, for NFLX, these risks include, among other things: (1) fixed cost leverage as NFLX is making very significant bets on content and is losing large sums of money to develop international markets, (2) subscriber growth could slow while the bull case on NFLX depends on a significant amount of subscriber growth for many years, (3) international markets may not develop, (4) a hot-hand in original programming could turn cold, (5) there are many large competitors participating or looking to enter the space, (6) the long-term cost model is unknown and our earnings power analysis depends on scale in content spending and (7) lack of network neutrality or aggressive usage caps could ultimately lead to higher delivery costs for NFLX or for users which would effectively raise price to consumer with no benefit to the company.

P: There are always risks that the target price for any security will not be realized. In addition to general market and macroeconomic risks, for P, these risks include, among other things: 1) a reversal in content cost escalation; 2) P achieves a significant premium to traditional radio advertising with new interactive ad formats or otherwise; 3) the company is acquired; 4) investors continue to look through business model challenges for an extended period; 5) competitive efforts fail and rapid audience expansion resumes; 6) P's subscriber business sees mass-market adoption.

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MKM Partners, Equity Research

Investment Banking Serv./Past 12 Mos.

Rating	Count	Percent	Count	Percent
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HOLD [NEUTRAL]	67	45.89	0	0
SELL [SELL]	2	1.37	0	0

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June 22, 2017

Apple Inc.

Apple Music vs. Spotify: Can You Hear the Battle Drums?

Our view: We outline the multiple steps Apple has taken recently to grow Apple Music's share of the streaming market.

Key points:

All You Need to Know: **Apple Music** has been growing at a solid clip and presently has 27M subscribers vs. ~20M as of Dec. However, it still lags behind Spotify which announced ~50M paid subscribers in March (vs. 40M in Sep-16). Apple has been taking multiple steps to gain share in Music, which is central to its larger push to double Services revenue by 2020 (Refer to our Services Primer for details on services business). 1.) Apple lowered pricing for users who buy an annual subscription vs monthly. Annual subscription costs $99/year vs. $9.99/month and offers a ~17% discount. 2) Apple is seeking to reduce record labels' current 58% revenue share from streaming. Earlier, Spotify successfully lowered the record label cut to 52% from 55% by providing subscriber growth guarantees. (Source: Bloomberg) 3.) At WWDC, AAPL introduced social features similar to Spotify, adding the ability to share playlists/songs with friends and allowing users to see what their friends are listening to. 4) AAPL supplements the streaming business with free TV shows like recently released "Planet of the Apps" and "Carpool Karaoke" (release in August). In a further commitment to create original content, AAPL recently hired two top Sony Pictures executives that were behind successful shows like Breaking Bad and The Crown.

Fundamentally, we remain positive on AAPL based on: 1) iPhone 8 cycle tailwinds; 2) sustained high-teens services growth and 3) potential cash repatriation benefits. Maintaining Outperform rating and price target at $168.

Apple Music vs. Spotify: **(a.)** Content: Apple Music has a larger catalog and has struck more exclusive deals with artists. It is also increasingly investing in exclusive video content for the Music service. (b.) AAPL allows integration with iTunes library. (c.) Social features: Presently, only Spotify allows users to share playlists and let them see what songs their friends are playing. (d.) Music discovery and others: Apple uses curated playlists and Beats 1 radio. Spotify appears to have a slight advantage with multiple tools like Release Radar, New Music Friday, and personalized Discover Weekly playlist. (e.) Pricing is essentially the same though Spotify offers a free service with ads.

Services 101: AAPL expects Services to be the size of a F100 company by FY17 (~$28B in revenues) and double by FY20, implying ~18% CAGR. Currently in the $24B Services portfolio, we estimate the largest components are A) App Store ($8.5B, or 3.9% of total revenues), B) iTunes/ Apple Music (~$5.5B, 2.5%), C) AppleCare & Services (~$4.1B, 1.9%), D) Licensing & Other including iCloud, Apple Pay and others (~$5.9B, 2.7%).

Sector: IT Hardware

Outperform

NASDAQ: AAPL; USD 145.63

Price Target USD 168.00

WHAT'S INSIDE

☐ Rating/Risk Change ☐ Price Target Change
☐ In-Depth Report ☐ Est. Change
☐ Preview ☑ News Analysis

Scenario Analysis*

Downside Scenario	Current Price	Price Target	Upside Scenario
105.00	145.63	168.00	195.00
↓ 26%		↑ 17%	↑ 35%

*Implied Total Returns

Key Statistics

Shares O/S (MM):	5,328.0	Market Cap (MM):	775,917
Dividend:	2.28	Yield:	1.6%
BVPS:	23.78	P/BVPS:	6.12x
		Avg. Daily Volume:	29,778,684

RBC Estimates

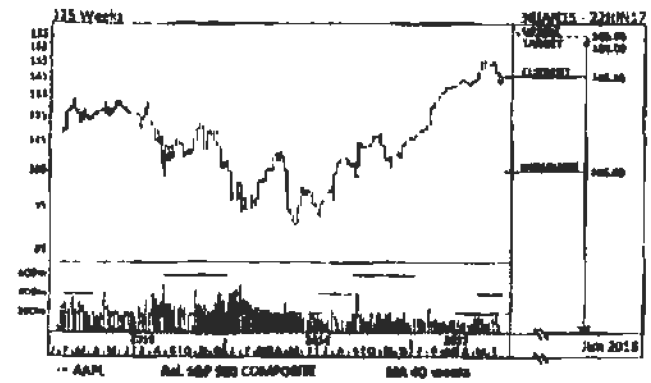
FY Sep	2015A	2016A	2017E	2018E
EPS, Ops Diluted	9.22	8.28	8.90	9.79
P/E	15.8x	17.6x	16.4x	14.9x
Revenue	233.7	215.6	225.4	238.3

EPS, Ops Diluted	Q1	Q2	Q3	Q4
2016	3.28A	1.90A	1.42A	1.67A
2017	3.36A	2.10A	1.58E	1.87E
2018	3.48E	2.42E	1.81E	2.08E
Revenue				
2016	75.9A	50.6A	42.4A	46.9A
2017	78.4A	52.9A	44.9E	49.3E
2018	79.9E	59.8E	47.0E	52.1E

All values in USD unless otherwise noted.

Target/Upside/Downside Scenarios

Exhibit 1: Apple Inc.



Source: Bloomberg and RBC Capital Markets estimates for Upside/Downside/Target

Target price/base case

In the current environment with $250B+ in cash, we believe the stock is undervalued at these levels. From a product perspective, we believe the company can continue to gain share in both the tablet and smartphone space. In our view, the smartphone space is currently a two-horse race where Apple will be one of the winners in continuing to gain market share. Our base case of $168/share is based on ~18x FTM EPS, as we think Apple will return to y/y revenue growth in FY17.

Upside scenario

In our upside scenario of $195, we see Apple's services growing at a faster than anticipated rate and lifting company gross margins above the 40% level. In this scenario, we believe the stock deserves to be valued higher, as EPS growth expansion would likely outpace revenue growth for the company over the next several years. In this scenario, we believe many investor concerns would be quelled, causing the stock price to move well above our current price target. Our upside price reflects ~20x FY18E EPS.

Downside scenario

In our downside scenario of $105, the company begins to lose market share in both the smartphone and tablet markets. These two product lines generate the bulk of Apple's revenue and EPS. If new competitors impinge on the company's current market share, we believe the financial model would become increasingly difficult to maintain.

Investment summary

Themes. We believe AAPL's current stock price creates an attractive entry point for investors to benefit from its ability to return to revenue and EPS growth in FY17. We believe multiple catalysts remain as the company benefits from: (1) iPhone ramps; (2) Mac/iPad refresh cycle; (3) potential ITV launch or other major product lines; and (4) improvements in capital allocation policy. We believe the fundamental reality remains that AAPL's valuation is materially sub-par to what we anticipate is its long-term revenue and EPS potential.

It's the ecosystem, not just hardware. We believe AAPL's true differentiation is its unique computing ecosystem: iOS. iOS provides users with an integrated, scalable, and seamless experience across multiple devices, which we believe will be difficult for competitors to replicate in scale. Simplistically, the scale of users attracts application developers, which in turn bolsters the number of users. We believe this cycle results in a captive consumer base that transitions more data and usage via iOS on Apple devices.

Vertical integration. While the benefits of integrating and developing hardware and software simultaneously are well recognized with Apple, we believe another byproduct of this is that Apple is able to pursue a substantially larger profit pool vs. any of its peers. Simplistically, rather than just targeting the hardware layer, AAPL is able to capture incremental profits by also being the OS developer, processor manufacturer, and in some instances the retailer of the product.

Multiple levers in place. We believe AAPL has multiple levers ahead of it that should drive further revenue acceleration. Notably, we believe emerging markets penetration will remain a key and material revenue driver for the company over the next several years. Furthermore, we believe success and growth in Enterprise markets will open up a stickier and higher-margin segment. Finally, we believe new products (such as an ITV) could further expand AAPL's revenue opportunity and profit potential.

Valuation

Our price target of $168 is based on ~18x FTM EPS, which is slightly above AAPL's five-year price/FTM EPS multiple of 15x, as we think AAPL will revert to y/y revenue growth in FY17E. Our price target and implied return support an Outperform rating.

Risks to rating and price target

Risks include: unknown market acceptance of new products; new product launch delays; stronger-than-expected competitive response to iPhone; slower-than-expected international expansion; greater-than-expected iPod cannibalization; slower-than-expected Macintosh market share gains; channel conflicts or execution; and key executive or staff departures. We see Apple's valuation multiple as vulnerable should market sentiment continue to deteriorate, and it could compress further on unexpected competitive developments, execution stumbles, unexpectedly slowing growth, declining margins, PC market concerns, or a decline in overall market or technology market valuations.

Company description

Apple, founded in 1976, is a California-based designer, manufacturer, and marketer of differentiated personal computers, software, and services. Products include the Macintosh line of personal computers, Mac OS X operating system and related application software (iLife, iWork, etc.), services, and peripherals, the iPod line of portable digital media players, the iTunes online media store, iPhone Smartphone, and iPad tablet. Apple is positioned in the high-end consumer sector, has a strong global brand and fiercely loyal customer base, and is supported by its retail store network. Apple has approximately 110,000 employees.

RBC Capital Markets

IT Hardware
Apple Inc.

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Two Embarcadero Center, Suite 2250, San Francisco, CA 94111

Apple Inc. (NASDAQ:AAPL)
Fiscal Year End September

Revenue ($ in billions)	$75.5-77.5	$50-53	$41-43	$45.5-47.5	$76-78	$51.5-53.5	$43.5-45.5	
Gross Margin (%)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
OPEX ($ in billions)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
Other ($ millions)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
Tax Rate (%)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	

Net Sales	75,872	50,557	42,358	44,852	74,464	52,896	44,881	48,814	76,800	59,396	46,893	51,069	81,208	233,715	215,639	226,442	258,295	234,500	219,339	224,981	229,712
Q/Q Change	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]								
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COGS - non-GAAP	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Gross Profit	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Gross Margin %	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Q/Q Change	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]								
Y/Y Change	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
R&D	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Q/Q Change	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]								
Y/Y Change	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
% of revenue	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
SG&A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Q/Q Change	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]								
Y/Y Change	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
% of revenue	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total operating expenses	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Q/Q Change	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]								
Y/Y Change	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
% of revenue	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
EBIT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
EBIT margin	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other income (expense)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Income before Taxes	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Provision for Taxes	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Tax rate	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Net Income (non-GAAP)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Net margin %	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Shares-basic	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Shares-Diluted	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
GAAP Basic EPS	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
GAAP Diluted EPS	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Source: Company Reports and RBC Capital Markets estimates.

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Sector Perform (SP): Returns expected to be in line with sector average over 12 months.

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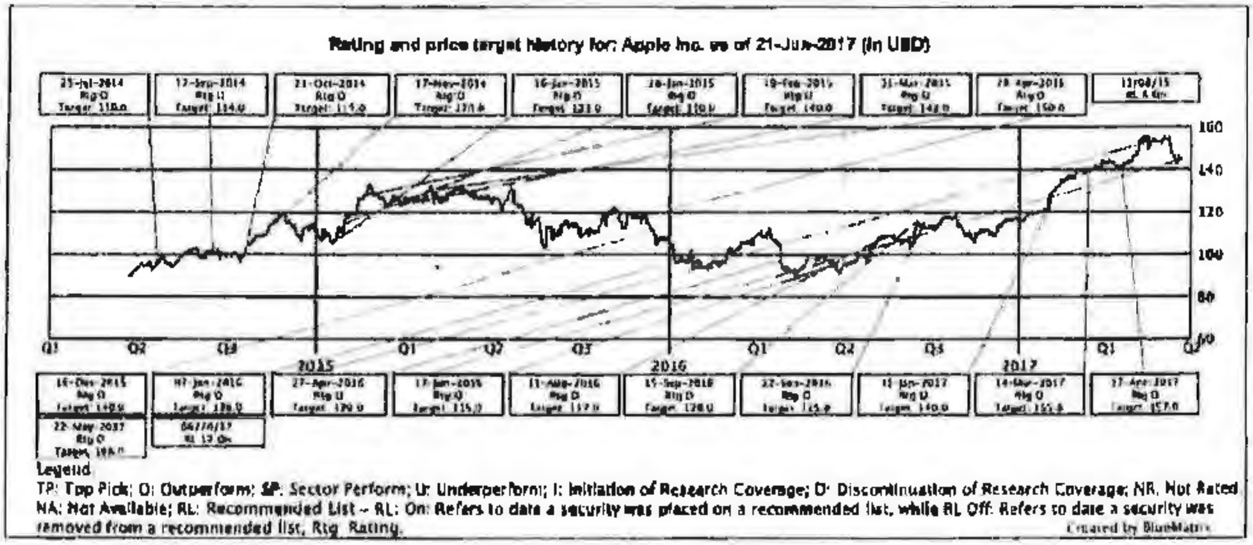
RBC Capital Markets, Equity Research
As of 31-Mar-2017

			Investment Banking Serv./Past 12 Mos.	
Rating	Count	Percent	Count	Percent
BUY [Top Pick & Outperform]	845	51.94	285	33.81
HOLD [Sector Perform]	679	41.84	149	21.94
SELL [Underperform]	101	6.22	8	7.92



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Apple Inc.

Valuation

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AEGIS CAPITAL CORP

Company Update

March 3, 2017

Key Metrics

P - NASDAQ	$12.43
Pricing Date	Mar 2 2017
Price Target	$17.00
52-Week Range	$14.98 - $8.05
Shares Outstanding (mm)	255.2
Market Capitalization (mm)	$3,172.1
3-Mo Average Daily Volume	7,632,070
Book Value/Share	$3.56
Price/Book	3.5x

EPS FY: December

	2015A	Prior 2016A	Curr. 2016A	Prior 2017E	Curr. 2017E
1Q-Mar	(0.23)	--	(0.51)	--	(0.51)E
2Q-Jun	(0.08)	--	(0.33)	--	(0.31)E
3Q-Sep	(0.40)	--	(0.27)	--	(0.25)E
4Q-Dec	(0.09)	--	(0.41)	--	(0.17)E
FY	(0.79)	-	(1.52)	--	(1.20)E
P/E	NM		NM		NM

REVENUE

	2015A	Prior 2016A	Curr. 2016A	Prior 2017E	Curr. 2017E
1Q-Mar	230.8	--	297.3	--	314.9E
2Q-Jun	285.6	--	343.0	--	373.1E
3Q-Sep	311.6	--	351.9	--	444.8E
4Q-Dec	336.2	--	392.6	--	541.0E
FY	1,164.0	--	1,384.8	--	1,673.9E

Company Description:

Pandora is an Internet radio service primarily in the U.S. with an evolving service offering in New Zealand, and Australia and their associated territories. The service has over 78 million monthly active users, 100 million users every three months that listen for an average of 23 hours a month, and close to 4 million paying subscribers to its subscription ad-free service. Pandora also owns Ticketfly, a live events ticketing company, which it purchased on October 31, 2015 and is in the process of launching an on-demand music streaming subscription service. Pandora was founded in 1999 by Timothy Westergren (recently returned to Pandora as CEO), along with two co-founders: Will Glaser and Jon Kraft. It was incorporated in 2000 and is headquartered in Oakland, California. The company commenced its non-subscription, ad-supported radio service in 2005 and since then listeners have created over 9 billion stations. The Company went public on the New York Stock Exchange on June 15th, 2011 at $16 per share. Pandora was originally named Savage Beast Technologies.

Pandora Media Inc.

Rating: Buy

Spotify Sub Leap Evidence of Expanding Market For On-Demand

Investment Highlights:

Spotify @ 50M Subs. Spotify announced the crossing of 50M subscribers via Twitter (TWTR-$15.79:Sell) last night, adding 10M subscribers in five months. That compares to 20M subscribers for Apple Music at the end of 2016 - Eddy Cue, Apple's SVP of Internet Software and Services stated in Mid-February, that Apple was "well past" the 20M subscriber mark. Currently, under 100M consumers are paying for music worldwide compared to a potential market opportunity, we believe, of at least a billion. Spotify's subscriber leap is evidence, in our view, of an expanding market for paid on-demand music streaming. The market is in its infancy, rather than maturing.

Positive For Pandora. Spotify's announcement is creating headline risks for Pandora's stock this morning. However, Pandora is in a perfect position to capture subscribers from this expanding market, both from its existing subscriber base of 81M active users, and from non-Pandora users. Thus, we view this news from Spotify as as positive indicator of Pandora's ability to capture subs when it rolls out its premium on-demand product this month.

Maintain Buy & $17 Price Target. We continue to believe that an acquisition remains part of the bull case on the stock. Our price target is based on a DCF analysis using a WACC of 9.4% and a 9x implied terminal year EBITDA multiple. Pandora trades at 2.0x 2017 EV/Sales on our estimates. These multiples are at a discount to the group of Internet media stocks which trade at 3.2x 2017 EV/Sales. See Risk Factors and Valuation Methodology on page 2.

Required Disclosures

Price Target

Our price target on Pandora is $17

Valuation Methodology

Our price target is based on a DCF valuation analysis.

Risk Factors

Competition. Competition in online streaming, and on-demand streaming in particular, continues to grow. Spotify recently announced surpassing 40M subscribers, Apple Music in its short existence has 17M subscribers, Tidal is getting aggressive in the space with exclusive content, YouTube/Google Play is becoming increasingly relevant in addition to launching the YouTube Red service, and SoundCloud has 175M users globally.
Relationships With Labels. Pandora's relationships with the top music labels could sour in the future or could become less economical when contracts are up for renegotiation.
Execution Risks. High execution risks from juggling multiple investments : the existing lean-back service, the forthcoming on-demand service, international expansion, and expanding the ticketing service.

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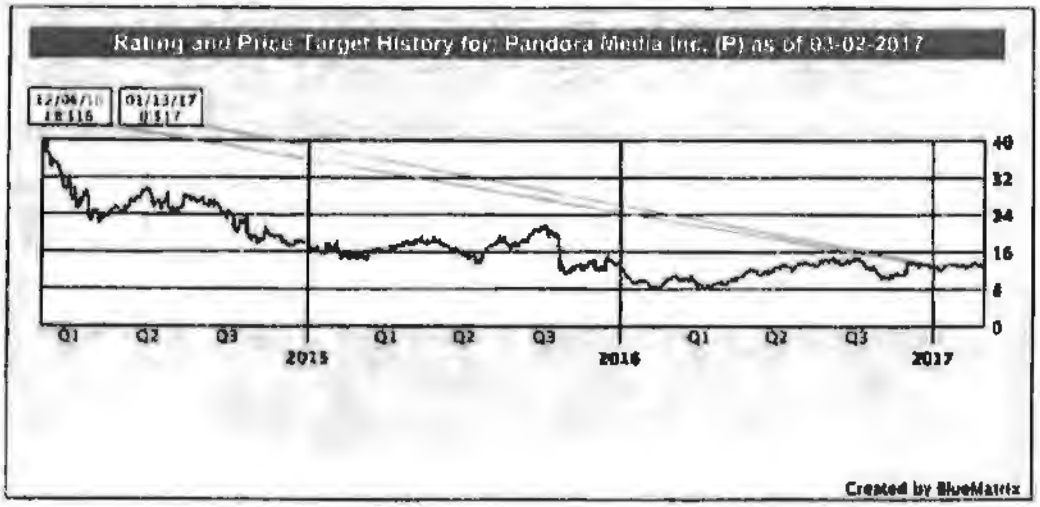

Rating	Percent	Investment Banking Services/Past 12 Mos. Percent
BUY [BUY]	85.71	29.17
HOLD [HOLD]	13.39	20.00
SELL [SELL]	0.89	0.00

Meaning of Ratings

A) A Buy rating is assigned when we do not believe the stock price adequately reflects a company's prospects over 12-18 months.

B) A Hold rating is assigned when we believe the stock price adequately reflects a company's prospects over 12-18 months.

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The undersigned hereby certifies that on November 13, 2017, all counsel of record who are deemed to have consented to electronic service are being served with a copy of this document via the Court's SDNY Procedures for Electronic Filing.

/s/ Steven G. Sklaver
Steven G. Sklaver