SPOTIFY LOOSE ENDS: PRICING, SUBSCRIBER-BASED VALUE AND BIG DATA!

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Loose Ends

- In my last post, I valued Spotify, using information from its prospectus, and promised to come back to cover three loose ends,
  - A pricing of the company to contrast with my intrinsic valuation
  - A valuation of a Spotify subscriber and by extension a user-based valuation of the company
  - The value of big data, seen through the prism of what Spotify can learn about its subscribers from their use of its service and put to commercial use.

1. Pricing versus Value

- The value of an asset is determined by its expected cash flows and the risk in these cash flows, which you can estimate imprecisely using a discounted cash flow model.
- The price of an asset is based on what others are paying for similar assets, requiring judgments on what comprises "similar".
- My last post reflected my attempt to attach an intrinsic value to Spotify, but the pricing questions for Spotify are two fold:
  - the companies that investors in the market will compare it, to make a pricing judgment
  - the metric that they will base the pricing on.

One-on-One Pricing: Raw Data

	Enterprise Value (millions US $)	# Users (millions)	# Premium Subscribers (millions)	Revenues (millions $)	% from Ads	Gross Profit (millions $)
Pandora	$ 1,135	74.70	5.50	$ 1,467	73.28%	$ 500
Netflix	$ 137,462	118.00	118.00	$ 11,693	0%	$ 4,033
Spotify		159.00	71.00	$ 5,049	10.17%	$ 1,048

Pricing Spotify

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	Pricing Multiple			Pricing Spotify		
	EV/ User	*EV/ Revenue*	*EV/ Gross Profit*	*Users*	*Revenues*	*Gross Profit*
Pandora	15.19	0.77	2.27	$ 2,416	$ 3,906	$ 2,379
Netflix	1164.93	11.76	34.08	$ 185,224	$ 59,356	$ 35,720

What's your price?

- Those who are bullish on the company will try to avoid comparisons to Pandora and encourage comparisons to Netflix.
- If, as is rumored, Spotify's equity is priced at between $20 and $25 billion, it will look massively over priced, if compared to Pandora, but be a bargain, relative to Netflix.
- The bottom line is that the pricing range for Spotify is wide, because it depends on the company you compare it to, and the metric you base the pricing on.

A Subscriber-based Valuation of Spotify

- Last year, I did a user-based valuation of Uber and used it to understand the dynamics that determine user value and then to value Amazon Prime.
- That framework can be easily adapted to value Spotify subscribers, both existing and new. It requires that we break Spotify down into its constituent parts and value each separately.

Valuing Existing Subscribers

Renewal Rate
Assumed to stay at 94.5% (2017 levels)

Revenue/Subscriber
In 2017= 5.26 Euros/month, converted to $ (.81 Euro=$) & annualized.

Growth Rates
Subscriber premiums grow at 3%/year, whereas contents costs grow 1.5%/year. In year 10, content cost is 70% of revenue.

Content Costs
Base year is set at 79.24% of subscriber revenues (2017 level)

Tax Rates
Used global average tax rate of 25%.

	Base Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Membership Survival	1.0000	0.9450	0.8930	0.8439	0.7975	0.7536	0.7122	0.6730	0.6360	0.6010	0.5680	0.5367	0.5072	0.4793	0.4529	0.4280
Revenue/Subscriber	$ 77.63	$ 79.96	$ 82.36	$ 84.83	$ 87.37	$ 89.99	$ 92.69	$ 95.47	$ 98.34	$ 101.29	$ 104.33	$ 107.46	$ 110.68	$ 114.00	$ 117.42	$ 120.94
Content Cost/ Subscriber	$ 61.51	$ 62.44	$ 63.37	$ 64.32	$ 65.29	$ 66.27	$ 67.59	$ 68.94	$ 70.32	$ 71.73	$ 73.16	$ 74.63	$ 76.12	$ 77.64	$ 79.20	$ 80.78
Operating Profit/Loss per Subscriber	**$ 16.12**	**$ 17.52**	**$ 18.98**	**$ 20.50**	**$ 22.08**	**$ 23.73**	**$ 25.10**	**$ 26.53**	**$ 28.02**	**$ 29.56**	**$ 31.16**	**$ 32.83**	**$ 34.56**	**$ 36.36**	**$ 38.23**	**$ 40.16**
Tax rate	25.00%	25.00%	25.00%	25.00%	25.00%	25.00%	25.00%	25.00%	25.00%	25.00%	25.00%	25.00%	25.00%	25.00%	25.00%	25.00%
After-tax Operating Income	$12.09	$12.42	$12.72	$12.98	$13.21	$13.41	$13.41	$13.39	$13.36	$13.32	$13.27	$13.22	$13.15	$13.07	$12.99	$12.89
Present Value (at Cost of Capital)		**$11.45**	**$10.80**	**$10.16**	**$9.53**	**$8.92**	**$8.22**	**$7.56**	**$6.96**	**$6.39**	**$5.87**	**$5.39**	**$4.94**	**$4.53**	**$4.14**	**$3.79**
Life of subscriber =	15.00															
Value per Subscriber =	$108.65															
Number of Premium Subscribers =	71.00															
Value of Premium Subscribers =	**$ 7,714.28**															

Subscriber Life
Set to 15 years. Only 42.8% make it through year 15.

Cost of Capital
Cost of capital set at median (8.5%) for global companies

Valuing New Subscribers

Value of New Subscriber
Value of Existing Subscriber ($108.65) -
Cost of Acquiring New Subscriber ($27.30)

Cost of acquiring New Subscriber =	$ 27.30
Value per new user (in today's $) =	$81.35

Growth in Users
Growth rate in users assumed to be 25%/year for next 5 years & 5% in years 6-10, before settling into steady state growth of 1% a year.

	Base Year	1	2	3	4	5	6	7	8	9	10
Total Subscribers	71.00	84.85	105.83	132.88	167.00	209.93	224.59	237.31	250.50	264.40	279.06
New Subscribers	0.00	17.75	25.65	32.87	41.44	52.11	26.20	25.08	26.24	27.67	29.21
Value per Subscriber	$81.35	$82.98	$84.64	$86.33	$88.06	$89.82	$91.61	$93.45	$95.32	$97.22	$99.17
Value added by new Subscribers		$1,472.86	$2,170.84	$2,837.58	$3,648.73	$4,680.41	$2,400.64	$2,343.55	$2,501.00	$2,690.51	$2,896.35
Terminal Value (New Subscribers)											$3,528.37
Present Value		**$1,338.96**	**$1,794.08**	**$2,131.92**	**$2,492.13**	**$2,906.16**	**$1,355.10**	**$1,202.61**	**$1,166.74**	**$1,141.04**	**$2,477.01**
Value Added by New Users	**$18,005.75**										

Steady State
Users increases 1% a year in perpetuity

Cost of Capital
Discounted back at the cost of capital of 10% (US $), in the 75th percentile of global firms in 2018.

Valuing Advertising Business

Growth in Revenues
Advertising revenues fgrow 10% a year for next 5 years & 5% from years 6 through 10.

Content Costs
Content costs decrease over time from 79.24% of revenues (current) to about 70%, mirroring improvements in subscription business.

	Base Year	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*
Advertising Revenue	$ 513.58	$564.94	$621.43	$683.58	$751.93	$827.13	$868.48	$911.91	$957.50	$1,005.38	$1,055.65
- Content Costs	$ 406.96	$441.14	$478.18	$518.34	$561.87	$609.06	$633.30	$658.51	$684.73	$ 711.98	$ 740.32
Operating Income	$ 106.62	$123.80	$143.25	$165.23	$190.06	$218.07	$235.18	$253.39	$272.78	$ 293.39	$ 315.32
After-tax Operating Income	$ 79.96	$ 92.85	$107.44	$123.92	$142.54	$163.55	$176.38	$190.04	$204.58	$ 220.05	$ 236.49
Terminal Value											$4,304.99
PV of After-tax Operating Income		$ 85.58	$ 91.26	$ 97.02	$102.86	$108.77	$108.11	$107.36	$106.52	$ 105.60	$2,008.63
Value of Advertising Business	**$2,921.70**										

Steady State
Ad revenues grow at riskfree rate (2.85%) in perpetuity.

Cost of Capital
Used cost of capital (8.5% in US$) for median global company in 2018 as discount rate.

Valuing the Corporate Drag

Growth rate in Expenses
Assume that economies of scale will allow for lower growth (5% a year) in R&D and G&A costs.

	Base Year	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*
Total R&D & G&A Costs	$ 814.81										
Corporate Expenses	$814.81	$855.56	$898.33	$943.25	$990.41	$1,039.93	$1,091.93	$1,146.53	$1,203.85	$1,264.05	$1,327.25
After-tax Corporate Expenses		$ 641.67	$ 673.75	$ 707.44	$ 742.81	$ 779.95	$ 818.95	$ 859.89	$ 902.89	$ 948.03	$ 995.44
Terminal Value (Corporate Exp)											$ 18,120.45
PV of Corporate Expenses		$591.40	$572.32	$553.86	$535.99	$518.70	$501.97	$485.78	$470.11	$454.94	$8,454.68
Value Drag of Corporate Expenses	**$13,139.75**										

Steady State
Corporate costs grow at 2.85% a year forever.

Cost of Capital
Discounted back at the cost of capital (8.5%) of median global company.

Valuing Spotify: Subscriber-based Model

Valuing Spotify	
Value of Existing Subscribers	$7,714.28
Value of New Subscribers	$18,005.75
Value of Advertising Business	$2,921.70
- PV of Corporate Expenses	$13,139.75
Value of Spotify Operating Assets	$15,501.99
+ Cash & Cross Holdings	$2,987.42
- Debt	$0.00
Value of Equity	**$18,489.41**
- Value of Equity Options	$ 1,659.60
Value of Equity in common stock	**$16,829.81**

Top Down versus Subscriber based Models

- Tax Loss Carryforward: The first is that I did not incorporate the benefits of the losses that Spotify has to carry forward (approximately $1.7 billion), with the resulting tax benefit at a 25% tax rate resulting in about $300 million in lost value.
- One cost of capital: The second reason is that I used a composite cost of capital of 9.24% on all cash flows, whereas I used a lower (8.5%) cost of capital for existing users and a higher (10% cost of capital) for new users; that translates into about $600 million in value.
- Growth in Users: The third reason is that I assumed that composite cash flows for Spotify would grow at 2.85% a year forever, while I capped the growth rate in new users to 1%, a more realistic number since inflation cannot help me on user count; using a 2.85% growth rate in the number of users after year 10 adds $2.1 billion in value.

3. The Big Data Premium?

- Spotify meets some of the requirements for a big data payoff, listed in this post from a while back.
  - It has *exclusivity* at least on the information it collects on playlists that subscribers put together and the music that they enjoy listening to
  - It can *adapt its products and services* to take advantage of this knowledge, perhaps in helping artists create new content and customizing its offerings.
- It seems undeniable that it is generating value from the data. The question, though, is whether you should add a premium to your valuation to reflect this.

Why I am not adding a premium!

- It is counted in the valuations already: I allow Spotify to grow revenues well beyond what the current music market would support and lower content costs as they do so, because they have a data advantage. Adding a premium to my estimated valued seems like double counting.
- Decreasing Marginal Benefits: The big data argument, even if based on exclusivity and adaptive behavior, starts to lose its power as more and more companies exploit it. As Facebook, Amazon and Netflix, to name just three, have learned so much about us, there is not much left of us that is undiscovered.
- Data Backlash: This week, we did see perhaps the beginnings of a reassessment of where this has led us, with the savaging of Facebook in the market. There may be some buyer's remorse that some of us are feeling. If that translates into much stricter regulations on data gathering and a reluctance to share private data, it would be bad news for Spotify, but it would be worse news for Google, Facebook, Netflix and Amazon. Time will tell!