

**NUMBERS AND NARRATIVE:
MODELING, STORY TELLING AND
INVESTING**

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Let's start with an experiment

A valuation of Amazon in September 2018

A DCF valuation of Amazon

Amazon in September 2018					
The Assumptions					
	Base year	Years 1-5	Years 6-10		After year 10
Revenues (a)	\$ 208,125	15.00%	3.00%		3.00%
Operating margin (b)	7.71%	7.71%	12.50%		12.50%
Tax rate	20.20%	20.20%	24.00%		24.00%
Reinvestment (c)		Sales to capital ratio	5.95	RIR =	30.00%
Return on capital	15.24%	Marginal ROIC =	89.16%		10.00%
Cost of capital (d)		7.97%	7.50%		7.50%
The Cash Flows					
	Revenues	Operating Margin	EBIT (1-t)	Reinvestment	FCFF
1	\$ 239,344	8.67%	\$ 16,560	\$ 5,249	\$ 11,311
2	\$ 275,245	9.63%	\$ 21,147	\$ 6,037	\$ 15,110
3	\$ 316,532	10.59%	\$ 26,736	\$ 6,942	\$ 19,794
4	\$ 364,012	11.54%	\$ 33,527	\$ 7,983	\$ 25,544
5	\$ 418,614	12.50%	\$ 41,754	\$ 9,181	\$ 32,573
6	\$ 471,359	12.50%	\$ 46,568	\$ 8,869	\$ 37,699
7	\$ 519,438	12.50%	\$ 50,825	\$ 8,084	\$ 42,741
8	\$ 559,954	12.50%	\$ 54,258	\$ 6,813	\$ 47,446
9	\$ 590,191	12.50%	\$ 56,628	\$ 5,084	\$ 51,544
10	\$ 607,897	12.50%	\$ 57,750	\$ 2,977	\$ 54,773
Terminal year	\$ 626,134	12.50%	\$ 59,483	\$ 17,845	\$ 41,638
The Value					
Terminal value		\$ 925,287			
PV(Terminal value)		\$ 435,438			
PV (CF over next 10 years)		\$ 206,707			
Value of operating assets =		\$ 642,144			
Adjustment for distress		\$ -			
- Debt & Mnority Interests		\$ 45,435			
+ Cash & Other Non-operating assets		\$ 27,050			
Value of equity		\$ 623,759			
- Value of equity options		\$ -			
Number of shares		497.00			
Value per share		\$ 1,255.05	Stock was trading at =		\$1,970.19

A 'narrative' about Amazon: A Field of Dreams Disruption Machine

1. Continue high revenue growth: In valuing Amazon, I am going to assume that the company is going to continue on its path of growing revenues rapidly (high revenues), acting as a **disruption machine**, entering any business where it senses weakness in status quo
2. By selling products at or below cost: In pursuit of this growth, Amazon will continue to give away its products and services at or below cost, leading to a continuation of low operating margins for the next few years.
3. Aspirations of using market power: Once Amazon reaches a dominant position, it will raise prices on products/ services but the ease with which new entrants can come into the business will act as a restraint on prices (keeping operating margins constrained in long term).
4. Low/different reinvestment: Amazon will have to invest in a mix of assets, including infrastructure, computing services, acquisitions and product development, but will be able to deliver more revenues/dollar investment than the typical retail firm.
5. Shifting risk profile: Amazon's risk profile will be a mix of retail, entertainment and business services as well as its geographic ambitions, and the technology twist to its business will keep debt ratios low (lower than brick and mortar retailers).

A quick test

- Now that you have been exposed to two different valuations of Amazon, one driven entirely by numbers and one set as a story, which one do you find more credible?
 - a. The DCF valuation
 - b. The Amazon story
- Which one are you more likely to remember tomorrow?
 - a. The DCF valuation
 - b. The Amazon story
- What would your biggest concern be with each one?

The Greatest (and most Feared) Disruptive Platform in History

Amazon will complete its metaphorsis from being a retail company to one that can take its competitive advantages - access to capital & willingness to lose money for long periods, while disrupting and changing the status quo - to any business that it targets, giving it the potential for high revenue growth on top of already-large revenues. It will be able to use the pricing power it accumulates in each business it is in, to increase profit margins, partly through economies of scale and partly through higher prices. Its low debt ratio and divergent business mix give it a low cost of capital.

The Assumptions

	Base year	Years 1-5	Years 6-10		After year 10	Link to story
Revenues (a)	\$ 208,125	15.00%	→ 3.00%		3.00%	Expanding into new businesses
Operating margin (b)	7.71%	7.71%	→ 12.50%		12.50%	Economies of scale and pricing power increase margins
Tax rate	20.20%	20.20%	→ 24.00%		24.00%	Converging on a global tax rate of 25%
Reinvestment (c)		Sales to capital ratio 5.95		RIR =	30.00%	Big payoffs from investing in technology and content
Return on capital	15.24%	Marginal ROIC =	89.16%		10.00%	The last man standing...
Cost of capital (d)		7.97%	→ 7.50%		7.50%	Low debt & diverse business mix

The Cash Flows

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The Value

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PV(Terminal value)	\$ 435,438		
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Value of operating assets =	\$ 642,144		
Adjustment for distress	\$ -	Probability of failure =	0.00%
- Debt & Mnority Interests	\$ 45,435		
+ Cash & Other Non-operating assets	\$ 27,050		
Value of equity	\$ 623,759		
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Numbers person or Story teller?

Vive le difference!

What are you?

- If you were asked to categorize yourself, would you more naturally think of yourself as a
 - a) Numbers Person
 - b) Story Person
 - c) Not sure
- When did you make this decision and how has it affected your educational and career choices?
- As you get older, do you find yourself becoming more of whatever you chose?

Dueling Perspectives

- **Numbers people** believe that
 - ▣ valuation should be about numbers
 - ▣ narratives/stories are distractions that bring in irrationalities into investing.
- **Narratives people** believe that
 - ▣ valuation and investing is really about great stories
 - ▣ it is the height of hubris to try to estimate numbers, when you face uncertainty.
- They speak different languages and often past each other.

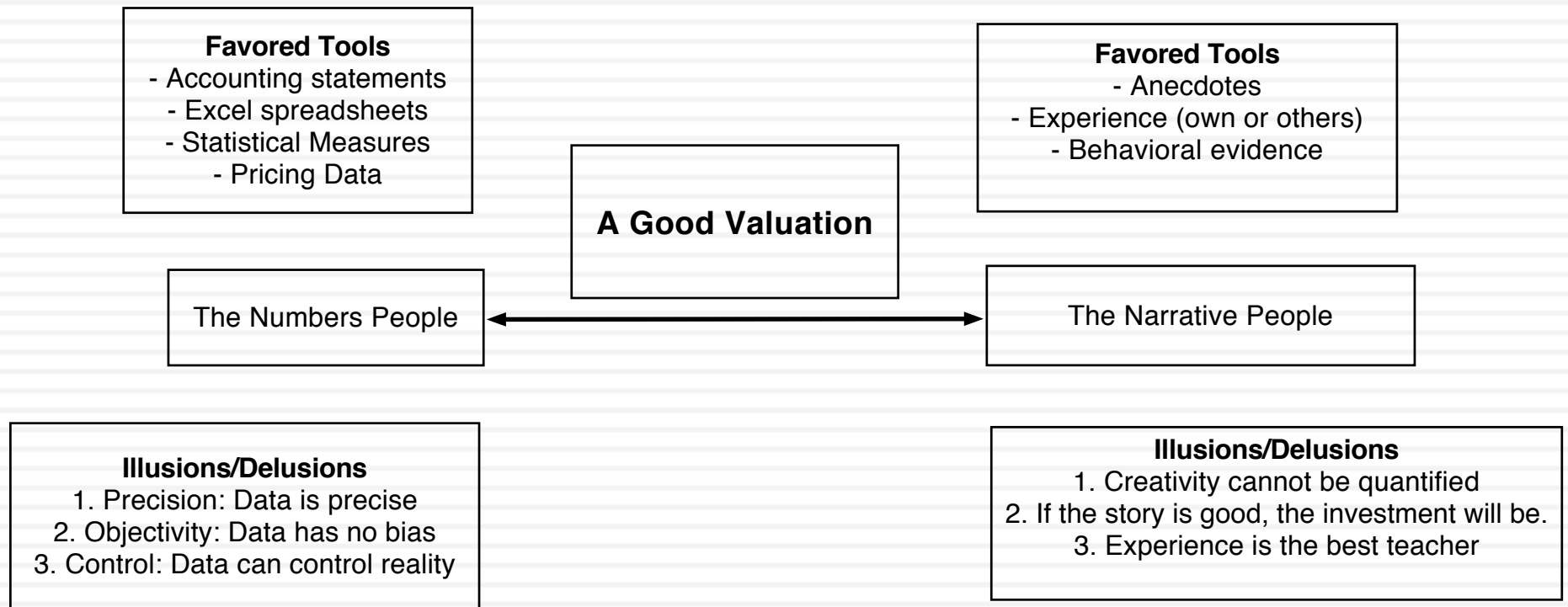
The delusions of the number crunchers

- The illusion of precision: If you use numbers, you are being more precise than when you don't, and the more numbers you use, the more precise you become.
- The illusion of “no bias”: Numbers don't lie and data does not have an agenda. Thus, analysts who use numbers are more likely to be unbiased.
- The illusion of control: If you put a number on something (your cash flows, expected growth rate, risk etc.), you can control it better.

The delusions of the story tellers

1. Number crunchers don't dream in technicolour: Creativity and Numbers are mutually exclusive. If you talk about numbers, you cannot be creative, and if you are being creative, talk about numbers only crimps your creative instincts.
2. Creativity is deserving of reward: If your story is good, your business will success and your investment will pay off.
3. Experience is the best teacher: If you have pulled this off before (started and succeeded at running a business), your story is more believable.

Bridging the Gap

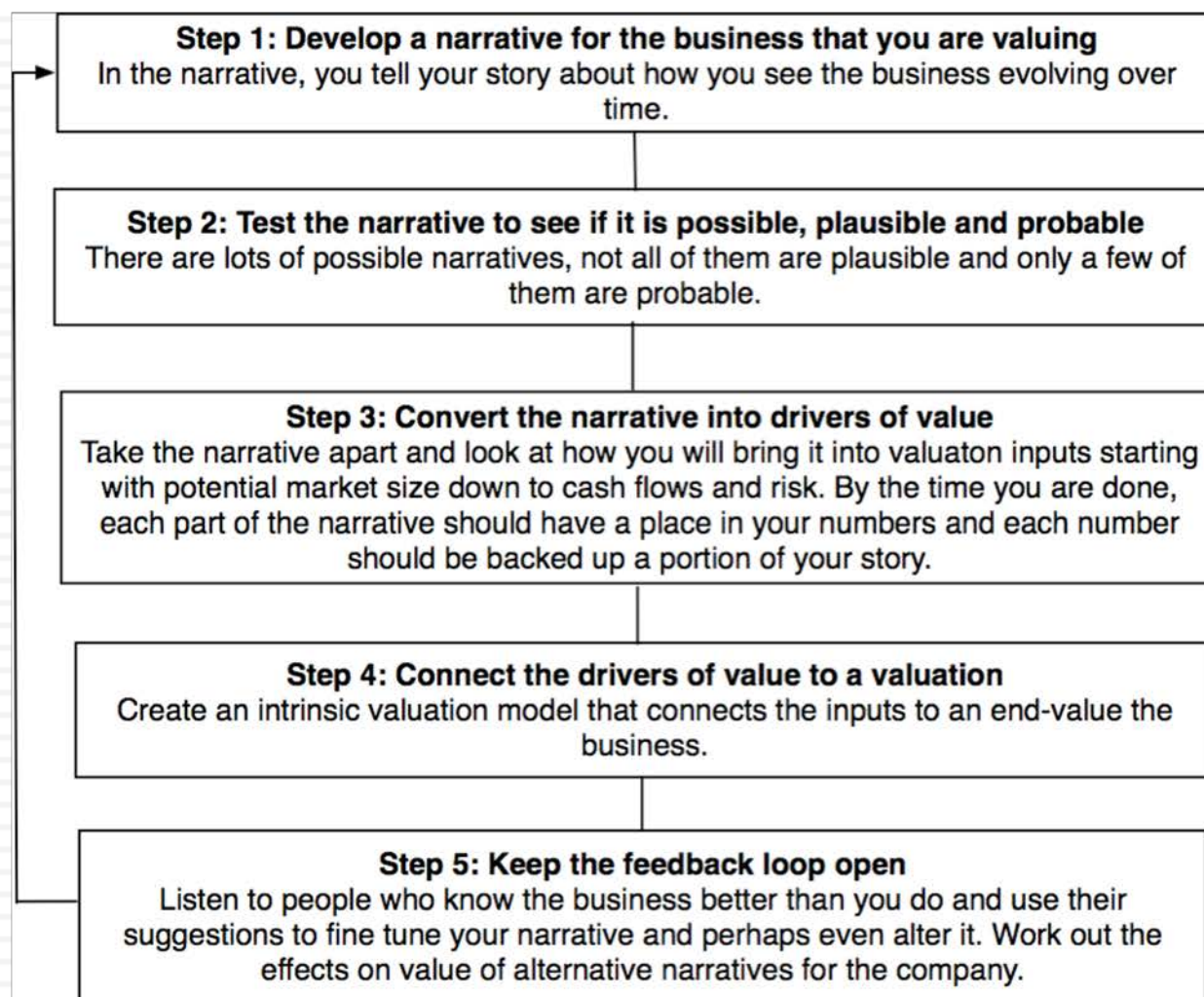




FROM NARRATIVE TO NUMBERS:
THE MECHANICS



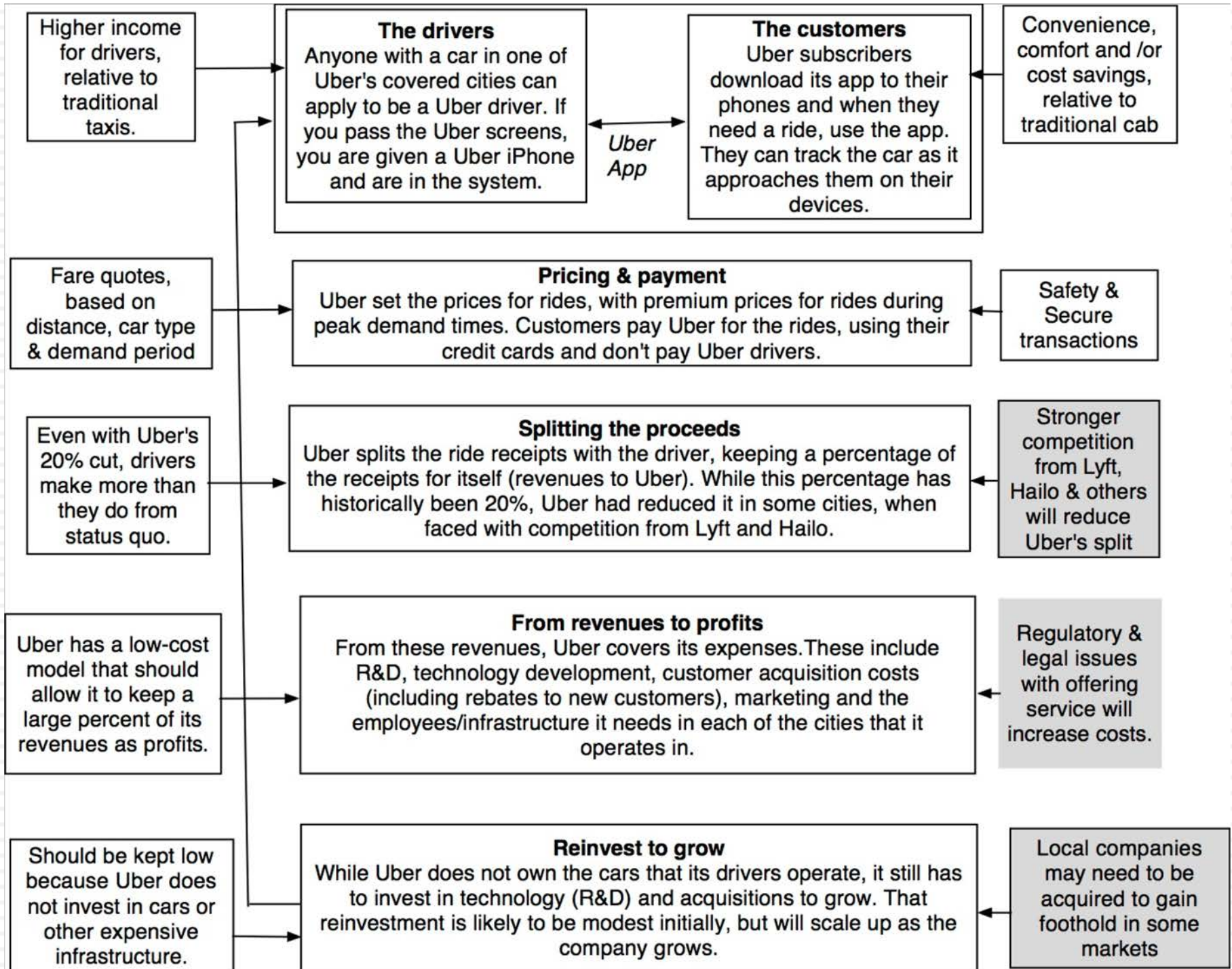
The Steps



Step 1a: Survey the landscape

- Every valuation starts with a narrative, a story that you see unfolding for your company in the future.
- In developing this narrative, you will be making assessments of
 - ▣ Your company (its products, its management and its history).
 - ▣ The market or markets that you see it growing in.
 - ▣ The competition it faces and will face.
 - ▣ The macro environment in which it operates.

Understanding Uber in 2014



Understanding Ferrari in 2015

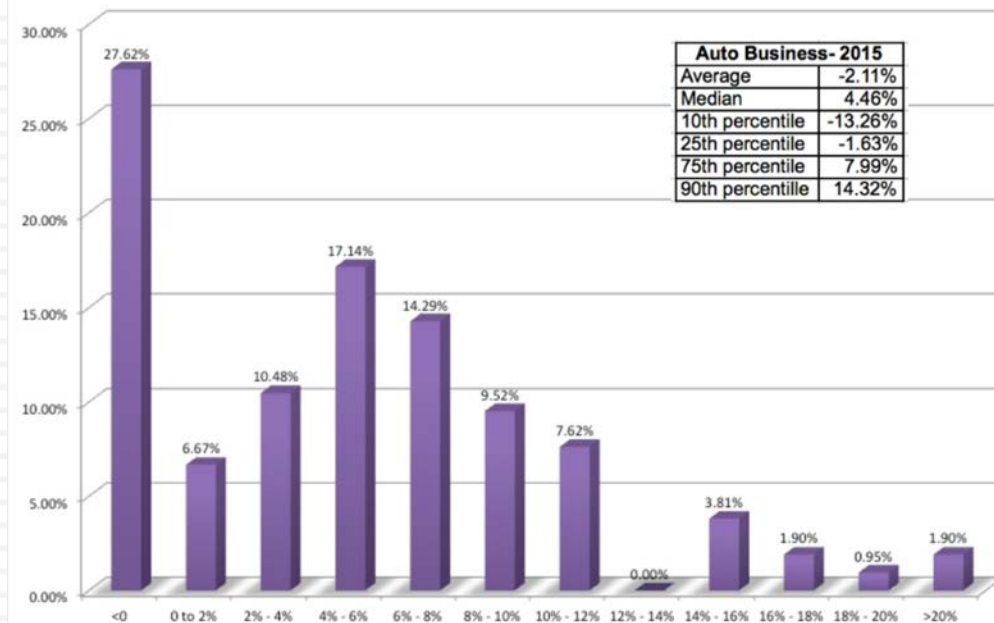
It is in the Auto Business Low Margins

Low Growth

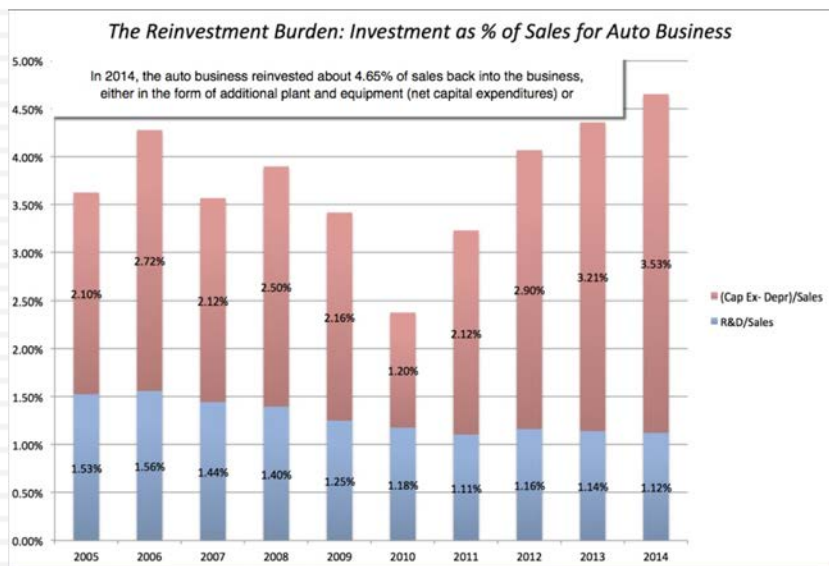
Year ▼	Revenues (\$) ▼	% Growth Rate ▼
2005	1,274,716.60	
2006	1,421,804.20	11.54%
2007	1,854,576.40	30.44%
2008	1,818,533.00	-1.94%
2009	1,572,890.10	-13.51%
2010	1,816,269.40	15.47%
2011	1,962,630.40	8.06%
2012	2,110,572.20	7.54%
2013	2,158,603.00	2.28%
2014	2,086,124.80	-3.36%
ounded Average =		5.63%

+

The Automobile Business: Pre-tax Operating Margins in 2015



High & Increasing Reinvestment



=

Bad Business

	ROIC	Cost of capital	ROIC - Cost of capital
2004	6.82%	7.93%	-1.11%
2005	10.47%	7.02%	3.45%
2006	4.60%	7.97%	-3.37%
2007	7.62%	8.50%	-0.88%
2008	3.48%	8.03%	-4.55%
2009	-4.97%	8.58%	-13.55%
2010	5.16%	8.03%	-2.87%
2011	7.55%	8.15%	-0.60%
2012	7.80%	8.55%	-0.75%
2013	7.83%	8.47%	-0.64%
2014	6.47%	7.53%	-1.06%

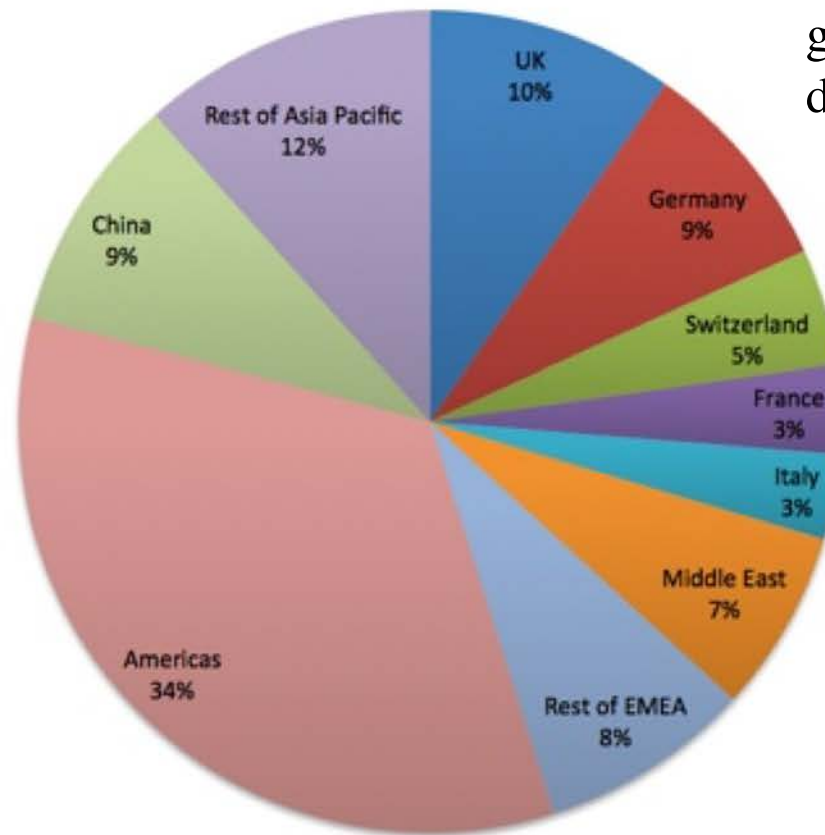
Only once in the last 10 years have auto companies collectively earned more than their cost of capital

But it is not just another auto company..

Ferrari sold only 7,255 cars in all of 2014

Ferrari had a profit margin of 18.2%, in the 95th percentile, partly because of its high prices and partly because it spends little on advertising.

Ferrari: Geographical Sales (2014)

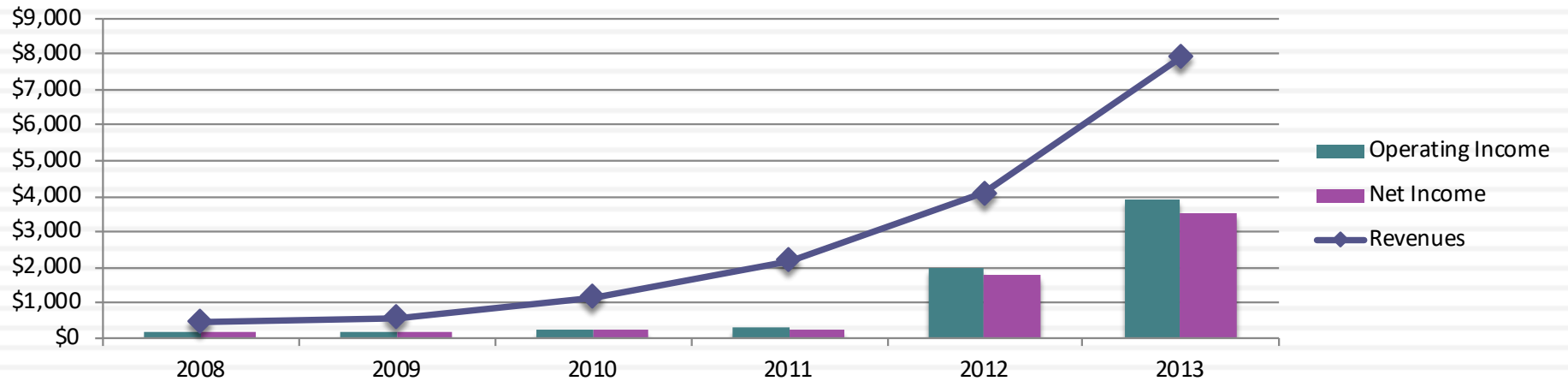


Ferrari sales (in units) have grown very little in the last decade & have been stable

Ferrari has not invested in new plants.

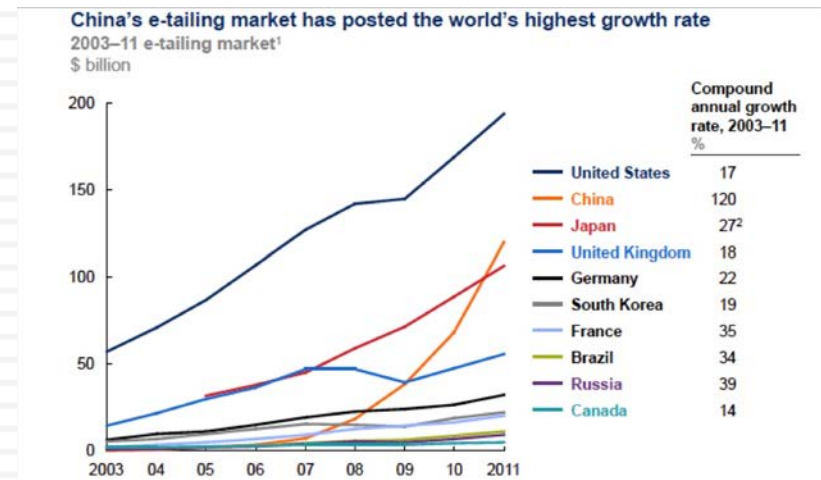
Alibaba: The Rocket takes off..

Figure 6.5: Alibaba- The rocket takes off!



Market Domination

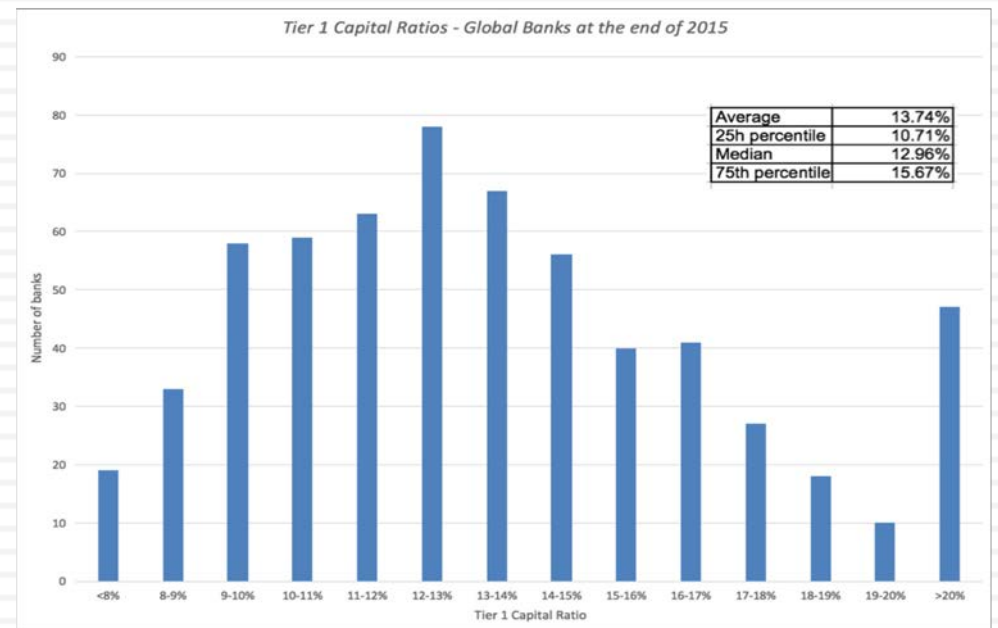
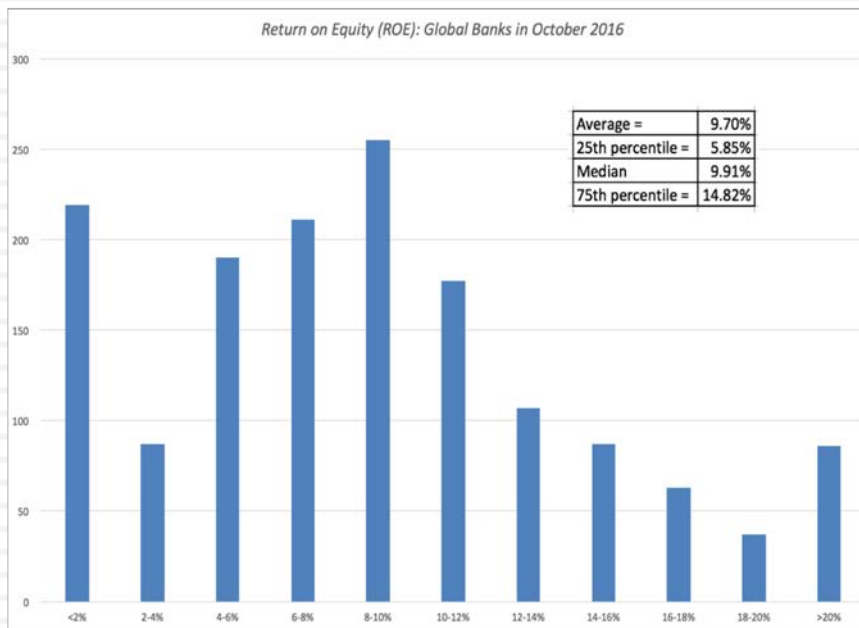
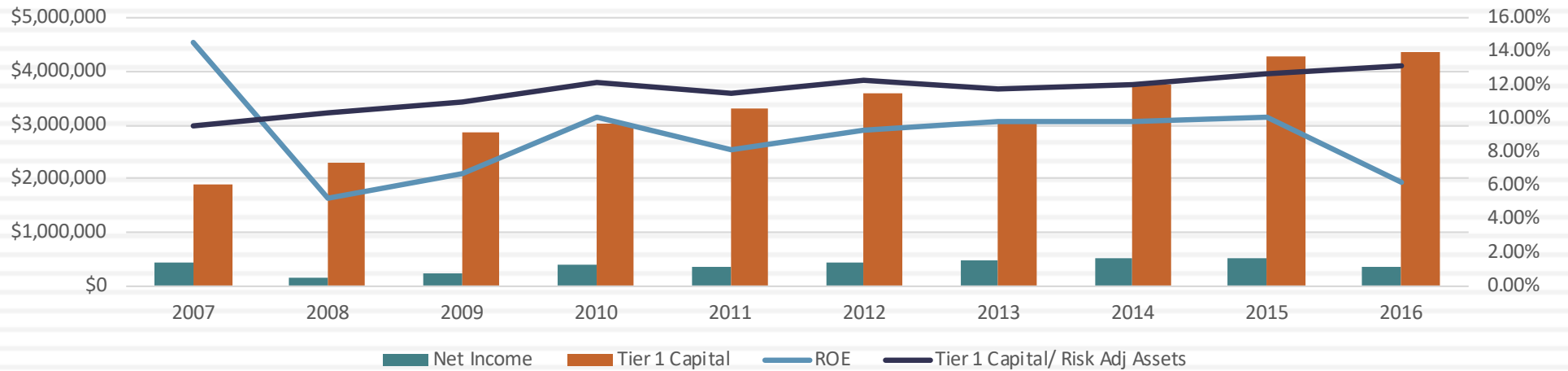
	B2C	C2C	Mobile	Online Payment
Tmall	49.08%	TaoBao	81.45%	Alipay
JingDong	18.16%	Paipai	JingDong	Tenpay
Tencent B2C	5.68%	Eachnet	Maimaibao	Unionpay
Suning	4.30%		Suning	Others
Amazon China	2.72%		Amazon	
Dangdang	2.12%		Others	
Others	17.94%			



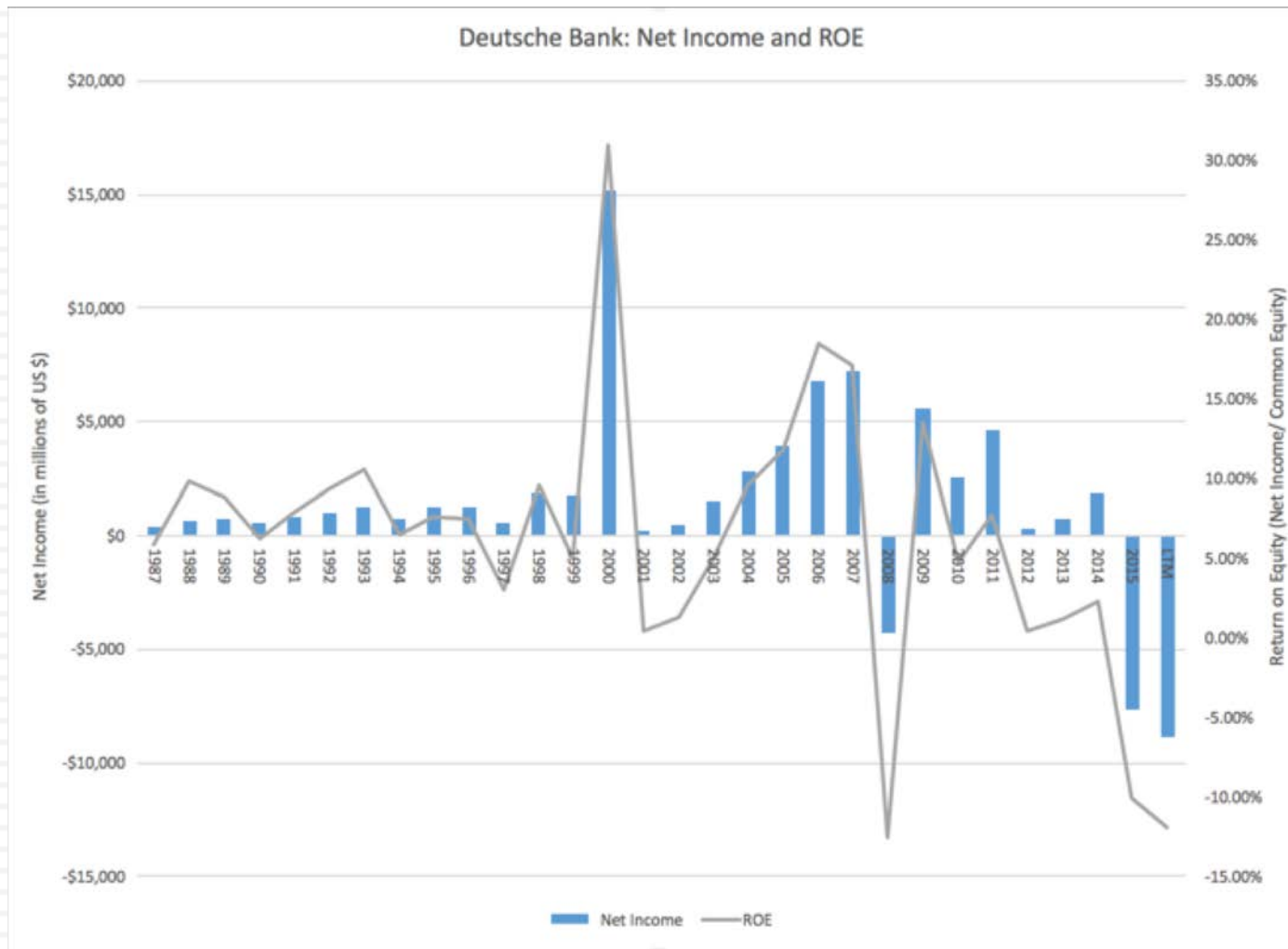
In the fastest growing market in the world 19

Understanding Deutsche Bank The Banking Business

The Banking Business: 2007 to 2016



In October 2015: Looking back at Deutsche Bank's not good, very bad, horrible decade



Step 1b: Create a narrative for the future

- Every valuation starts with a narrative, a story that you see unfolding for your company in the future.
- In developing this narrative, you will be making assessments of your company (its products, its management), the market or markets that you see it growing in, the competition it faces and will face and the macro environment in which it operates.
 - ▣ Rule 1: Keep it simple.
 - ▣ Rule 2: Keep it focused.

The Uber Narrative: An Urban, Car Service disruptor

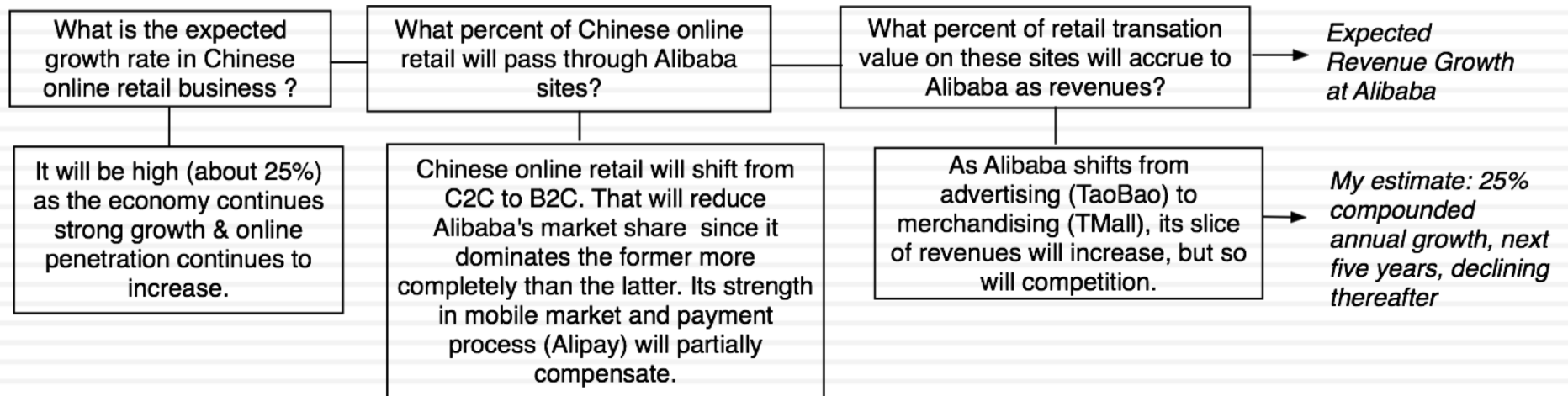
In June 2014, my initial narrative for Uber was that it would be

1. An urban car service business: I saw Uber primarily as a force in urban areas and only in the car service business.
2. Which would expand the business moderately (about 40% over ten years) by bringing in new users.
3. With local networking benefits: If Uber becomes large enough in any city, it will quickly become larger, but that will be of little help when it enters a new city.
4. Maintain its revenue sharing (20%) system due to strong competitive advantages (from being a first mover).
5. And its existing low-capital business model, with drivers as contractors and very little investment in infrastructure.

The Ferrari Narrative: An Exclusive Club

- Ferrari will stay an exclusive auto club, deriving its allure from its scarcity and the fact that only a few own Ferraris.
- By staying exclusive, the company gets three benefits:
 - ▣ It can continue to charge nose bleed prices for its cars and sell them with little or no advertising.
 - ▣ It does not need to invest in new assembly plants, since it does not plan to ramp up production.
 - ▣ It sells only to the super rich, who are unaffected by overall economic conditions or market crises.

The Alibaba Narrative: The China Story

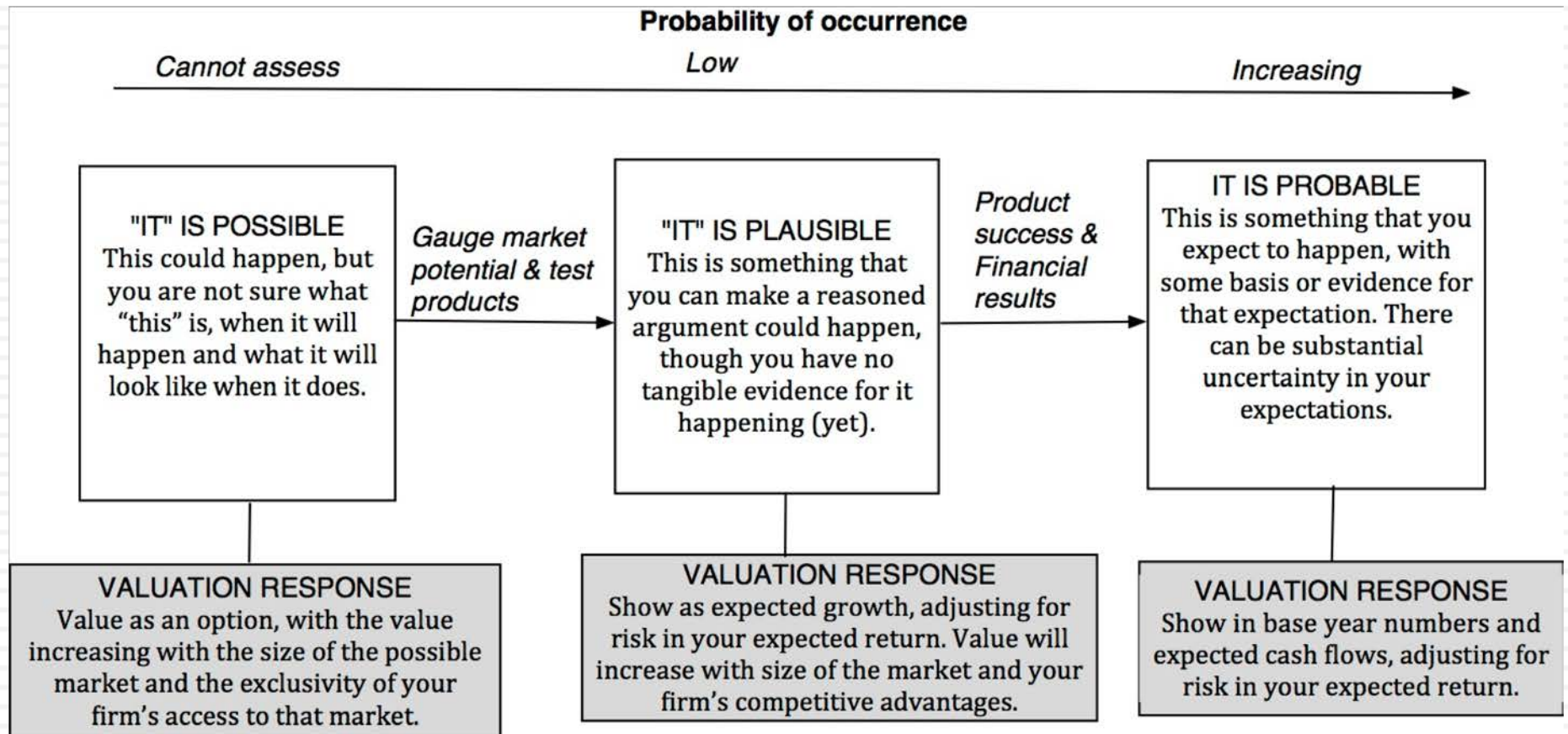


The Deutsche Bank Narrative

- Growth and Profits: Deutsche Bank is a very low growth bank, with risk-adjusted assets at the inflation low and a return on equity that will stay low for the near term, as it faces regulatory pressures and reputation shocks.
- Regulatory Capital: To recover, the company will have to issue massive amounts of new equity and in steady state, it will remain both high risk and require high regulatory capital to sustain itself.
- A Stable Bank that runs in place: Once recovered, the bank will generate a return on equity roughly equal to its cost of equity.
- Failure risk: There is a very real chance that the bank may need to be saved, in which case the equity will be wiped out.

Step 2: Check the narrative against history, economic first principles & common sense

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The Impossible, The Implausible and the Improbable

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The Impossible

Bigger than the economy

Assuming Growth rate for company in perpetuity > Growth rate for economy

Bigger than the total market

Allowing a company's revenues to grow so much that it has more than a 100% market share of whatever business it is in.

Profit margin > 100%

Assuming earnings growth will exceed revenue growth for a long enough period, and pushing margins above 100%

Depreciation without cap ex

Assuming that depreciation will exceed cap ex in perpetuity.

The Implausible

Growth without reinvestment

Assuming growth forever without reinvestment.

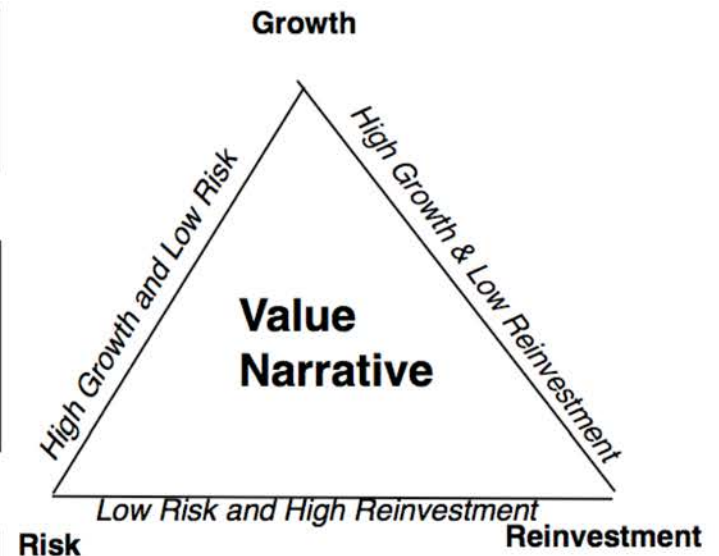
Profits without competition

Assuming that your company will grow and earn higher profits, with no competition.

Returns without risk

Assuming that you can generate high returns in a business with no risk.

The Improbable



The Improbable: Willy Wonkitis

Tesla: Summary 15-year DCF Analysis (DCF valuation as of mid-year 2013)

	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
Unit Volume	24,298	36,883	64,684	86,713	149,869	214,841	291,861	384,747	466,559	550,398	643,850	726,655	820,645	922,481	1,034,215	1,137,780
% Growth		52%	79%	34%	73%	43%	36%	32%	21%	18%	17%	13%	12%	12%	12%	10%
Automotive Revenue Per Unit (\$)	93,403	85,342	83,432	78,932	65,465	58,258	56,407	55,553	55,991	56,586	56,969	57,540	58,138	58,603	59,002	59,554
% Growth		-9%	-2%	-5%	-17%	-11%	-3%	-2%	1%	1%	1%	1%	1%	1%	1%	1%
Automotive Sales	2,462	3,321	5,613	7,051	10,025	12,720	16,685	21,595	26,347	31,357	36,897	42,022	47,949	54,283	61,221	67,980
Development Service Sales	16	40	42	44	46	49	51	54	56	59	62	65	68	72	75	79
Total Sales	2,478	3,361	5,655	7,095	10,072	12,768	16,736	21,648	26,403	31,416	36,959	42,087	48,017	54,355	61,296	68,059
% Growth		36%	60%	25%	42%	27%	31%	29%	22%	19%	18%	14%	14%	13%	13%	11%
EBITDA	148	417	920	1,042	1,586	2,150	3,138	4,066	4,857	5,723	6,328	7,182	8,144	9,688	10,874	12,099
% Margin	6.0%	12.4%	16.3%	14.7%	15.7%	16.8%	18.7%	18.8%	18.4%	18.2%	17.1%	17.1%	17.0%	17.8%	17.7%	17.8%
D&A	103	158	172	203	301	353	389	537	606	696	811	938	1,088	1,260	1,451	1,661
% of Capex	41%	79%	59%	65%	62%	69%	78%	86%	79%	77%	75%	76%	76%	76%	76%	77%
EBIT	45	259	748	839	1,285	1,796	2,749	3,529	4,252	5,027	5,517	6,244	7,056	8,429	9,423	10,439
% Margin	1.8%	7.7%	13.2%	11.8%	12.8%	14.1%	16.4%	16.3%	16.1%	15.0%	14.0%	14.8%	14.7%	15.5%	15.4%	15.3%
Net Interest Income (Expense)	(27)	(1)	9	33	47	90	108	155	199	278	358	445	542	651	784	934
Other Income	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pretax Income	46	258	758	872	1,332	1,886	2,857	3,684	4,451	5,305	5,875	6,688	7,598	9,080	10,207	11,373
Income Taxes	3	2	14	34	86	262	462	641	807	1,003	1,134	1,317	1,470	1,761	2,028	2,323
% Effective Rate	6%	1%	2%	4%	6%	14%	16%	17%	18%	19%	19%	20%	19%	19%	20%	20%
Net Income	44	256	744	839	1,246	1,624	2,395	3,043	3,644	4,303	4,741	5,372	6,128	7,319	8,179	9,050
Plus																
After-tax Interest Expense (Income)	27	1	(9)	(33)	(47)	(90)	(108)	(154)	(189)	(278)	(357)	(444)	(541)	(650)	(782)	(932)
Depreciation of PP&E	103	158	172	203	301	353	389	537	606	696	811	938	1,088	1,260	1,451	1,661
Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Less																
Change in Working Capital	(155)	(14)	(157)	(167)	(172)	(325)	(163)	(81)	(28)	(299)	(356)	(328)	(219)	(329)	(365)	(376)
% of Change in Sales		-2%	-7%	-12%	-9%	-12%	-4%	-2%	-1%	-6%	-6%	-6%	-4%	-5%	-5%	-6%
Capital Expenditures	250	200	312	312	486	510	497	623	765	906	1,078	1,236	1,437	1,660	1,898	2,149
% of Sales	10%	6%	6%	4%	5%	4%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Unlevered Free Cash Flow	78	229	750	863	1,186	1,702	2,343	2,884	3,314	4,113	4,472	4,959	5,456	6,597	7,315	8,005

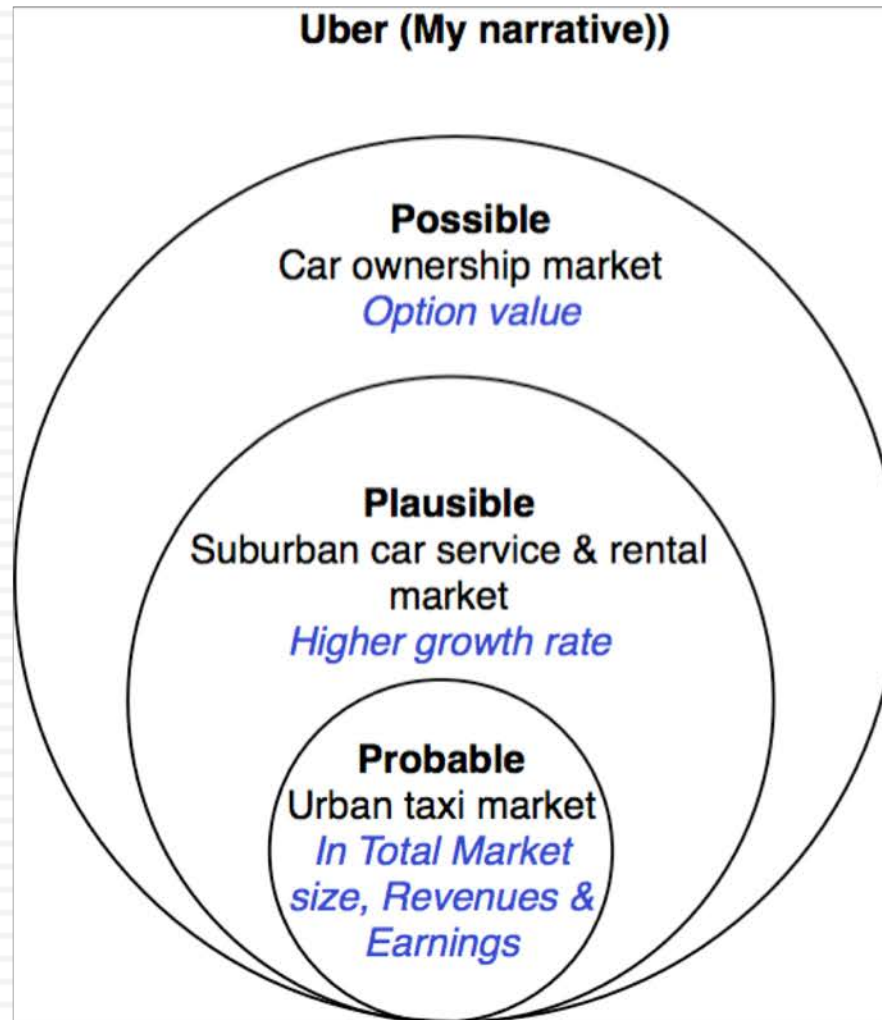
EBITDA	12,099
Sales	68,059
Net Debt (Cash)	(260)
Tesla Diluted Shares	142

Exit EBITDA High	12.0 x	Exit PPG High	5.0%	Exit P/Sales High	180%
Exit EBITDA Low	8.0 x	Exit PPG Low	3.0%	Exit P/Sales Low	130%

Discount Rate High	13.0%	FY Month of Valuation	1.0 (Beginning of this Month)
Discount Rate Low	9.0%	Month of FY End	12.0 (End of this Month)

Uber: Possible, Plausible and Probable

The larger & more ambitious your story, the more onus there is on you to show that it is possible, plausible & probable.



Big Story or Small One?

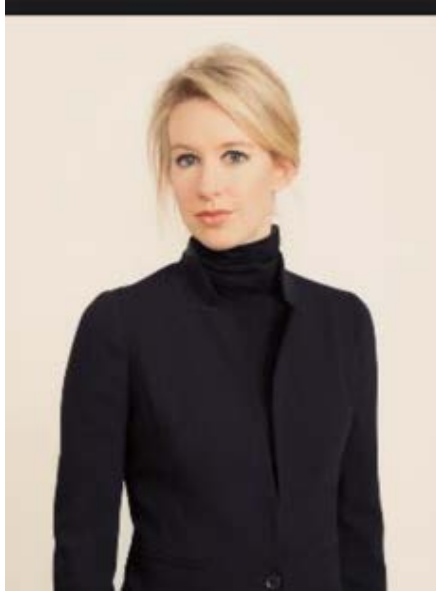
- The upside of a big story is that it will generally deliver a higher value for your company, if you can get others to believe it is plausible and probable.
- The downside is two fold:
 - Your sales job becomes a lot more difficult, as your story gets bigger. In fact, there is a danger that you could be categorized as a fairy tale teller, if your story is too big.
 - Even if you succeed in convincing others that the story is plausible and probable, you will now have to act and deliver on that big story. That can stretch resources to breaking point and distract you from building your primary business.

The Runaway Story: When you want a story to be true...

- With a runaway business story, you usually have three ingredients:
 1. Charismatic, likeable Narrator: The narrator of the business story is someone that you want to see succeed, either because you like the narrator or because he/she will be a good role model.
 2. Telling a story about disrupting a much business, where you dislike the status quo: The status quo in the business that the story is disrupting is dissatisfying (to everyone involved)>
 3. With a societal benefit as bonus: And if the story holds, society and humanity will benefit.
- Since you want this story to work out, you stop asking questions, because the answers may put the story at risk.

The Impossible: The Runaway Story

The Story



+

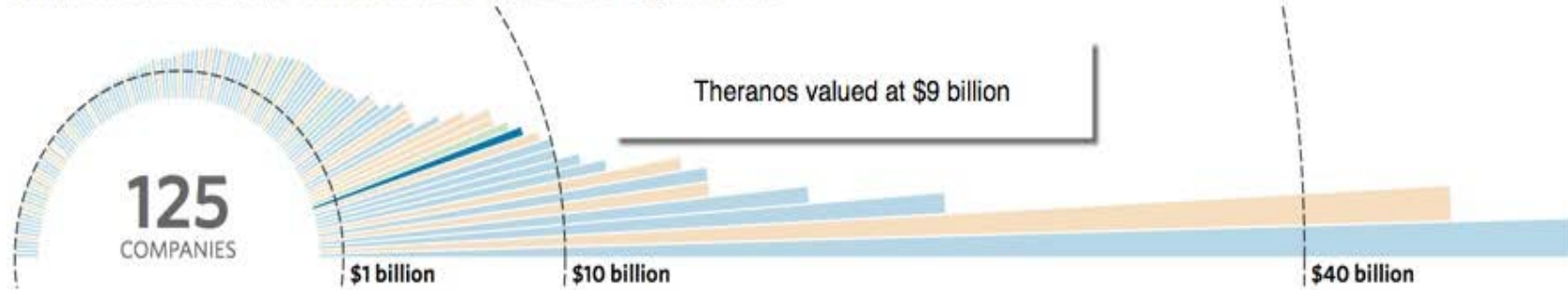
The Checks (?)

Board Member	Designation	Age
Henry Kissinger	Former Secretary of State	92
Bill Perry	Former Secretary of Defense	88
George Schultz	Former Secretary of State	94
Bill Frist	Former Senate Majority Leader	63
Sam Nunn	Former Senator	77
Gary Roughead	Former Navy Admiral	64
James Mattis	Former Marine Corps General	65
Dick Kovocovich	Former CEO of Wells Fargo	72
Riley Bechtel	Former CEO of Bechtel	63
William Foege	Epidemiologist	79
Elizabeth Holmes	Founder & CEO, Theranos	31
Sunny Balwani	President & COO, Theranos	NA

+

Money

Companies valued at \$1 billion or more by venture-capital firms



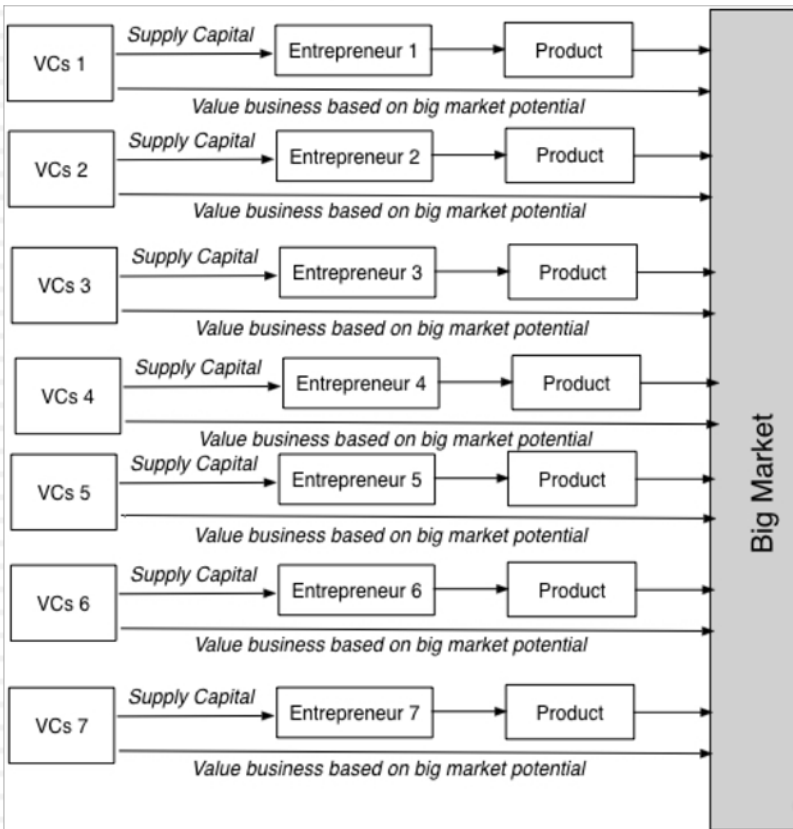
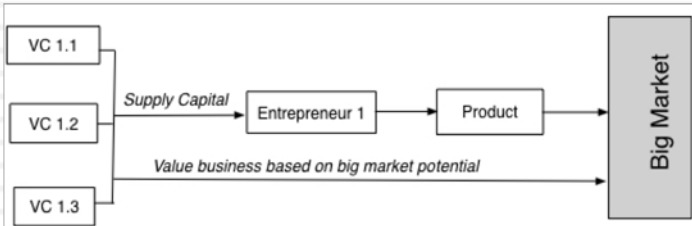
Valuations as of October 2015

Select companies from the chart or table for more detail.

The root of implausible and improbable stories: Over confidence!

- In the last three decades of research on behavioral finance, researchers have uncovered the not so surprising truth that as human beings, we are not only capable of thinking irrationally, but hard wired to do so.
- Of all of the character attributes that human beings have, the one that seems to create the most consequential errors is over confidence.
- Over confident founders, with over confident investors providing them capital, shoot for big markets, often fail but change the way we live in significant ways.

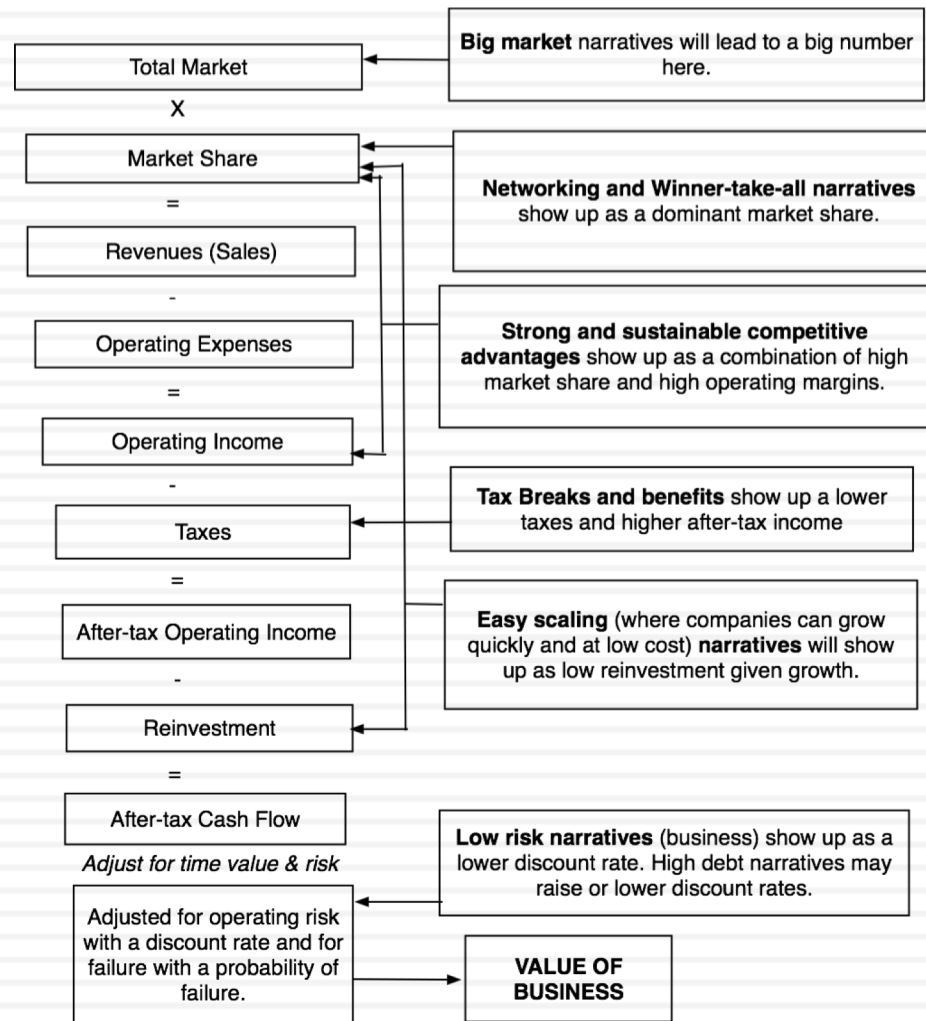
The Implausible: The Big Market Delusion



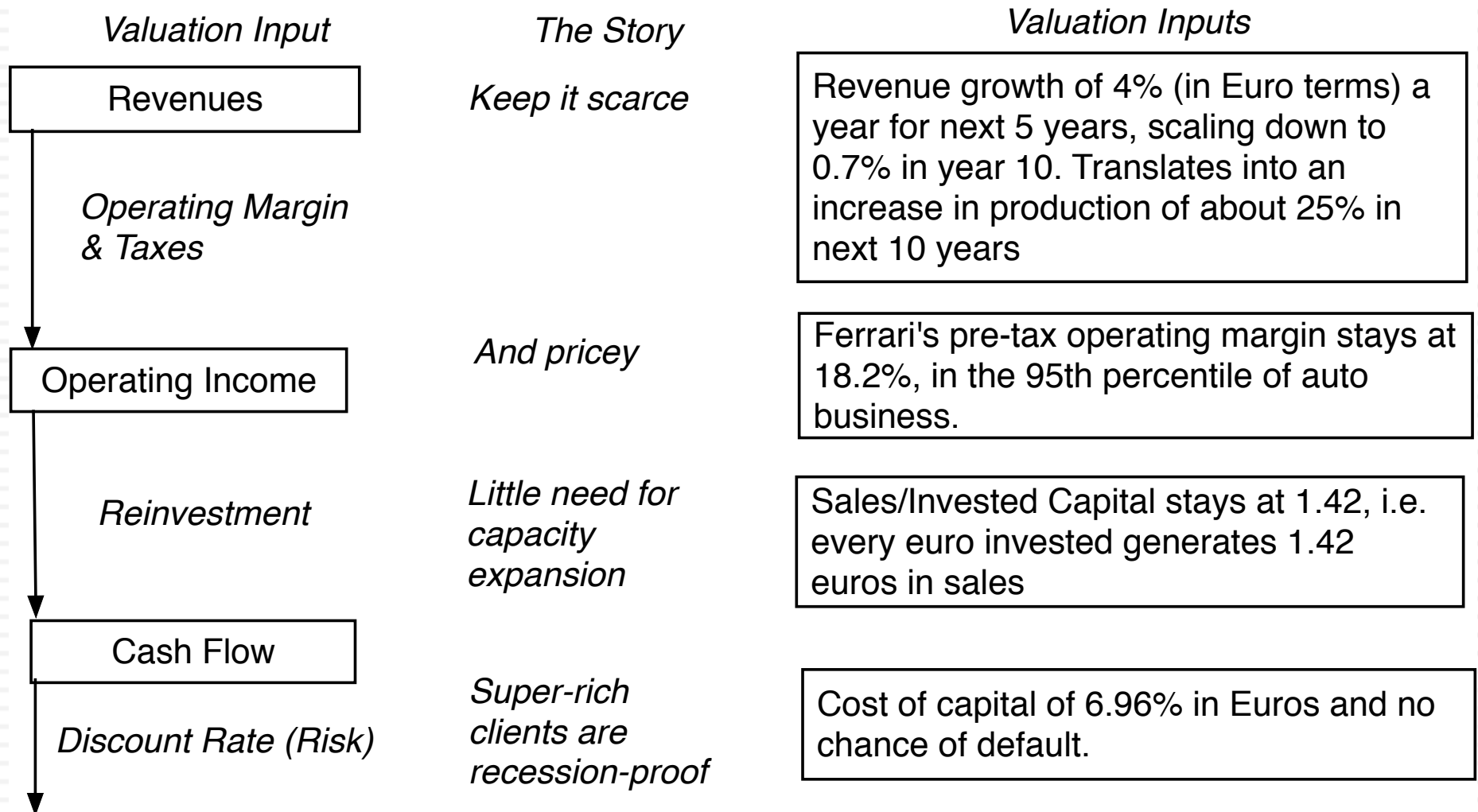
Company	Market Cap	Enterprise Value	Current Revenues	Breakeven Revenues (2025)	% from Online Advertising	Imputed Online Ad Revenue (2025)
Google	\$441,572.00	\$386,954.00	\$69,611.00	\$224,923.20	89.50%	\$201,306.26
Facebook	\$245,662.00	\$234,696.00	\$14,640.00	\$129,375.54	92.20%	\$119,284.25
Yahoo!	\$30,614.00	\$23,836.10	\$4,871.00	\$25,413.13	100.00%	\$25,413.13
LinkedIn	\$23,265.00	\$20,904.00	\$2,561.00	\$22,371.44	80.30%	\$17,964.26
Twitter	\$16,927.90	\$14,912.90	\$1,779.00	\$23,128.68	89.50%	\$20,700.17
Pandora	\$3,643.00	\$3,271.00	\$1,024.00	\$2,915.67	79.50%	\$2,317.96
Yelp	\$1,765.00	\$0.00	\$465.00	\$1,144.26	93.60%	\$1,071.02
Zillow	\$4,496.00	\$4,101.00	\$480.00	\$4,156.21	18.00%	\$748.12
Zynga	\$2,241.00	\$1,142.00	\$752.00	\$757.86	22.10%	\$167.49
Total US	\$770,185.90	\$689,817.00	\$96,183.00	\$434,185.98		\$388,972.66
Alibaba	\$184,362.00	\$173,871.00	\$12,598.00	\$111,414.06	60.00%	\$66,848.43
Tencent	\$154,366.00	\$151,554.00	\$13,969.00	\$63,730.36	10.50%	\$6,691.69
Baidu	\$49,991.00	\$44,864.00	\$9,172.00	\$30,999.49	98.90%	\$30,658.50
Sohu.com	\$18,240.00	\$17,411.00	\$1,857.00	\$16,973.01	53.70%	\$9,114.51
Naver	\$13,699.00	\$12,686.00	\$2,755.00	\$12,139.34	76.60%	\$9,298.74
Yandex	\$3,454.00	\$3,449.00	\$972.00	\$2,082.52	98.80%	\$2,057.52
Yahoo! Japan	\$23,188.00	\$18,988.00	\$3,591.00	\$5,707.61	69.40%	\$3,961.08
Sina	\$2,113.00	\$746.00	\$808.00	\$505.09	48.90%	\$246.99
Netease	\$14,566.00	\$11,257.00	\$2,388.00	\$840.00	11.90%	\$3,013.71
Mail.ru	\$3,492.00	\$3,768.00	\$636.00	\$1,676.47	35.00%	\$586.76
Mixi	\$3,095.00	\$2,661.00	\$1,229.00	\$777.02	96.00%	\$745.94
Kakaku	\$3,565.00	\$3,358.00	\$404.00	\$1,650.49	11.60%	\$191.46
Total non-US	\$474,131.00	\$444,613.00	\$50,379.00	\$248,495.46		\$133,415.32
Global Total	\$1,244,316.90	\$1,134,430.00	\$146,562.00	\$682,681.44		\$522,387.98



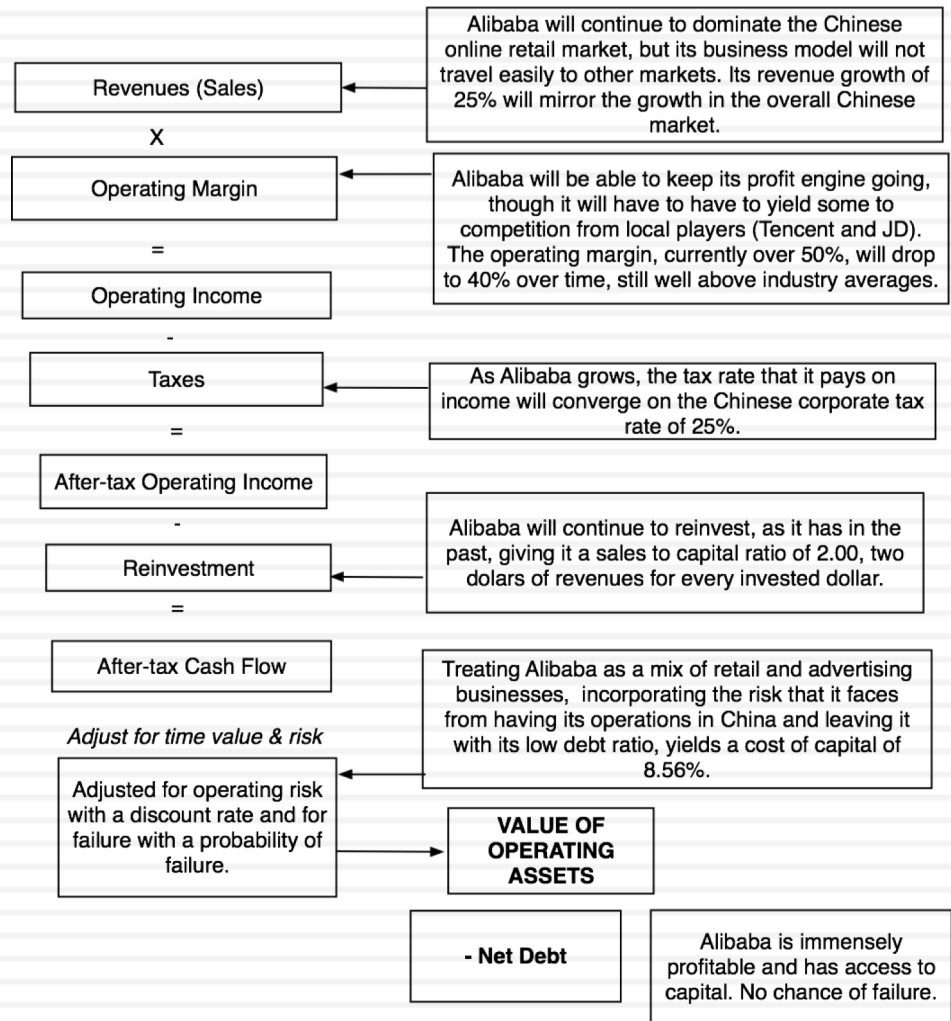
Step 4a: Connect your narrative to key drivers of value



Ferrari: From story to numbers



The Alibaba Revenue/Margin Inputs



The Deutsche Bank Inputs

My story for Deutsche Bank

Risk Adjusted Assets

Slow growing: The growth in risk adjusted assets will be 1% a year for the next 10 years.

Return on Equity

Clawback to profitability: After losses in next 2 years, ROE will improve to 5.85% (25th percentile of banks) in year 5 and 9.44% (Deutsche Bank's cost of equity in stable period) in year 10

Tier 1 Capital

Regulatory Capital Shock/Reaction: After paying DOJ fine, Deutsche will be severely undercapitalized. It will have to raise new equity and will shoot to reach 15.67% (75th percentile of banks) in year 10.

Cost of Equity

Risky Bank: The cost of equity for Deutsche initially will be 10.2% (75th percentile of banks) but will decrease gradually to 9.44% (the median cost of equity for banks) in 10 years.

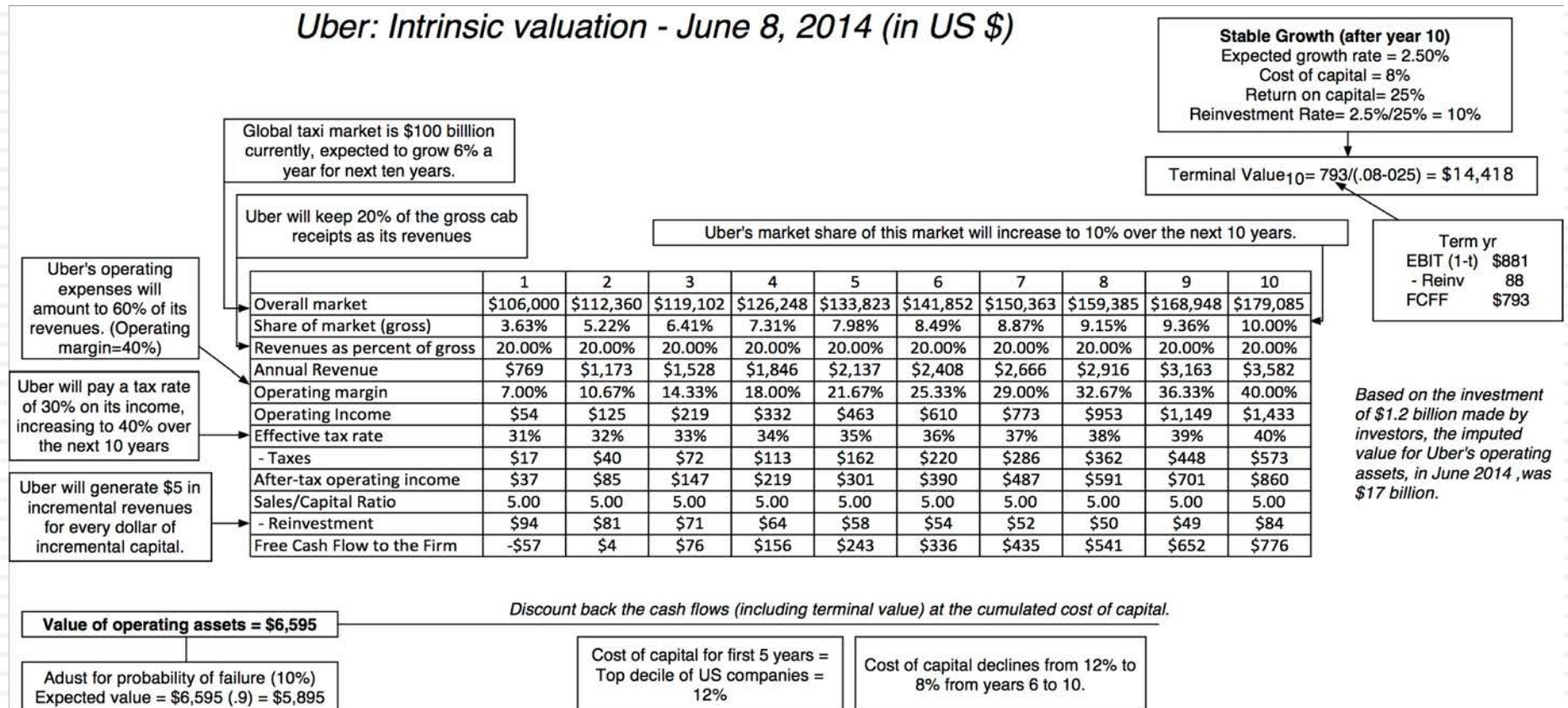
Catastrophic Failure

Failure Risk: There is a 10% chance that the German government will have to bailout the bank, leading to the wiping out of equity.

Step 4b: Value the company (Uber)

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Uber: Intrinsic valuation - June 8, 2014 (in US \$)



Ferrari: The “Exclusive Club” Value

Stay Super Exclusive: Revenue growth is low												
	Base year	1	2	3	4	5	6	7	8	9	10	Terminal year
Revenue growth rate		4.00%	4.00%	4.00%	4.00%	4.00%	3.34%	2.68%	2.02%	1.36%	0.70%	0.70%
Revenues	€ 2,763	€ 2,874	€ 2,988	€ 3,108	€ 3,232	€ 3,362	€ 3,474	€ 3,567	€ 3,639	€ 3,689	€ 3,714	€ 3,740
EBIT (Operating) margin	18.20%	18.20%	18.20%	18.20%	18.20%	18.20%	18.20%	18.20%	18.20%	18.20%	18.20%	18.20%
EBIT (Operating income)	€ 503	€ 523	€ 544	€ 566	€ 588	€ 612	€ 632	€ 649	€ 662	€ 671	€ 676	€ 681
Tax rate	33.54%	33.54%	33.54%	33.54%	33.54%	33.54%	33.54%	33.54%	33.54%	33.54%	33.54%	33.54%
EBIT(1-t)	€ 334	€ 348	€ 361	€ 376	€ 391	€ 407	€ 420	€ 431	€ 440	€ 446	€ 449	€ 452
- Reinvestment		€ 78	€ 81	€ 84	€ 87	€ 91	€ 79	€ 66	€ 51	€ 35	€ 18	€ 22
FCFF		€ 270	€ 281	€ 292	€ 303	€ 316	€ 341	€ 366	€ 389	€ 411	€ 431	€ 431
Cost of capital		6.96%	6.96%	6.96%	6.96%	6.96%	6.96%	6.97%	6.98%	6.99%	7.00%	7.00%
PV(FCFF)		€ 252	€ 245	€ 238	€ 232	€ 225	€ 228	€ 228	€ 227	€ 224	€ 220	
Terminal value	€ 6,835											
PV(Terminal value)	€ 3,485											
PV (CF over next 10 years)	€ 2,321											
Value of operating assets =	€ 5,806											
- Debt	€ 623											
- Minority interests	€ 13											
+ Cash	€ 1,141											
Value of equity	€ 6,311											

High Prices
+ No selling
cost =
Preserve
current
operating
margin

Minimal
Reinvestment
due to low
growth

The super
rich are not
sensitive to
economic
downturns

Alibaba, the China Story (September 2014, just before IPO)

Alibaba will stay China-centric, maintaining its high market share and growing with the Chinese online retail market. It's margins will come down because of competition but still stay high.

	T12M	2012-13
Revenues	\$9,268	\$4,821
Operating Income	\$4,702	\$1,777
Effective tax rate	11.92%	
Operating Margin	50.73%	

Revenue growth of 25% a year for 5 years, tapering down to 2.63% in year 10

Pre-tax operating margin decreases to 40% over time & tax rate rises to 25%

Sales to capital ratio maintained at 2.00

Stable Growth
 $g = 2.41\%$
 Cost of capital = 8%
 ROC = 8%;
 Reinvestment Rate = $2.41\%/8\% = 30.125\%$

Terminal Value₁₀ = $10,353 / (.08 - 0.0241) = \$185,198$

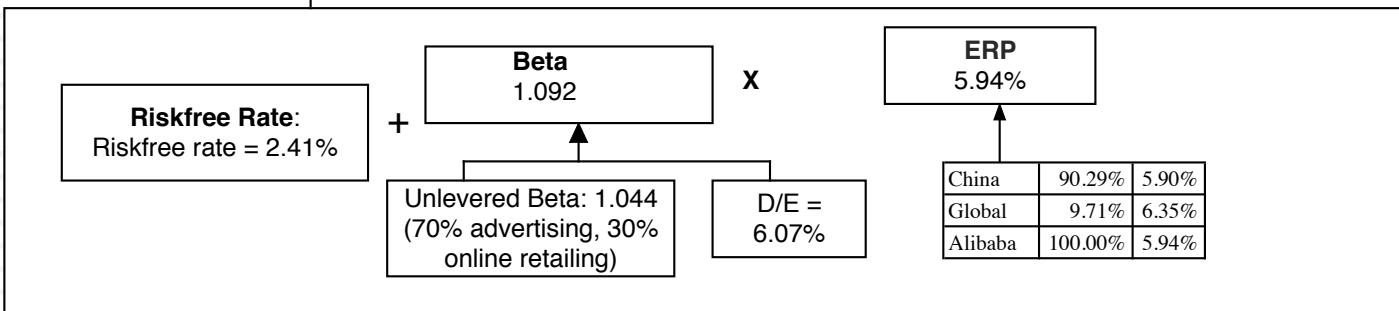
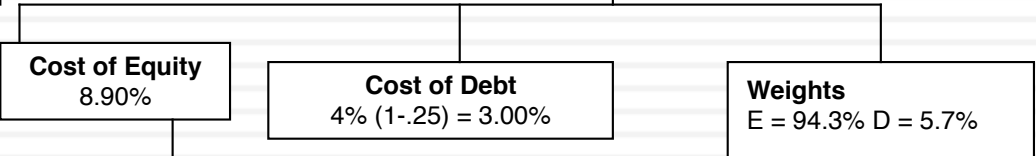
	1	2	3	4	5	6	7	8	9	10
Revenue growth rate	25.00%	25.00%	25.00%	25.00%	25.00%	20.48%	15.96%	11.45%	6.93%	2.41%
Revenues	\$ 11,585	\$ 14,481	\$ 18,101	\$ 22,626	\$ 28,283	\$ 34,075	\$ 39,515	\$ 44,038	\$ 47,089	\$ 48,224
EBIT (Operating margin)	49.66%	48.59%	47.51%	46.44%	45.37%	44.29%	43.22%	42.15%	41.07%	40.00%
EBIT (Operating income)	\$ 5,753	\$ 7,035	\$ 8,600	\$ 10,507	\$ 12,831	\$ 15,093	\$ 17,078	\$ 18,560	\$ 19,341	\$ 19,290
Tax rate	11.92%	11.92%	11.92%	11.92%	11.92%	14.54%	17.15%	19.77%	22.38%	25.00%
EBIT(1-t)	\$ 5,067	\$ 6,197	\$ 7,575	\$ 9,255	\$ 11,301	\$ 12,899	\$ 14,149	\$ 14,891	\$ 15,012	\$ 14,467
- Reinvestment	\$ 1,158	\$ 1,448	\$ 1,810	\$ 2,263	\$ 2,828	\$ 2,896	\$ 2,720	\$ 2,261	\$ 1,525	\$ 567
FCFF	\$ 3,908	\$ 4,749	\$ 5,765	\$ 6,992	\$ 8,473	\$ 10,002	\$ 11,429	\$ 12,630	\$ 13,486	\$ 13,900

Term yr
 EBIT (1-t) \$14,816
 - Reinv 4,463
 FCFF 10,353

Operating assets \$137,386
 + Cash 9330
 - Debt 10068
 + Equity investments 2,087
 + Alipay provision 3,000
 + IPO Proceeds (est) 20,000
 - Options 696
 Value of equity 161,039
 Value per share \$65.98

Cost of capital = 8.90% (.943) + 3.00% (.057) = 8.56%

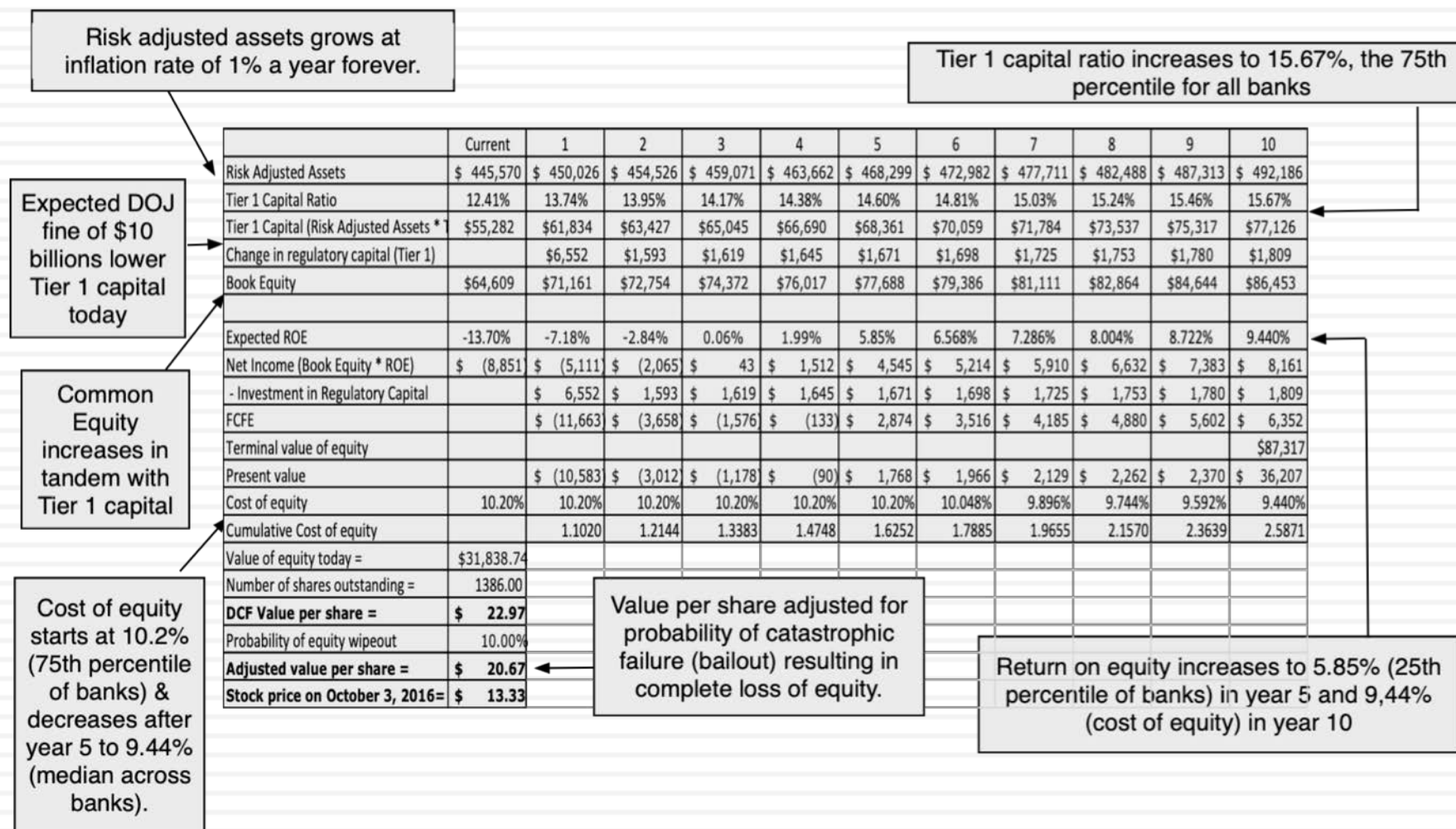
Cost of capital decreases to 8% from years 6-10



Alibaba will continue to be in two businesses, advertising and retailing, and retain its existing China focus.

The Deutsche Bank Valuation

Deutsche Bank: A Crisis Valuation (October 2016)



Step 5: Keep the feedback loop open

- When you tell a story about a company (either explicitly or implicitly), it is natural to feel attached to that story and to defend it against all attacks. Nothing can destroy an investor more than hubris.
- Being open to other views about a company is not easy, but here are some suggestions that may help:
 - ▣ Face up to the uncertainty in your own estimates of value.
 - ▣ Present the valuation to people who don't think like you do.
 - ▣ Create a process where people who disagree with you the most have a say.
 - ▣ Provide a structure where the criticisms can be specific and pointed, rather than general.

The Uber Feedback Loop: Bill Gurley

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1. Not just car service company.: Uber is a car company, not just a car service company, and there may be a day when consumers will subscribe to a Uber service, rather than own their own cars. It could also expand into logistics, i.e., moving and transportation businesses.
2. Not just urban: Uber can create new demands for car service in parts of the country where taxis are not used (suburbia, small towns).
3. Global networking benefits: By linking with technology and credit card companies, Uber can have global networking benefits.

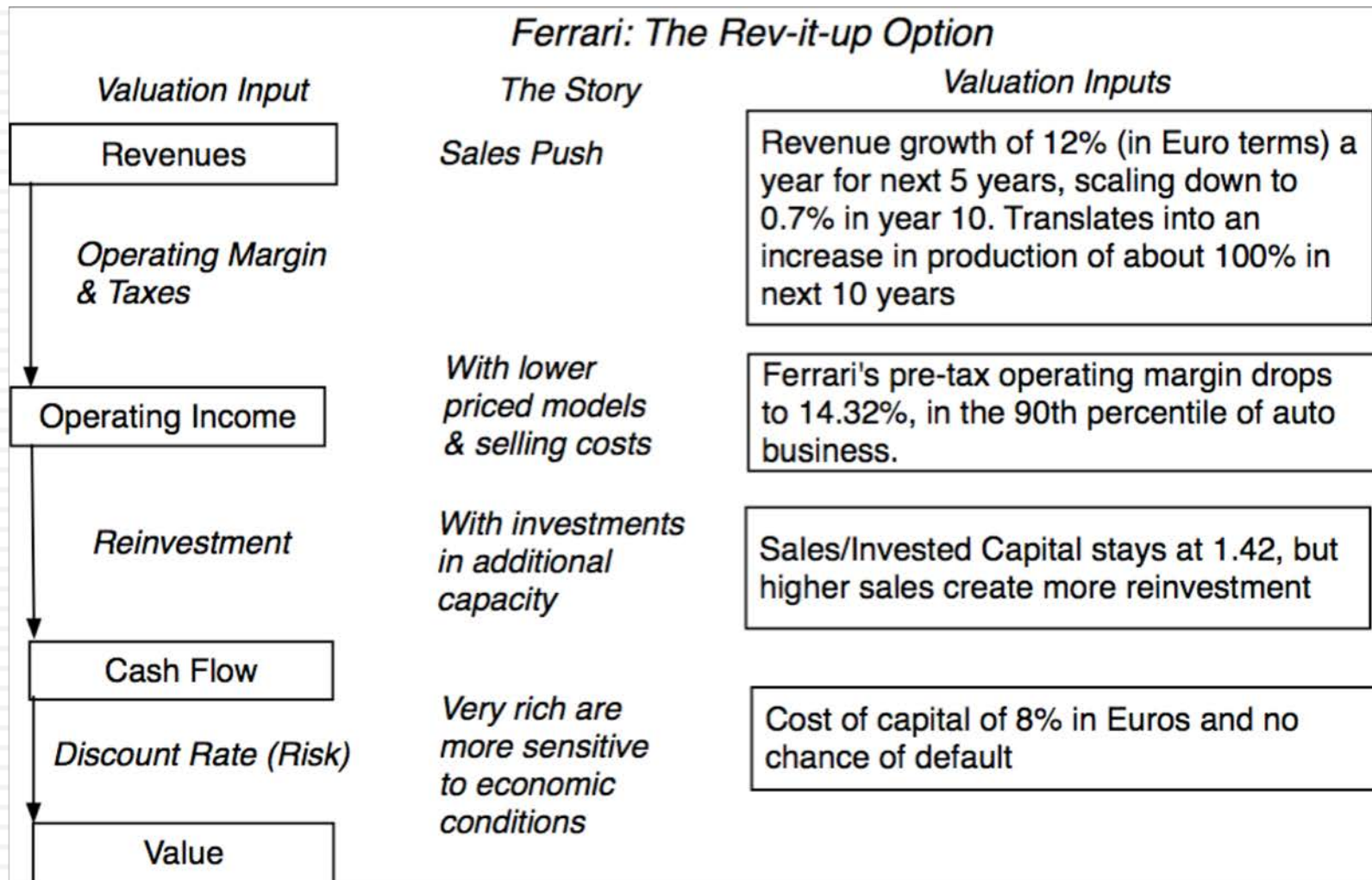
Valuing Bill Gurley's Uber narrative

	<i>Uber (Gurley)</i>	<i>Uber (Gurley Mod)</i>	<i>Uber (Damodaran)</i>
Narrative	Uber will <u>expand the car service market substantially</u> , bringing in mass transit users & non-users from the suburbs into the market, and use its <u>networking advantage to gain a dominant market share</u> , while maintaining its revenue slice at 20%.	Uber will <u>expand the car service market substantially</u> , bringing in mass transit users & non-users from the suburbs into the market, and use its <u>networking advantage to gain a dominant market share</u> , while cutting prices and margins (to 10%).	Uber will expand the car service market moderately, primarily in urban environments, and use its <u>competitive advantages to get a significant but not dominant market share</u> and maintain its revenue slice at 20%.
Total Market	\$300 billion, growing at 3% a year	\$300 billion, growing at 3% a year	\$100 billion, growing at 6% a year
Market Share	40%	40%	10%
Uber's revenue slice	20%	10%	20%
Value for Uber	\$53.4 billion + Option value of entering car ownership market (\$10 billion+)	\$28.7 billion + Option value of entering car ownership market (\$6 billion+)	\$5.9 billion + Option value of entering car ownership market (\$2-3 billion)

Different narratives, Different Numbers

<i>Total Market</i>	<i>Growth Effect</i>	<i>Network Effect</i>	<i>Competitive Advantages</i>	<i>Value of Uber</i>
A4. Mobility Services	B4. Double market size	C5. Strong global network effects	D4. Strong & Sustainable	\$90,457
A3. Logistics	B4. Double market size	C5. Strong global network effects	D4. Strong & Sustainable	\$65,158
A4. Mobility Services	B3. Increase market by 50%	C3. Strong local network effects	D3. Semi-strong	\$52,346
A2. All car service	B4. Double market size	C5. Strong global network effects	D4. Strong & Sustainable	\$47,764
A1. Urban car service	B4. Double market size	C5. Strong global network effects	D4. Strong & Sustainable	\$31,952
A3. Logistics	B3. Increase market by 50%	C3. Strong local network effects	D3. Semi-strong	\$14,321
A1. Urban car service	B3. Increase market by 50%	C3. Strong local network effects	D3. Semi-strong	\$7,127
A2. All car service	B3. Increase market by 50%	C3. Strong local network effects	D3. Semi-strong	\$4,764
A4. Mobility Services	B1. None	C1. No network effects	D1. None	\$1,888
A3. Logistics	B1. None	C1. No network effects	D1. None	\$1,417
A2. All car service	B1. None	C1. No network effects	D1. None	\$1,094
A1. Urban car service	B1. None	C1. No network effects	D1. None	\$799

The Ferrari Counter Narrative



Ferrari: The “Rev-it-up” Alternative

Get less exclusive: Double number of cars sold over next decade

	Base year	1	2	3	4	5	6	7	8	9	10	Terminal year
Revenue growth rate		12.00%	12.00%	12.00%	12.00%	12.00%	9.74%	7.48%	5.22%	2.96%	0.70%	0.70%
Revenues	€ 2,763	€ 3,095	€ 3,466	€ 3,882	€ 4,348	€ 4,869	€ 5,344	€ 5,743	€ 6,043	€ 6,222	€ 6,266	€ 6,309
EBIT (Operating) margin	18.20%	17.81%	17.42%	17.04%	16.65%	16.26%	15.87%	15.48%	15.10%	14.71%	14.32%	14.32%
EBIT (Operating income)	€ 503	€ 551	€ 604	€ 661	€ 724	€ 792	€ 848	€ 889	€ 912	€ 915	€ 897	€ 904
Tax rate	33.54%	33.54%	33.54%	33.54%	33.54%	33.54%	33.54%	33.54%	33.54%	33.54%	33.54%	33.54%
EBIT(1-t)	€ 334	€ 366	€ 401	€ 439	€ 481	€ 526	€ 564	€ 591	€ 606	€ 608	€ 596	€ 600
- Reinvestment		€ 233	€ 261	€ 293	€ 328	€ 367	€ 334	€ 281	€ 211	€ 126	€ 31	€ 35
FCFF		€ 133	€ 140	€ 147	€ 153	€ 159	€ 230	€ 310	€ 395	€ 482	€ 566	€ 565
Cost of capital		8.00%	8.00%	8.00%	8.00%	8.00%	7.90%	7.80%	7.70%	7.60%	7.50%	7.50%
PV(FCFF)		€ 123	€ 120	€ 117	€ 113	€ 108	€ 145	€ 181	€ 215	€ 244	€ 266	
Terminal value	€ 8,315											
PV(Terminal value)	€ 3,906											
PV (CF over next 10 years)	€ 1,631											
Value of operating assets =	€ 5,537											
- Debt	€ 623											
- Minority interests	€ 13											
+ Cash	€ 1,141											
Value of equity	€ 6,042											

Lower Prices +
Some selling
cost = Lower
operating
margin

Reinvestment
reflects
higher sales

The very
rich are
more
sensitive to
economic
conditions

And the world is full of feedback.. My Ferrari afterthought!



Alibaba, the Global Story (September 2014, just before IPO)

Alibaba is able to expand into overseas markets, allowing its revenues to grow 40% a year for the next 5 years. Its profit margins will come under pressure as it competes in foreign markets and it will need to reinvest more to grow.

	T12M	2012-13
Revenues	\$9,268	\$4,821
Operating Income	\$4,702	\$1,777
Effective tax rate	11.92%	
Operating Margin	50.73%	

Revenue growth of 40% a year for 5 years, tapering down to 2.63% in year 10

Pre-tax operating margin decreases to 30% over time & tax rate rises to 25%

Sales to capital ratio will be 1.50

Stable Growth
 $g = 2.41\%$
 Cost of capital = 8%
 ROC = 8%;
 Reinvestment Rate = $2.41\%/8\% = 30.125\%$

Terminal Value₁₀ = $17,567 / (.08 - 0.0241) = \$314,292$

	1	2	3	4	5	6	7	8	9	10
Revenue growth rate	40.00%	40.00%	40.00%	40.00%	40.00%	32.48%	24.96%	17.45%	9.93%	2.41%
Revenues	\$ 12,975	\$ 18,165	\$ 25,431	\$ 35,604	\$ 49,846	\$ 66,036	\$ 82,522	\$ 96,918	\$ 106,540	\$ 109,108
EBIT (Operating) margin	48.66%	46.58%	44.51%	42.44%	40.36%	38.29%	36.22%	34.15%	32.07%	30.00%
EBIT (Operating income)	\$ 6,313	\$ 8,462	\$ 11,320	\$ 15,110	\$ 20,120	\$ 25,287	\$ 29,888	\$ 33,094	\$ 34,171	\$ 32,732
Tax rate	11.92%	11.92%	11.92%	11.92%	11.92%	14.54%	17.15%	19.77%	22.38%	25.00%
EBIT(1-t)	\$ 5,561	\$ 7,453	\$ 9,970	\$ 13,308	\$ 17,721	\$ 21,611	\$ 24,762	\$ 26,552	\$ 26,522	\$ 24,549
- Reinvestment	\$ 2,471	\$ 3,460	\$ 4,844	\$ 6,782	\$ 9,494	\$ 10,794	\$ 10,990	\$ 9,598	\$ 6,415	\$ 1,712
FCFF	\$ 3,089	\$ 3,993	\$ 5,126	\$ 6,527	\$ 8,227	\$ 10,817	\$ 13,772	\$ 16,954	\$ 20,107	\$ 22,838

Term yr
 EBIT (1-t) \$25,141
 - Reinv 7,574
 FCFF 17,567

Operating assets \$ 202,186
 + Cash 9330
 - Debt 10068
 + Equity investments 2,087
 + Alipay provision 3,000
 + IPO Proceeds (est) 20,000
 - Options 696
 Value of equity 225,839
 Value per share \$92.52

Cost of capital = $9.05\% (.943) + 3.00\% (.057) = 8.70\%$

Cost of capital decreases to 8% from years 6-10

Cost of Equity
9.05%

Cost of Debt
4% (1-.25) = 3.00%

Weights
E = 94.3% D = 5.7%

Riskfree Rate:
Riskfree rate = 2.41%

Beta
1.092

Unlevered Beta: 1.044
(70% advertising, 30% online retailing)

D/E = 6.07%

ERP
6.08%

Country	Weight	ERP
China	60.00%	5.90%
Global	40.00%	6.35%
Total	100.00%	6.08%

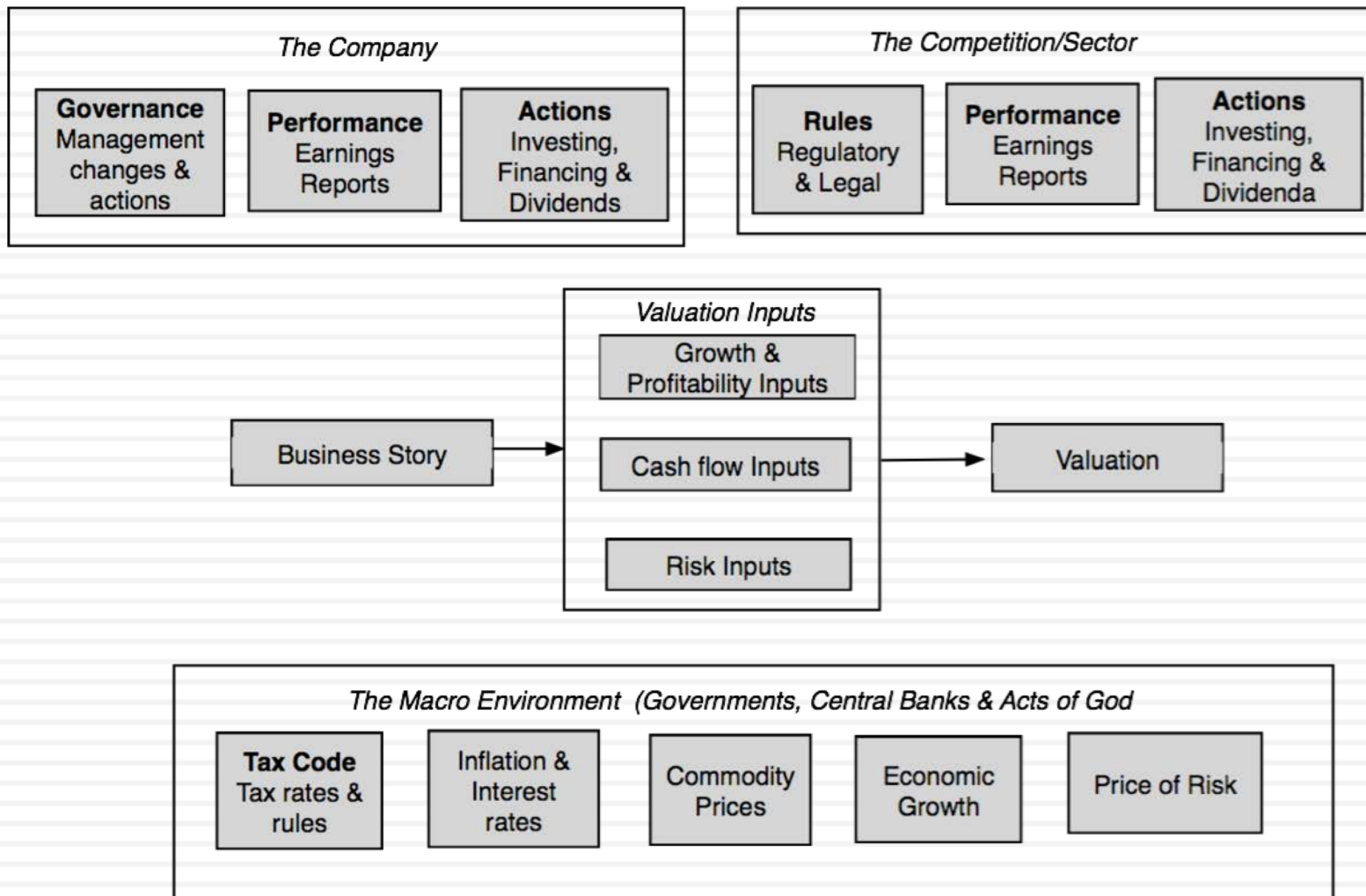
Alibaba will continue to be in two businesses, advertising and retailing, but the proportion of revenues from the rest of the globe will increase.

Narrative breaks, shifts & changes

“When my information changes, I alter my conclusions. What do you do, sir?”

Lord Keynes

Why narratives change



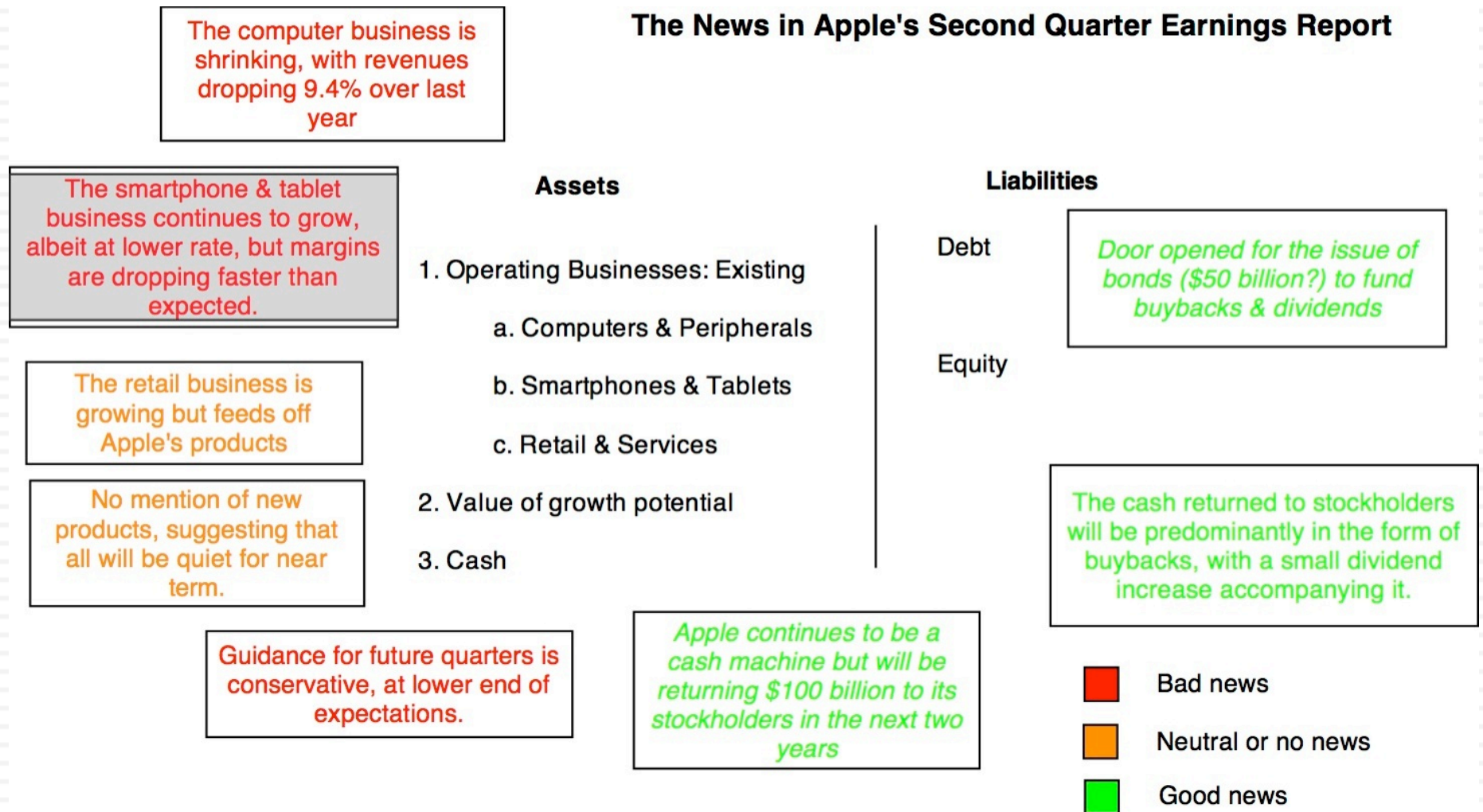
How narratives change

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Narrative Break/End	Narrative Shift	Narrative Change (Expansion or Contraction)
Events, external (legal, political or economic) or internal (management, competitive, default), that can cause the narrative to break or end.	Improvement or deterioration in initial business model, changing market size, market share and/or profitability.	Unexpected entry/success in a new market or unexpected exit/failure in an existing market.
Your valuation estimates (cash flows, risk, growth & value) are no longer operative	Your valuation estimates will have to be modified to reflect the new data about the company.	Valuation estimates have to be redone with new overall market potential and characteristics.
Estimate a probability that it will occur & consequences	Monte Carlo simulations or scenario analysis	Real Options

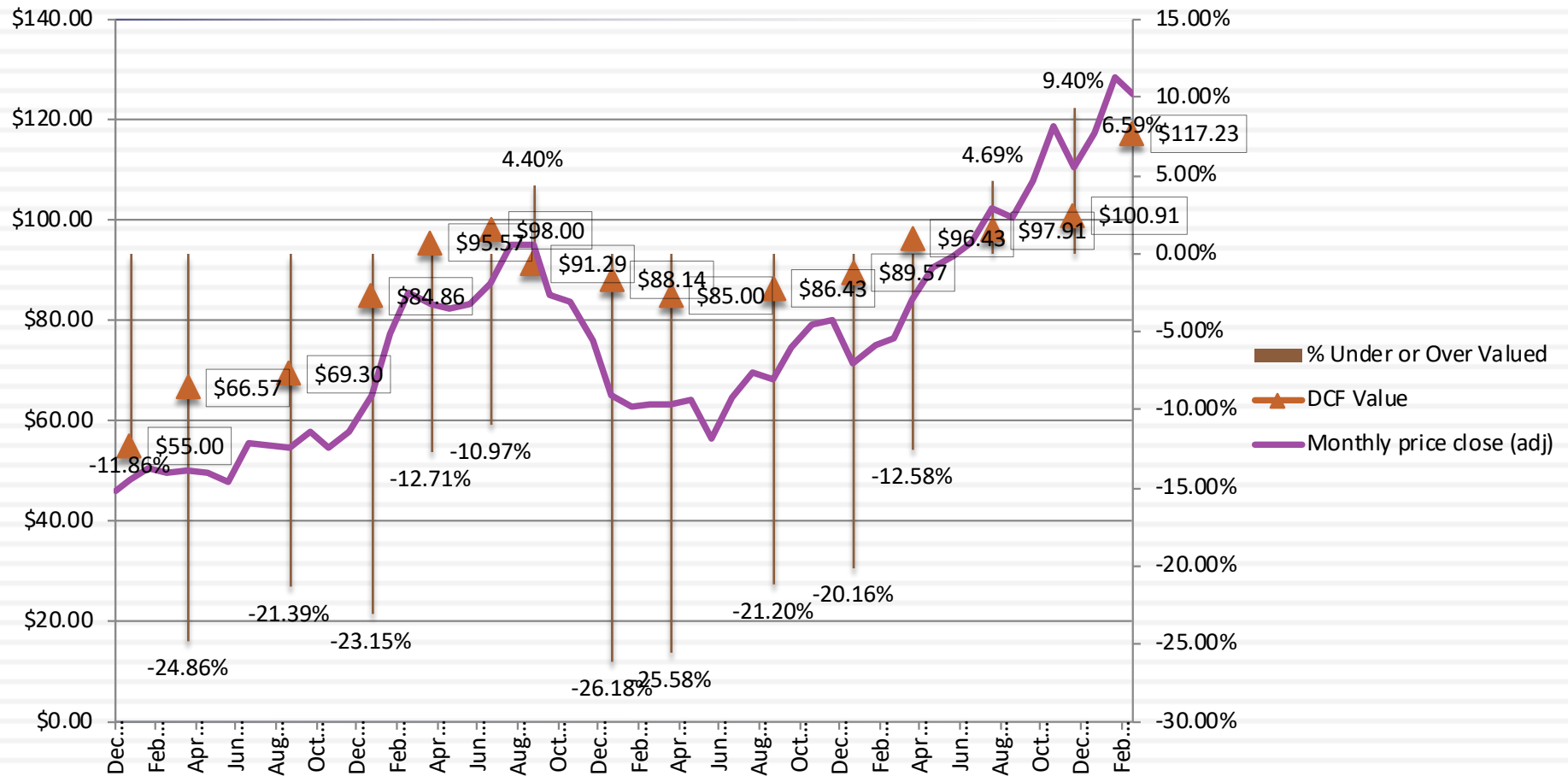
Earnings Reports and Stories: Apple's earnings report in October 2013

The News in Apple's Second Quarter Earnings Report



Sometimes your story does not change..

Apple, Price and Value - 2010 to 2015



And sometimes it does.. Facebook's Evolution

Report Date	Active Users	Mobile Active Users	% of revenue from Mobile	Net Income	Capital	T12m Sales/Capital
7/26/12	955	543	NR	(\$157)	\$3,515	1.23
10/23/12	1010	604	NR	(\$59)	\$4,252	1.09
1/30/13	1060	680	23.00%	\$64	\$4,120	1.24
5/1/13	1100	751	30.00%	\$219	\$4,272	1.28
7/24/13	1150	819	41.00%	(\$152)	\$3,948	1.55
10/30/13	1190	874	49.00%	\$425	\$4,007	1.71
1/29/14	1230	945	53.00%	\$523	\$4,258	1.85
4/23/14	1280	1010	59.00%	\$642	\$4,299	2.07
7/23/14	1320	1070	62.00%	\$791	\$4,543	2.20

Uber: The September 2015 Update

<i>Input</i>	<i>June 2014</i>	<i>September 2015</i>	<i>Rationale</i>
Total Market	\$100 billion; Urban car service	\$230 billion; Logistics	Market is broader, bigger & more global than I thought it would be. <u>Uber's</u> entry into delivery & moving businesses is now plausible, perhaps even probable.
Growth in market	Increase market size by 34%; CAGR of 6%.	Double market size; CAGR of 10.39%.	New customers being drawn to car sharing, with more diverse offerings.
Market Share	10% (Local Networking)	25% (Weak Global Networking)	Higher cost of entry will reduce competitors, but remaining competitors have access to capital & in Asia, the hometown advantage.
Slice of gross receipts	20% (Left at status quo)	15%	Increased competition will reduce car service company slice.
Operating margin	40% (Low cost model)	25% (Partial employee model)	Drivers will become partial employees, higher insurance and regulatory costs.
Cost of capital	12% (Ninth decile of US companies)	10% (75 th percentile of US companies)	Business model in place and substantial revenues.
Probability of failure	10%	0%	Enough cash on hand to find off threats to survival.
Value of equity	\$5.9 billion	\$23.4 billion	Value increased more than four fold.

Potential Market	Market size (in millions)
A1. Urban car service	\$100,000
A2. All car service	\$175,000
A3. Logistics	\$230,000
A4. Mobility Services	\$310,000

Growth Effect	CAGR (next 10 years)
B1. None	3.00%
B2. Increase market by 25%	5.32%
B3. Increase market size by 50%	7.26%
B4: Double market size	10.39%

Network Effects	Market Share
C1. No network effects	5%
C2. Weak local network effects	10%
C3. Strong local network effects	15%
C4. Weak global network effects	25%
C5. Strong global network effects	40%

Increases overall market to \$618 billion in year 10

	Base	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Assumptions
Overall market	\$230,000	\$253,897	\$280,277	\$309,398	\$341,544	\$377,031	\$416,204	\$459,448	\$507,184	\$559,881	\$618,052	A3 & B4
Share of market (gross)	4.71%	6.74%	8.77%	10.80%	12.83%	14.86%	16.89%	18.91%	20.94%	22.97%	25.00%	C4
Gross Billings	\$10,840	\$17,117	\$24,582	\$33,412	\$43,813	\$56,014	\$70,277	\$86,900	\$106,218	\$128,612	\$154,513	
Revenues as percent of gross	20.00%	19.50%	19.00%	18.50%	18.00%	17.50%	17.00%	16.50%	16.00%	15.50%	15.00%	D3
Annual Revenue	\$2,168	\$3,338	\$4,670	\$6,181	\$7,886	\$9,802	\$11,947	\$14,338	\$16,995	\$19,935	\$23,177	
Operating margin	-23.06%	-18.26%	-13.45%	-8.64%	-3.84%	0.97%	5.77%	10.58%	15.39%	20.19%	25.00%	E2
Operating Income	-\$500	-\$609	-\$628	-\$534	-\$303	\$95	\$690	\$1,517	\$2,615	\$4,026	\$5,794	
Effective tax rate	30.00%	31.00%	32.00%	33.00%	34.00%	35.00%	36.00%	37.00%	38.00%	39.00%	40.00%	
- Taxes	-\$150	-\$189	-\$201	-\$176	-\$103	\$33	\$248	\$561	\$994	\$1,570	\$2,318	
After-tax operating income	-\$350	-\$420	-\$427	-\$358	-\$200	\$62	\$442	\$956	\$1,621	\$2,456	\$3,477	
Sales/Capital Ratio		5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	F
- Reinvestment		\$234	\$267	\$302	\$341	\$383	\$429	\$478	\$531	\$588	\$648	
Free Cash Flow to the Firm		-\$654	-\$694	-\$660	-\$541	-\$322	\$13	\$478	\$1,090	\$1,868	\$2,828	
Terminal value											\$56,258	
Present value of FCFF		-\$595	-\$573	-\$496	-\$369	-\$200	\$7	\$248	\$520	\$822	\$1,152	
Present value of terminal value											\$22,914	
Cost of capital	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	9.60%	9.20%	8.80%	8.40%	8.00%	G1

PV of cash flows during next 10 years =	\$515	
PV of terminal value =	\$22,914	
Value of operating assets	\$23,429	
Probability of failure	0.00%	G2
Adjusted value of operating assets	\$23,429	
Less Debt	\$0	
Value of Equity	\$23,429	

Expense Profile	Operating Margin
E1: Independent contractor	40%
E2: Partial employee	25%
E3: Full employee	15%

Capital Intensity
F: Status Quo: Sales/Capital = 5

Competitive Advantages	Slice of Gross Receipts
D1. None	5%
D2. Weak	10%
D3. Semi-strong	15%
D4. Strong & Sustainable	20%

Risk Estimates

- G1. Cost of capital at 75th percentile of US companies = 10%
G2. Probability of failure in next 10 years= 0%

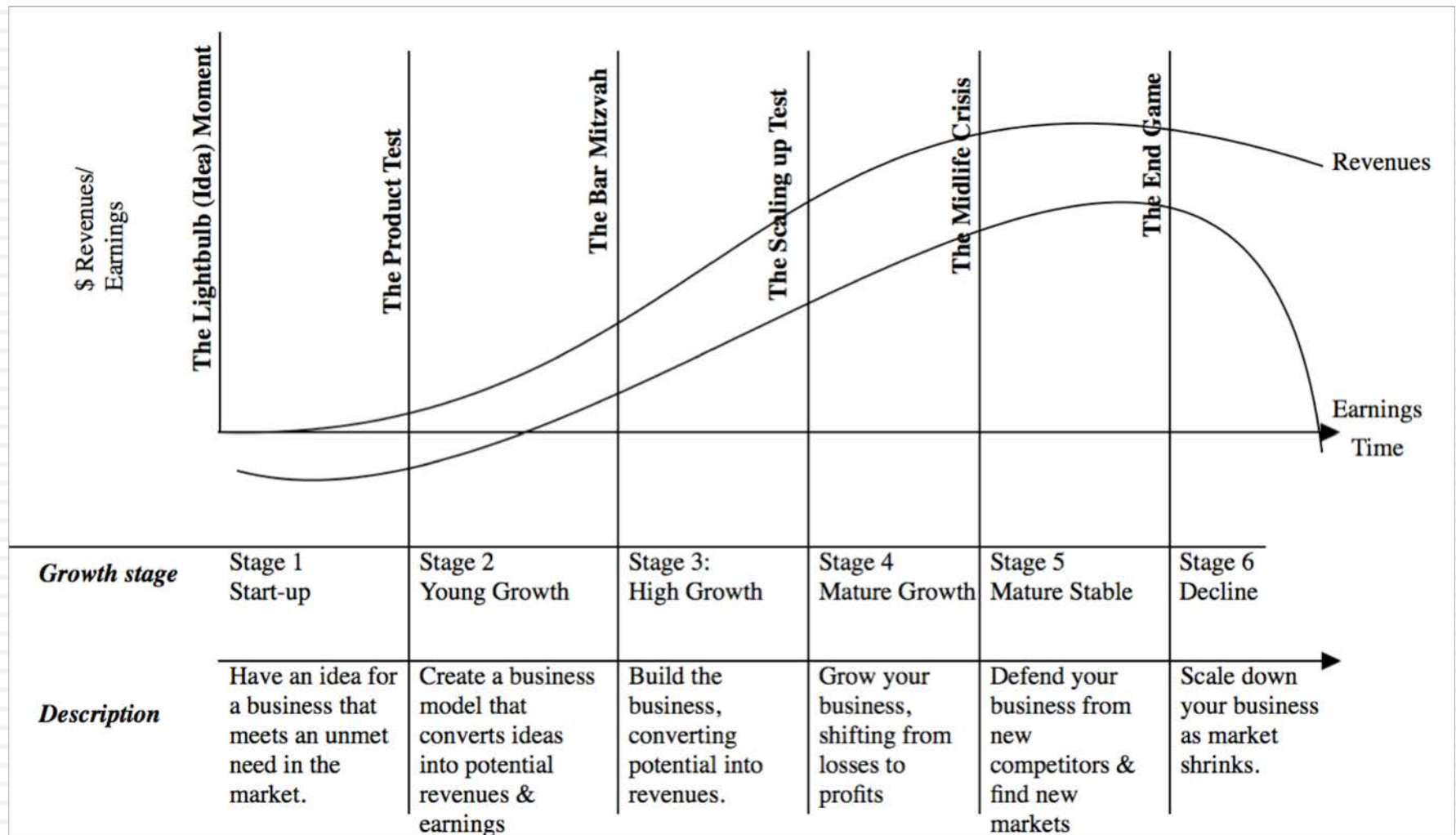
Uber Valuation: September 2015



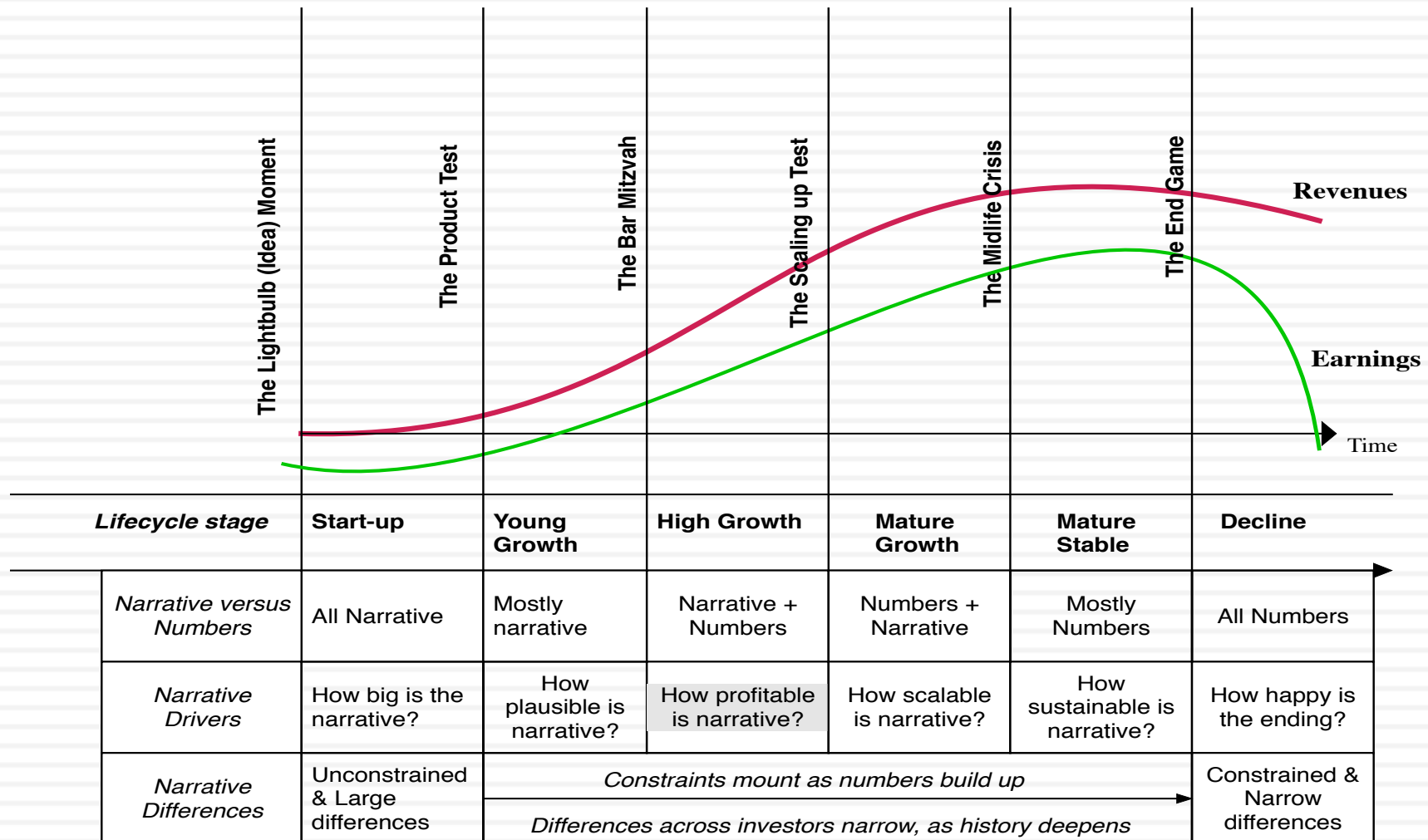
Managers: Narrative or Numbers?

“Management is, above all, a practice where art, science, and craft meet”

Introducing the corporate life cycle



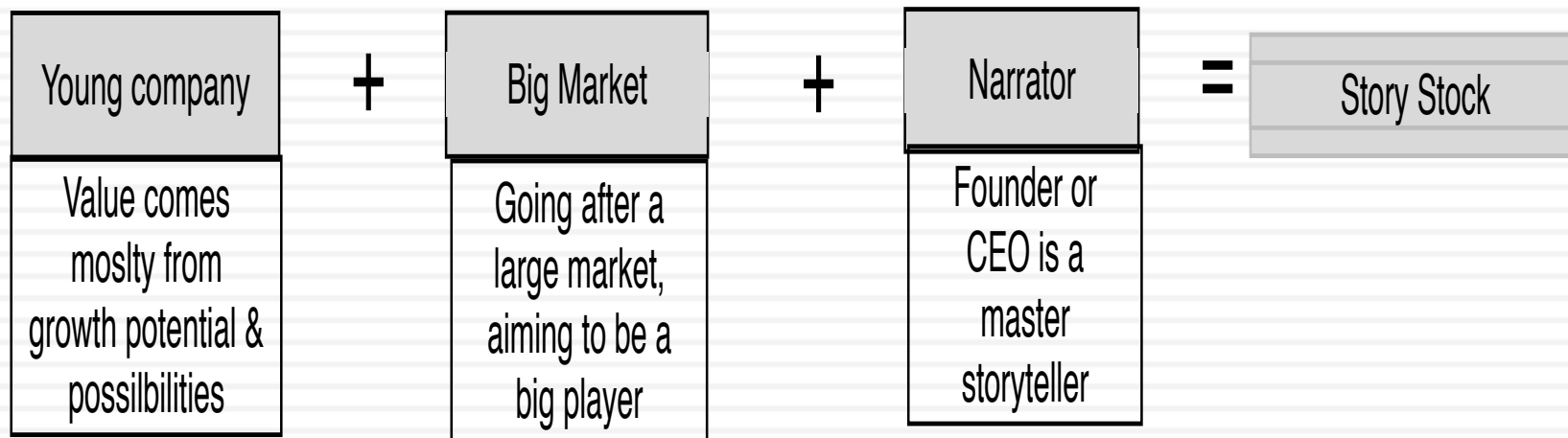
Connecting to narratives..



As companies age, the managerial imperative shifts..

- With young companies, you need dreamers & visionaries: Early in a company's life, when all you have are ideas and no clear business plan, it is all about the narrative. Not surprisingly, the most successful managers/investors at this stage are people who are stronger on narrative.
- As companies age, you need pragmatists and builders: As companies age, the emphasis shifts to numbers, partly because more of the value is determined by the narrative that has actually unfolded and partly because there are more numbers to focus on. The most successful managers/investors become people who can work with and around those numbers.

Some companies (usually young ones) are story stocks..



Tesla (July 2016)

The Story

Tesla is an auto/tech company looking towards the mass market. Its primary competitive advantages lies in superior technology & brand loyalty with a secondary advantage in styling. In terms of investment needs and risk, it is as much tech as auto company.

The Assumptions

	<i>Base year</i>	<i>Years 1-5</i>	<i>Years 6-10</i>		<i>After year 10</i>	<i>Link to story</i>
Revenues (a)	\$ 4,253	50.00%	25%→2.2%		1.47%	Mass market focus = \$80 billion in revenue
Operating margin (b)	-14.15%	-14.15%	→12.00%		12.00%	Tech superiority & brand = High margins
Tax rate	30.00%	30.00%	→30.00%		30.00%	Global marginal tax rate average
Reinvestment (c)		Sales to capital ratio : 2.24		RIR =	16.33%	Invest like an auto/tech company
Return on capital	-13.25%	Marginal ROIC =	30.14%		9.00%	In maturity,, has tech features
Cost of capital (d)		8.13%	→7.50%		7.50%	50% auto, 50% technology

The Cash Flows

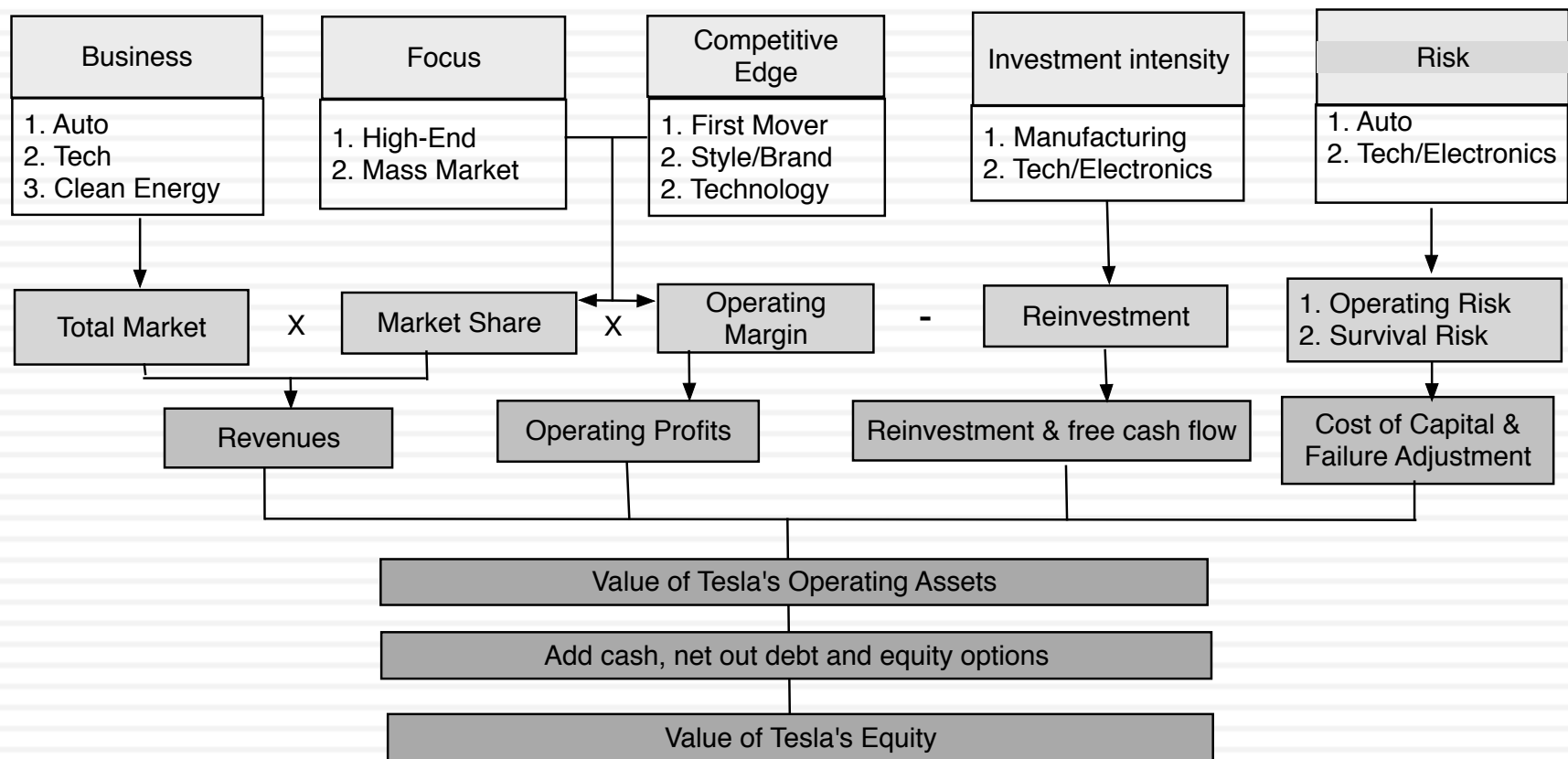
	<i>Revenues</i>	<i>Operating Margin</i>	<i>EBIT</i>	<i>EBIT (1-t)</i>	<i>Reinvestment</i>	<i>FCFF</i>
1	\$ 6,380	-11.54%	\$ (736)	\$ (736)	\$ 949	\$ (1,685)
2	\$ 9,570	-8.92%	\$ (854)	\$ (854)	\$ 1,424	\$ (2,278)
3	\$ 14,355	-6.31%	\$ (905)	\$ (905)	\$ 2,136	\$ (3,041)
4	\$ 21,532	-3.69%	\$ (795)	\$ (795)	\$ 3,204	\$ (3,999)
5	\$ 32,298	-1.08%	\$ (347)	\$ (347)	\$ 4,806	\$ (5,154)
6	\$ 45,312	1.54%	\$ 698	\$ 698	\$ 5,810	\$ (5,112)
7	\$ 59,172	4.15%	\$ 2,458	\$ 2,458	\$ 6,187	\$ (3,729)
8	\$ 71,528	6.77%	\$ 4,842	\$ 3,636	\$ 5,516	\$ (1,880)
9	\$ 79,522	9.38%	\$ 7,463	\$ 5,224	\$ 3,569	\$ 1,655
10	\$ 80,691	12.00%	\$ 9,683	\$ 6,778	\$ 522	\$ 6,256
Terminal year	\$ 81,877	12.00%	\$ 9,825	\$ 6,878	\$ 1,123	\$ 5,754

The Value

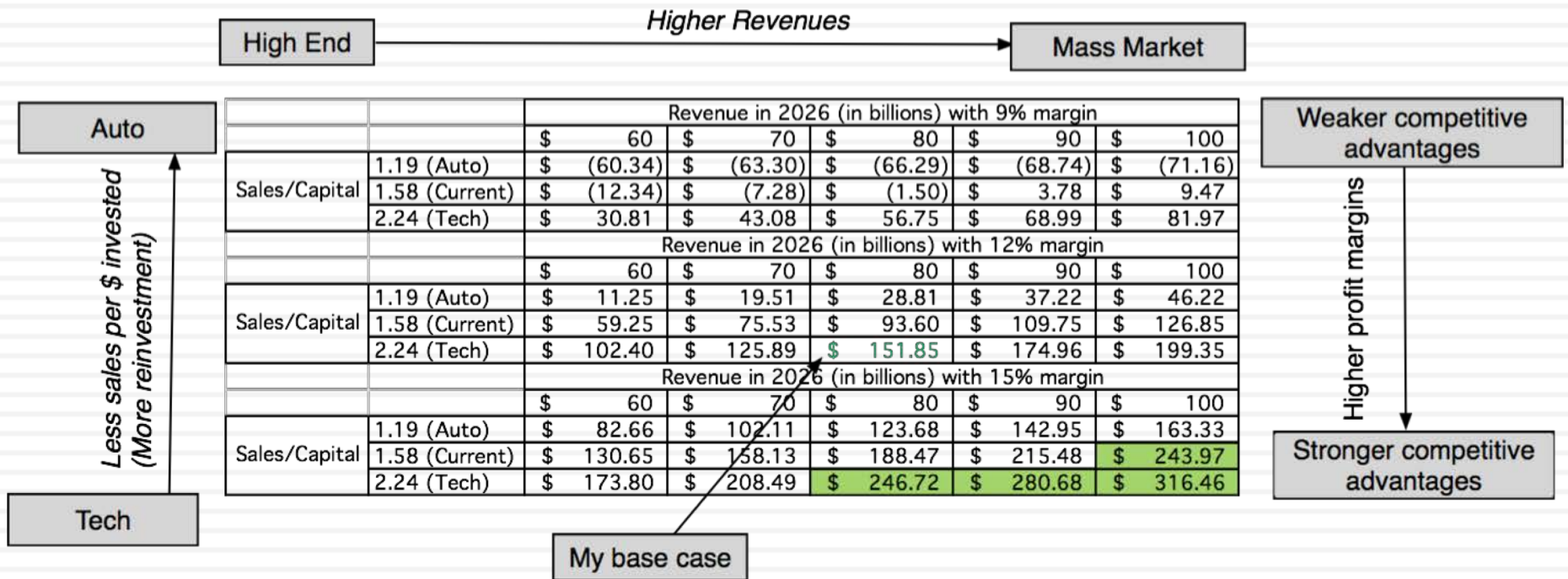
Terminal value	\$ 95,428		
PV(Terminal value)	\$ 44,454		
PV (CF over next 10 years)	\$ (14,963)		
Value of operating assets =	\$ 29,491		
Adjustment for distress	\$ 1,475	Probability of failure =	10.00%
- Debt & Mnority Interests	\$ 3,648		
+ Cash & Other Non-operating assets	\$ 1,442		
Value of equity	\$ 25,810		
- Value of equity options	\$ 3,446		
Number of shares	147.28		
Value per share	\$ 151.85	Stock was trading at =	\$221.00

Tesla is an example... Plausible story choices in 2016

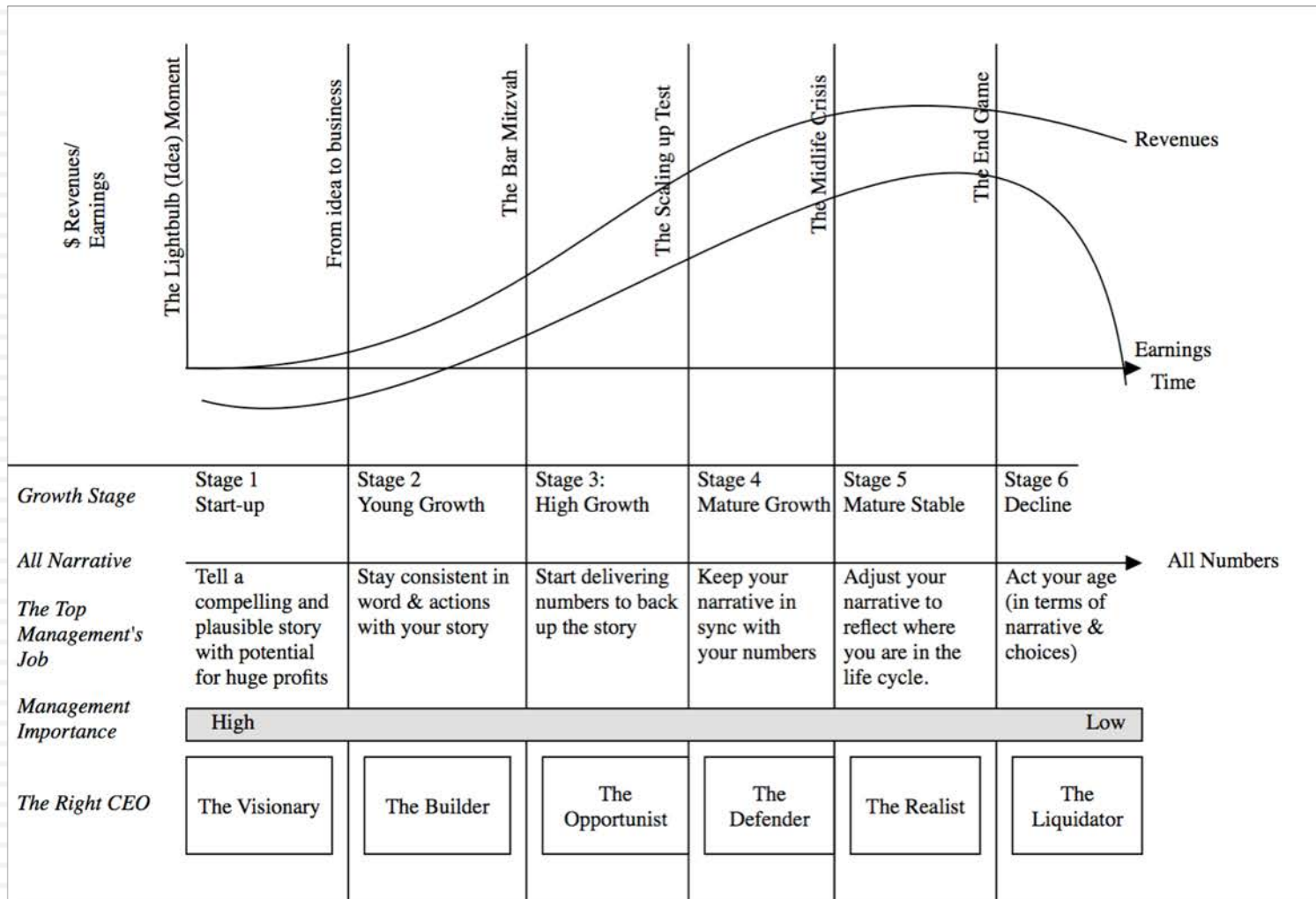
The Tesla Story Choices



And differing valuations..



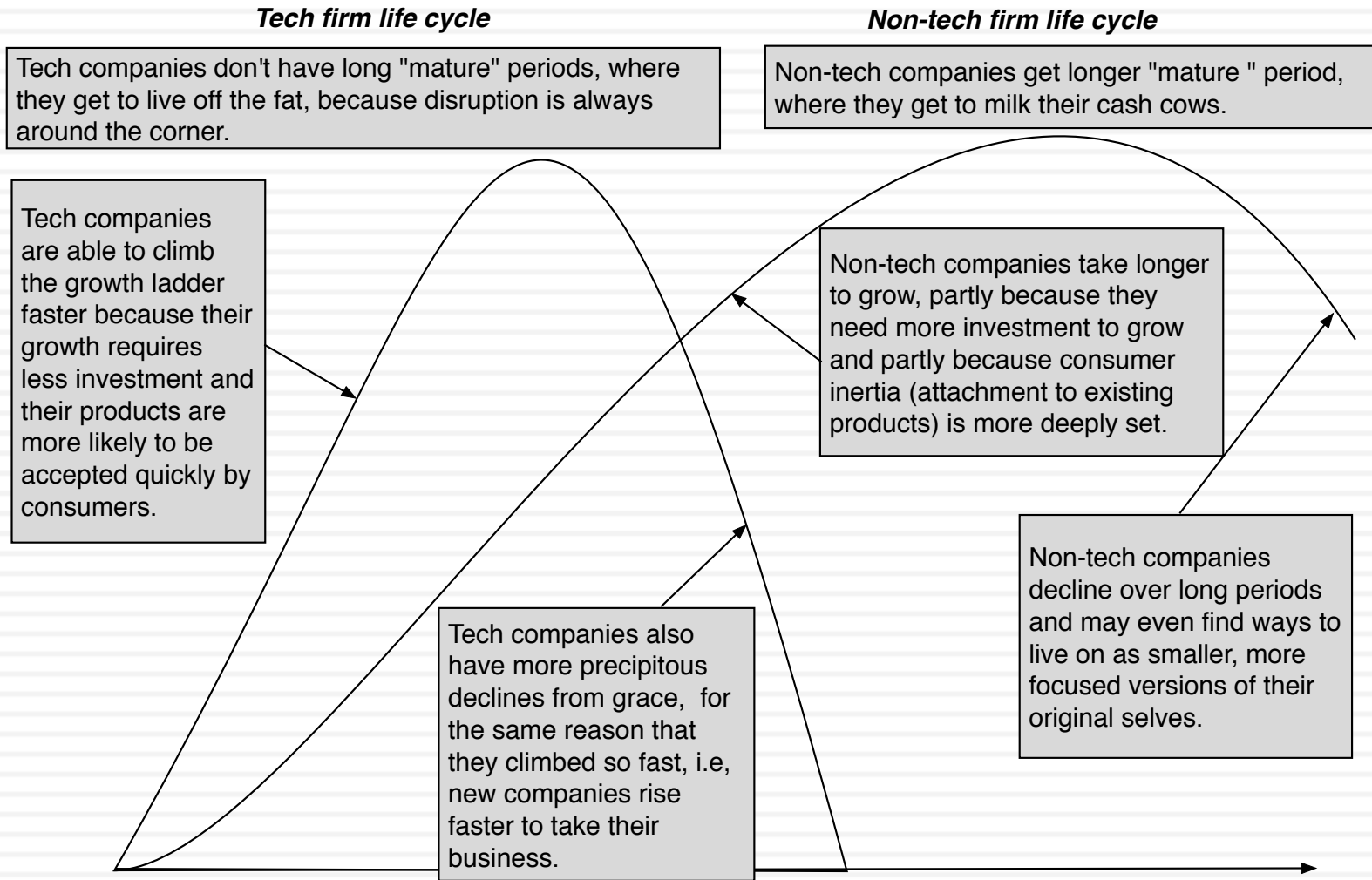
The Managerial Challenge



As emphasis shifts, managers and investors can resist, adapt or move on

- As young start-ups succeed and start moving into the growth, the managers who were instrumental in their success have three choices:
 - ▣ Adapt and adjust their focus to include numbers, without giving up their narrative.
 - ▣ Stay completely focused on narrative and ignore numbers.
 - ▣ Hand over control of the operating details of the company to a numbers person while handling the narrative part.
- ▣ If managers don't adapt to where their companies are in the life cycle, they can ruin these companies, if left in charge, or be pushed out of the companies, if investors have the power.

The Compressed Life Cycle?



The Consequences

- When life cycles were long, stretching over decades, time and aging allowed for smoother transitions, since CEOs aged with their companies, and moved on.
- As life cycles shorten, managers are far more likely to find their companies changing under them so quickly that they can no longer adapt.
 - To be a long tenured CEO, you will either need to be versatile and/or be able to delegate the work that you cannot do to people you empower and trust.
 - If these transitions are not well managed, there will be far more turnover in top management and activist investing will flourish.




Investors: Narrative or Numbers?

“Show me the money”

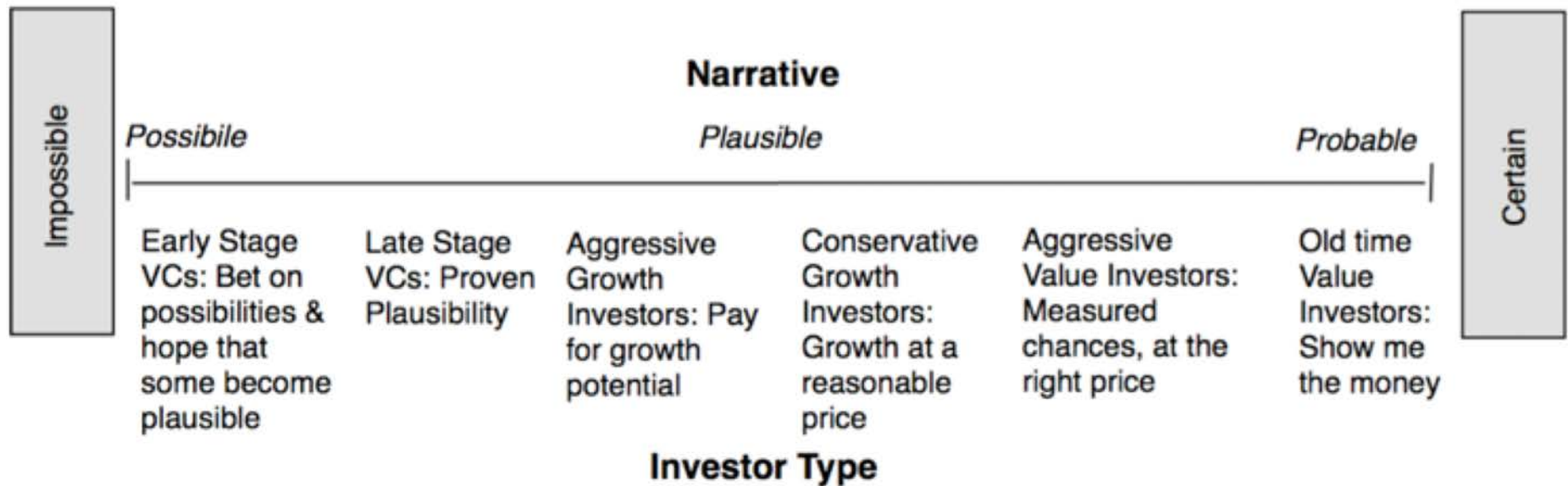
Investment Philosophy: Contrasts

- There is a sharp disagreement among investors as to what makes an investor successful.
 - At the one end are those from the old time value investing school, who believe that investing should always be about the numbers, often reflecting assets that a company already owns. Everything else (growth, business stories) are viewed as speculation.
 - At the other are those that believe that investment success comes from getting stories (both macro and micro) right, not from grinding through the numbers for every company.
- Neither side sees much merit in the other side's argument.

The Investor Challenge

Growth stage	<i>Stage 1 Start-up</i>	<i>Stage 2 Young Growth</i>	<i>Stage 3: High Growth</i>	<i>Stage 4 & 5 Mature Stable</i>	<i>Stage 6 Decline</i>
Key Questions	Is there a market for the product or service? How big is that market? Will you survive?	Do people use your product or service? How much do they like it?	Will people pay for the product or service? Can you scale up, i.e., grow as you get bigger?	Can you make money of the product and service and sustain profitability in the face of competition?	What will you get if you sell your assets? How do you plan to return cash flows to your investors?
Pricing Metrics & Measures	Market size, Cash on hand, Access to capital	Number of users, User intensity (EV/User)	User engagement with model, Revenues (EV/Sales)	Earnings levels and growth (PE, EV/EBIT)	Cash flows, Payout & Debt servicing (PBV, EV/EBITDA)
Narrative vs Numbers	Mostly or all narrative	More narrative than numbers	Mix of narrative & numbers	More numbers than narrative	Mostly or all numbers
Value Drivers	Total market size, Market Share & Target Margin	Revenue Growth (and its drivers)	Revenue Growth & Reinvestment	Operating margins and Return on capital	Dividends/Cash Returns & Debt ratios
Dangers	<i>Macro delusions</i> , where companies are collectively overpriced, given market size.	<i>Value distractions</i> , with focus on wrong revenue drivers.	<i>Growth illusions</i> , with failure to factor in the cost of growth.	<i>Disruption Denial</i> , with failure to see threats to sustainable profits.	<i>Liquidation leakage</i> , with unrealistic assumptions about what others will pay for liquidated assets.
Transitions					
	<i>Potential to Product</i>	<i>Product to Revenues</i>	<i>Revenues to Profits</i>	<i>Profits to Cash flows</i>	

Investment Philosophies & Narratives



There is no one pathway to investing nirvana..

- Successful Value investors
 - ▣ Work primarily with numbers (financial ratios, pricing metrics)
 - ▣ Will tend to invest in mature companies with stable and clear stories
- Successful Growth investors
 - ▣ Make their investments primarily based upon stories
 - ▣ Will tend to invest in companies with big and expansive stories that pass the plausibility test.
- Both sides will view the other side as deluded, but they will both be better at what they do, if they can work on their weak sides.



The End

“There is no real ending. It’s just the place where you stop the story.”