



Source: volvocars.com

Value Creation – as seen from Asia and Ride-sharing

Capstone Thesis for INSEAD Executive Masters in Finance (EMFIN) programme

Written by: Jonathan Siew, *EMFIN19F*

Faculty Advisor: Senior Affiliate Professor Claudia Zeisberger

Executive Summary

The purpose of this study is to understand Value Creation from the perspectives of selected technology sectors and Asia. I have approached this study by taking a global view first, before zooming in to Asia. This will serve as a backdrop and be followed by exploring the value creation definition and understanding how this could play out within venture-backed growth companies in Transportation (Ride-sharing) through Uber and Grab. I will then conclude this study with some reflections on value creation based on these cases.

Acknowledgements

I would like to acknowledge the guidance and support given by my faculty advisor Professor Claudia Zeisberger in defining the problem and sharpening the scope and ideas. I would also like to acknowledge my family that has patiently supported me in preparing this Capstone thesis and completing the INSEAD Executive Master in Finance.

Content Page

Section	Page
Executive Summary	lii
Acknowledgements	lii
Introduction - The Landscape as we see it	1
Defining Value and Determining Value Creation (for Digital)	9
On Uber	15
On Grab	26
Reflections and Conclusions	33
Appendix	35
References	48

Introduction - The Landscape as we see it

“Someone is sitting in the shade today because someone planted a tree a long time ago.”

- Warren Buffett

These are interesting times, where innovation and change is accelerating in the business world, and technology permeates our lives and societies. There is a keen and growing interest in technology companies from the media and stock market, and also how a premium is given to technology-driven digital-first companies as compared with conventional companies in the stock market, albeit the fall in the last quarter of 2018.

The Importance of Technology and the Premium accorded to it

A look at the market capitalisation of the world’s largest companies over the last 5 to 10 years clearly shows this change. Technology companies now occupy many positions in the world’s most valuable companies, displacing previous incumbents from traditional sectors such as Energy, Finance and Industrials. Where we used to see likes of Exxon, GE and Citigroup dominate on the world’s most valuable companies (by view of market capitalization), we now see the likes of Apple, Amazon, Alphabet (see *Exhibits 1 and 2*). These big tech companies have been frequently mentioned in the media under the acronym “FAANG” – the Facebook, Apple, Amazon, Netflix and Google.

The Financial Times (FT) published an article in August 2018, “Apple wins race to be first trillion-dollar company”, highlighting how Apple had grown in value with a succession of hit products and services to become the world’s most valuable company. Only a month later, Amazon followed suit to join this trillion-dollar club as its stock more than doubled. A series of articles that followed discussed the growth paths and potential maturation points of the current core businesses of leading Technology companies, and brings up the question of whether the next phase of growth (“second acts”) will generate as much value as the first, especially if we see these Technology companies starting to compete in relatively new spaces and/or on each other’s turf. (Bradshaw, 2018) (Waters, Kuchler, & Bond, 2018)



Exhibit 1 – The Largest Global Companies by Market Cap (Source: CB Insights)

Looking at the Automotive sector, we see how Tesla displaced General Motors (GM) back in April 2017 to become the largest US car maker by market capitalisation (“market cap”), with a market cap coming close to US\$51Bn. A view of this market cap on a per car basis places Tesla at US\$667,000 per car sold in 2016 or US\$108,000 per car it plans to make in 2018, compared with GM’s US\$5,000 per car sold in 2016 – a gap of almost 20x (Reuters). Bloomberg created a visual (see Exhibit 3) on this comparing Tesla to other international car makers, and this amounts to a gap of 13x when compared against BMW. Tesla’s valuation is heavily centred on perceived future value as a Technology company innovating and disrupting Automotive Manufacturing (via Electric Vehicles) and Solar Energy. The examples of Apple, Amazon and Tesla amongst others show how important Technology is viewed in stock markets today.

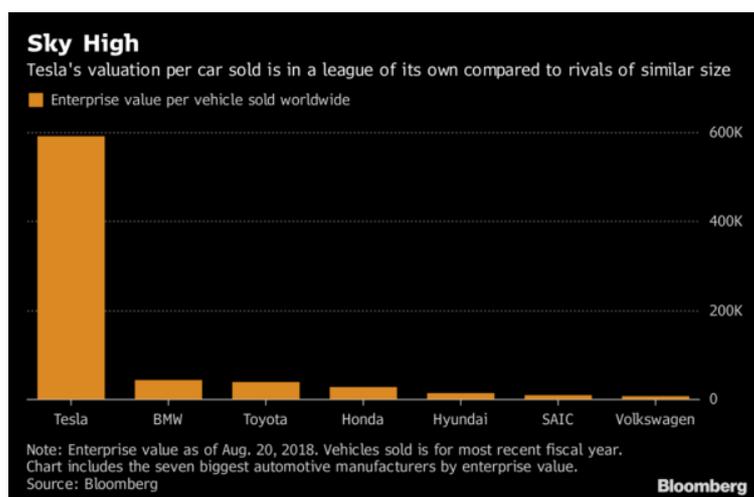


Exhibit 3 – Tesla’s valuation per car compared against rivals (Source: Bloomberg)

In the upcoming sections, I will highlight the progress Asia has made in the Technology space, then zoom into the segments of Transportation through Ride-sharing cases in Uber and Grab, so as to better understand the strategic narratives that drive valuations for leading startups in the space.

Asia comes of age, with its Protagonists and a Technology-driven narrative

This story of technology and innovation is not just limited to the West. In Asia, technology is also priced at a premium in the stock markets and with an accompanying strong growth in the venture investing scene in Asia. Comparing venture investing in US with Asia, we observe broad trends that the US tends to be more deep-tech centric and specialized, given the maturity and size of the market, and Asia tends to be more application and innovation-driven given the segmented markets with the exception of China, Japan and Korea. It is hence more common to find “copy-cat” companies in Asia that are executing already proven business models from the West, but adapted to a local context. (Potter & Zeisberger, 2018)

In the last decade, we have seen the rise of technology giants from China, more famously known as the “BAT” – Baidu, Alibaba and Tencent, which are the leaders in Search, E-commerce, Gaming and Social Networking respectively in China and have combined revenues of 572 Bn CNY (US\$83.4Bn) in 2017. These are the Chinese equivalents of Google, Amazon and Facebook in the US. (see Exhibit 4) The BAT has grown via an ecosystem approach, dominating their specific internet segments and aggressively competing against one another for emerging new segments organically and through inorganically (see Exhibit 5) (Lee, 2018) (Hiranand, et al., 2018).

China's internet giants are doing everything

Industry	Baidu 百度		Alibaba Group		Tencent 腾讯	
	Build	Invest/Acquire	Build	Invest/Acquire	Build	Invest/Acquire
Ecommerce / O2O / Retail	–	Bitauto, Uxin	Taobao, Tmall, Hema, Aliexpress	Ele.me, Xiaohongshu, Yiguo, Sun Art, Suning Lazada, Paytm	–	JD, Meituan Dianping, Bitauto, Pinduoduo, Xiaohongshu, Vipshop, Meili Inc, MissFresh, Yonghui
Content & Media	Baidu News, Baidu Tieba, Baidu Knows, Baidu Wiki	iQiyi, PPS	Alibaba Music, Alibaba Pictures	Youku Tudou, Wanda Film, Wasu Media	Tencent Video, Tencent News, Tencent Reading, Tencent Music, Tencent Pictures	Kuaishou, Bilibili, China Literature, Qutoutiao, Bona Film, Huayi Brothers Media, SoundHound
Messaging & Social	–	–	Dingtalk	Weibo, Momo, Snap	Wechat, QQ	Zhihu, Snap
Sharing Economy	–	Shouqi Limousine & Chauffeur, Uber	–	Didi, ofo, Lyft	–	Didi, Mobike, Uber, Lyft

Exhibit 5: BAT's reach across varying Internet Sectors
(Source: Abacus News China Internet Report 2018)

In terms of its appetite for investing in ventures and acquisitions, Tencent comes in first, followed by Alibaba and Baidu as measured by deal count. As of November 2018, Tencent is said to have a portfolio approaching 750 companies, while Alibaba's is around 350. According to Bloomberg's data for the period of 2017 to May-2018, Tencent completed 94 deals, Alibaba 74 deals and Baidu 25 deals. The BAT's reach does not stop at the number of deals, but also in amount of investment venture capital flow and its access to leading companies in emerging spaces. They account for 40 to 50% of venture capital flows compared to less than 5% for big tech companies in the US. They are also invested into 50.8% of China's 124 unicorns according to February 2018 data by ITJUZI. This active investing has been enabled by the strong profitability from their core businesses and startups wanting to access their ecosystem's networks and customers on top of funding. (Soo, 2018) (Lucas, Tencent spending spree turns up heat on Alibaba, 2018) (Hiranand, et al., 2018) (Sender, 2018) (Lucas, Investments fuel a third of profits at Tencent and Alibaba, 2018)

Masayoshi Son and Softbank's US\$100Bn Vision Fund

"Mr Son is redefining technology investing. No one has ever done that before at this kind of scale. It's unprecedented but it's meeting a market demand."

- Stephen Schwarzman, Cofounder, Blackstone



*Exhibit 7: SoftBank CEO Masayoshi Son presenting the US\$100Bn Vision Fund
(Source: Alessandro Di Ciommo/NurPhoto via Getty Images)*

A discussion of Asia’s venture scene is never completed without mention of SoftBank. Along with the BAT, we have in the past three years witnessed the reemergence of Softbank into prominence through the announcement of Softbank’s US\$100Bn Vision Fund by Chairman and CEO Masayoshi Son in 2016. According to Techcrunch and Crunchbase estimates, the Vision Fund is closed to 50% deployed as of December 2018, with talks still ongoing on Vision Fund 2. (Rowley J. , 2018) Son has also announced plans in 2018 to raise a \$100Bn fund every few years and deploy almost \$50Bn a year. (McBride, Wang, & Elstrom, SoftBank’s \$100 Billion Vision Fund Is Run by These 10 Men, 2018) (Martin, 2017)

With the Vision fund and its minimum ticket size of \$100Mn, Son and his nine managing partners of the Vision Fund are virtually kingmakers of Technology, with the ability to determine winners and losers in emerging industries. SoftBank chooses to invest in unicorns that are leaders in their segments, and has invested in Transportation, AI, Chips and Robotics and other Consumer Technology (See Exhibit 12). Their investment size has dwarfed many of the leading venture capital firms (see Exhibit 13), changing the dynamics of the venture game and has even led to talk that Softbank may have replaced the IPO.

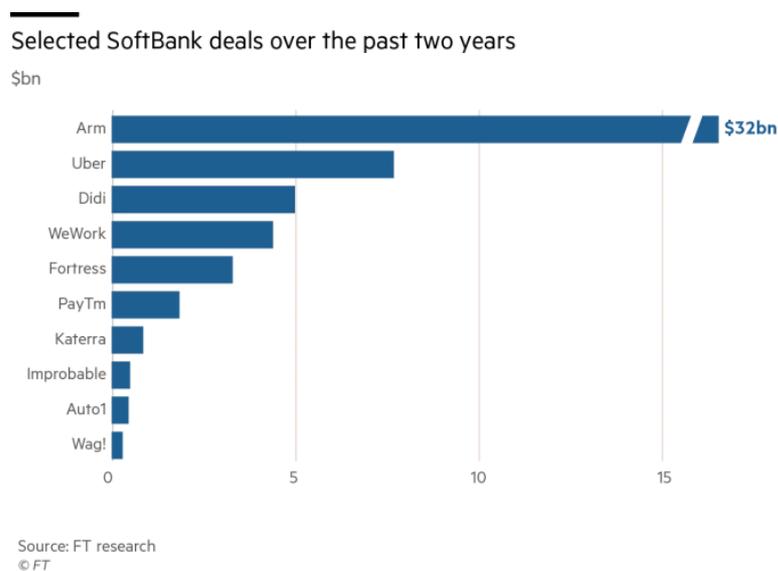


Exhibit 12: Selected deals completed by Softbank

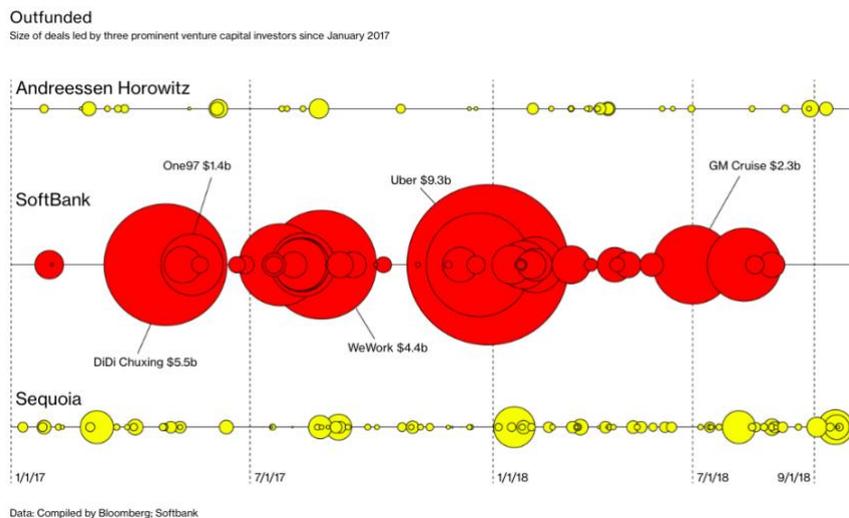


Exhibit 13: SoftBank's Investment Quantum dwarfs existing top VC funds (Source: Bloomberg)
(McBride, Wang, & Elstrom, Masayoshi Son, SoftBank, and the \$100 Billion Blitz on Sand Hill Road, 2018)

The availability of capital from backers like SoftBank and the BAT, alongside record excess dry powder in the private equity and venture capital space has contributed to companies choosing to stay private longer. The average time for a tech company to go public is now 11 years, up from 4 years back in 1999. (Wright, 2018) (McKinsey & Company, 2018) (Jeddy & Portner, 2018)

The increase in venture investment funding in Asia has also led it to narrowing the gap with the US. In CB Insight & PWC's Venture Capital Funding Report for 2Q18, they estimated that total quarterly funding in Asia is coming close to the US at US\$21.2Bn compared to \$23.0Bn. They also found that in Asia, median later-stage deal size is significantly higher at US\$100Mn to US\$44.5Mn and the number of new unicorn births has outpaced the US with 9 to 6. (See Exhibits 14 to 18) (PwC/CBInsights, 2018)

Southeast Asia's Venture Scene

The BAT has also sought growth by investing in emerging internet segments, not just inside China but outside of China as well, with one key destinations being Southeast Asia (SEA). This is not a surprise, given the expected growth in SEA's internet economy from US\$72Bn today in gross merchandise value (GMV) to US\$240Bn in 2025, at a CAGR of 22%. In fact, Southeast Asia "is becoming a proxy war for Tencent and Alibaba, and according to Hian Goh, Partner at Openspace Ventures, this phenomenon is likely to intensify going forward if investment interest is redirected from Silicon Valley due to the souring ties between

the US and China. (Ho & Soo, Southeast Asia becomes a target for China technology companies but is a tough nut to crack, 2018) (Google & Temasek Holdings, 2018)

A recent analysis by Bain & Company showed both progress and optimism. Bain research found that the number of SEA venture deals quadrupled from 2012 to 2017 from 126 to 524 respectively. Private equity deal value grew from S\$5Bn to S\$15Bn in the same period. Bain is also optimistic on the next 5 years, predicting that SEA will produce at least 10 new unicorns by 2024, and would clock a total deal value of S\$70Bn over the next five years, double that of the previous five. (Varma & Boulton, 2018)

CB Insights analysis in September 2017 also showed strong progress in the venture capital scene. SEA startups have been raising more and more funds consistently since 2012, and in as of September 2017 they have raised US\$6.5Bn in disclosed equity funding. This was twice the 2016's US\$3.1Bn, and over three times 2015's \$1.7Bn. (see Exhibit 19) (CBInsights, 2017)

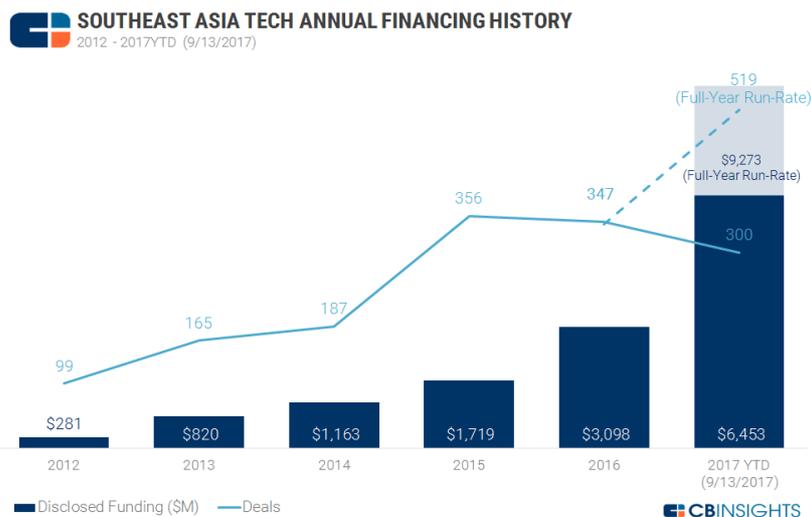


Exhibit 19: SEA Tech Annual Funding History (Source: CB Insights)

Bain's report listed the top SEA Tech unicorns, and within the top five we find that all of them have been invested in by the BAT or SoftBank, according to data from CB Insights and Crunchbase (see Exhibit 20 and 21):

- Grab: raised Series G US\$2Bn from SoftBank Vision Fund and Didi Chuxing in Jul'17 and Series H US\$1Bn from Toyota Motor Corporation
- Go-Jek: raised Series E US\$1.5Bn from Tencent, JD.com, Temasek and Google Ventures in Feb'18; a further US\$1.2Bn from Tencent, JD and Google Ventures in Oct'18
- SEA: Tencent first invested in 2010; Acquired more shares pre-IPO and currently owns close to 33% stake in the company

- Lazada: Bought a majority stake for US\$1Bn in 2016; Invested US\$1Bn more in 2017 and a further US\$2Bn more in Mar'18
- Tokopedia: raised Series G US\$1.1Bn from Alibaba and SoftBank Vision Fund; Series F US\$1.1Bn from Alibaba

Figure 3: Since 2012, Southeast Asia has given rise to 10 unicorns with a combined market value of \$34 billion

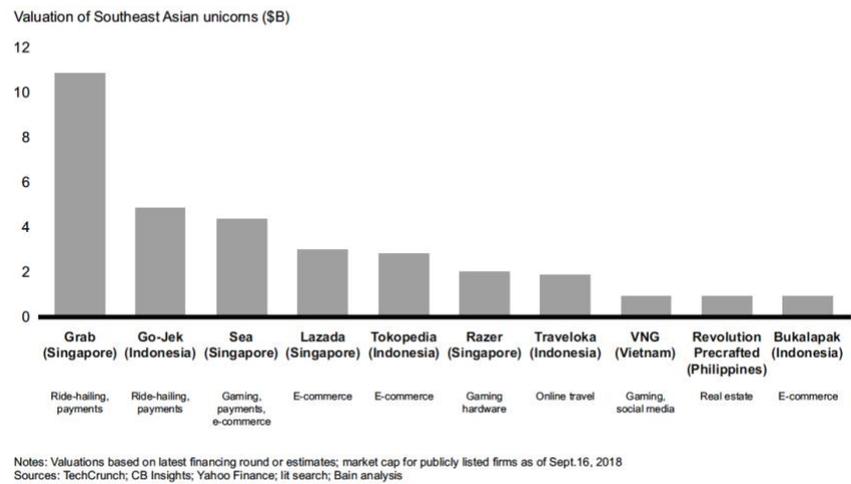


Exhibit 20: Top 10 Tech unicorns of SEA (Varma & Boulton, 2018)

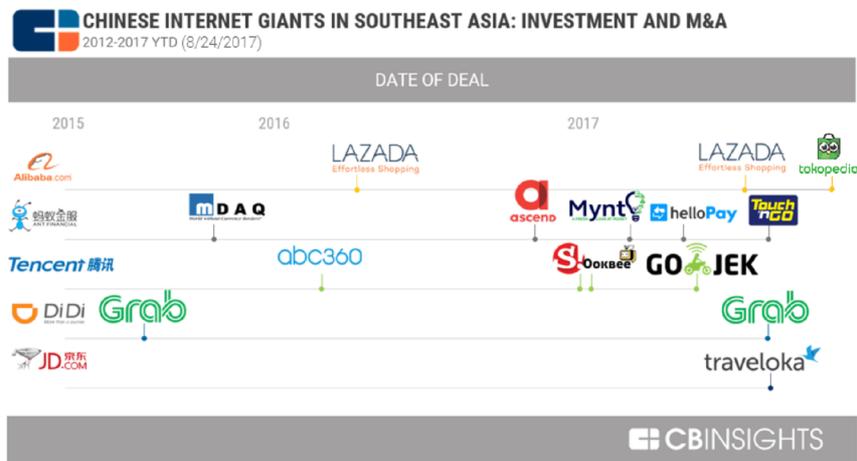


Exhibit 22: View of Chinese Internet Giants investing in SEA (Source: CB Insights)

With this as the backdrop, we now examine how we can define value and value creation for digital companies, followed by a deep-dive into one specific technology segment of Ride-hailing, with the case of Uber and Grab in the sections to follow.

Defining Value and Determining Value Creation (for Digital)

Defining Value and Valuation

We define Value as the fair market valuation, the price or market valuation of a company's shares that is transacted on a willing-buyer willing-seller basis. The method to which this valuation is determined is dependent on various factors such as stage of the company, nature of the business and what others are willing to pay currently in market for similar assets. (IPEV Board, 2010)

For a later stage growth company or a matured ongoing business, it is typical for valuation professionals to value a company using a Discounted Cash Flow (DCF) model and come up with a market value of the company after triangulating with alternative multiples-based methods such as Precedent Transactions or Comparable (Listed) Companies.

For the purpose scoping the valuation analysis, the focus will be on technology (digital) companies at a growth stage, with a setup as a market place with network effects. Some of the main information and questions we need answered to form a framework for evaluating such companies are:

- What are the current financials of the company? Cost assumptions, and expected profitability (at gross profit and operating profit) going forward five to ten years?
- What is the current market size of the industry? The concentration and competitive dynamics in the industry?
- What is the future market size of the businesses that the company intends to be in? And what is the envisioned state of the company in that competitive space?
- What are the most important metrics relevant to the industry? How have these changed in each major valuation round?
- What are the other comparable or precedent transaction multiples that we can compare this to? Typical Multiples – P/S, P/E, EV/EBIT or EV/ EBITDA; P/[industry metric] or EV/[industry metric]

For ride-sharing, some of the relevant metrics that could be examined are

- i. For value to the user - efficiency of the service and average pricing
- ii. Average number of users and revenue spend
- iii. Average number of active drivers within key areas
- iv. Cost of customer acquisition
- v. Customer and driver churn rates
- vi. Effectiveness of marketing spend

The companies I am examining – Uber and Grab - are fundamentally still private businesses, thus making it challenging to put together relevant information for such an exercise. This would be done on a best attempt basis.

Determining Value Creation

In terms of Value Creation, it is achieved when two things happen: 1) the company executes their growth plan successfully and gains further traction and 2) the company manages to raise further funding at an up round (higher valuation) or trigger an exit event via a trade sale or initial public offering (IPO). Thus, as we try to determine the value created by the company over time, we would be doing so from understanding the company's changes in valuation from each stage of fundraising and matching it with the major strategic narratives to understand the progress made by the company. If more relevant information can be obtained on specific progress and key metrics for the company as an investor or manager of the business, it would improve the overall analysis and deepen perspectives.

From the analysis that I have done, the main five perspectives to take note in evaluating the value creation narrative are as follows. The first three are of most interest, with experts commenting specifically on Uber and its business model:

- A. Understanding the potential and quality of two-sided marketplace businesses* (Bill Gurley, Benchmark Capital, an early investor in Uber)
- B. 5 articles covering an analysis on Uber's valuation* (Professor Damodaran)
- C. Understanding user growth trends – through acquisition loops and engagement loops* (Andrew Chen, GP Andressen Horowitz, former VP-growth Uber)
- D. "Increasing returns to scale" of network and knowledge-based businesses (Professor Arthur)
- E. The need to find relevant metrics to inform of the traction the company is making (Professors Govindarajan, Rajgopal, & Srivastava)

A. Evaluating Two-sided Marketplace Businesses (Gurley, All Markets Are Not Created Equal: 10 Factors To Consider When Evaluating Digital Marketplaces, 2012)

Bill Gurley, general partner at Benchmark Capital and early investor in Uber, lists ten criteria to consider when evaluating two-sided marketplace businesses:

- i. Is it a qualitatively better customer experience?
- ii. Does it provide an economic advantage?
- iii. Can the technology make the marketplace more powerful?
- iv. Is the current market highly fragmented?
- v. Is supplier signup currently high-friction?
- vi. Is the market large enough?

- vii. Can the market be expanded?
- viii. How often will people transact on the platform?
- ix. How do you get paid?
- x. Does adding to the network make the network more powerful?

For Gurley, satisfying just seven or eight of these categories could make a marketplace business a good investment with a high chance of success. His view then was that Uber was one of the few companies that could lay a claim to satisfying all of the above.

A. Gurley's response to Damodaran's valuation attempt of Uber

(Gurley, How to Miss By a Mile: An Alternative Look at Uber's Potential Market Size, 2014)

Gurley had a sharp response to a Jun'14 Damodaran's attempt to value Uber, highlighting that his assumptions on Uber's likely market potential might be off by a factor of 25 times at US\$250Bn, and that the past can be a poor guide for the future if the future offering is materially different than the past.

He commented that Uber offered a radically different experience, opening up new use cases that were not present before. He also argued that Uber could reach a point in price and convenience that it becomes a viable alternative to car ownership. Network effects were also poorly accounted for when stating a low (10%) market penetration for Uber, as where Uber expands in a market, the service improves in terms of pick-up times, coverage density and utilization, which then drives further increases.

B. Value Creation Specific to Uber

Professor Damodaran of NYU published a series of five blog posts that are worth mentioning to gain a better perspective of Value. The underlying theme in his analyses is the fundamental belief that you can use the DCF model to value technology businesses as well, but identifying the narratives and defining the assumptions amidst uncertainty remains key.

Not surprisingly the process of his valuation changes amidst feedback shows that the DCF model is highly dependent upon the underlying assumptions made. The other gap that was identified as one reviews his analysis in entirety is the difference in how Venture Capitalists (VCs) might see a business, which includes new markets and potential domination of those markets due to network effects and increasing economies of scale, as compared to the traditional view of existing market sizes and becoming a viable player in that market.

1. *"A Disruptive Cab Ride to Riches: The Uber Payoff"* (Damodaran, A Disruptive Cab Ride to Riches: The Uber Payoff, 2014)

Damodaran saw Uber as a disrupter to the Taxi business by playing the role of a matchmaker, and the value it brings is screening drivers, its pricing/ payment system and convenience. He concludes that Uber is overpriced based on his estimates and should be valued close to US\$5.9Bn to US\$6.5Bn, compared with its announced market value of US\$17Bn.

This valuation assumed the following: Uber to gain 10% market share of the global Taxi and Limo Industry of US\$100Bn, 2014 Gross Revenue of US\$1.5Bn and Net Revenue of US\$300Mn, Turn profitable in 12 months with a 40% operating margin

2. *"On the Uber Rollercoaster: Narrative Tweaks, Twists and Turns!"*

(Damodaran, On the Uber Rollercoaster: Narrative Tweaks, Twists and Turns!, 2015)

Damodaran stands corrected by Bill Gurley on his previous valuation attempt – Gurley is an existing investor in Uber – and he changes the narrative and assumptions, to revise Uber's valuation upwards to US\$54Bn.

Damodaran conducted a subsequent valuation and concluded that Uber was still overvalued, with his estimates standing at US\$23.4Bn vs US\$51Bn in market.

This valuation assumed the following: Uber is now seen not just as a car service, but covers urban and suburban and has other businesses grow from given its global network. Uber has grown its Gross Revenue to close to \$11Bn, 4x 2014 levels; Ride-sharing is becoming competitive globally with local equivalents also accessing capital at high valuations, the cost structure is high due to driver churn and marketing spend/ subsidies, resulting in low contribution margins

3. *The Ride Sharing Business: Is a Bar Mitzvah moment approaching?*

(Damodaran, The Ride Sharing Business: Is a Bar Mitzvah moment approaching?, 2016)

Damodaran provided an updated estimate of Uber's valuation at US\$28Bn up from US\$23.4Bn but still lower than market.

He highlighted three major concerns that Uber has lost out in the China market which reduces total market size, the intensity of global competition in the space and that they have raised money from unconventional capital providers (public investors) that might put pressure on tangible results and/or an imminent IPO

4. *"Uber's bad week: Doomsday Scenario or Business Reset?"*

(Damodaran, Uber's bad week: Doomsday Scenario or Business Reset?, 2017)

Damodaran provided an update on his view on Uber's valuation and sticks to the previous US\$28Bn number.

Uber is reported to have generated US\$20Bn in Gross Revenue and US\$6.5Bn in Net Revenues in 2016, doubled that of 2015, and a loss of US\$2.8Bn. He expressed concerns that

Uber is consistently portrayed in the news as a bad corporate citizen, co-founder and CEO Travis Kalanick was required to step down leaving uncertainty on the management front, and the legal tussle with Google/Waymo over proprietary IP leak on self-driving cars.

5. *“User/ Subscriber Economics: An Alternative View of Uber’s Value”*

(Damodaran, User/ Subscriber Economics: An Alternative View of Uber's Value, 2017)

Damodaran attempted a user based and sum of the parts (SOTP) model of valuing Uber instead of expected cashflows and the DCF, and arrived at a valuation of US\$37.2Bn.

He uses the broad formula of:

“Value of a user-based company = Value of existing users + Value added by new users
– Value drag from corporate expenses”

C. A Framework for Growth by Andrew Chen (Chen, 2018)

Andrew Chen is currently General partner at Andressen Horowitz and former VP of growth for Uber, and he published his conceptual model for predicting (user) growth based on his experience as an operator and investor. He noted that growth accounting is a lagging metric and it is more important to understand the acquisition loop and engagement loop that is the leading indicators. These loops are what would result in the eventual Monthly Active Users (MAU) and would also explain if the current strategy is workable, sustainable or can be improved.

The main aim of the growth framework is to help understand the following:

- 1) Understand the existing state of customer growth – including growth loops, the quality of acquisition, engagement, churn, and monetization
- 2) Identify potential upside-based learnings from within the company as well as across benchmarks from across industry
- 3) Prioritize and make decisions that impact the future

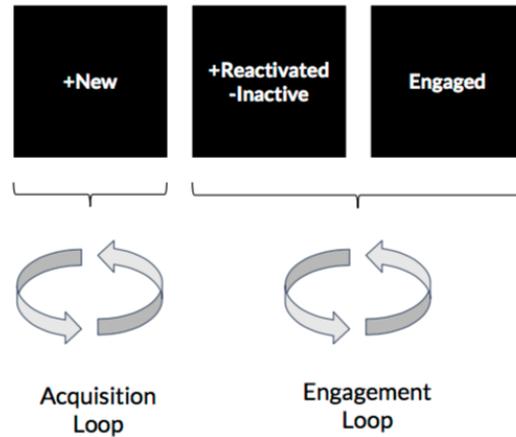


Exhibit 23: Framework for Growth by Andrew Chen

D/E. There is a need to look for other metrics to determine traction in digital businesses due to increasing returns to scale

Professors Govindarajan, Rajgopal, & Srivastava came to a conclusion that to determine the value (or true worth) of digital companies, investors need to look for cues on the success of its business model, as the current financial accounting model is not able to capture the principle value creator: *increasing return to scale on intangible investments*".

Digital companies have assets that are intangible, ecosystems that extend beyond its premises and products and services rendered are not physical – these result in very different pictures when viewing their balance sheets and income statements. Also, unlike physical assets such intangible assets may get enhanced with increased use due to network effects, allowing market leadership to translate to a winner-take-all profit structure, such as the case in Facebook.

(Govindarajan, Rajgopal, & Srivastava, 2018) (Arthur, 1996)

On Uber

Background

“Let’s call an Uber” or “Let’s Uber” is a common phrase now instead of calling a cab or a taxi, which is indicative of how Uber as a ride-sharing company has progressed. What started as a booking service for black cars and limousines has become a global transportation platform. Uber was at one point the most valuable private company in the world, and was reported by PitchBook to have raised over US\$17.4Bn, and with their last valuation round listing them at a respectable US\$72Bn. The following sections on Uber utilised data from multiple sources such as PitchBook, Morningstar, CBInsights, Crunchbase and Techcrunch, amongst others. The quantitative data source were estimates that were made available through the Wall Street Journal (WSJ) and subsequently analysed by PitchBook and Morningstar.

Unparalleled Execution and Product Innovation

Uber has aggressively drove execution from their inception. Their geographical expansion took off in 2013, establishing themselves across 50 cities. In mid 2014, they were in more than 150 cities, and as of June '18, Uber has expanded to a total of 65 countries and over 700 cities (see Exhibit 25). According to data from Uber and eMarketer as quoted by Reuters, ridership numbers are over 40Mn people in the US and 75Mn globally, supported by 3Mn active drivers globally. As Uber continued to expand and implement their well structured playbook, they started to encounter regulatory resistance from the likes of transport authorities, taxi associations and taxi and private limousine companies. However this proved to be the least of their worries, but the traditional head on competition on multiple fronts and eventually a continual stream of bad publicity and press was what started to cause the company to slow its advancement. (CB Insights, 2018)

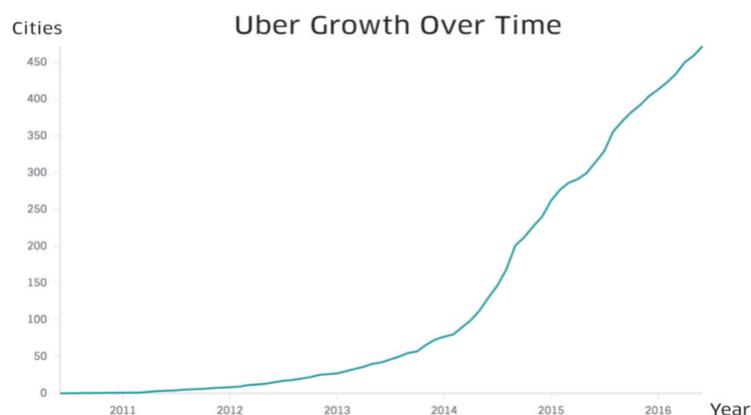


Exhibit 25: Uber’s growth over time, measured by cities (Source: CBInsights)

The product innovations that has emerged on the platform includes: Uber Black, UberX, Uber Pool, UberXL, Uber Eats, Uber Freight, Uber Air and Jump. This range of products tap on and continue to enhance the value of Uber's platform, using Uber's global network of drivers to serve as a latent global delivery network of both people and things and increasing overall utilisation. Also, an innovative concept that was implemented early on is now taken as a standard for ride-hailing was surge/ dynamic pricing, which increased the supply liquidity to address increase demand. Some of the key product innovations are explained below:

- Uber Black was the original private car hire which required drivers to hold commercial driver's licenses. This was challenging to scale later on, and Uber proceeded to launch the a less premium ride UberX in late 2012 in response to Lyft their US rival. UberX eventually became the flagship product, providing for 80% of Ubers rides as of Sep'18. UberX competed directly with taxis and switched on Uber's growth.
- Uber Pool was a carpooled Uber, providing discounted rides by bundling multiple fares into a single car. This model provided a win-win to both Uber and riders and it drove up utilisation of the network on the whole, and it theoretically allows Uber to collect as much as 2-4x more revenue per trip, with riders also enjoying a benefit of lower fares. In 2016 Uber's David Plouffe announced that 20% of all Uber rides globally are not Uber Pool rides.
- Uber Eats the food delivery app/ service of Uber, allow users to order good from local restaurants through the app for delivery within 20 minutes to one hour. It has turned out to be the fastest growing and most profitable unit and Uber is doubling down on the category. Its biggest competition for this category is GrubHub. As of Jul'18, Recode reported that Uber Eats had grown its market share of the US from 12% to 21% compared to GrubHub that saw its market share decline from 60% to 50%.
- Jump is a dockless bike startup that was acquired for US\$100 to 200Mn in Apr'18. At that time Jump that has 650 electric bikes in a few markets. Uber's expansion into bikes and scooters was important to maintain its users and engagement with the platform. The average length of a trip on Jump is 2.6 miles, which is the same length as 30-40% of all trips Uber serves in San Francisco.

Local & Regional Competition and The "Anti-Uber alliance"

As Uber expanded into new territories from 2013 to 2016 they frequently found themselves faced with local/ regional competitors that have raised substantive funding (see Exhibit 28B), were building out similar ride hailing platforms and were focused on outspending them temporarily to gain a foothold. This led to the commoditisation and the inability to bring costs under control in certain markets. In China in particular, as Uber battled DiDi, they found the playing field moving back to the US again as DiDi invested S\$100Mn in Lyft in Sep'15.

Uber was faced with increase in their variable costs as they proceeded with each new market expansion. These costs included: driver commissions, driver incentives, driver onboarding (e.g. mobile devices), sales & marketing spend and insurance/ other operating expenses. The the intense competition in certain markets led to a increased spending on subsidies and incentives on riders and drivers, which led to Uber experiencing a range in terms of contribution margins (CM) – a measure of revenue vs variable costs – across markets. They found CM to be between 8-9% for more mature markets such as New York, DC, Boston and Paris, and low or negative CM in emerging and highly competed markets, which led to Uber’s decision for certain high profile exits to competitors in China (DiDi Chuxing), Southeast Asia (Grab) and Russia (Yandex). (See Exhibits 29 and 31) (Mossberg & Swisher, 2016) (CB Insights, 2018)

Autonomous Technologies and the Existential Crises

Previous CEO Travis Kalanick saw that autonomous (or self-driving) vehicles (AVs) was a potential opportunity and threat for Uber. (see Exhibit 26) The opportunity was because of the potential to eliminate the driver’s costs, which could allow Uber to save another 75%, and also not requiring to deal with the potential increase in costs for cities that wants these partner/ contractor drivers to be covered by Uber as employees. The threat was in the risk of a technology-driven company to come up with a lower cost platform for ride-sharing that will disrupt Uber’s current business model. Uber acted swiftly at this realisation, and decided to take action by hiring practically the whole of Carnegie Mellon’s robotics team working on autonomous technologies, and also acquiring Otto who was led by ex-Google self driving team lead Anthony Lawandoski. This topic on AVs will continue to be on the horizon in Uber’s development and competitive landscape, along with their leading competitors in Google’s Waymo and General Motor’s (GM)’s Cruise. (Lowensohn, 2015) (Loizos, 2016) (Dillet, 2016)



Exhibit 26: Travis Kalanick’s take on autonomous technology

A private company but always in the public eye

As Uber grew, it became known for its culture of aggressiveness being led by a relatively public CEO Travis Kalanick. He continued to push his team to move quickly in its global quest, and continued to see it as a necessary evil for Uber to be challenging the authorities as they expanded their business, due to the protective regulations that guard the taxi and related industries. In 2017, this aggressive reputation and other legal tussles started to emerge, and Uber faced major issues on its public image and the external view on its culture, which eventually led to Kalanick's departure. With incoming CEO Dara Khosrowshahi's entry, he had to make strong efforts to account for the changes to culture and practices for Uber, and continue to rebuild a positive public image for the company. Khosrowshahi was quoted early into his appointment for mentioning that Uber had the disadvantages of being a public company as far as the spotlight is concerned, but none of the advantages. Due to the way Uber was run and its global ambitions, it has been in the public eye from the very beginning.

Continuous growth in terms of Gross Bookings and Net Revenues

Uber has continued to display strong revenue growth up to the 3rd quarter, although operating profitability is still unclear. Gross bookings came in at US\$12.7Bn for 3Q18, up 34% yoy. Net revenue grew by 38% yoy to US\$2.95Bn in 3Q18. (See Exhibit 27) UberEats as a segment contribution was broken out for the first time generating US\$2.1Bn in 3Q, up 150% yoy and contributing to 17% of total gross bookings up from 9% yoy. However rate of yoy growth fell sharply by 63% from 2Q while adjusted net losses widened from US\$680Mn to US\$939Mn in 3Q. Increased spending in competitive markets in US, India and the Middle East as well as recent investments into micro-mobility. Take rates (commissions) has been maintained at 23.2% compared with last quarter and up from 22.4% last year. Gross profit margin has increased to 48.3% up from 46.3% in 3Q18. (See Exhibit 31) (CB Insights, 2018)

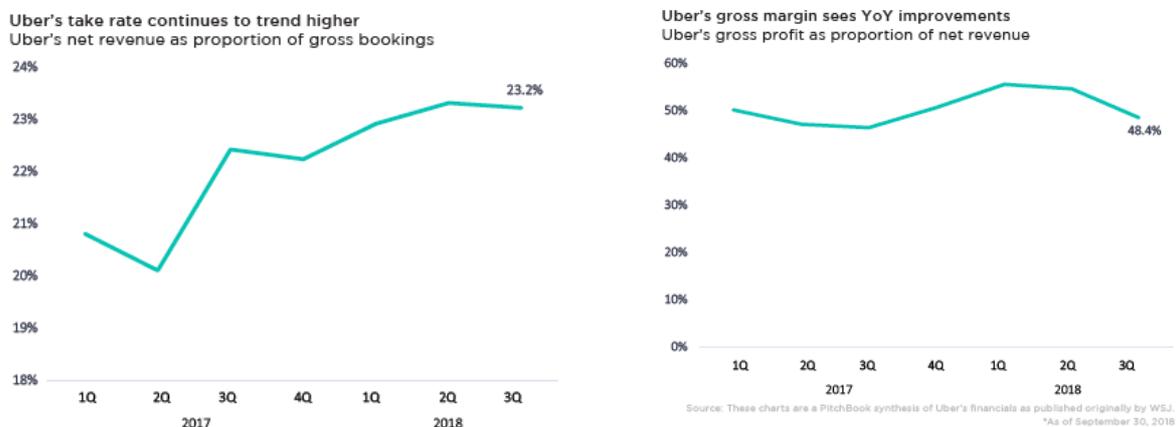


Exhibit 31: (Source: WSJ, PitchBook, 2018)

Uber's quarterly net revenue

\$M, 2014 – Q3'2018

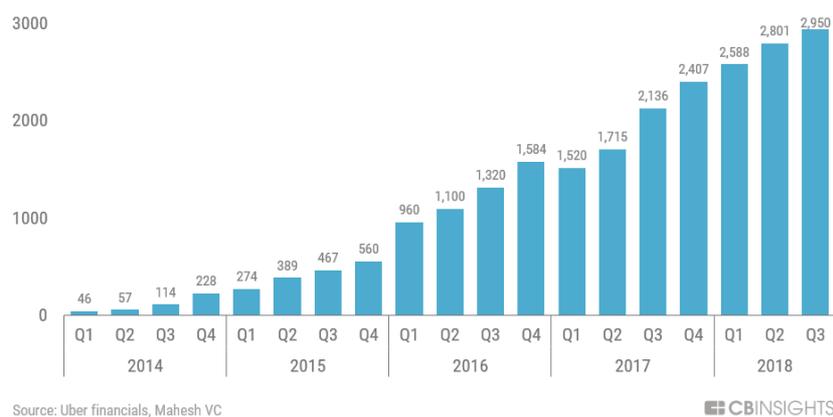


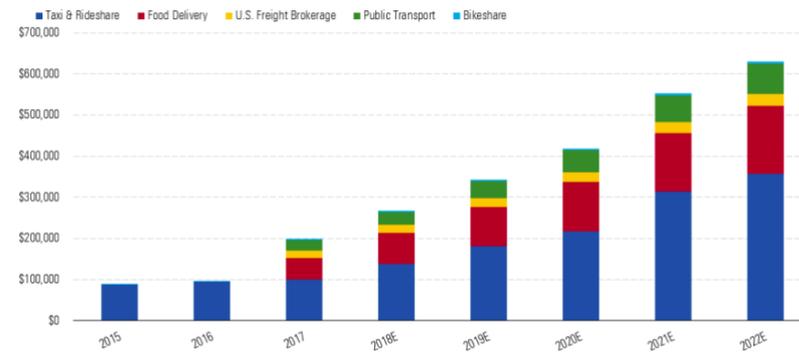
Exhibit 27: Uber's quarterly net revenue (1Q14 to 3Q18)(Source: CBInsights)

Uber's impending IPO in 2H19

According to the WSJ, in Dec'18 Uber filed confidentially for an IPO in 2H19, with an expected valuation of up to US\$120Bn. An analysis report that was published by PitchBook-Morningstar in July'18 valued Uber at US\$110Bn, close to the quoted expected value and rated them an investment rating of 3 out of 5 stars with a narrow moat and with high uncertainty due to the execution risks. Some of the assumptions that is required to support this valuation as listed below.

- A total addressable market (TAM) of US\$630Bn by 2022 has been assumed with a 26% CAGR for 2017-22 from strong growth in the global ride-sharing (see Exhibits 32, 33 and 34)
 - US\$110Bn is about 77% above the last implied valuation (US\$62Bn) from its last round
 - US\$110Bn translates to an enterprise value/net sales of 9, 6 and 5 for 2018, 2019 and 2020 respectively. It also translates to a net revenue multiples of 2.0, 1.4 and 1.0
 - It assumes Uber's net revenue over the next 5 years will grow at 39% CAGR, above that the addressable market's 26%. Net revenue will grow by 10x, from US\$7.8Bn (US\$36Bn gross revenue) in 2017 to US\$82.4Bn (US\$397Bn gross revenue) (See Exhibit 35)
 - Take rate will be between 20-30%
 - Market share of total addressable markets will move up from 18% today to 34%; market share of ride-sharing markets to move up from 29% to 50% (see Exhibit 34)
 - The 10-year DCF model assumes positive EBITDA in 2020, operating income in 2022 and operating margins of nearly 17% by 2027 (See Exhibit 36)
- (Morningstar Equity Research, 2018) (Hoffman, Bensinger, & Farrell, 2018)

Exhibit 1 Ridesharing, Food Delivery, and Other Submarkets Will Push Uber's TAM to \$630 Billion (\$ in Millions)



Source: TLC, NYC Open Data, Statista, UC Davis Institute of Transportation Studies, IBIS, Citi Bike, Morningstar estimates

Exhibit 32: Breakdown on Uber's TAM (Source: PitchBook-Morningstar)

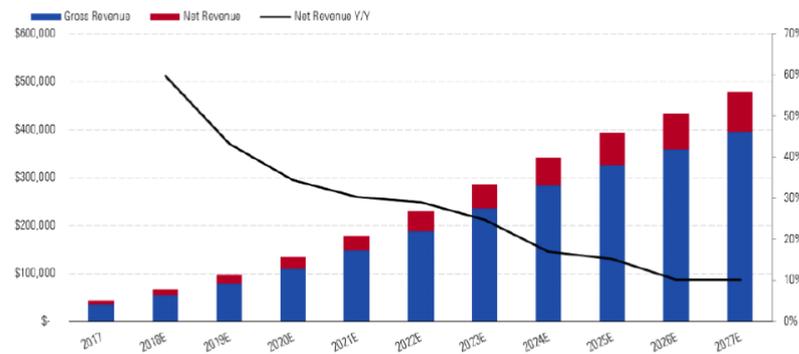
Exhibit 18 Uber Will Have Approximately 55% Ridesharing Market Share by 2027 (Excluding China) (\$ in Millions)



Source: Company, The Wall Street Journal, Morningstar estimates

Exhibit 34: Uber is assumed to have majority share of the ride-sharing market (excluding China) (Source: PitchBook-Morningstar)

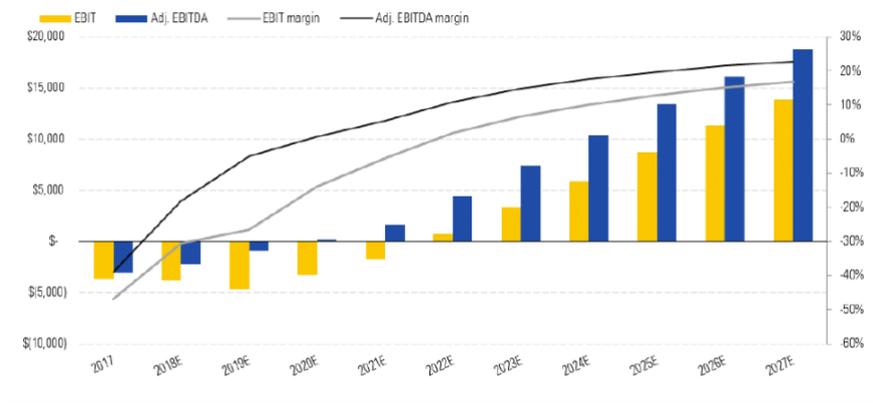
Exhibit 17 Uber Gross and Net Revenue (\$ in Millions)



Source: Company, The Wall Street Journal, Morningstar estimates

Exhibit 35: Uber Gross and Net Revenue projections (Source: PitchBook-Morningstar)

Exhibit 20 Margin Expansion and Profitability on the Horizon
(\$ in millions)



Source: Company, The Wall Street Journal, Morningstar estimates

Exhibit 36: Margin Expansion and Profitability is expected in future projections (Source: PitchBook-Morningstar)

Not yet a finished product even with the IPO

Even with its potential IPO in 2H19, Uber would have several areas it needs to address to become sustainable and profitable. These include the following:

- More effectively battle against local/ regional competitors in market for usage and loyalty
- Keeping sales and marketing costs low and address driver churn. They would need to manage costs while spending on rider and driver acquisition and retention incentives given today's competitive mechanics. According to The Information, Uber is estimated to only be able to retain about 20% of drivers after one year, due to a 12.5% monthly churn.
- Figuring out a solution for autonomous vehicle (AV) technologies. This still requires significant investment for development, but there is no guarantee that Uber's internal solution would keep them on the playing field. They would need to gain or maintaining access to AV technologies to ensure that Uber continues to have a big part to play in the future transport landscape, and prevent being disrupted by an upcoming AV player.
- Managing and addressing legal risks and exposures, both in terms of drivers status and also regulatory concerns as they expand. The status of drivers as contractor/partner versus employee needs to effectively remain at status quo in order to ensure that employment costs does not rise and further impact the bottomline.

Investment Thesis

Uber has been able to continuously build and grow its business, and its investment thesis has continued to evolve and become reality, justifying its valuation for each funding round.

However, for such venture-backed consumer technology companies, much of the value is still derived from the assumption of its successful execution, domination and future profitability alongside an actual build-out of a market that was not present prior to the investing.

Some of the key thoughts behind Uber’s investment thesis are as followed:

- Uber has shown a dynamic and continuous evolving investment thesis across the years
- They are the world’s first ridesharing app for black cars and limousines, and later other vehicles
- They are also the world’s most valuable ride-sharing company and 2nd largest globally, behind DiDi (in terms of rides hailed) and the “The Amazon of Transportation” as according to Khosrowshahi; PitchBook highlights that Uber is moving away from pure-play ride-sharing to Mobility-as-a-Service(MaaS) platform. (Hussain, 2018)

Growth and Valuation Journey



Exhibit 37:A Timeline on Uber’s valuation and fundraising (Source: Pitchbook)

Key Narratives and Timeline

(Lashinsky, 2017) (CB Insights, 2017) (CB Insights, 2018) (David & Vo, 2018) (Olsen, 2017)

I have listed down some of the key narratives that impacts Uber’s development and valuation below, followed by a more details listing of the timeline.

- Kalanick showcases his ability to fundraise and execute on a business as Uber expands both in the US and globally. Uber displays its potential future through its revenue growth in the US which indicated both positive unit economics and negative churn as current users are increasingly use the service
- Uber brings on marquee investors such as Benchmark Capital, Lowercase Capital, TPG, Google Ventures, Toyota and most recently SoftBank

- Toyota invested US\$500Mn to collaborate on self-driving car technology, which was important as it was an OEM validating the ride-hailing business model
- Dara Khosrowshahi joins as CEO in Aug'17 from Expedia Group. He is tasked to repair the company's public image and adjust their strategy for this next phase. He announced the target of taking Uber public within the next 18-36 months, and the company needing to maintain its growth and opportunity narrative whilst finding a pathway to profitability.
- SoftBank comes aboard in Dec'17 through a US\$9Bn deal, for both current and new shares. New capital of US\$1.25Bn was invested in the company. This was important as it restored Uber's status as important to the future of ride-sharing, and marked a symbol of confidence in its future and a closure to Uber's difficult 2017. (Rowley J. D., 2018)
- Khosrowshahi continues express his confidence for future growth in Dec'18. Uber and Lyft combined contributes ~0.5% of all miles driven in the US and there is potential to move this to 20 to 30%. The impact will be seen from reduced car ownership and traffic congestions. Uber is reported to have filed confidentially for IPO in 2H19.

Timeline

Year	Key Events
2008/ 2009	<ul style="list-style-type: none"> ▪ Founded as UberCab, the world's first ride-sharing app by Travis Kalanick and Garrett Camp, raises Seed Funding
2011	<ul style="list-style-type: none"> ▪ Feb'11 raised Series A of US\$11Mn led by Benchmark Capital
2012/2013	<ul style="list-style-type: none"> ▪ Started UberX in late-2012 to compete against Lyft which launched in May ▪ Started overseas expansion and later expanded into China via Shanghai in 2013
2015/2016	<ul style="list-style-type: none"> ▪ 2015 Uber senses the importance of autonomous technologies and pushes for its own development inhouse. ▪ Acquired deCarta and Microsoft's Mapping Unit in 2015 and Shadow Maps in 2016 to improve mapping accuracy and usability. ▪ Sep'15 Didi invested US\$100Mn in Lyft Uber's main US rival. ▪ Nov'15 Didi unveiled a strategic pact with Grab and Ola for SEA and India, also known to the media as the "anti-Uber alliance".
2016	<ul style="list-style-type: none"> ▪ Aug'16 acquired Otto – a self-driving trucking startup –for about 1 percent of Uber's value or \$680M plus 20% of future profit from its trucking business. Otto was founded by Anthony Levandowski, the engineer previously leading Google's self-driving efforts. ▪ May'16 Didi raises US\$1Bn from Apple. Aug'16 Uber sells its China business to Didi Chuxing, in return for 17.7% preferred equity. It had spent close to S\$2Bn competing in China at that point
2017	<ul style="list-style-type: none"> ▪ "Uber's Tumultuous Year"

	<ul style="list-style-type: none"> ▪ Jan'17 the #DeleteUber campaign was launched on Twitter after the company tried to profit from immigration ban protests ▪ Feb'17 a former Uber engineer Susan Fowler's posted a blog post on sexism and harassment at Uber (Fowler, 2017) ▪ Google's Waymo issues a lawsuit alleging theft of self-driving car technology relating to Levandowski; Feb'17 video surfaces of Kalanick's heated argument with an Uber driver ▪ CEO Kalanick was forced to take a leave of absence and subsequently resign June 2017 following a string of lawsuits against Uber ▪ A string of resignations for Uber's management: Amit Singhal (SVP of Engineering, resigns on sexual harassment allegations at previous workplace Google), Ed Baker (VP of Product and Growth), Gary Marcus (Director, AI Labs), Jeff Jones (President, departs on disagreement with Uber's beliefs), Brian McClendon (VP of Maps and Business Platform), Sherif Marakby (VP of Global Vehicle Programs), Anthony Levandowski (Founder of Otto, Head of Self-driving Car Unit), Gautam Gupta (Head of Finance), Emil Michael (SVP of Business, Kalanick's 2nd in command) ▪ Aug'17 – Dara Khosrowshahi former Expedia CEO takes over as Uber CEO ▪ Dec'17 SoftBank takes a 14% stake in Uber, at a potential major drop in valuation from previous US\$68Bn to ~US\$48Bn. SoftBank was already an investor in Didi Chuxing and Grab at that point.
2018	<ul style="list-style-type: none"> ▪ Mar'18 – Uber sells out its SEA operations for 28% stake in Grab ▪ Apr'18 – Acquired Jump for US\$100 to 200Mn. ▪ Aug'18 – Nelsen Chai hired as CFO to prepare Uber towards an IPO ▪ Dec'18 – Uber reboots its self-driving program, 9 months after a halt due to one of their vehicles struck and killed a pedestrian

What should we expect going forward?

- Uber's long-awaited IPO – and with the new funding, new possibilities such as the re-entering SEA organically or by the acquisition of Grab/Go-Jek.
- Uber becoming the transportation solution platform of choice, and using the network, brand data advantages and funding to grow and dominate new categories
 - PitchBook believes that a successful pivot towards becoming a bundled one-stop-shop and multi-modal platform for urban transportation can create significant growth and competitive advantages against current pure-play ride sharing companies. (Hussain, 2018)
 - E-scooters and bikes as a category will continue to grow – Uber is likely to take further actions in the space whether organically or inorganically, adding on to its acquisition of dockless bike startup Jump in Apr'18 and participation in Lime's Series C funding of US\$335Mn in Jul'18 (Dickey, 2018) (Efrati, Osawa, & Weinberg, 2018)

- Continue to grow out Uber Eats as a delivery service. And potentially build an advertising related business with it, given the potential to implement paid discovery? (Constantine, 2018)
- Uber continuing the battle to secure its future with AV technologies – AV is transformational and poses an existential threat to Uber’s current business model. AV technologies is expected to both lower costs and become safer than human drivers. However, based on current information seems to indicate that Uber is behind in the development race compared with Waymo and Cruise Automation today (see Exhibit 44).
- Potential changes to the way Uber approaches and captures markets. Whilst they used to go head in aggressively, there may be a more gradual and calculated approach today with the new CEO and management in place.

On Grab

Background

Grab was started in 2012 by Anthony Tan and Tan Hooi Ling as MyTeksi in Malaysia, both graduates of Harvard Business School (HBS). The company expanded a year later in 2013 to Singapore, Philippines and Thailand as GrabTaxi and expanded to Indonesia in 2015 and then to Myanmar and Cambodia in 2017. In 2016, they rebranded themselves across the region as Grab instead of GrabTaxi to signal that the Grab Platform offered services beyond ride hailing, even as they went into food payment and logistics. In 2018, after the successful acquisition of Uber SEA's operations, they announced their regional ambitions as Southeast Asia (SEA)'s first and everyday superapp. (Johnson, 2018) The following sections on Grab utilised data from multiple sources such as Bloomberg, CBInsights, Crunchbase and Techcrunch, amongst others. Information availability in terms of financials has also been more limited than Uber.

Grab established the largest online-to-offline (O2O) ecosystem technology company in the region and has been valued above >US\$10B in its latest fundraising Series H. Their regional ambitions echo what Google and Temasek have held up as the regional opportunity in its 2018 edition of the SEA digital economy report – SEA's US\$240Bn digital economy that is supported by its 650M population and comprising of the sectors ride-hailing, online media, online travel and e-commerce. (See Exhibit 46) In their core business of online Transport and Food Delivery, we can see from Exhibit 47 the importance of Indonesia as a market going forward, explaining why it remains an important battlefield, with many startups and investors vying for a piece of the pie. (Google & Temasek Holdings, 2018)

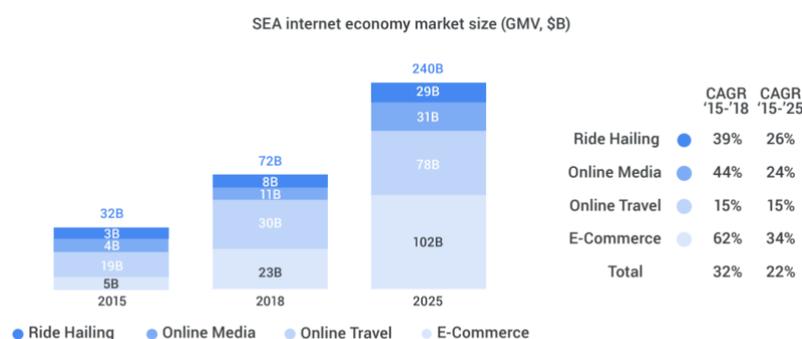


Exhibit 46: SEA's internet economy market size and divisions (2015, 2018, 2025) (Source: Google, Temasek)

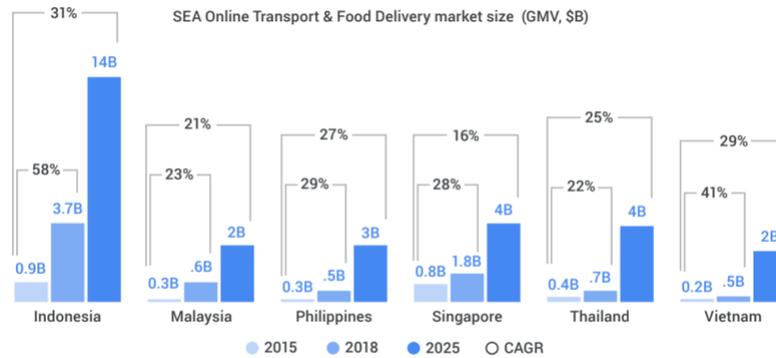
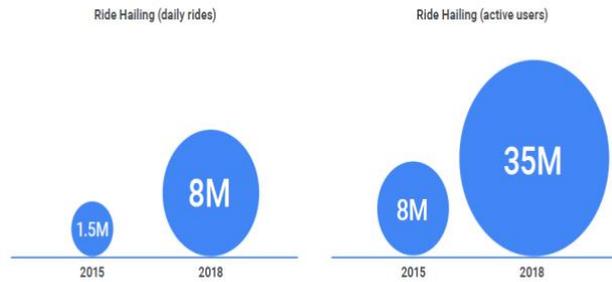
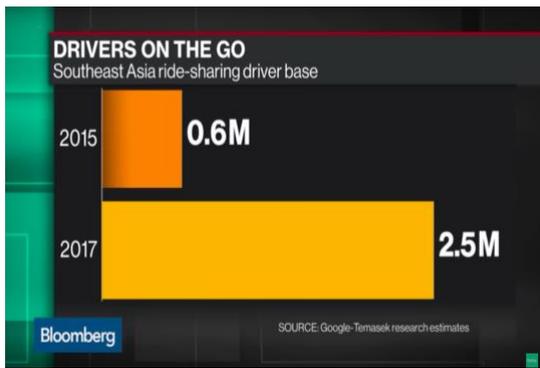


Exhibit 47: SEA's Online Transport & Food Delivery market size (2015, 2018, 2025) (Source: Google, Temasek)

Grab expands through the SEA region

In a similar way that Uber had advanced overseas, Grab had expanded its core ride-sharing platform through the region in a methodical manner with the use of subsidies and incentives to hire and retain drivers and riders. Exhibit 48 showcases the overall growth of the ride-hailing sector since the battle began in the region – the number of drivers has increased from 0.6Mn (2015) to 2.5Mn (2017), the number of riders have increased from 8Mn (2015) to 35Mn (2018) and the number of rides taken has increased from 1.5Mn (2015) to 8Mn (2018). In the midst of this uplift, Grab has continued to make progress in the following manner to lead the pack:

- Jun'16: 300,000 registered drivers across 6 countries, 15Mn app downloads, 1 in 9 smartphone users are active users; Biggest home-grown tech company in the region
- Dec'16: Over 500,000 registered drivers across SEA
- May'17: Over 800,000 registered drivers across six markets in SEA, catering to 40Mn riders. Services has expanded from taxi-hailing to include cars and motorbikes
- Aug'17: over 1.2Mn registered drivers across 7 markets in SEA and 87 cities, 55Mn app downloads, facilitates ~3M rides daily (vs. Didi 18-20M rides per day); adding 800 R&D jobs in 6 R&D centres
- Nov'17: Over 1B completed rides in SEA. Covers 142 cities across Singapore, Malaysia, Indonesia, Thailand, Vietnam, Philippines and Myanmar. (Russell, Uber rival Grab crosses 1 billion rides in Southeast Asia, 2017)
- Jul'18: over 100Mn app downloads, >7.1M agents on the platform, enabled 6.6M micro-entrepreneurs, 217 cities across SEA
- Sep'18: Claims to have dominance for the ride-hailing market in SEA - Philippines 90%, Singapore 80% and Indonesia 65%



*Exhibit 48: Ride-sharing drivers, users and ride numbers
(Source: Google, Temasek, Bloomberg)*

As Grab battled Uber in SEA, they were the representative of the “Anti-Uber alliance” for the region, and received funding from DiDi and SoftBank in 2015 to 2017. This was a clear indication of strong backers for this company as it faced Uber in the region. (Swisher, 2016) Grab eventually won the battle against Uber and acquired it for an undisclosed sum, with Uber taking up 27.5% share of Grab in the process. (Cheok, 2018)

Uber’s exit, and a life after Uber

As Uber exits SEA, there continues a battle between Grab and a new contender Go-Jek, for the region as the latter announced its intention to expand regionally into Vietnam, Thailand, Singapore and Philippines with a US\$500Mn war chest. This battle would be one that is fought on three key fronts, 1) for funds raised, 2) for talent and innovative startups and 3) new verticals through innovative O2O products and services. Both Grab and Go-Jek have raised substantive funds in the recent months, and both are amongst the highly valued unicorns in the region – Go-Jek on last count was valued at US\$9 to 10Bn and Grab was valued at US\$11Bn. Even as Grab is backed by SoftBank, Toyota and Didi, Go-Jek is backed by Google, Tencent, and JD.com¹.

(Russell, Go-Jek officially announces Southeast Asia expansion to fill void left by Uber’s exit, 2018) (The Economist, 2018) (Silviana & Potkin, 2018) (Russell, Grab raises fundraising target to \$5B as Southeast Asia’s ride-hailing war heats up, 2018)

Investment Thesis

Similar to Uber, Grab has been able to continuously build and grow its business, and its investment thesis has continued to evolve and become reality, justifying its valuation for each funding round. However, for such venture backed consumer technology company, much of

¹ China’s second-largest e-commerce platform

the value is still derived from the assumption of its successful execution, domination and future profitability alongside an actual build-out of a market that was not present prior to the investing. Some of the key thoughts behind Grab’s investment thesis are as followed:

- Grab has shown a dynamic and continuous evolving investment thesis across the years
- Grab started with making taxis safer in Southeast Asia – starting in Malaysia.
- SEA’s most valuable unicorn and ride-sharing company. It subsequently became the dominant ride-sharing app in SEA upon Uber’s exit; and is going beyond just transport to financial and other services whilst defending its ride-sharing lead from Go-Jek
- To become the everyday superapp/ daily-lifestyle platform – not just transportation, but finance and so on for everyday use (to consumers), and a platform that has effectively dominates the internet economy of SEA (to investors).
- In three to ten years’ time, for Grab to be a platform that has enabled a hundred million micro-businesses across SEA. Grab, with its portfolio of companies and its ecosystem, would have alleviated poverty and improve economic realities in SEA.
(Fortune, 2016) (Ho, Soo, & Deng, China’s internet ecosystem model increasingly being copied globally , 2018)

Growth and Valuation Journey

Grab's funding rounds				Estimated valuation (US\$)
	Date	Amount (US\$)	Lead investors	
Series A	Apr 2014	5.3m	Vertex Ventures	N/A
Series B	May 2014	15m	GGV Capital, Qunar	N/A
Series C	Oct 2014	65m	Tiger Global, Hillhouse Capital	N/A
Series D	Dec 2014	250m	Softbank	N/A
Series E	Aug 2015	350m	China Investment Corporation, Didi Chuxing, Coatue	N/A
Series F	Sep 2016	750m	Softbank	3b
Series G	Jul 2017	Up to 2.5b	Softbank, Didi Chuxing	>6b
Debt facility	Oct 2017	700m	HSBC	N/A
Series H	Jun 2018	1b	Toyota	>10b

Sources: Grab, Crunchbase

SCMP

- Additional funding not captured: - Aug’18 – Series H \$1B from Financial Investors
Oppenheimer Funds, Ping An Capital and Macquarie Capital

Exhibit 49: Grab’s funding rounds (Source: SCMP)

Key Narratives and Timeline (David & Vo, 2018)

- The “everyday superapp” – deepening regional engagement and growth, the race for fund-raise and adopting the view of an ecosystem approach. (Ho, Soo, & Deng, China’s internet ecosystem model increasingly being copied globally , 2018) (Bloomberg, 2018)

“We started with the goal to enable transport to be fast and safe. The next step is becoming SEA’s superapp...we’re now going to become one app for multiple different services, focused on what we call the everyday most important needs to Southeast Asia: food, payments and logistics” – Tan Hooi Ling, Grab’s Cofounder

- Further growth and partnerships through an announcement of a US\$250Mn fund for acquisitions in Indonesia, as part of its ‘Grab 4 Indonesia’ 2020 master plan, a commitment to invest US\$700 million in Indonesia to develop its digital economy. Also, the launch of Grab Ventures for the region. Some of the related investment and partnerships are:
 - ❖ Grab acquires Kudo for between US\$80-100Mn mix of cash and equity (Russell, Uber rival Grab makes first major acquisition to build out its payments platform, 2017)
 - ❖ Grab invests in oBike’s Series B round for US\$45Mn in August 2017. (Russell, Uber rival Grab quietly backed dock-less bike service oBike, 2017)
 - ❖ Grab invests US\$100Mn into OYO hotels to expand its budget hotel services into SEA. OYO claims to have offer 87,000 rooms in 171 cities within 6 months after launching in the country in June 2018. (Russell, Grab invests \$100M into India’s OYO to expand its budget hotel service in Southeast Asia, 2018)
- Bringing on key Investors that took them to the next level – GGV, Tiger Global, and Hillhouse Capital. DiDi and subsequently SoftBank. In terms of SoftBank, GGV Capital’s Hans Tung had this to say,

“He (Masayoshi Son) wants to play pope in the ride-sharing app world” (Ambler, 2018)
- Uber exits SEA – but interestingly Grab had to do the deal as much as for offensive reasons as with defensive reasons – as Go-Jek would also be open to proceed with such a deal to gain quick access. With Uber out of the picture in SEA, Go-Jek declares its regional ambitions and intention to go head on with Grab. (Culpan, 2018)

Timeline

Year	Key Events
2012	<ul style="list-style-type: none"> ▪ Starts in Singapore and Malaysia as GrabTaxi, an Uber-copy starting with taxis
2013 to 2014	<ul style="list-style-type: none"> ▪ Feb’13 – Uber officially launches in Singapore ▪ The start of Uber vs Grab Grab expands into another 4 countries – Philippines, Vietnam, Thailand, and Indonesia – and went head-on with Uber through subsidies to gain market share, depleting its Series A to C cash reserves of S\$85.3Mn. ▪ Jul’14 – Grab launches GrabCar ▪ Nov’14 – Grab launches GrabBike in Vietnam ▪ Dec’14 – SoftBank steps in with a S\$250Mn Series D investment

<p>2015 to 2017</p>	<p>Grab focuses on product-market experimentation and innovation and tailoring its service to specific markets</p> <ul style="list-style-type: none"> ▪ May'15 – Grab launches GrabBike in Indonesia, competing directly with Go-Jek ▪ Jul'15 – Grab launches GrabExpress its logistics delivery service ▪ Jan'16 – Grab launches GrabPay its mobile payment services ▪ May'16 – Grab launches GrabFood, competing directly with UberEats ▪ Apr'17 – acquired Kudo, an online-to-offline (O2O) e-commerce platform and network of 400,000 authorized agents in 500 towns and cities across Indonesia (Grab, 2017) ▪ Partnered with fintech firm OVO for usage of e-wallets after its own e-wallet got suspended by Bank Indonesia in 2017. OVO is owned by Indonesian conglomerate Lippo Group, and Lippo has implemented OVO's smartphone payment systems across its portfolio shopping centers and accompanying restaurant chains. With OVO's help, Grab intends to bring a full range of financial services, including micro lending, insurance, and savings to Indonesia. (Maheshwari & Timmerman, 2017) (Tani, Grab expands into Indonesia e-payments, taking battle to Go-Jek, 2018)
<p>2018</p>	<ul style="list-style-type: none"> ▪ Mar'18 – Uber vs Grab rivalry ends. Grab acquired Uber's SEA business – including UberEats for an undisclosed sum and 27.5% stake in Grab. This was said to be facilitated by SoftBank, who was the biggest shareholder in both companies at the time. ▪ Mar'18 – Grab launches GrabCycle a bike-sharing marketplace ▪ May'18 – With the exit of Uber in the region, Go-Jek announces a S\$500Mn expansion into Vietnam, Thailand, Singapore and Philippines. They were previously only in Indonesia, but in various verticals beyond ride-sharing. (The Economist, 2018) ▪ Jun'18 – Toyota invests S\$1B in Grab leading the round, the largest by an automaker in the global ride-hailing sector. Potential new services to be jointly rolled out in future – insurance, leasing, maintenance and others. ▪ Jun'18 – Grab launches Grab Ventures as part of its M&A, JV and partnerships strategy for the region, to find the next generation of tech leaders and to build and scale growth-stage startups across the region. Initial sector focus would be Mobility, Fintech, Logistics, Food delivery, Food Tech (Grab, 2018) ▪ Sep'18 - Regulators in Singapore fined Grab S\$6.4m and Uber S\$6.6m for their merger, saying it harmed competition and led to increases in effective fares. (The Economist, 2018) ▪ Oct'18 – Booking invests US\$200Mn in Grab, which will see both companies team up to offer bundled and shared services across both platforms in 2019. This deal mimics the US\$500Mn investment Booking made in Didi in Jul'17. (Russell, Southeast Asia's Grab pulls in \$200M from travel giant Booking, 2018)

	<ul style="list-style-type: none"> ▪ Jan'19 – Grab launches a JV with Zhong An Insurance for users and drivers across SEA; Grab has also rolled out a subscription service in Singapore in an attempt to lock in regular usage amidst competition from Go-Jek (Tani, Grab partners with China's ZhongAn to offer insurance, 2019) (Cheng, 2018)
--	--

What can we expect going forward?

- Category dominance for ride-hailing, food delivery services and e-wallets for most of SEA. New verticals will be added and it remains to be seen if Grab can be a leader in those new spaces, for instance in the fintech and insurtech space (amongst others) regionally. As a consumer, one would be able to expect more convenience as further services and subsidies are rolled-out that will likely improve living and traveling in and across SEA.
- Increasing importance of privacy and security of information, and especially so for companies that are managing and using multiple sets of personal information like Grab. Grab would need to manage this risk to be able to continue to hold the trust of its users.
- There would be further investments, acquisitions and also product and partnership experiments and showcase of an ecosystem/platform story as Grab works through Grab Ventures to scale up other growth stage startups and also add value to its current platform
- Further competition – see parallel fund-raising and regional expansion efforts in Go-Jek across the region. Also, other contenders for local and regional pockets are also expected to rise up and compete, especially in new spaces that Grab would not be able to utilize their platform for competitive advantage. For instance, honestbee rolling out O2O solutions in Singapore or Malaysia.

Reflections and Conclusions

Venture Investing is not just a bet, but also about investing ahead of the curve

In an interview on CNBC Managing Asia, Patrick Grove, CEO of Catcha Group and Co-founder of iProperty Group amongst other companies, mentioned his perspectives on venture investing. He does not see the mounting losses at startups as cash burn, but an investment that is required for a 5 to 7-year journey. In the competitive space of building disruptive startups, it is very much about speed and quality of execution (the land grab), building out the best technology and platform for customers and balancing the wars you want to win vs reaching profitability. (Grove, 2017)

In looking at the specific cases of Uber and Grab, I find this to be very true. In venture-backed technology investing, sometimes you are dealing with potential new markets that are not present, or is still in emergence. Adding on the need to make projections on future profits based on past metrics and team's execution potential, this leaves much uncertainty in performing such valuation. Broadly in such investing and valuation exercises, it is more important to be accurate, than precise as Bill Gurley says. Venture investing is not for the faint of heart.

Evolving Narratives and Investment Thesis as the business pans out

We observe in both Uber and Grab's case that the investment thesis is never static but dynamic. High growth and disruption is the norm, and this is sometimes only seen when the business grows to the next stage, which impacts its subsequent valuation round. We see that Grab has chosen to deepen its engagement in the market by going beyond transportation to financial and other services, and Uber has decided to continue its focus as the "Amazon of Transportation", prioritising a more sustainable cash burn rate in expansion in view of its potential IPO in 2019.

Keen competition for both talent and funding

Assuming other factors remain equal – i.e. execution capability on the ground and product innovation, what differentiates would be the availability of talent and size of war chest. Having spoken to the former-GM of Grab Financial in Philippines, I realise that talent is a major concern for such fast-growing startups in the region, which leads to the need to acquire as well to speed up the process. Ming Ma, President of Grab also highlighted in the Dealstreet PEVC conference in 2018 that as a company, they are targeting 3x what their nearest competitor has raised in terms of funding.

“The pathway to profitability” – it takes a minimum level of profitability to create a sustainable and attractive business. It is still unclear and is anyone’s guess how much of a moat/ defensive unique proposition the ride-sharing leaders of today would have at a later stage and what new businesses or competitive advantages they might be able to bring to market. Autonomous vehicles remain a real existential threat and concern to ride-sharing incumbents. We might obtain more clarity on potential (planned) profitability when Uber’s prospectus for their 2019 IPO is made available to the public.

IPOs and the need for liquidity - Eventually investors are still looking for liquidity, even though it was called out that “Softbank could be the new IPO”, but what we observe is that even Softbank themselves would eventually need a way to cash out from their investments and/or rationalize the businesses and investments within the group, not to mention returning funds back to their backing investors as well. IPOs will continue to remain important, but timing is key, given the bearish sentiments in the stock market in 4Q18 and the potential trade war between US and China.

SoftBank’s continued role as the kingmaker – Given its strategic stakes in multiple ridesharing companies and in other top technology companies, its current war chest and potential to raise even further funds, SoftBank will continue to have an eminent role that determines the winners and losers of emerging industries. Also, not to be forgotten are the counterbalancing BAT who continue to maintain a strong appetite for growth inside and outside of China. We should expect these big boys to continue to make big bets into the space.

Appendix

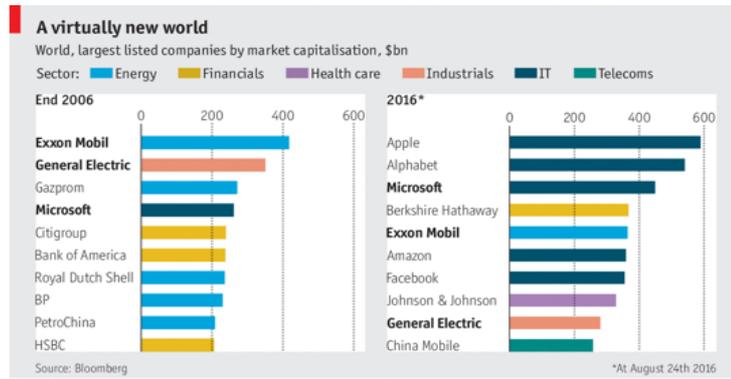


Exhibit 2 – The Largest Global Companies by Market Cap
(Source: Bloomberg, The Economist)

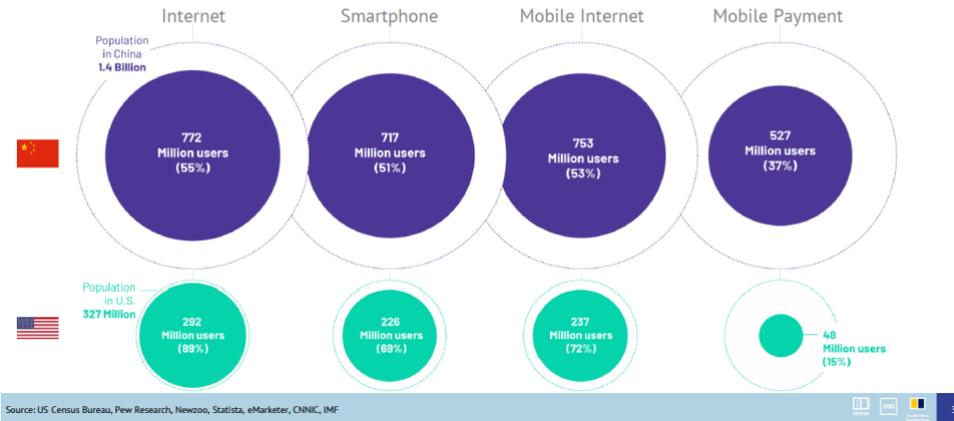
China vs. US – Top Players for Key Verticals



Exhibit 4: China's internet category champion equivalents
(Source: Abacus News China Internet Report 2018)

At a Glance: China vs. US Internet

Although China's internet penetration is just over 50%, its sheer scale means there are 3x the number of smartphone users and 11x the number of mobile payment users in China than in the US.



*Exhibit 6: View on the market sizing and dynamics – China vs US
(Source: Abacus News China Internet Report 2018)*

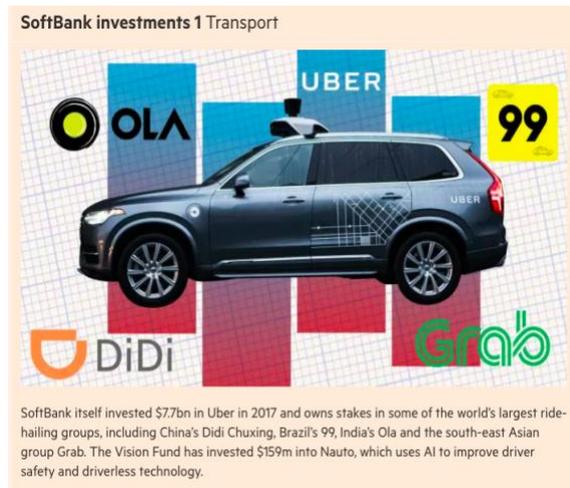


Exhibit 8: SoftBank's investment area 1 Transport

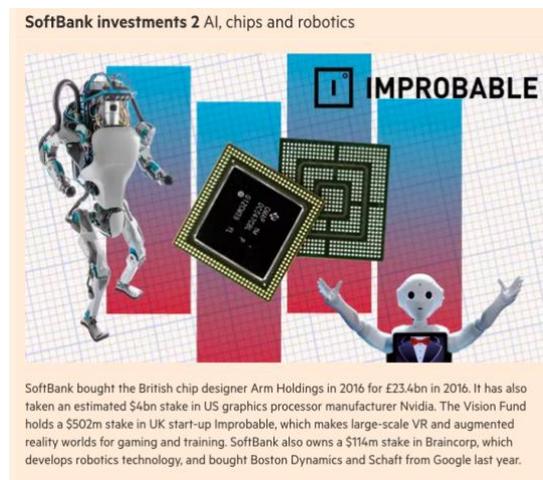


Exhibit 9: SoftBank's investment area 2 AI, Chips and Robotics



Exhibit 10: SoftBank's investment area 3 Tech and Apps

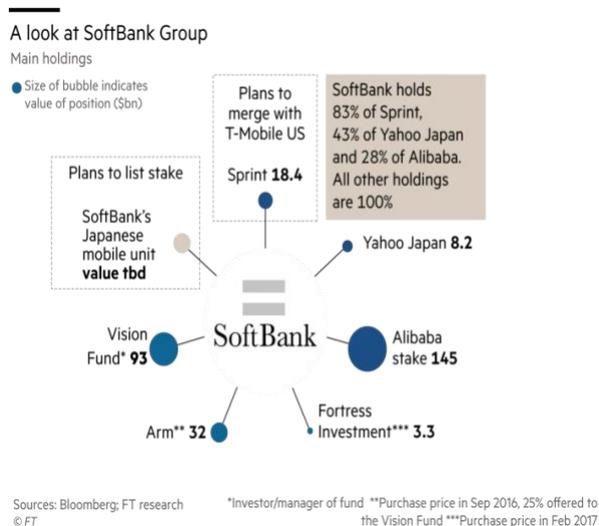
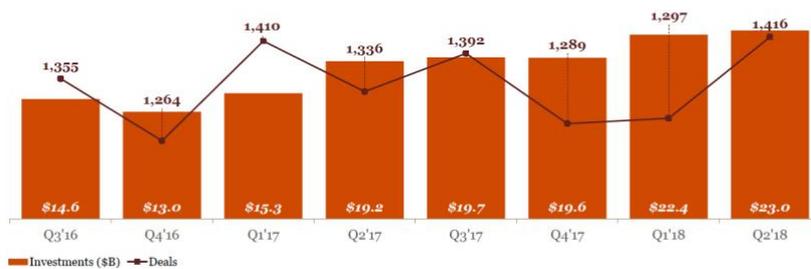


Exhibit 11: A view of SoftBank Group

8-quarter US financing trend

US funding hits a record \$23B in Q2'18

- Dollars were up 2% in Q2'18 as a record \$23B was invested across 1,416 deals. Deal activity increased for the second consecutive quarter.
- 45 mega-rounds of \$100M or more contributed to the strong quarterly funding total. Q2'18 the third straight quarter with more than 30 rounds of \$100M or more.



PwC | CB Insights MoneyTree™ Report Q2 2018

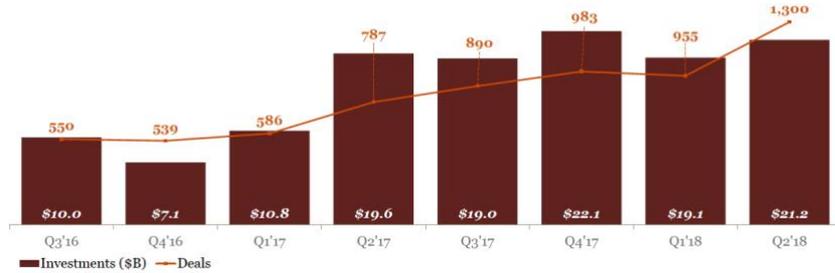
Exhibit 14: 8-quarter US financing trend (PwC/CBInsights, 2018)

8-quarter financing trend: Asia



Asia funding and deals increased

- Total quarterly funding to Asia-based companies increased 10% in Q2'18 as \$21.2B was invested across 1,300 deals.
- Deals increased by 36% from the prior quarter to 1,300.



PwC | CB Insights MoneyTree™ Report Q2 2018

61

Exhibit 15: 8-quarter Asia financing trend (PwC/CBInsights, 2018)

Global later-stage median deal size



Later-stage deal sizes increased significantly in Asia

- Asian median later-stage deal size jumped to \$100M in Q2'18, up from \$69.5 in Q1'18. Deals over \$200M doubled in Q2'18, from 6 in Q1 to 12.
- Median deal size also increased in North America, rising to \$44.5.
- Later-stage median deal size declined in Europe to \$17.6M in Q2'18.



PwC | CB Insights MoneyTree™ Report Q2 2018

71

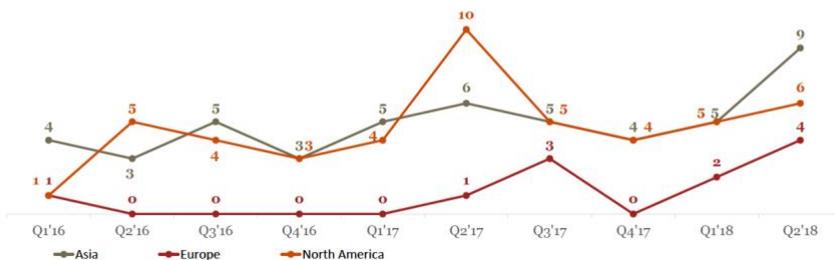
Exhibit 16: Global later-stage median deal size (PwC/CBInsights, 2018)

Global new unicorn births



Asia takes off in new unicorn births

- New unicorn births in Asia jumped to 9 new companies valued at \$1B or more.
- Europe and North America also saw growth in new unicorns, rising to 4 and 6, respectively.



PwC | CB Insights MoneyTree™ Report Q2 2018

67

Exhibit 17: Global new unicorn birth (PwC/CBInsights, 2018)

Global mega-round activity



Total mega-round dollars increased in Asia, declined in North America and Europe

- Asia saw the total dollar amount of \$100M+ rounds increase to \$13.3B in Q2'18, up from \$12B in Q1.
- Total funding from \$100M+ rounds declined in both North America and Europe.

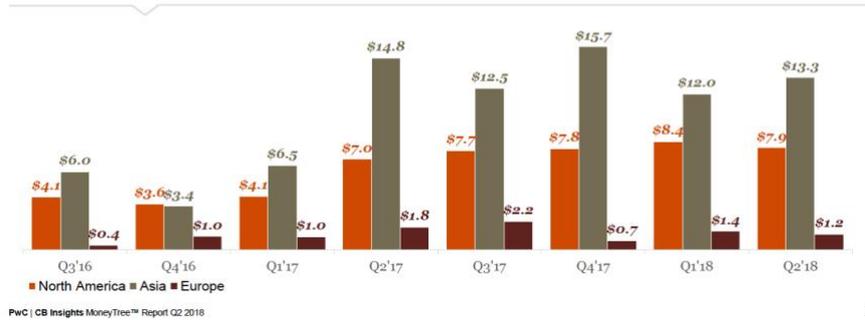
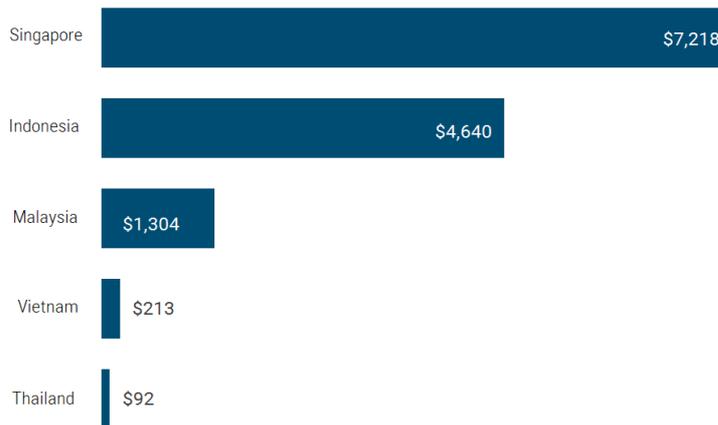


Exhibit 18: Global mega-round activity (PwC/CB Insights, 2018)

INVESTMENT(\$M) INTO SOUTHEAST ASIA BY COUNTRY

2012 - 2017 YTD (9/13/2017)



CBINSIGHTS

Exhibit 21: Investment into SEA by Country

Acquisition Loop: Paid marketing

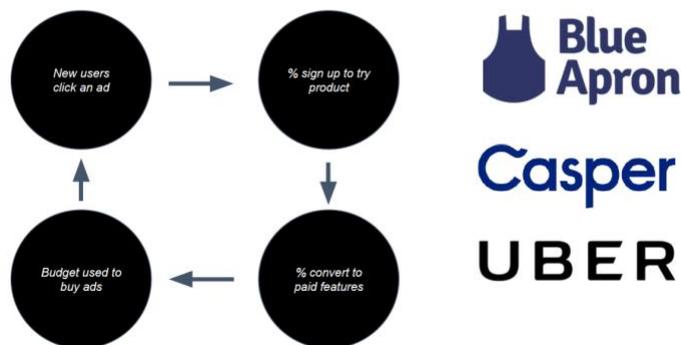
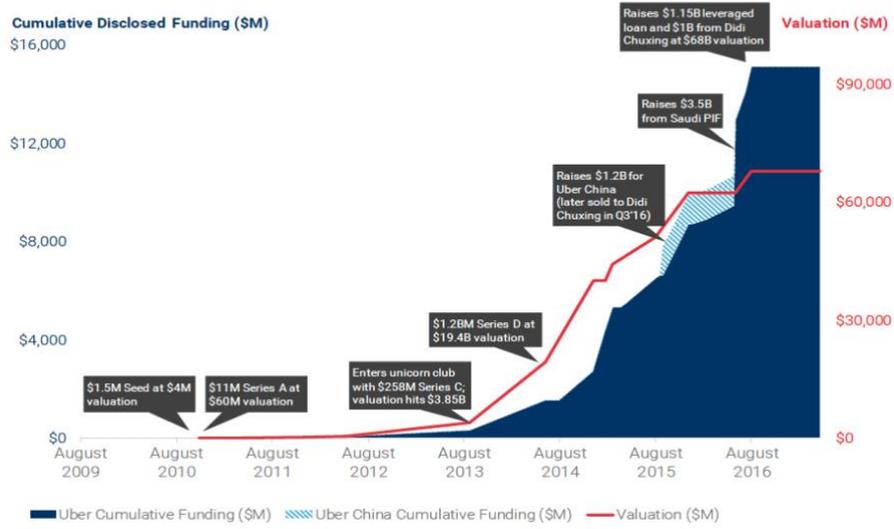


Exhibit 24: Paid marketing loop - "Spend money, sell products, take the money and buy more ads..."

Uber cumulative funding & valuation history
2009-2017 YTD (8/29/2017)



CBINSIGHTS

Exhibit 28A: Uber's cumulative funding and valuation history (CB Insights, 2017)

WAR CHESTS: RIDE-HAILING STARTUPS WITH \$1B+ IN DISCLOSED FUNDING
2012 - 2017 YTD (8/29/2017)

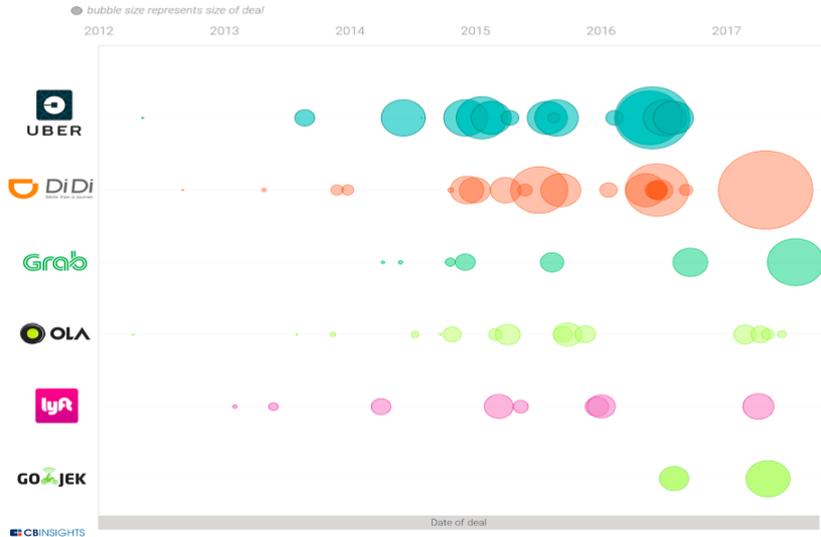


Exhibit 28B: Fundraising indication of Uber and its rivals (Source: CBInsights)

Uber's most profitable cities by contribution margin

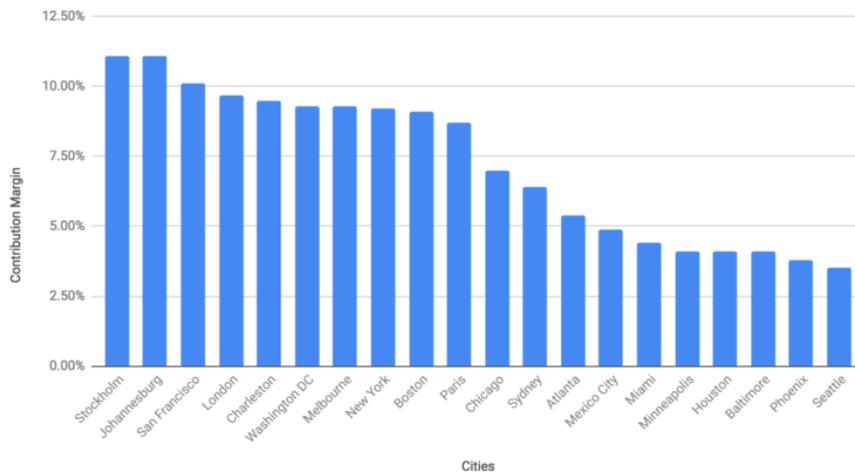
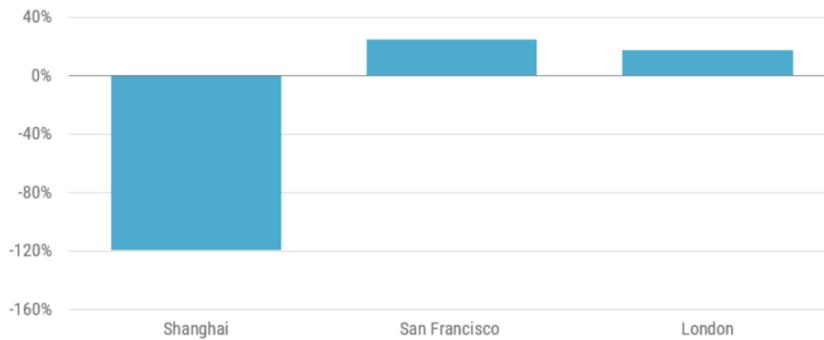


Exhibit 29: Contribution margin of selected cities for Uber (Source: CBInsights)

Uber net revenues as a % of gross bookings

For select cities, 2015



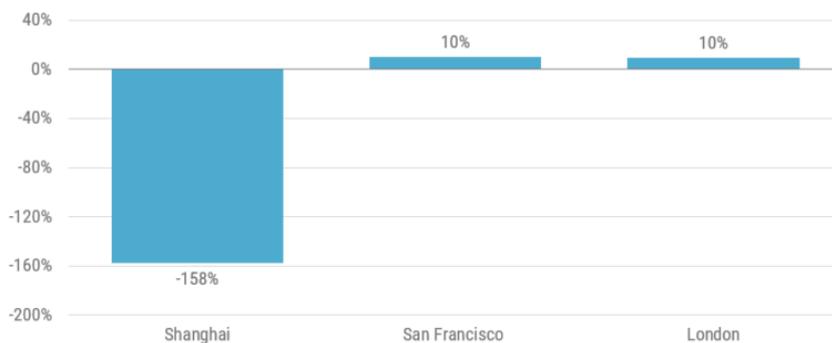
Source: Uber financials

CBINSIGHTS

Exhibit 30: Uber net revenues as a % of gross bookings for selected cities (Source: CBInsights)

Uber's contribution margin

For select cities, 2015

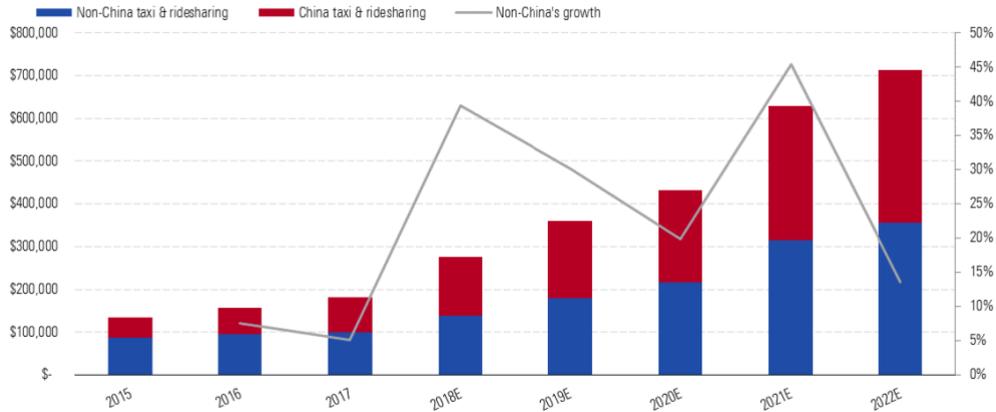


Source: Uber financials

CBINSIGHTS

Exhibit 31: Uber's contribution margin for selected cities
(Source: CBInsights)

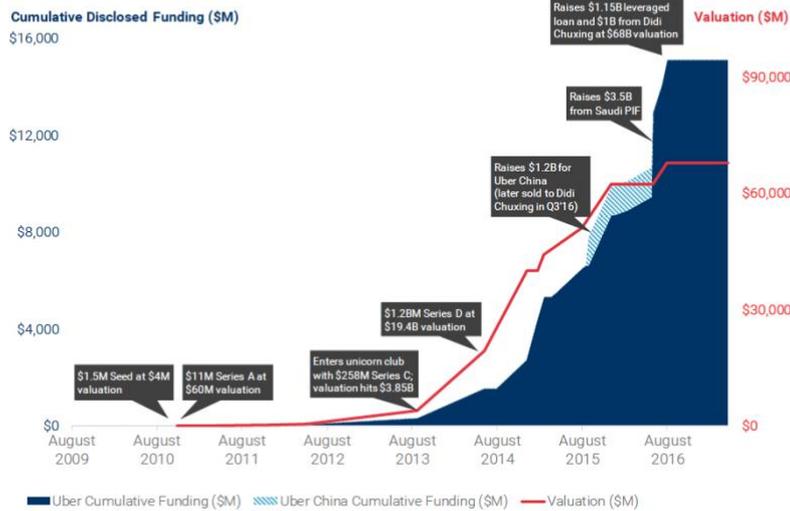
Exhibit 4 We Anticipate a Rapidly Rising Global Taxi and Ridesharing Addressable Market (\$ in Millions)



Source: Statista, Morningstar estimates

Exhibit 33: Global Ride-sharing projections (Source: PitchBook-Morningstar)

Uber cumulative funding & valuation history
2009-2017 YTD (8/29/2017)



Investors have responded in a big way

Especially in the heady startup financing environment of early-to-mid decade, Uber was heralded for the boundless opportunities the company represented.

Drawn to this vision and the company's explosive growth, investors flocked to the table.

Exhibit 38: Uber's cumulative funding and valuation to date

UBER'S INVESTORS BY TYPE

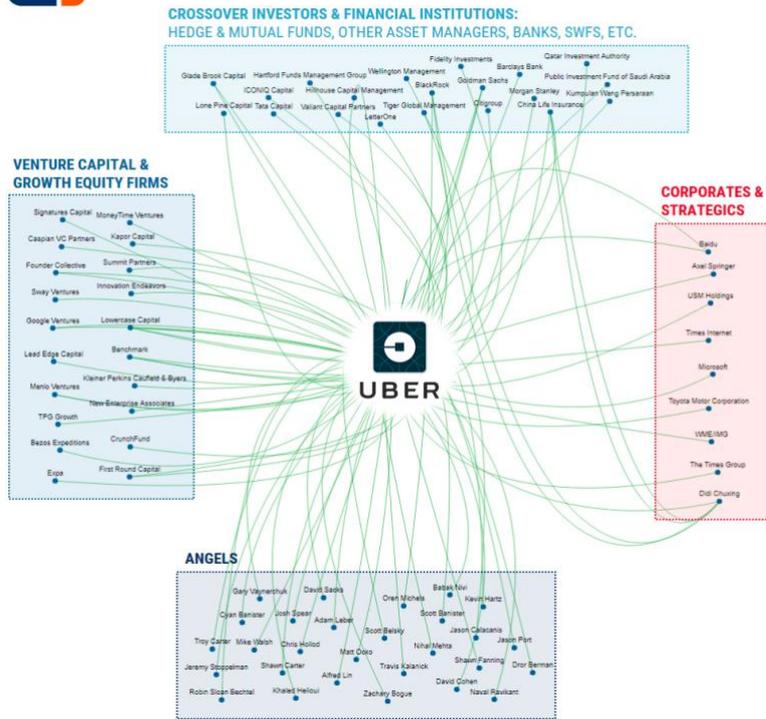


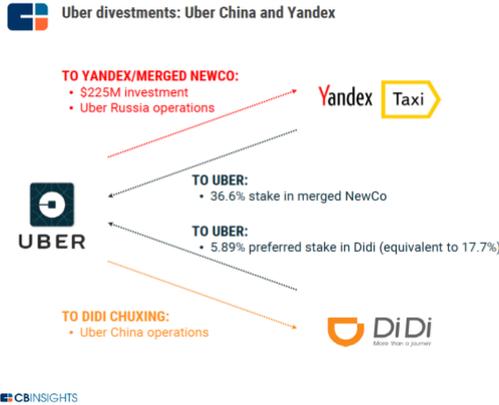
Exhibit 39: Uber's varying investor types

UBER VS. DIDI CHUXING EQUITY FINANCING VALUATIONS

Q4'10 - Q3'16 QTD (8/4/2016)



Exhibit 40: Uber vs DiDi financing rounds

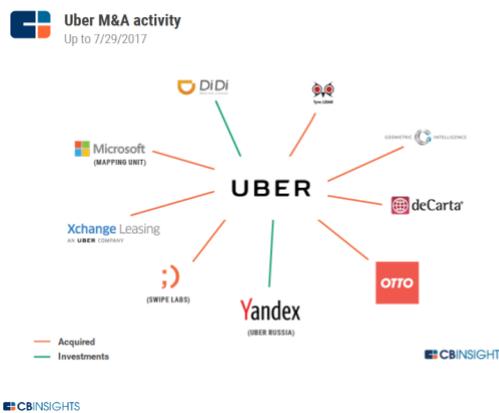


Divestments have already begun to prune losses

In both China and now Russia & Eastern Europe, Uber has struck deals to cease direct operations (and losses) while retaining an economic stake.

More such deals could be on the horizon if Uber looks to further draw down its cash burn.

Exhibit 41: Uber's deal with Yandex

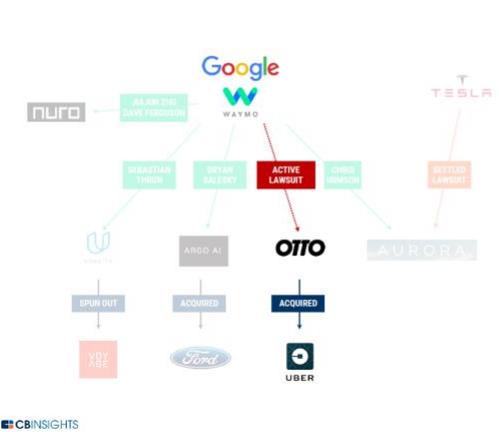


Acquisitions focus on AI, autonomous vehicles, mapping

Uber's M&A activity has largely focused on adding competencies in frontier areas, such as its acquisition of Geometric Intelligence to serve as a central AI lab.

With a relatively late start in the autonomous vehicle (AV) race, the company looked to make up ground by acquiring self-driving truck startup Otto.

Exhibit 42: Uber's acquisition activities



Otto acquisition now threatens AV program, Uber at large

Levandowski has been fired from Uber for his role in the lawsuit.

The case looks to be proceeding to trial as Uber's requests for arbitration have all been denied.

Exhibit 43: Waymo's active lawsuit with Otto

Exhibit 14 Potential Capital Investment in Self-Driving Fleet

	Miles Driven (M)	Miles per Intervention	Potential Fleet Size	Est. Cost per Car	Capital Investment (M)
Waymo	7	5,600	85,000	\$47,000	\$4,364
Cruise	1	1,250	72,360	\$46,296	\$3,350
Uber	3	13	24,000	\$59,500	\$1,428

Source: Waymo, Uber, General Motors, The New York Times, Volvo, Chrysler, Jaguar, PitchBook estimates

Exhibit 44: Potential Capital Investment and current status for AVs (Source: PitchBook-Morningstar)

Exhibit 30 A Glance at Uber Financials and Morningstar Estimates

Morningstar Equity Research		1 August 2018								★★★	
Uber Technologies Inc. (UBER)											
Last Price	Fair Value	Uncertainty	Stewardship	Economic Moat	Moat Trend	Morningstar Credit Rating					
78.76 USD	79 USD	Very High	Standard	Narrow	Stable	N/A					
Analyst	Ali Mogherabi	Five-Star Price	36.50	Estimated COE	9.0%	Adjusted P / E	(35.7)	(35.8)			
Phone & Email	312-696-6056	Fair Value Estimate	79.00	Pre-Tax Cost of Debt	5.3%	EV / Adjusted EBITDA	(48.4)	(48.6)			
	ali.mogherabi@morningstar.com	One-Star Price	138.25	Estimated WACC	8.9%	EV / Sales	8.8	8.8			
Sector	Technology	Market Price	78.76	ROIC *	-143.8%	Price / Book	198.2	198.8			
Industry	Media - Diversified	P / FVE	1.00	Adjusted ROIC *	-158.0%	FCF Yield	-2.3%	-2.3%			
				* 5-Yr Projected Average		Dividend Yield	0.0%	0.0%			
						(2% Estimates)	(Price)	(Fair Value)			
		3-Yr		Forecast						5-Yr	
All values except per share amounts in USD Millions		Historical	2017	2018	2019	2020	2021	2022	Projected		
		CAGR/AV							CAGR/AVG		
Income Statement											
Revenue			7,778	12,420	17,801	23,950	31,203	40,247			
Gross Profit			3,777	6,955	10,146	13,651	18,098	23,746			
Operating Income			(3,791)	(3,802)	(4,720)	(3,310)	(1,738)	690			
Net Income			(4,469)	(3,088)	(3,814)	(2,653)	(1,430)	534			
Adjusted Income			(4,469)	(3,088)	(3,814)	(2,663)	(1,430)	534			
Adjusted EPS			(3.19)	(2.21)	(2.72)	(1.82)	(1.02)	0.38			
Adjusted EBITDA			(3,168)	(2,244)	(908)	177	1,667	4,364			
Growth (% YoY)											
Revenue				59.7%	43.3%	34.5%	30.3%	29.0%	38.9%		
Gross Profit				84.1%	45.9%	34.5%	32.6%	31.2%	44.4%		
Operating Income				0.3%	24.2%	-29.5%	-47.5%	-139.7%	NM		
Net Income				-30.9%	23.5%	-29.4%	-46.9%	-137.4%	NM		
Adjusted EPS				-30.9%	23.3%	-29.4%	-46.9%	-137.4%	NM		
Adjusted EBITDA				-39.2%	-59.5%	-119.5%	84.7%	161.8%	NM		
Profitability (%)											
Gross Margin			48.6%	56.0%	57.0%	57.0%	58.0%	59.0%	57.4%		
Operating Margin			-48.7%	-30.6%	-26.3%	-13.6%	-5.6%	1.7%	-15.0%		
Net Margin			-57.5%	-24.9%	-21.4%	-11.2%	-4.6%	1.3%	-12.2%		
Adjusted EBITDA Margin			-40.7%	-18.1%	-5.1%	0.7%	5.3%	10.8%	-1.2%		
Return on Equity			-87.6%	-147.0%	262.4%	58.5%	21.4%	-7.5%	41.6%		
Adjusted ROIC				-351.5%	73.9%	-7.3%	-74.0%	-421.3%	-156.0%		
Adjusted RONIC				-24.7%	-30.8%	-271.5%	125.1%	168.7%	-6.7%		
Leverage											
Debt / Capital			45.5%	84.6%	-1455.7%	-105.0%	-70.4%	-80.2%	NM		
Debt / EBITDA			(0.9)	(1.2)	(1.2)	(2.9)	6.0	1.0	0.3		
EBITDA / Interest Expense			(9.5)	(16.7)	(16.2)	(7.0)	3.4	20.3	NM		
FCFE / Total Debt			(1.26)	(0.84)	(0.56)	(0.24)	0.23	1.10	NM		
Cash Flow											
Dividends per Share			0.00	0.00	0.00	0.00	0.00	0.00			
Free Cash Flow to the Firm			(3,453)	(50)	17	1,805	3,980	7,585			
FCFE (CFO-Capex)			(3,846)	(2,572)	(1,712)	(723)	704	3,357			
Dividend Payout Ratio			0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
Dividend Payout Ratio			0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

Source: Morningstar; data as of July 6, 2018

Exhibit 45: PitchBook-Morningstar projections for Uber

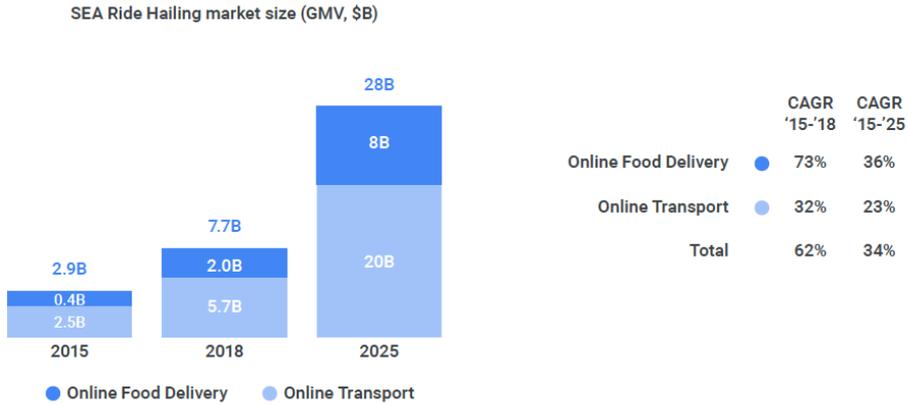


Exhibit 50: SEA Ride Hailing market size (2015, 2018, 2025) (Source: Google, Temasek)

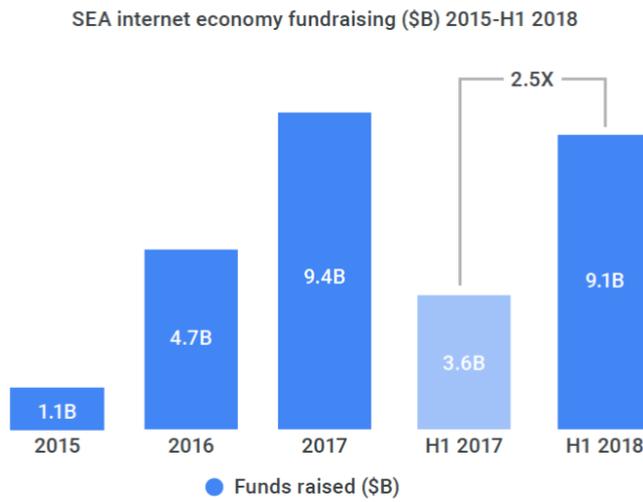


Exhibit 51: SEA internet economy fundraising (2015 to 2017) (Source: Google, Temasek)

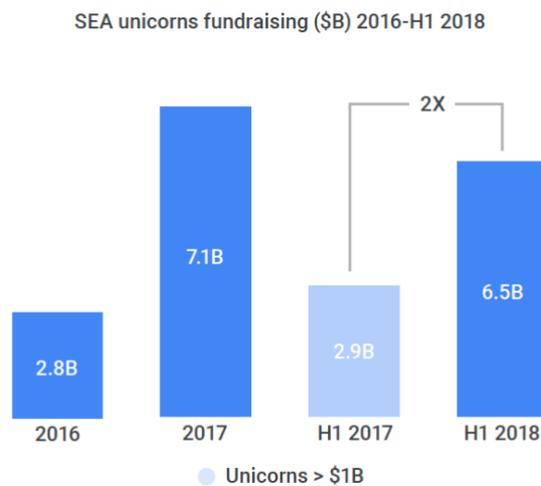


Exhibit 52: SEA unicorns fundraising (2015 to 2017) (Source: Google, Temasek)

SEA non-unicorns fundraising (\$B) 2016-H1 2018

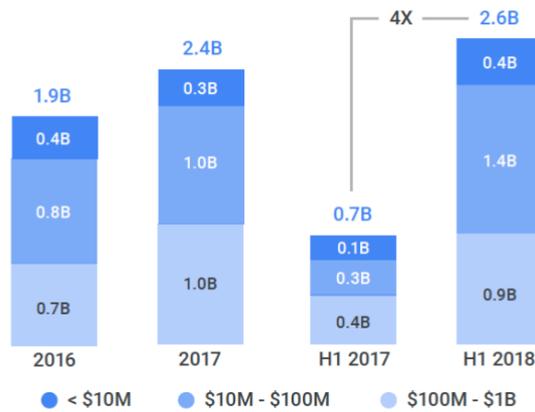
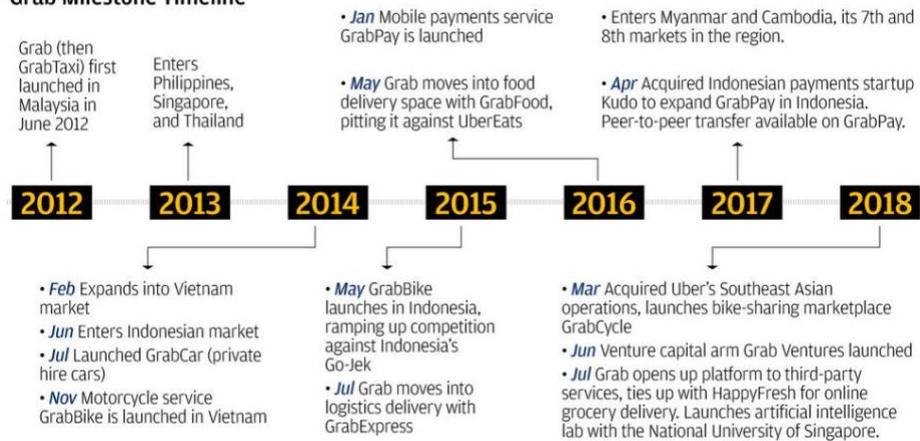


Exhibit 53: SEA non-unicorns fundraising (2015 to 2017) (Source: Google, Temasek)

Grab Milestone Timeline



Source: Grab

SCMP

Exhibit 54: Grab Milestone Timeline (Source: SCMP, Grab)

References

1. Lee, E. (2018, September 4). *Explainer: China's tech ecosystems and the barriers between them*. Retrieved from Technode: <https://technode.com/2018/09/04/explainer-china-ecosystems/>
2. Waters, R., Kuchler, H., & Bond, S. (2018, August 4). *Silicon Valley: Big Tech prepares for its second act*. Retrieved from Financial Times (FT): <https://www.ft.com/content/e528599a-96ff-11e8-b67b-b8205561c3fe>
3. Bradshaw, T. (2018, August 3). *Apple wins race to be first trillion-dollar company*. Retrieved from Financial Times (FT): <https://www.ft.com/content/aebad290-9644-11e8-b67b-b8205561c3fe>
4. Hiranand, R., Shen, X., Barclay, A., Yeung, E., Zheng, S., Cheung, B., . . . Chen, C. (2018, July 10). *China Internet Report 2018*. Retrieved from Abacus News: www.abacusnews.com/china-internet-report
5. Ho, C. K., Soo, Z., & Deng, I. (2018, July 13). *China's internet ecosystem model increasingly being copied globally*. Retrieved from South China Morning Post (SCMP): <https://www.scmp.com/tech/enterprises/article/2155155/chinas-internet-ecosystem-model-increasingly-being-copied-globally>
6. Gurley, B. (2012, November 13). *All Markets Are Not Created Equal: 10 Factors To Consider When Evaluating Digital Marketplaces*. Retrieved from Above the Crowd: <http://abovethecrowd.com/2012/11/13/all-markets-are-not-created-equal-10-factors-to-consider-when-evaluating-digital-marketplaces/>
7. Arthur, W. B. (1996, July-August). Increasing Returns and the New World of Business. *Harvard Business Review (HBR)*, pp. 100-109.
8. Grove, P. (2017, August 14). How Southeast Asia's start-up scene is finding funds. (C. Tan, Interviewer)
9. PwC/CB Insights. (2018, Q2). *Venture Capital Funding Report (MoneyTree Report) Q2 2018*. Retrieved from CB Insights: <https://www.cbinsights.com/research/report/venture-capital-q2-2018/>
10. Fortune. (2016). *40 under 40 (2016)*. Retrieved from Fortune: <http://fortune.com/40-under-40/2016/anthony-tan-hooi-ling-tan-17/>
11. CB Insights. (2017, September 22). *The State Of Southeast Asia Tech*. Retrieved from CB Insights: <https://www.cbinsights.com/research/southeast-asia-tech-financing-trends-investors/>
12. Lucas, L. (2018, March 22). *Tencent spending spree turns up heat on Alibaba*. Retrieved from Financial Times (FT): <https://www.ft.com/content/253fcb3a-2d10-11e8-a34a-7e7563b0b0f4>
13. Sender, H. (2018, March 26). *How Alibaba and Tencent became Asia's biggest dealmakers*. Retrieved from Financial Times (FT): <https://www.ft.com/content/38a54804-2238-11e8-9a70-08f715791301>
14. Soo, Z. (2018, May 21). *China's largest tech companies have spent billions on investments, but are they smart shoppers?* Retrieved from South China Morning Post (SCMP): <https://www.scmp.com/tech/china-tech/article/2146500/chinas-largest-tech-companies-have-spent-billions-investments-are>
15. Rowley, J. (2018, December 8). *SoftBank's Vision Fund inches closer to \$100B*. Retrieved from Tech Crunch: <https://techcrunch.com/2018/12/08/softbanks-vision-fund-inches-closer-to-100b/>
16. Kaiser, K., & Westarp, C. (2010). *Value Creation in the Private Equity and Venture Capital Industry*. Fontainebleau: INSEAD.
17. Ambler, P. (2018, January 18). *The Ride-Sharing War For Global Dominance Has One Clear Winner: Softbank's Masayoshi Son*. Retrieved from Forbes: <https://www.forbes.com/sites/pamelaambler/2018/01/05/the-ride-sharing-war-for-global-dominance-has-one-clear-winner-softbanks-masayoshi-son/#6387857c7181>
18. David, J., & Vo, M. (2018). *Grab vs. Uber vs. Go-Jek: Digital Platform-based International Competition in South East Asia*. INSEAD. INSEAD.
19. Govindarajan, V., Rajgopal, S., & Srivastava, A. (2018, February 26). *Why Financial Statements Don't Work for Digital Companies*. Retrieved from Harvard Business Review (HBR): <https://hbr.org/2018/02/why-financial-statements-dont-work-for-digital-companies>
20. Chen, A. (2018, November 24). *The red flags and magic numbers that investors look for in your startup's metrics – 80 slide deck included!* Retrieved from @andrewchen: <https://andrewchen.co/investor-metrics-deck/>

21. The Economist. (2018, September 29). *A ride-hailing battle in South-East Asia*. Retrieved from The Economist: <https://www.economist.com/business/2018/09/29/a-ride-hailing-battle-in-south-east-asia>
22. Hogan Lovells. (2018, June 5). *Venture capital and private equity in Asia-Pacific in 2018*. Retrieved from Hogan Lovells: <https://www.hoganlovells.com/en/publications/venture-capital-and-private-equity-in-asia-pacific-in-2018>
23. Martin, A. (2017, July 3). *SoftBank's Masayoshi Son plots a \$93bn revolution*. Retrieved from Financial Times (FT): <https://www.ft.com/content/353e6420-5d85-11e7-b553-e2df1b0c3220>
24. McBride, S., Wang, S., & Elstrom, P. (2018, September 27). *SoftBank's \$100 Billion Vision Fund Is Run by These 10 Men*. Retrieved from Bloomberg: <https://www.bloomberg.com/news/articles/2018-09-27/softbank-s-100-billion-vision-fund-is-run-by-these-10-men>
25. McBride, S., Wang, S., & Elstrom, P. (2018, September 27). *Masayoshi Son, SoftBank, and the \$100 Billion Blitz on Sand Hill Road*. Retrieved from Bloomberg: <https://www.bloomberg.com/news/features/2018-09-27/masayoshi-son-softbank-and-the-100-billion-blitz-on-sand-hill-road>
26. Potter, I., & Zeisberger, C. (2018, August 22). *The Rise of the Red Unicorn*. Retrieved from INSEAD Knowledge - Entrepreneurship Blog: <https://knowledge.insead.edu/blog/insead-blog/the-rise-of-the-red-unicorn-9946>
27. Ho, C. K., & Soo, Z. (2018, July 6). *Southeast Asia becomes a target for China technology companies but is a tough nut to crack*. Retrieved from South China Morning Post (SCMP): <https://www.scmp.com/print/tech/enterprises/article/2153876/southeast-asia-becomes-target-china-technology-companies-tough-nut>
28. Wright, K. (2018, May 22). *Silicon Valley tech bubble is larger than it was in 2000, and the end is coming*. Retrieved from CNBC - Disrupter|50 Commentary: <https://www.cnbc.com/2018/05/22/tech-bubble-is-larger-than-in-2000-and-the-end-is-coming.html>
29. McKinsey & Company. (2018, February). *The rise and rise of private equity*. Retrieved from McKinsey & Company, Private Equity & Principal Investors: <https://www.mckinsey.com/industries/private-equity-and-principal-investors/our-insights/the-rise-and-rise-of-private-equity>
30. Jeddy, A., & Portner, M. (2018, April). *Dry powder in private equity*. Retrieved from McKinsey & Company - Private Equity & Principal Investors: <https://www.mckinsey.com/industries/private-equity-and-principal-investors/our-insights/dry-powder-in-private-equity>
31. IPEV Board. (2010). *International Private Equity and Venture Capital Valuation Guidelines*. IPEV Board.
32. Varma, S., & Boulton, A. (2018). *Investing in Southeast Asia: What's Behind the Boom*. Singapore: Bain & Company.
33. Google & Temasek Holdings. (2018, November). *Think with Google*. Retrieved from e-Conomy SEA 2018: Southeast Asia's internet economy hits an inflection point: <https://www.thinkwithgoogle.com/intl/en-apac/tools-research/research-studies/e-conomy-sea-2018-southeast-asias-internet-economy-hits-inflection-point/>
34. Gurley, B. (2014, July 14). *How to Miss By a Mile: An Alternative Look at Uber's Potential Market Size*. Retrieved from Above the Crowd: <http://abovethecrowd.com/2014/07/11/how-to-miss-by-a-mile-an-alternative-look-at-ubers-potential-market-size/>
35. Damodaran, A. (2014, June 9). *A Disruptive Cab Ride to Riches: The Uber Payoff*. Retrieved from Musings on Markets: <http://aswathdamodaran.blogspot.com/2014/06/a-disruptive-cab-ride-to-riches-uber.html>
36. Damodaran, A. (2015, October 12). *On the Uber Rollercoaster: Narrative Tweaks, Twists and Turns!* Retrieved from Musings on Markets: <http://aswathdamodaran.blogspot.com/2015/10/on-uber-rollercoaster-narrative-tweaks.html>
37. Damodaran, A. (2016, August 17). *The Ride Sharing Business: Is a Bar Mitzvah moment approaching?* Retrieved from Musings on Markets: <http://aswathdamodaran.blogspot.com/2016/08/the-ride-sharing-business-is-bar.html>
38. Damodaran, A. (2017, June 21). *Uber's bad week: Doomsday Scenario or Business Reset?* Retrieved from Musings on Markets: <http://aswathdamodaran.blogspot.com/2017/06/ubers-bad-week-doomsday-scenario-or.html>
39. Damodaran, A. (2017, June 28). *User/ Subscriber Economics: An Alternative View of Uber's Value*. Retrieved from Musings on Markets: <http://aswathdamodaran.blogspot.com/2017/06/usersubscriber-economics-alternative.html>

40. Lashinsky, A. (2017). *Wild Ride: Inside Uber's Quest for World Domination*. New York: Portfolio/Penguin.
41. CB Insights. (2017, September). *Uber Strategy Teardown: The Giant Looks To An Autonomous Future, Food Delivery, And Tighter Financial Discipline*. Retrieved from CB Insights: <https://www.cbinsights.com/research/report/uber-strategy-teardown-expert-research/>
42. CB Insights. (2018, December). *How Uber Makes Money*. Retrieved from CB Insights: https://www.cbinsights.com/reports/CB-Insights_How-Uber-Makes-Money.pdf
43. Hussain, A. (2018, November 16). *PitchBook Analyst Note: Uber's 3Q Results Mixed; Bookings Slow Amidst Pivot to MaaS*. Retrieved from PitchBook: <https://pitchbook.com/news/reports/4q-2018-pitchbook-analyst-note-ubers-3q-results-mixed-bookings-slow-amidst-pivot-to-maas#downloadReport>
44. CB Insights. (2018, August). *The Global Unicorn Club*. Retrieved January 6, 2019, from CB Insights: <https://www.cbinsights.com/research-unicorn-companies>
45. Morningstar Equity Research. (2018, July 19). *Morningstar-PitchBook: Uber May Pick Up Investors, Along With Riders, in Its IPO*. Retrieved from PitchBook: <https://pitchbook.com/news/reports/3q-2018-morningstar-pitchbook-uber-may-pick-up-investors-along-with-riders-in-its-ipo>
46. Hoffman, L., Bensinger, G., & Farrell, M. (2018, October 16). *Uber Proposals Value Company at \$120 Billion in a Possible IPO*. Retrieved from Wall Street Journal (WSJ): <https://www.wsj.com/articles/uber-proposals-value-company-at-120-billion-in-a-possible-ipo-1539690343>
47. Lucas, L. (2018, November 22). *Investments fuel a third of profits at Tencent and Alibaba*. Retrieved from Financial Times (FT): <https://www.ft.com/content/0b4c978c-ec94-11e8-89c8-d36339d835c0>
48. Bloomberg. (2018, July 19). *Grab Wants to Be Southeast Asia's SuperApp, Co-Founder Says*. Retrieved from YouTube - Bloomberg Technology: <https://www.youtube.com/watch?v=KHOgbnnZS4E>
49. Fowler, S. (2017, February 19). *Reflecting On One Very, Very Strange Year At Uber*. Retrieved from Susan Fowler: <https://www.susanjowler.com/blog/2017/2/19/reflecting-on-one-very-strange-year-at-uber>
50. Constantine, J. (2018, December 10). *How Uber will become an ad company, starting with Eats Pool*. Retrieved from TechCrunch: <https://techcrunch.com/2018/12/10/uber-ads/>
51. Dickey, M. R. (2018, October 23). *Uber Eats is expanding to cover 70 percent of US population by end of year*. Retrieved from TechCrunch: <https://techcrunch.com/2018/10/23/uber-eats-is-expanding-to-cover-70-percent-of-u-s-population-by-end-of-year/>
52. Efrati, A., Osawa, J., & Weinberg, C. (2018, November 30). *Uber Exploring Deal to Buy Bird or Lime*. Retrieved from The Information: <https://www.theinformation.com/articles/uber-exploring-deal-to-buy-bird-or-lime>
53. Johnson, E. (2018, August 1). *Grab wants to go way beyond ride-hailing in Asia, co-founder Hooi Ling Tan says*. Retrieved from recode: <https://www.recode.net/2018/8/1/17639380/grab-hooi-ling-tan-ride-hailing-asia-platform-payments-groceries-kara-swisher-decode-podcast>
54. Russell, J. (2017, November 5). *Uber rival Grab crosses 1 billion rides in Southeast Asia*. Retrieved from TechCrunch: <https://techcrunch.com/2017/11/05/uber-rival-grab-crosses-1-billion-rides-in-southeast-asia/>
55. The Economist. (2018, September 29). *A ride-hailing battle in South-East Asia*. Retrieved from The Economist: <https://www.economist.com/business/2018/09/29/a-ride-hailing-battle-in-south-east-asia>
56. Swisher, K. (2016, June 13). *Everyone vs. Uber | Jean Liu President, Didi and Anthony Tan CEO, Grab | Code Conference 2016*. Retrieved from Youtube - Recode: <https://www.youtube.com/watch?v=5Sa20gEeaNo>
57. Silviana, C., & Potkin, F. (2018, November 30). *Grab, Go-Jek wage street fight for SE Asia 'super-app' supremacy*. Retrieved from Reuters: <https://www.reuters.com/article/us-grab-gojek-indonesia/grab-go-jek-wage-street-fight-for-se-asia-super-app-supremacy-idUSKCN1NY2WQ>
58. Mossberg, W., & Swisher, K. (2016, June 13). *Everyone vs. Uber | Jean Liu President, Didi and Anthony Tan CEO, Grab | Code Conference 2016*. Retrieved from YouTube - Recode: <https://www.youtube.com/watch?v=5Sa20gEeaNo>
59. Russell, J. (2018, May 23). *Go-Jek officially announces Southeast Asia expansion to fill void left by Uber's exit*. Retrieved from TechCrunch: <https://techcrunch.com/2018/05/23/go-jek-officially-announces-southeast-asia-expansion/>

60. Russell, J. (2018, October 29). *Southeast Asia's Grab pulls in \$200M from travel giant Booking*. Retrieved from TechCrunch: <https://techcrunch.com/2018/10/29/grab-raises-200m-booking/>
61. Russell, J. (2017, September 27). *Uber rival Grab quietly backed dock-less bike service oBike*. Retrieved from TechCrunch: <https://techcrunch.com/2017/09/27/grab-obike/>
62. Russell, J. (2017, April 2). *Uber rival Grab makes first major acquisition to build out its payments platform*. Retrieved from TechCrunch: <https://techcrunch.com/2017/04/02/grab-buys-kudo/>
63. Russell, J. (2018, December 7). *Grab invests \$100M into India's OYO to expand its budget hotel service in Southeast Asia*. Retrieved from TechCrunch: <https://techcrunch.com/2018/12/07/grab-invests-100m-in-indias-oyo/>
64. Culpán, T. (2018, November 29). *Grab should rework strategies to keep the market in balance*. Retrieved from Dealstreet Asia: <https://www.dealstreetasia.com/stories/grab-should-rework-strategies-to-keep-the-market-in-balance-112128/>
65. Russell, J. (2018, December 28). *Grab raises fundraising target to \$5B as Southeast Asia's ride-hailing war heats up*. Retrieved from TechCrunch: <https://techcrunch.com/2018/12/28/grab-5-billion/>
66. Grab. (2017, April 3). *Grab Solidifies Leadership in Digital Payments with Agreement to Acquire Kudo, Indonesia's leading O2O Ecommerce Platform*. Retrieved from Grab: <https://www.grab.com/sg/press/business/grab-solidifies-leadership-digital-payments-agreement-acquire-kudo-indonesias-leading-o2o-ecommerce-platform/>
67. Maheshwari, A., & Timmerman, A. (2017, December 15). *Lippo Group's Ovo enters co-branded partnership with GrabPay in Indonesia*. Retrieved from Dealstreet Asia: <https://www.dealstreetasia.com/stories/lippo-groups-ovo-partners-grabpay-in-indonesia-88603/>
68. Tani, S. (2018, November 14). *Grab expands into Indonesia e-payments, taking battle to Go-Jek*. Retrieved from Nikkei Asian Review: <https://asia.nikkei.com/Business/Companies/Grab-expands-into-Indonesia-e-payments-taking-battle-to-Go-Jek>
69. Olsen, D. (2017, June 21). *Uber's no good, very bad year: A timeline*. Retrieved from PitchBook: <https://pitchbook.com/news/articles/ubers-no-good-very-bad-year-a-timeline>
70. Lowensohn, J. (2015, May 19). *Uber gutted Carnegie Mellon's top robotics lab to build self-driving cars*. Retrieved from The Verge: <https://www.theverge.com/transportation/2015/5/19/8622831/uber-self-driving-cars-carnegie-mellon-poached>
71. Loizos, C. (2016, April 26). *It isn't just Uber: Carnegie Mellon's computer science dean on its poaching problem*. Retrieved from TechCrunch: <https://techcrunch.com/2016/04/26/it-isnt-just-uber-carnegie-mellons-computer-science-dean-on-its-poaching-problem/>
72. Dillet, R. (2016, August 18). *Uber acquires Otto to lead Uber's self-driving car effort*. Retrieved from TechCrunch: <https://techcrunch.com/2016/08/18/uber-acquires-otto-to-lead-ubers-self-driving-car-effort-report-says/>
73. Rowley, J. D. (2018, January 18). *Uber Finally Seals \$9 Billion Deal With SoftBank And Others*. Retrieved from Crunchbase: <https://news.crunchbase.com/news/uber-finally-seals-9-billion-deal-softbank-others/>
74. Tani, S. (2019, January 16). *Grab partners with China's ZhongAn to offer insurance*. Retrieved from Nikkei Asian Review: <https://asia.nikkei.com/Business/Companies/Grab-partners-with-China-s-ZhongAn-to-offer-insurance>
75. Cheok, J. (2018, March 26). *Grab confirms acquisition of Uber's South-east Asia business; Uber gets 27.5% stake in Grab*. Retrieved from The Straits Times: <https://www.straitstimes.com/business/companies-markets/grab-buys-ubers-south-east-asia-business-uber-gets-275-stake-in-grab>
76. Grab. (2018, June 5). *Grab Launches Grab Ventures To Boost Southeast Asia's Tech Ecosystem*. Retrieved from Grab: <https://www.grab.com/sg/press/business/grab-launches-grab-ventures-to-boost-southeast-asias-tech-ecosystem/>
77. Cheng, K. (2018, December 9). *Say goodbye to promos, Grab's top S'pore exec won't engage in price war with Gojek*. Retrieved from Today Online: <https://www.todayonline.com/singapore/say-goodbye-promos-grabs-top-spore-exec-wont-engage-price-war-gojek>