Customer-Based Corporate Valuation: Valuing Corporations from the Bottom Up

Daniel McCarthy

daniel.mccarthy@emory.edu

dan@thetaequity.com

Twitter: @d_mccar

Peter Fader

faderp@wharton.upenn.edu

pete@thetaequity.com

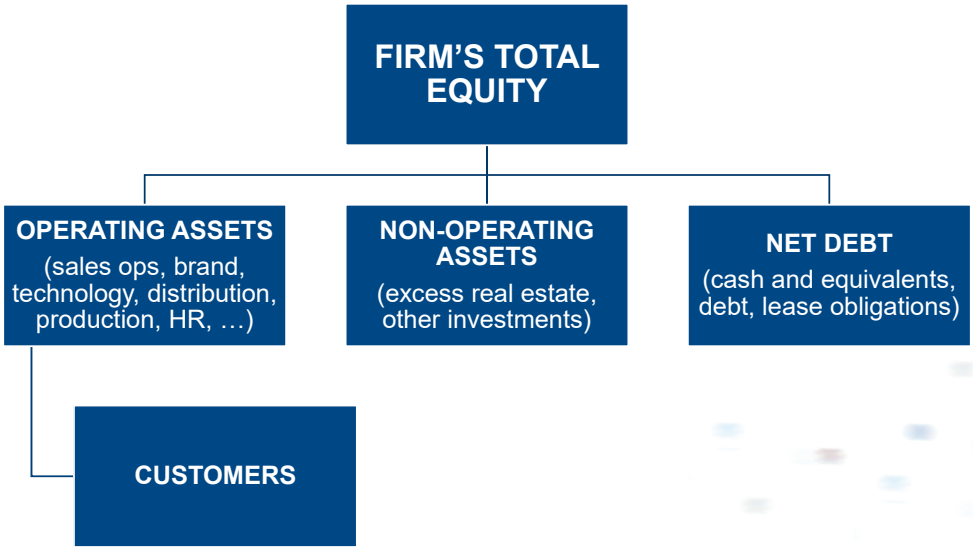
Twitter: @faderp

BounceX Webinar

April 8th, 2020

Theta Equity Partners

The sources of corporate valuation



Customer-Based Corporate Valuation (CBCV)

Explicitly links financial valuation to drivers of unit economics:

- Customer acquisition (volume, cost)
- Churn
- Order rate
- Basket size
- Contribution margin
- [Fixed costs, balance sheet effects, cost of capital]

3

Two case studies

wayfair

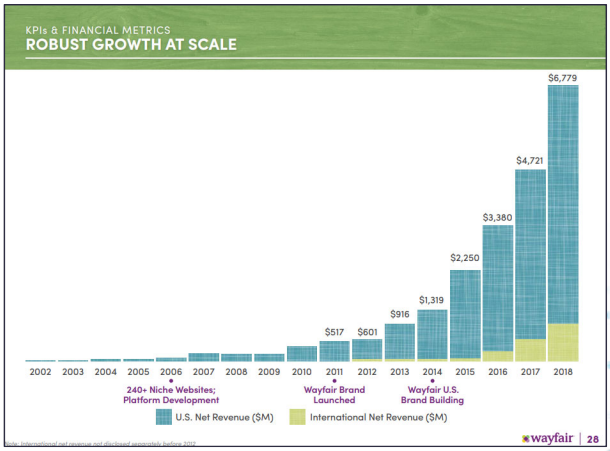
lyft

… and thoughts about the impact of COVID-19 on current and future valuation analyses

4

Case study 1: Wayfair

- Market leader in digitally native home goods
- ~$4 billion in annualized revenue at the time of analysis (Q1 2017)
- Revenue growing at 30% per year



5

Data

Table 6: Wayfair's Publicly Disclosed Historical Customer Data
Customer Data (000) and Revenue Figures ($000)

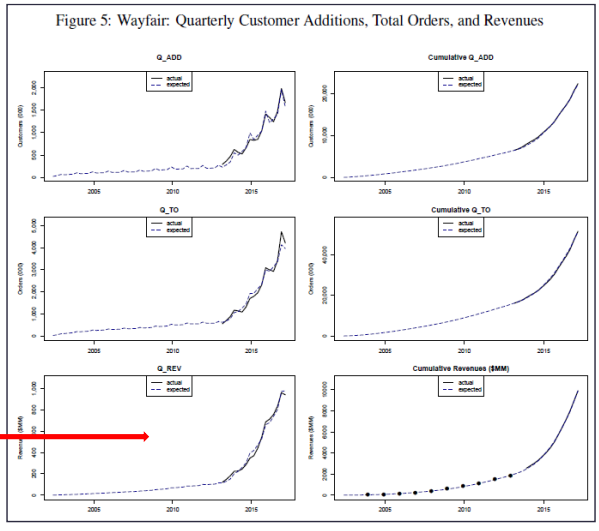
Period	QREV	AREV	QADD	QTO	AAU	Period	QREV	AREV	QADD	QTO	AAU
Q2 2002						Q4 2009		224000			
Q3 2002						Q1 2010					
Q4 2002						Q2 2010					
Q1 2003						Q3 2010					
Q2 2003						Q4 2010		279000			
Q3 2003						Q1 2011					
Q4 2003		7700				Q2 2011					
Q1 2004						Q3 2011					
Q2 2004						Q4 2011		349300			
Q3 2004						Q1 2012					1290
Q4 2004		24000				Q2 2012					1280
Q1 2005						Q3 2012					1260
Q2 2005						Q4 2012		386000			1300
Q3 2005						Q1 2013	120617		292	555	1370
Q4 2005		57000				Q2 2013	147748		366	703	1510
Q1 2006						Q3 2013	181693		468	884	1770
Q2 2006						Q4 2013	223388		624	1172	2090
Q3 2006						Q1 2014	226000		561	1138	2410
Q4 2006		105000				Q2 2014	243534		524	1084	2640
Q1 2007						Q3 2014	285502		659	1313	2860
Q2 2007						Q4 2014	346650		846	1702	3220
Q3 2007						Q1 2015	369395		829	1797	3600
Q4 2007		203000				Q2 2015	440297		850	1959	4040
Q1 2008						Q3 2015	544971		1042	2324	4590
Q2 2008						Q4 2015	685575		1412	3091	5360
Q3 2008						Q1 2016	711846		1337	2996	6070
Q4 2008		237000				Q2 2016	755657		1243	2930	6670
Q1 2009						Q3 2016	832398		1473	3416	7360
Q2 2009						Q4 2016	959008		1983	4722	8250
Q3 2009						Q1 2017	940352		1669	4213	8850

6

Proposed customer model

1. Acquisition
2. Latent attrition and repeat purchase ("Buy 'Til You Die" model)
3. Spend

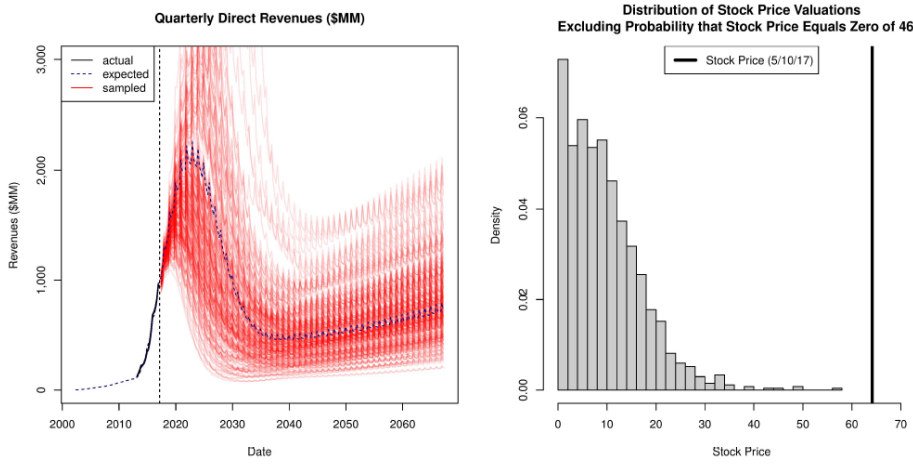
Model fits



Revenue isn't modeled directly; it is "built up" from the other model components

Model forecast and valuation

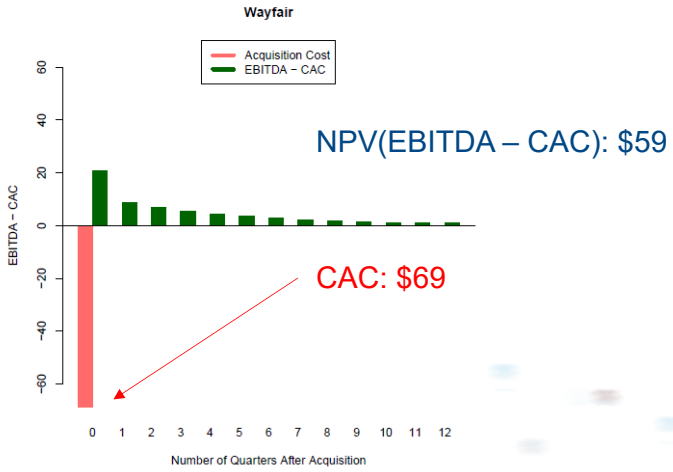
Figure 5: Wayfair: QREV Forecasts (left) and Stock Price Distribution (right)



9

Comparison of unit economics

Figure 6: Expected Cash Flows of a Customer Acquired in Q1 2017



10

Stock price reaction



11

Media reaction

SEPTEMBER 22, 2017 BY STOCKWINNERS.COM

Wayfair Sinks on Short-Seller Report

Wayfair sinks after Citron highlights academic paper with $10.24 valuation

wayfair
a zillion things home

Shares of Wayfair (W) are lower after short seller Citron Research highlighted on Twitter an academic paper on the company's valuation.

The paper states, "We begin by applying the proposed customer-based valuation methodology to data from Overstock (OSTK), an e-commerce retailer selling a wide assortment of products.

MARKETS INSIDER

A new study shows Wayfair is losing money on every new customer — and that's terrible news for the stock (W)





MARKETS | HEARD ON THE STREET

The Wayfair Riddle

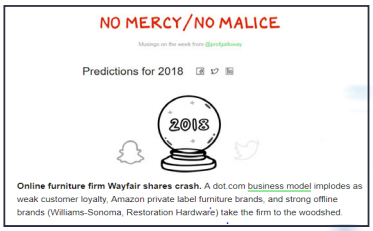
The furniture retailer's business has serious flaws, but the stock keeps soaring



By Elizabeth Winkler 3 COMMENTS

Updated Feb 12, 2018 1:17 p.m. ET

A recent study by marketing professors Daniel McCarthy of Emory University and Peter Fader of the University of Pennsylvania's Wharton School found that Wayfair spends about $69 to acquire each new customer, but only earns $59 back from each acquisition. Using a method of valuing publicly traded retailers that focuses on customer retention, Professors McCarthy and Fader conclude that Wayfair is overvalued by 84%.



WEDBUSH

Company Re

October 6, 2017

Rating: OUTPERFORM

Price: $71.17

12 Month Price Target: $82.00

Analysts

Seth Basham, CFA
212-938-9954
Seth.Basham@wedbush.com

Nathan Friedman
212-938-9955
Nathan.Friedman@wedbush.com

Wayfair (W)

W: Customer-Based Valuation Interesting, but Inconclusive

The Wedbush View

We hosted a call for investors yesterday with Wharton and Emory business school professors who recently published an academic paper featuring W and OSTK as examples of valuing public companies with non-subscription customer bases. We admire the work, but the lack of precision particularly for high-growth firms make it difficult to rely upon in the case of W, which they value at $10, with a range of 50-$57. Where we do concur with the professors is the sensitivity of W valuation models to revenue growth, and particularly that derived by repeat purchase behavior. To that end, we expect W to trade primarily on revenue growth in the near-medium term.

RAYMOND JAMES

Wayfair, Inc.

(W-NYSE)

Aaron Kessler, CFA, (415) 616-8959, Aaron.Kessler@RaymondJames.com
Justin Patterson, CFA, (415) 616-8035, Justin.Patterson@RaymondJames.com
Bianca Rodriguez, Res. Assoc., (415) 616-8032, Bianca.Rodriguez@RaymondJames.com

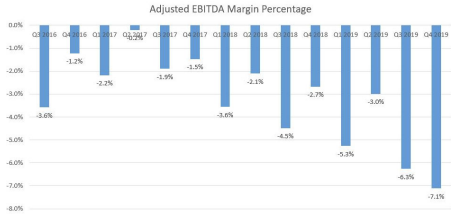
Internet: eCommerce

Additional Thoughts on Wayfair Following Academic Report Publication

Summary. As a follow up to our analysis last week analyzing an academic research report (Link), we are following up with some additional thoughts around customer retention, margin assumptions, customer acquisition costs, and our DCF analysis. We do note that we initially incorrectly cited the reports assertion on margins and lifetime value as noted below, though we continue to disagree with the key assertions (including customer retention, customer lifetime value, valuation analysis). We expect many of these debates to play out over a multiyear period and we believe we remain early in both the home goods market shift to online and Wayfair's growth curve.

Since then

- More of the same – growing revenues, growing losses
  - One year update: http://bit.ly/2whrvfo
- Media and financial professionals have continued to closely watch
  - Dan was quoted in the WSJ after results in Q4 2017, Q3 2018, Q4 2018, Q1 2019
  - Other recent mentions include Internet Retailer, Fortune Magazine, Bloomberg
- Q4 2019 results are worse than ever: worse margins on slowing growth





METRO | SPORTS | BUSINESS | OPINION | RHODE ISLAND | POLITICS | EDUCATION | LIFESTYLE | MARIJUANA | ARTS | MAGAZINE

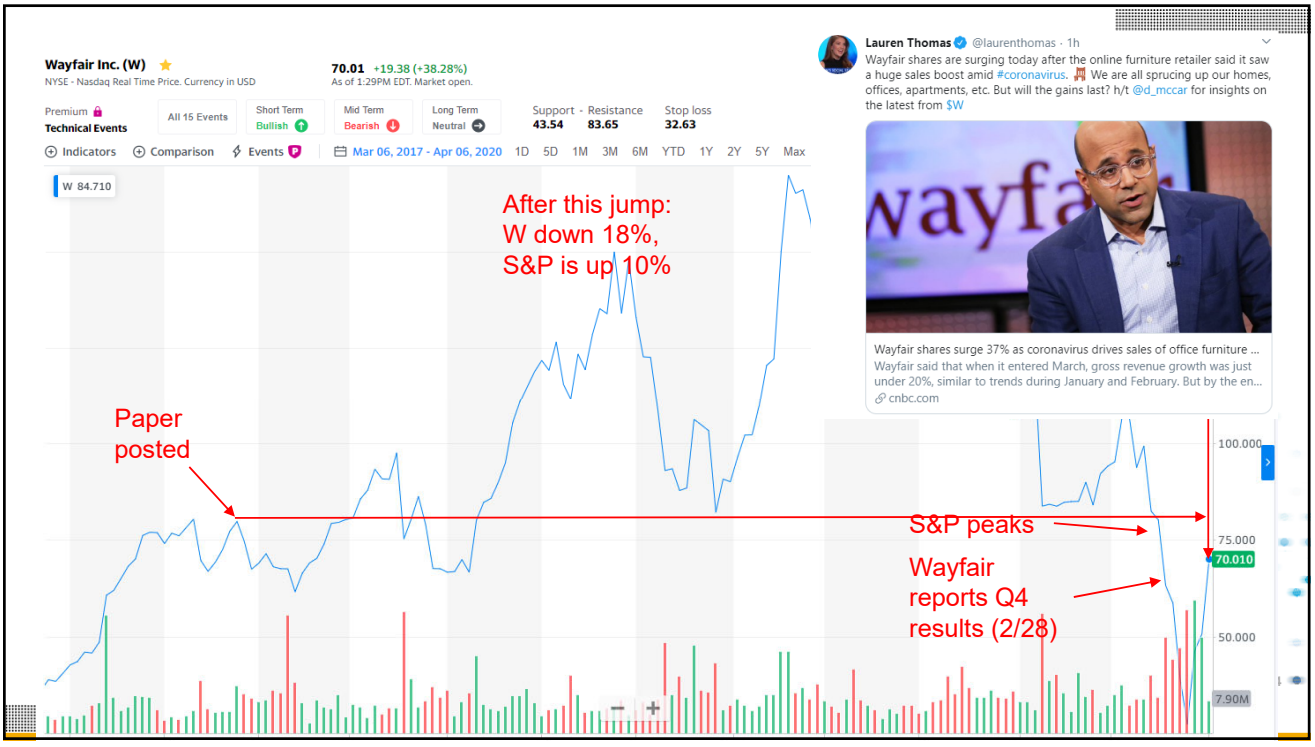
Wayfair stock takes another hit amid sales slowdown

Executives at the Boston retailer face tough questions as they balance growth with profitability

By Jon Chesto Globe Staff, Updated February 28, 2020, 6:22 p.m.

Now this: Wayfair expects revenue to grow by 15 to 17 percent in the current quarter that ends next month. What's wrong with that? Well, consider that the company on Friday reported year-over-year net revenue growth of 26 percent — to $2.5 billion in the last quarter. Yes, it's in line with previous guidance. But that was still the slowest increase in at least five years, as Emory University marketing professor Dan McCarthy notes.

13



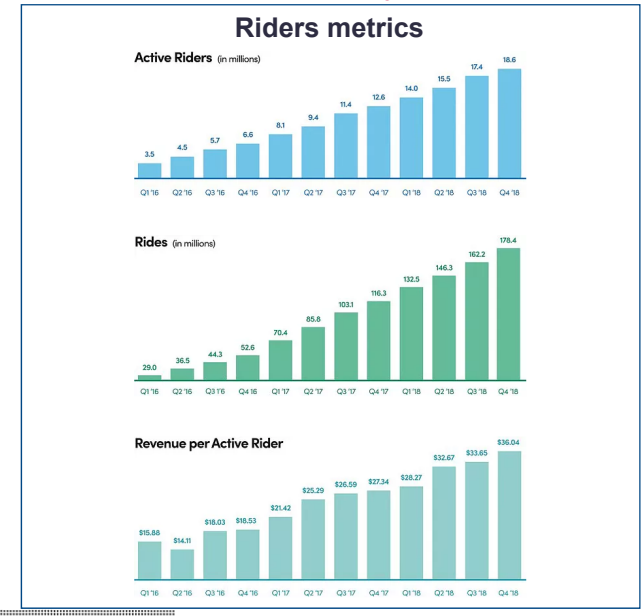
Case study 2: Lyft

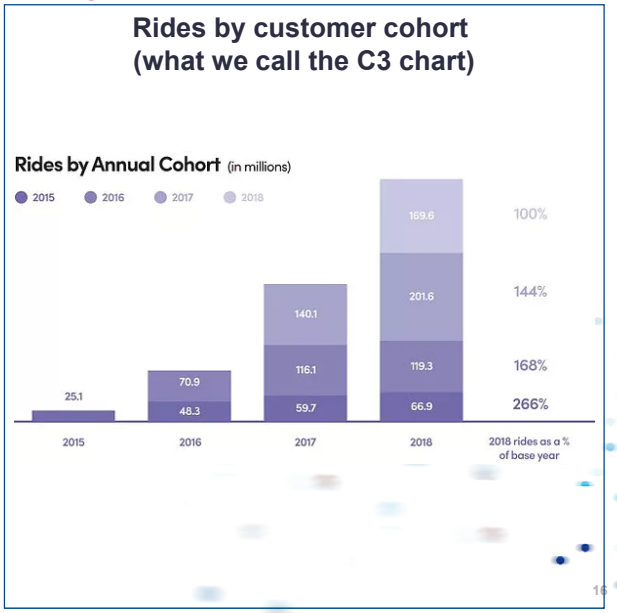
- World's second-largest ride-sharing company
- 100%+ annual revenue growth
- $2.2B revenue and $1B operating loss in 2018
- IPO date: March 29, 2019



15

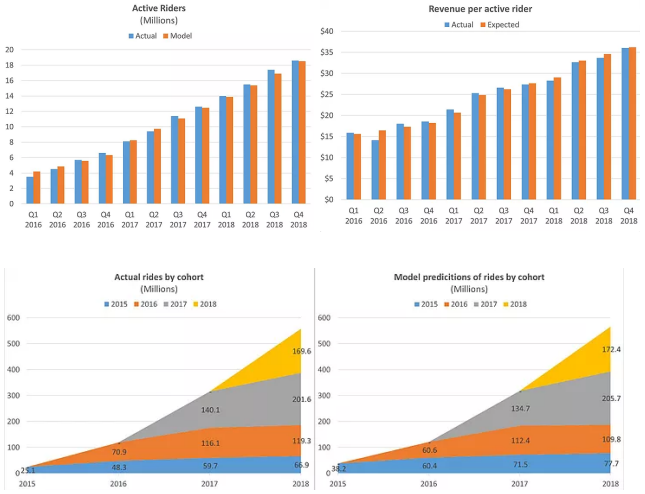
Disclosures from Lyft's pre-IPO S-1 filing

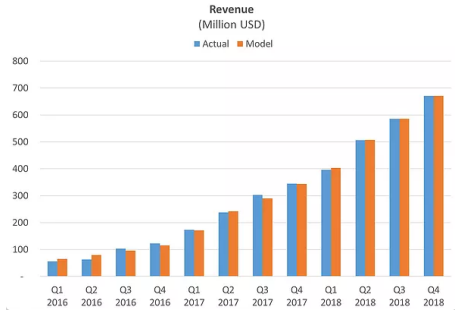




16

Lyft: model fits (1/2)





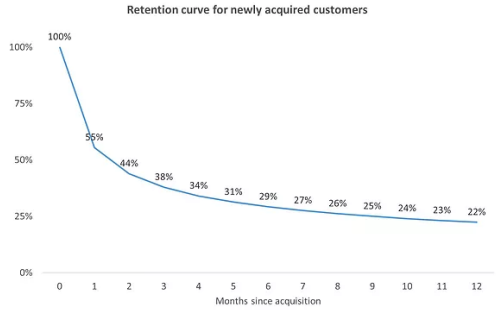
One extra data point we didn't use in model training:

- Lyft said it reached **1M total rides some time in 2013**
- Model estimate – they hit **1M rides in May 2013**

17

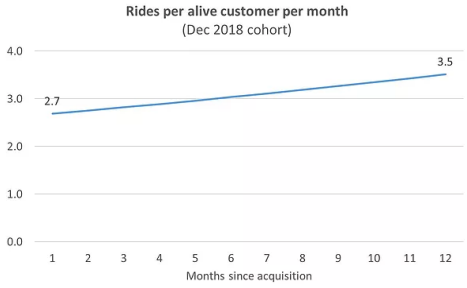
Lyft: unit economics for a newly acquired customer (1/2)

After initial shakeout, number of retained customers stabilizes (there is a high loyalty segment)



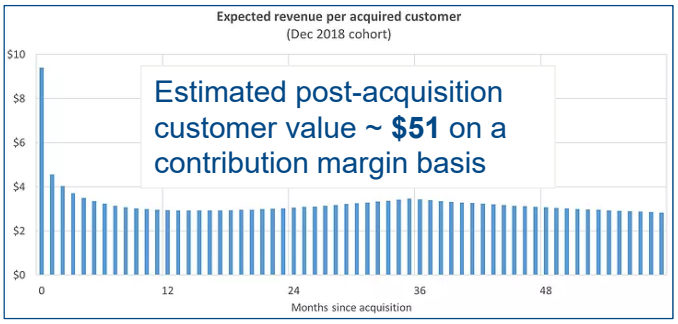
~10% of customers are expected to stay for 10+ years

Customers ride more over time

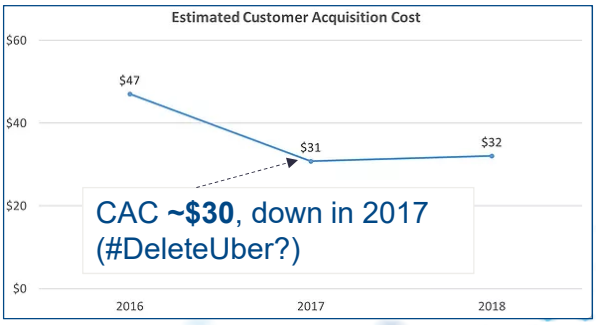


18

Lyft: unit economics for a newly acquired customer (2/2)



Estimated post-acquisition customer value ~ **$51** on a contribution margin basis

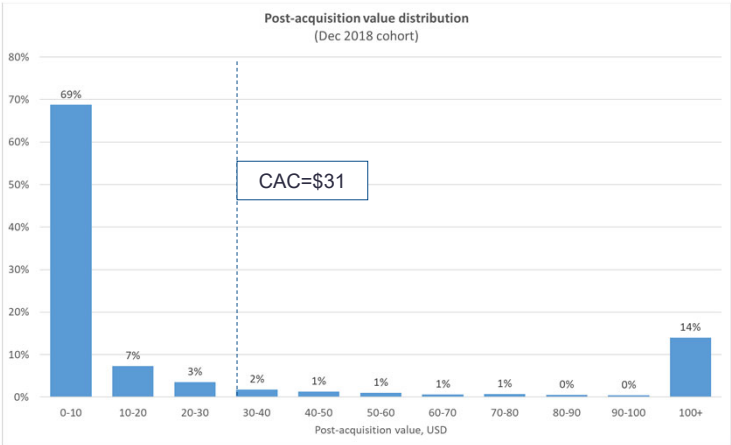


CAC **~$30**, down in 2017 (#DeleteUber?)

→ CLV = $19 per customer
→ ~70% return on CAC spend

19

Lyft: strong customer heterogeneity is key to constructive unit economics

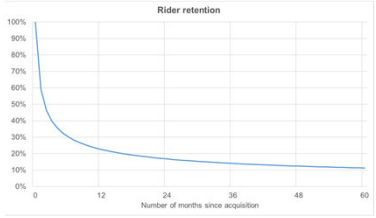


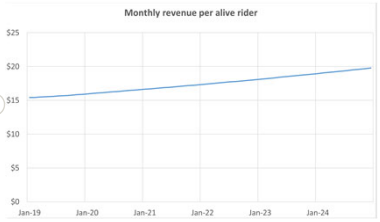
Losing money on ~80% of customers, but making up on the remaining 20% "power users"

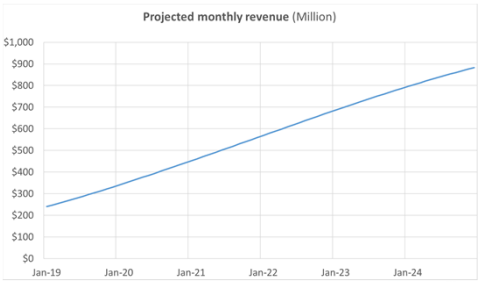
20

Lyft: model forecasts



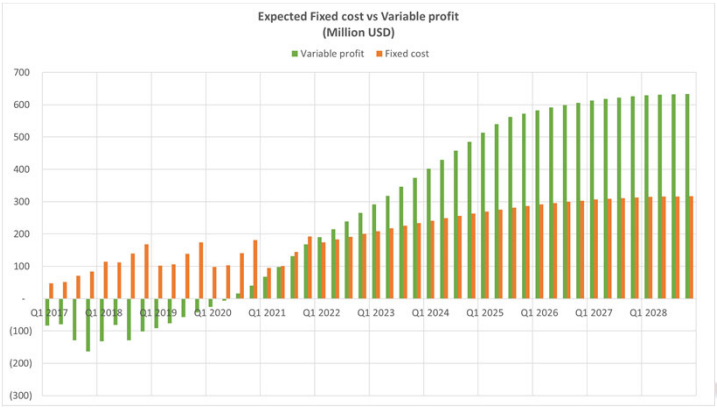






21

Lyft: constructive unit economics is not enough to justify the target $24B valuation



Our valuation - $4.5-7B depending on scenario

22

Lyft: media reaction & stock price

We performed our analysis in advance of the IPO, estimating a fair value of ~4.5-7B on our blog, which was covered by Financial Times, Motley Fool, and others





https://www.thetaequity.com/lyft-ipo

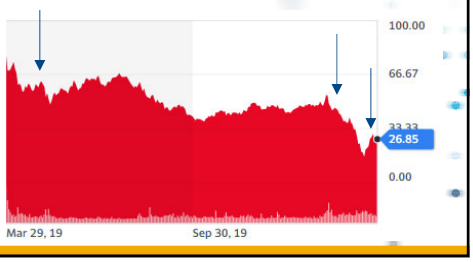
https://www.thetaequity.com/lyft-ipo-valuation

Stock price

- IPO Price: $72

Since then…

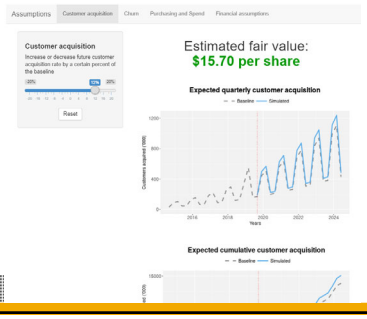
- 21% down after one month
- 36% down at pre-pandemic peak
- 63% down, as of 3/31



How will we accommodate the impact of COVID-19?

For us, it will be (somewhat) business as usual. We'll look separately at the "five horsemen of CBCV" and build up to overall impact. That said…

1. Sensitivity analysis more important than ever
2. Can't ignore role of liquidity analysis
3. [Income shock + pandemic shock] → [Income shock] → "new normal"



Summary and conclusions

- Bringing insights and methods from marketing into finance can improve forecasting accuracy and create important new investment KPI's
- CBCV is even more important during downturns – an essential driver of "playing good defense"
- Our firm, Theta Equity Partners, has done dozens of "outside in" (and primarily "inside out"!) CBCV analyses – contact us for more information!
- CBCV will become an industry standard for all investors, analysts, and CXO's

25

Further Resources

- Connect/follow us on LinkedIn and Twitter (@d_mccar, @faderp)
- The two papers: http://bit.ly/2N8P3sq and http://bit.ly/2LUmLFG
- HBR article: http://bit.ly/2sBjbYM
- Theta Equity Partners: https://thetaequity.com
- Contact us if you would like a copy of this deck

Thank you!

Theta Equity Partners