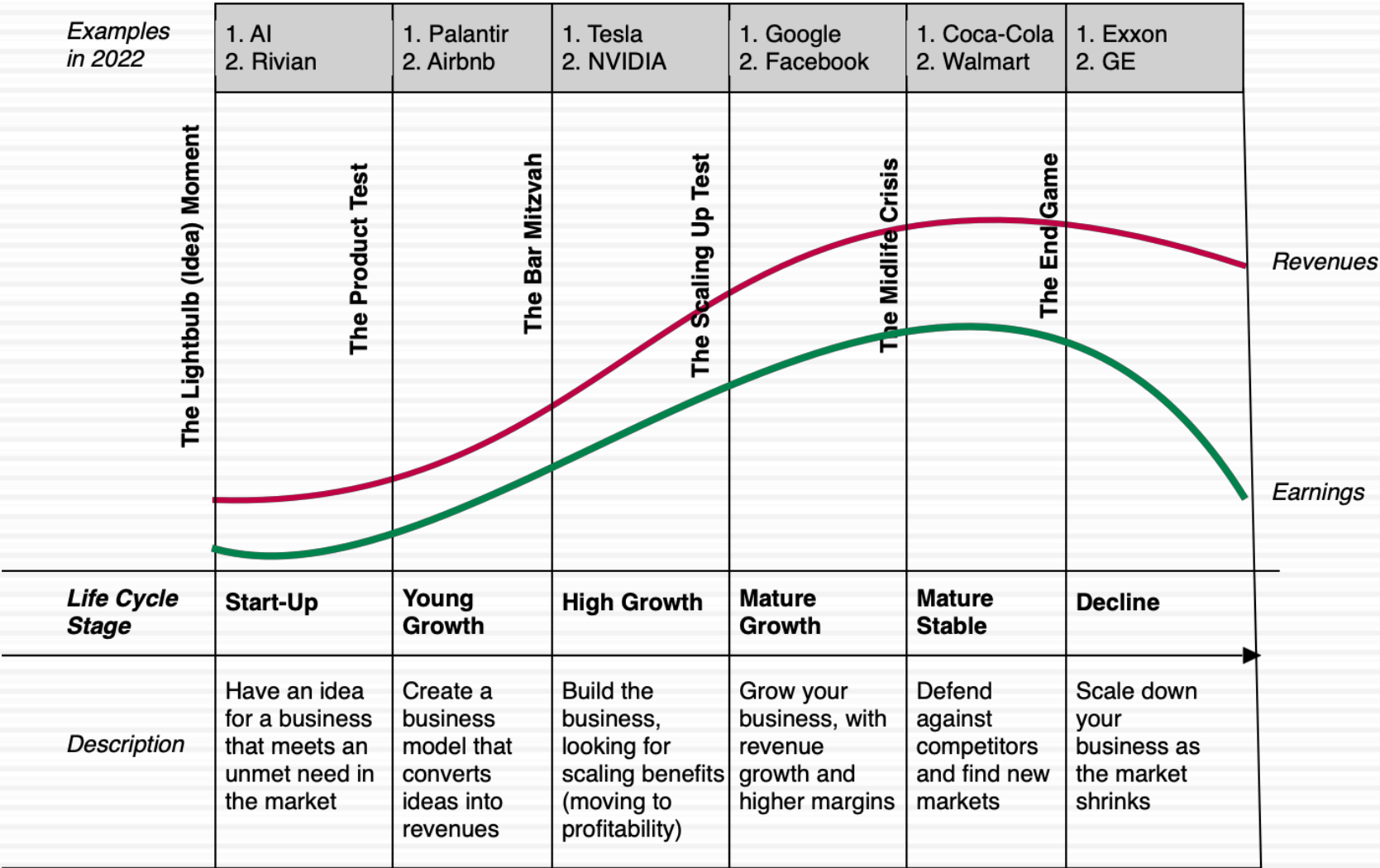




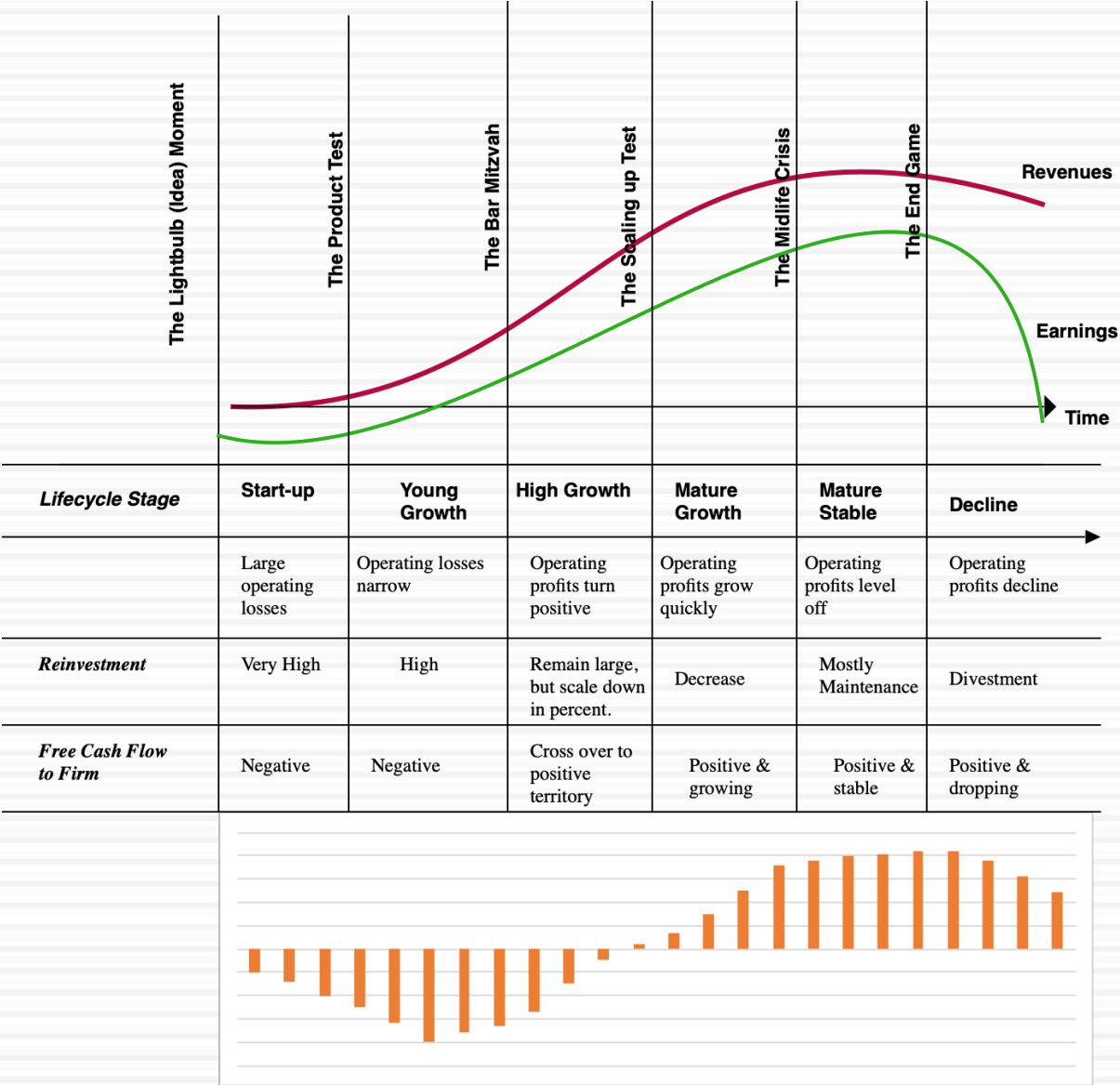
THE CORPORATE LIFE  
CYCLE: GROWING UP IS  
HARD TO DO!

Aswath Damodaran

# The Corporate Life Cycle



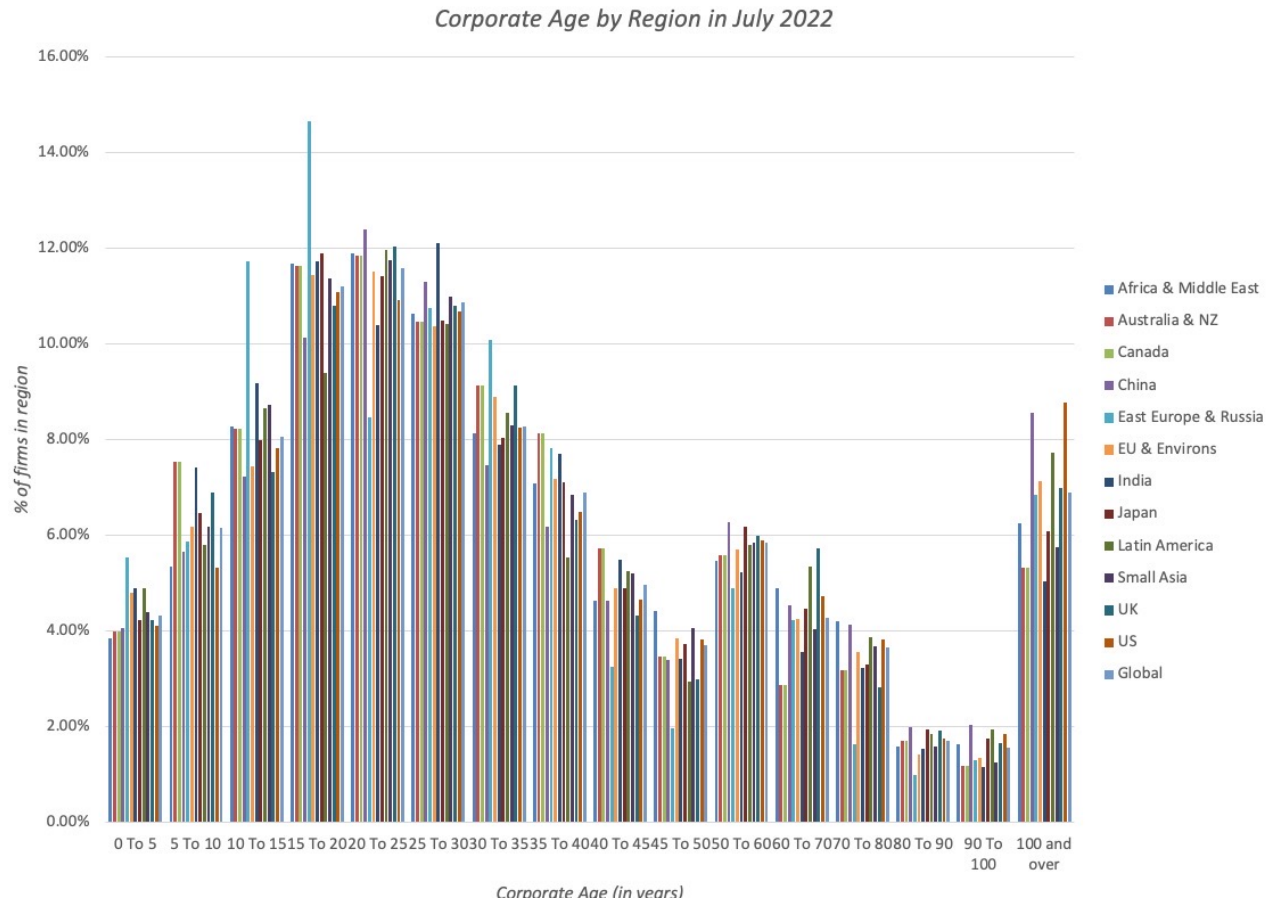
# The Life Cycle in earnings and cash flows



# Chronological Age: Growth and Margin Statistics

decile(Age)	# firms	Revenue Growth Rate (CAGR over last 3 years)				Operating Margin			
		First Quartile	<b>Median</b>	Third Quartile	% with negative growth	First Quartile	<b>Median</b>	Third Quartile	% with negative margins
Bottom decile	4,026	-4.86%	<b>18.16%</b>	72.42%	14.80%	-176.76%	<b>-3.29%</b>	12.22%	<b>54.91%</b>
2nd decile	4,164	-6.00%	<b>13.58%</b>	41.46%	25.55%	-53.00%	<b>0.00%</b>	13.77%	<b>48.17%</b>
3rd decile	4,930	-7.18%	<b>8.88%</b>	26.08%	28.86%	-15.02%	<b>4.28%</b>	15.61%	<b>37.39%</b>
4th decile	4,098	-4.55%	<b>8.58%</b>	21.60%	29.77%	-5.30%	<b>4.95%</b>	14.04%	<b>31.63%</b>
5th decile	4,785	-6.01%	<b>6.19%</b>	17.61%	32.18%	-0.48%	<b>5.76%</b>	14.91%	<b>27.79%</b>
6th decile	4,029	-7.11%	<b>4.15%</b>	15.51%	35.84%	0.00%	<b>5.79%</b>	13.98%	<b>25.83%</b>
7th decile	4,653	-7.04%	<b>3.74%</b>	14.20%	35.63%	0.00%	<b>5.48%</b>	13.54%	<b>25.08%</b>
8th decile	4,414	-6.22%	<b>2.19%</b>	9.87%	40.17%	0.40%	<b>6.20%</b>	13.42%	<b>20.93%</b>
9th decile	4,582	-5.24%	<b>1.32%</b>	8.38%	42.12%	1.21%	<b>6.03%</b>	12.57%	<b>17.03%</b>
Top decile	4,473	-3.97%	<b>1.57%</b>	7.33%	40.73%	0.00%	<b>5.86%</b>	12.37%	<b>12.22%</b>

# Chronological Age by Region



	Africa & Middle East	Australia & NZ	Canada	China	East Europe & Russia	EU & Environs	India	Japan	Latin America	Small Asia	UK	US	Global
Average	38.87	32.44	31.52	27.96	38.29	49.51	35.88	58.74	48.43	35.32	45.79	38.54	39.00
1st Quartile	19.00	15.00	14.00	18.00	18.00	18.00	18.00	25.00	18.00	20.00	15.00	11.00	17.00
Median	32.00	23.00	25.00	24.00	28.00	32.00	31.00	54.00	37.00	31.00	26.00	25.00	29.00
3rd Quartile	49.00	38.00	38.00	30.00	47.00	62.00	43.00	81.00	69.00	46.00	47.75	44.00	48.00

# Sector and Age

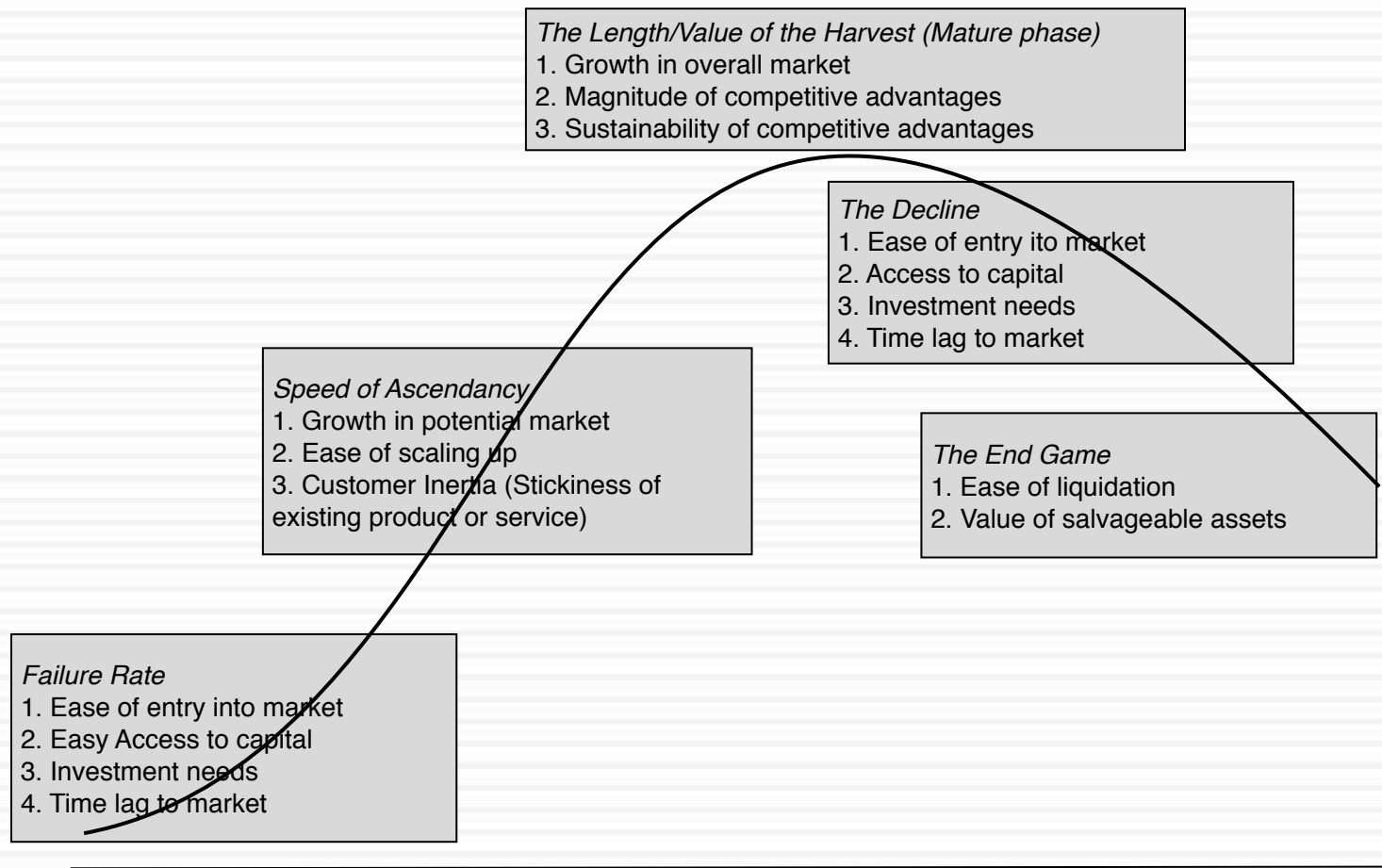
Primary Sector	# firms	Median Age	Revenue Growth Rate (CAGR over last 3 years)				Operating Margin			
			First Quartile	Median	Third Quartile	% with negative growth	First Quartile	Median	Third Quartile	% with negative margins
Communication Services	2,223	23	-10.76%	1.92%	16.98%	40.40%	-13.06%	4.68%	14.59%	37.22%
Consumer Discretionary	6,277	34	-11.29%	0.37%	11.37%	45.45%	-3.68%	4.16%	10.10%	32.10%
Consumer Staples	3,041	38	-3.99%	3.93%	12.66%	32.65%	0.39%	4.87%	11.03%	23.54%
Energy	1,522	25	-12.03%	0.18%	14.34%	40.47%	-10.34%	4.19%	22.19%	34.64%
Financials	5,646	28	-3.29%	6.90%	18.74%	24.35%	0.00%	0.00%	10.27%	21.94%
Health Care	4,670	21	-1.74%	10.42%	34.55%	22.36%	-209.09%	-0.64%	13.89%	50.52%
Industrials	8,288	35	-5.97%	2.98%	14.45%	37.52%	0.27%	5.57%	11.63%	24.21%
Information Technology	6,246	25	-1.87%	8.47%	22.19%	26.48%	-6.52%	4.96%	12.66%	32.33%
Materials	6,345	29	-3.81%	5.25%	16.24%	24.37%	1.34%	7.69%	14.55%	22.21%
Real Estate	2,728	28	-12.02%	1.81%	16.06%	41.39%	5.47%	22.69%	52.20%	19.14%
Utilities	910	27	-2.13%	4.22%	14.44%	30.66%	4.64%	14.96%	27.90%	15.16%
Total	47,907	29	-5.75%	4.44%	17.04%	32.35%	-1.79%	5.07%	13.74%	29.29%

# Would you rather be young or old?

- As a business, where in the life cycle would you most like to be?
  - a. A Start up
  - b. A Young, Growth Company
  - c. An Established Growth Company
  - d. A Mature Growth Company
  - e. A Mature Company
  - f. A Declining Company
  
- Assuming you are a business, where in the life cycle are you currently?
  - a. A Start up
  - b. A Young, Growth Company
  - c. An Established Growth Company
  - d. A Mature Growth Company
  - e. A Mature Company
  - f. A Declining Company

# The determinants of the life cycle

## The Corporate Life Cycle: Drivers and Determinants





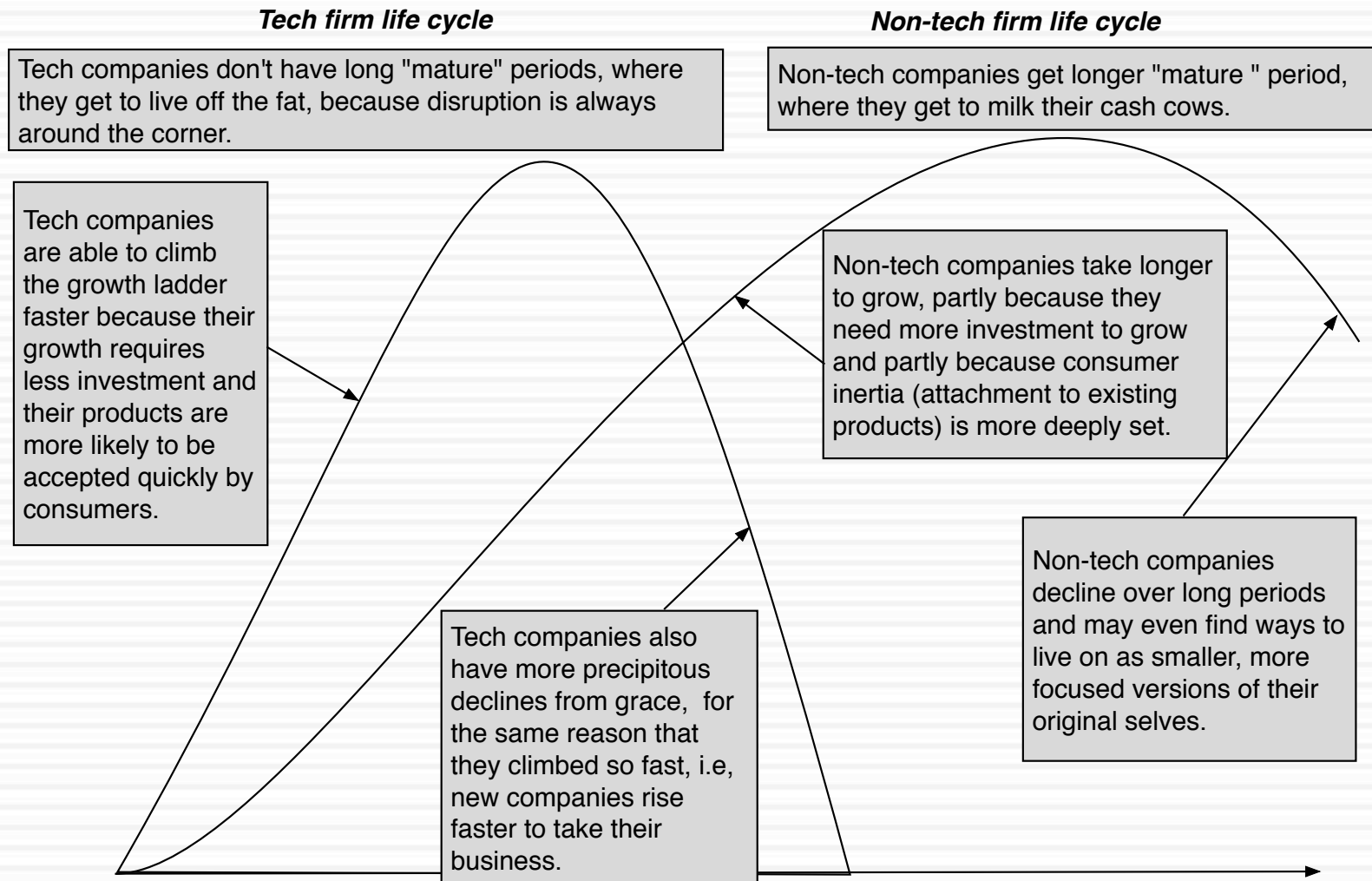
# Tech versus Non-tech companies

- Drawing the line between tech and non tech companies is getting more and more difficult. The solution may be to think of technology on a continuum.
- There are two reasons the classifications matter:
  - Equity research analysts and portfolio managers still work in sector silos, with tunnel vision of anything that happens outside these silos. Where a company like Amazon is placed can make a difference in how it is analyzed.
  - Pricing is often done relative to the sector that investors decide to put a company into.

# The defining characteristics of the tech business..

1. Scaling up is easy: Tech companies often operate in businesses where entry is not restricted, the up front investment is minimal and scaling up is easy.
2. Holding on is tough: Once tech companies reach the mature phase, they don't get to have long harvest periods. Their competitive advantages are fleeting and quickly deplete.
3. Decline is rapid: The same forces that allow technology companies to grow, i.e., unrestricted entry, ease of scaling up and customer switching, also make them vulnerable to new entrants seeking to take their business away from them.
4. And there is little left in the end game: Unlike other businesses, which accumulate physical assets as they grow and thus have a liquidation potential, with technology companies, there is little of substance to fall back, once earnings power is exhausted.

# Tech versus Non-tech life cycles





# Accounting versus Finance

# Accounting and Financial Balance Sheets

*Accounting Balance Sheet*

<b>Assets</b>		<b>Liabilities</b>	
Long Lived Real Assets	Fixed Assets	Current Liabilities	Short-term liabilities of the firm
Short-lived Assets	Current Assets	Debt	Debt obligations of firm
Investments in securities & assets of other firms	Financial Investments	Other Liabilities	Other long-term obligations
Assets which are not physical, like patents & trademarks	Intangible Assets	Equity	Equity investment in firm

*A Financial Balance Sheet*

<b>Assets</b>		<b>Liabilities</b>	
Existing Investments Generate cashflows today	Investments already made	Debt	Borrowed money
Expected Value that will be created by future investments	Investments yet to be made	Equity	Owner's funds

*Variant 1: You estimate the values of assets*

*Variant 2: You let the market estimate it for your*

# Kraft Heinz: Balance Sheet in December 2021

The Kraft Heinz Company  
Consolidated Balance Sheets  
(in millions, except per share data)

	December 25, 2021	December 26, 2020
<b>ASSETS</b>		
Cash and cash equivalents	\$ 3,445	\$ 3,417
Trade receivables (net of allowances of \$48 at December 25, 2021 and \$48 at December 26, 2020)	1,957	2,063
Inventories	2,729	2,773
Prepaid expenses	136	132
Other current assets	716	574
Assets held for sale	11	1,863
Total current assets	8,994	10,822
Property, plant and equipment, net	6,806	6,876
Goodwill	31,296	33,089
Intangible assets, net	43,542	46,667
Other non-current assets	2,756	2,376
<b>TOTAL ASSETS</b>	<b>\$ 93,394</b>	<b>\$ 99,830</b>
<b>LIABILITIES AND EQUITY</b>		
Commercial paper and other short-term debt	\$ 14	\$ 6
Current portion of long-term debt	740	230
Trade payables	4,753	4,304
Accrued marketing	804	946
Interest payable	268	358
Income taxes payable	541	114
Other current liabilities	1,944	2,086
Liabilities held for sale	—	17
Total current liabilities	9,064	8,061
Long-term debt	21,061	28,070
Deferred income taxes	10,536	11,462
Accrued postemployment costs	205	243
Long-term deferred income	1,534	6
Other non-current liabilities	1,542	1,745
<b>TOTAL LIABILITIES</b>	<b>43,942</b>	<b>49,587</b>
Commitments and Contingencies (Note 16)		
Redeemable noncontrolling interest	4	—
Equity:		
Common stock, \$0.01 par value (5,000 shares authorized; 1,235 shares issued and 1,224 shares outstanding at December 25, 2021; 1,228 shares issued and 1,223 shares outstanding at December 26, 2020)	12	12
Additional paid-in capital	53,379	55,096
Retained earnings/(deficit)	(1,682)	(2,694)
Accumulated other comprehensive income/(losses)	(1,824)	(1,967)
Treasury stock, at cost (11 shares at December 25, 2021 and 5 shares at December 26, 2020)	(587)	(344)
Total shareholders' equity	49,298	50,103
Noncontrolling interest	150	140
<b>TOTAL EQUITY</b>	<b>49,448</b>	<b>50,243</b>
<b>TOTAL LIABILITIES AND EQUITY</b>	<b>\$ 93,394</b>	<b>\$ 99,830</b>

# Kraft Heinz: Financial Balance Sheet

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## *A Market Balance Sheet*

<i>Assets</i>		<i>Liabilities &amp; Equity</i>	
Assets in Place	\$ 51,900	Debt	\$ 28,306
Growth Assets	\$ 25,854	Equity	\$ 49,448
Total Assets	\$ 77,754	Total Capital	\$ 77,754

$$\begin{aligned}
 & \text{Assets in Place} \\
 &= \frac{\text{After - tax Operating Income}}{\text{Cost of Capital}} \\
 &= \frac{\$3,460 (1 - .25)}{.05}
 \end{aligned}$$

**Market Cap**

# Zoom: Balance Sheet in December 2021

**ZOOM VIDEO COMMUNICATIONS, INC.**  
**CONSOLIDATED BALANCE SHEETS**  
(in thousands, except share and per share data)

	As of January 31,	
	2021	2020
<b>Assets</b>		
Current assets:		
Cash and cash equivalents	\$ 2,240,303	\$ 283,134
Marketable securities	2,004,410	572,060
Accounts receivable, net of allowances of \$36,844 and \$7,634 as of January 31, 2021 and 2020, respectively	294,703	120,435
Deferred contract acquisition costs, current	136,630	44,885
Prepaid expenses and other current assets	116,819	75,008
Total current assets	4,792,865	1,095,522
Deferred contract acquisition costs, noncurrent	157,262	46,245
Property and equipment, net	149,924	57,138
Operating lease right-of-use assets	97,649	68,608
Goodwill	24,340	—
Other assets, noncurrent	75,953	22,332
<b>Total assets</b>	<b>\$ 5,297,993</b>	<b>\$ 1,289,845</b>
<b>Liabilities and stockholders' equity</b>		
Current liabilities:		
Accounts payable	\$ 8,664	\$ 1,596
Accrued expenses and other current liabilities	393,018	122,692
Deferred revenue, current	858,284	209,542
Total current liabilities	1,259,966	333,830
Deferred revenue, noncurrent	25,211	20,994
Operating lease liabilities, noncurrent	90,415	64,792
Other liabilities, noncurrent	61,634	36,286
<b>Total liabilities</b>	<b>1,437,226</b>	<b>455,902</b>
Commitments and contingencies (Note 8)		
Stockholders' equity:		
Preferred stock, \$0.001 par value per share, 200,000,000 shares authorized as of January 31, 2021 and 2020; zero shares issued and outstanding as of January 31, 2021 and 2020	—	—
Common stock, \$0.001 par value per share, 2,000,000,000 Class A shares authorized as of January 31, 2021 and 2020; 215,737,924 and 123,391,114 shares issued and outstanding as of January 31, 2021 and 2020, respectively; 300,000,000 Class B shares authorized as of January 31, 2021 and 2020; 77,811,299 and 155,336,747 shares issued and outstanding as of January 31, 2021 and 2020, respectively	292	277
Additional paid-in capital	3,187,168	832,705
Accumulated other comprehensive income	839	809
Retained earnings	672,468	152
<b>Total stockholders' equity</b>	<b>3,860,767</b>	<b>833,943</b>
<b>Total liabilities and stockholders' equity</b>	<b>\$ 5,297,993</b>	<b>\$ 1,289,845</b>



# Zoom: Financial Balance Sheet

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## *A Market Balance Sheet*

Assets		Liabilities & Equity	
Assets in Place	\$ 9,975	Debt	\$ 90
Growth Assets	\$ 20,595	Equity	\$ 30,480
Total Assets	\$ 30,570	Total Capital	\$ 30,570

$$\begin{aligned}
 & \text{Assets in Place} \\
 &= \frac{\text{After-tax Operating Income}}{\text{Cost of Capital}} \\
 &= \frac{\$1064 (1 - .25)}{.08}
 \end{aligned}$$

**Market Cap**

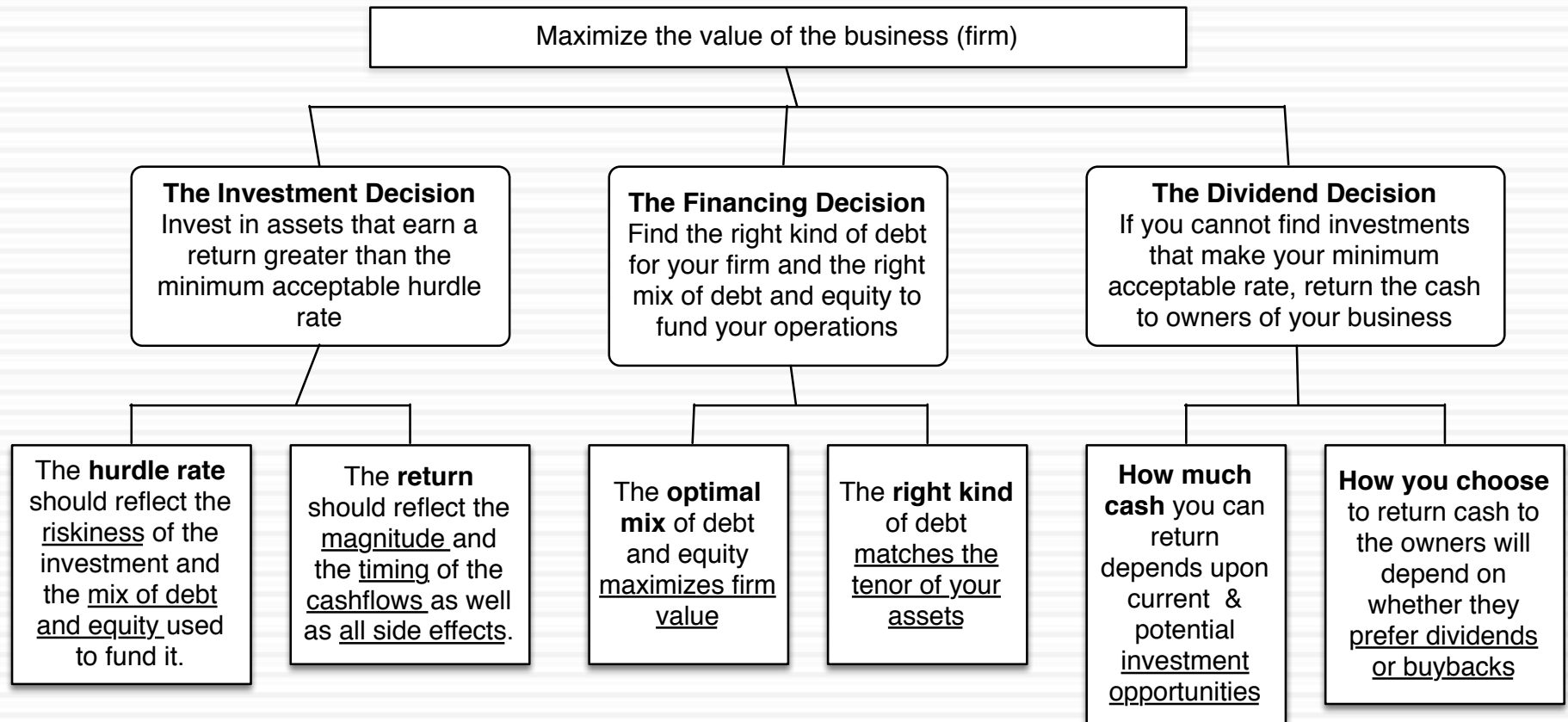
# The Bottom Line

- Accounting statements get less and less useful if you are looking earlier in the life cycle, since accountants have neither a history to record nor an operating business to describe.
- As companies age, balance sheets mean more but they also become more cluttered, since they carry the legacy of “accounting” fixes and choices. Meaningless assets start to populate the balance sheet and meaningless liabilities are often created to offset them.
  - Balance sheet based valuation is useless with young companies. It is most useful in mature companies without accounting clutter.
  - Comparing price to book value, a commonly used value investing metric, may find you cheap firms and lead you away from expensive firms, or perhaps just load up your portfolio with older firms and steer you away from young firms.
- Fair value accounting is destined for failure everywhere, because you cannot capture growth assets fully, no matter how creative you get, and creativity is not an accounting strong point.

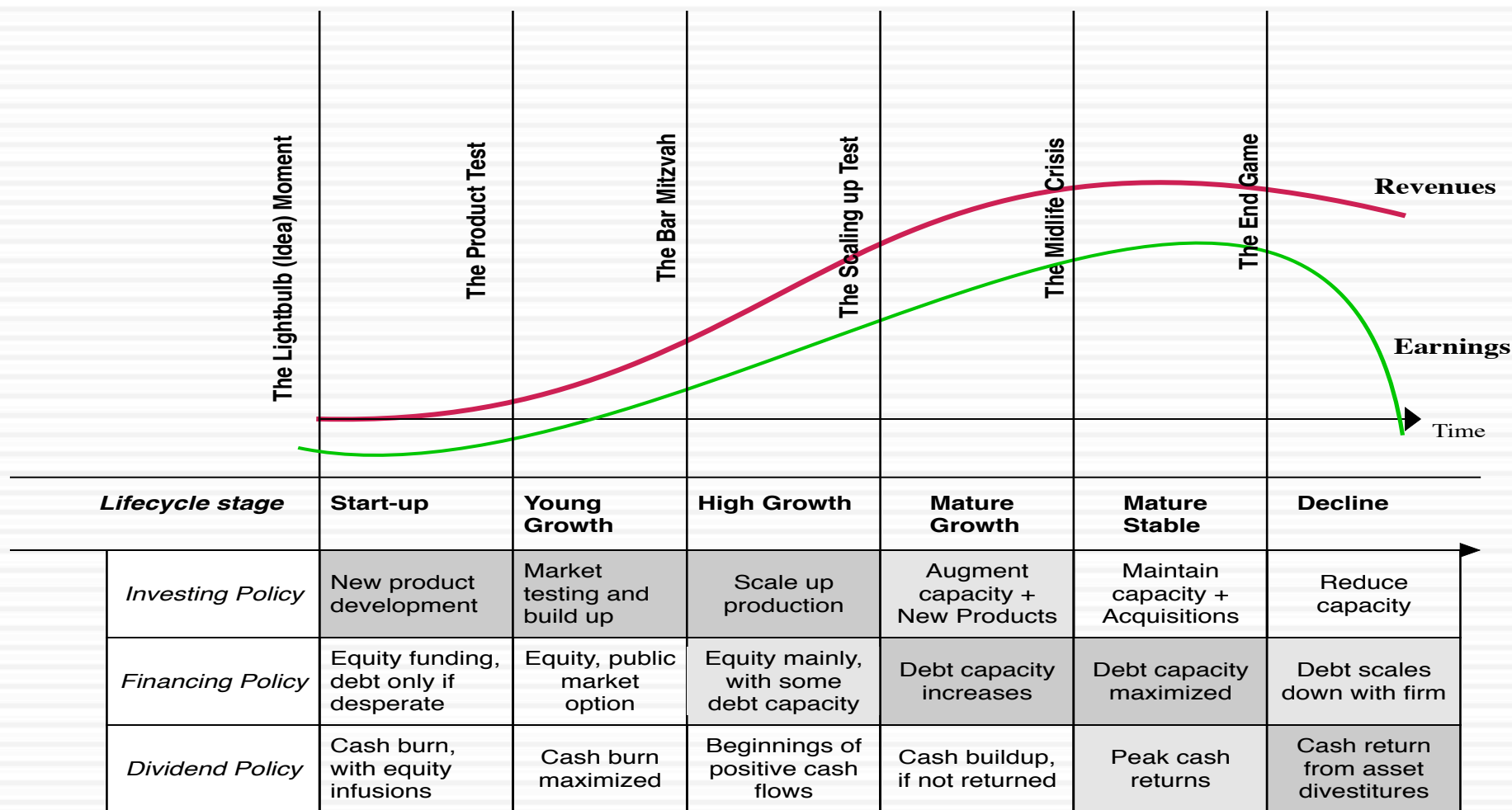


# Corporate Finance across the Life Cycle

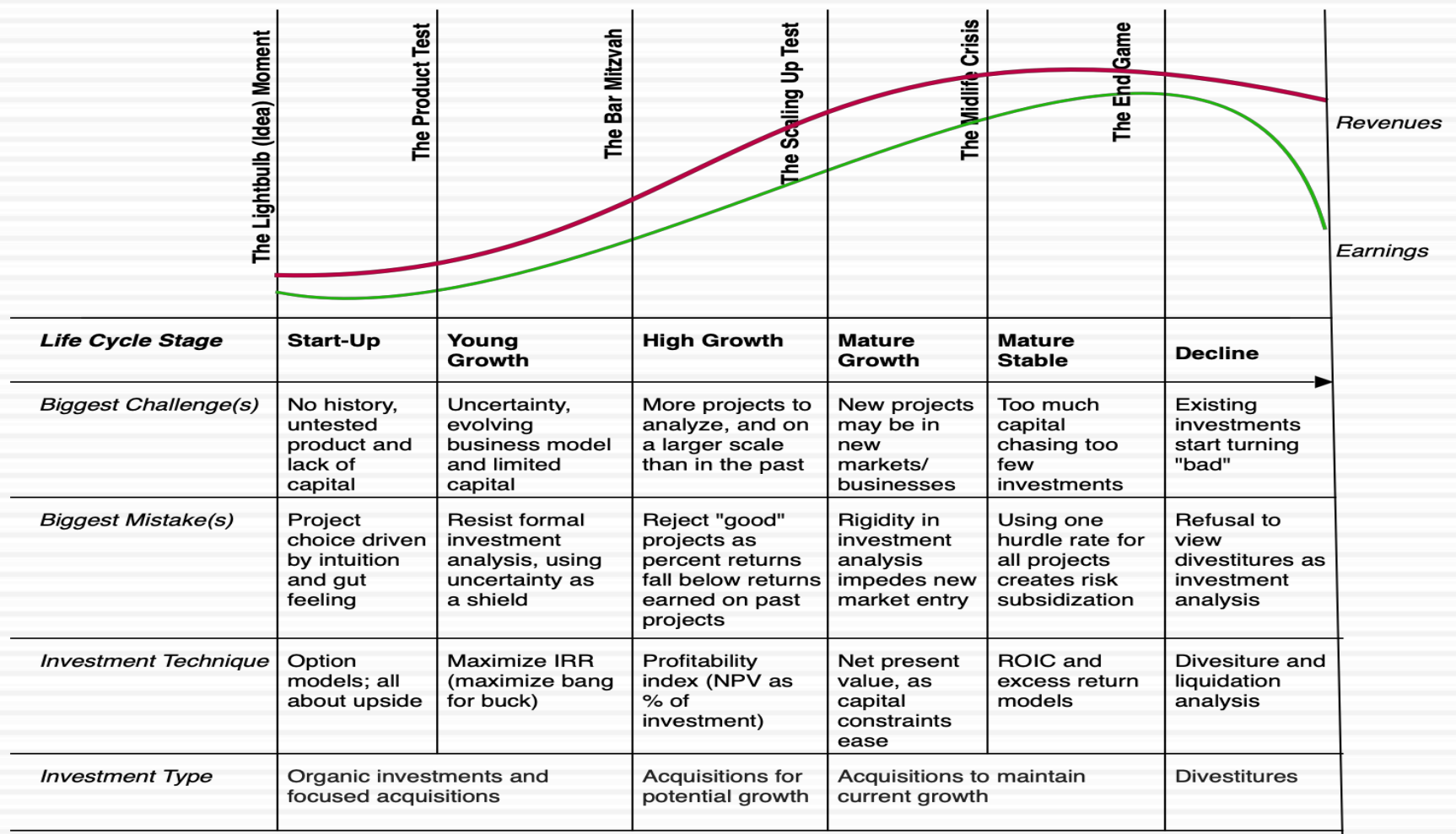
# The Big Picture



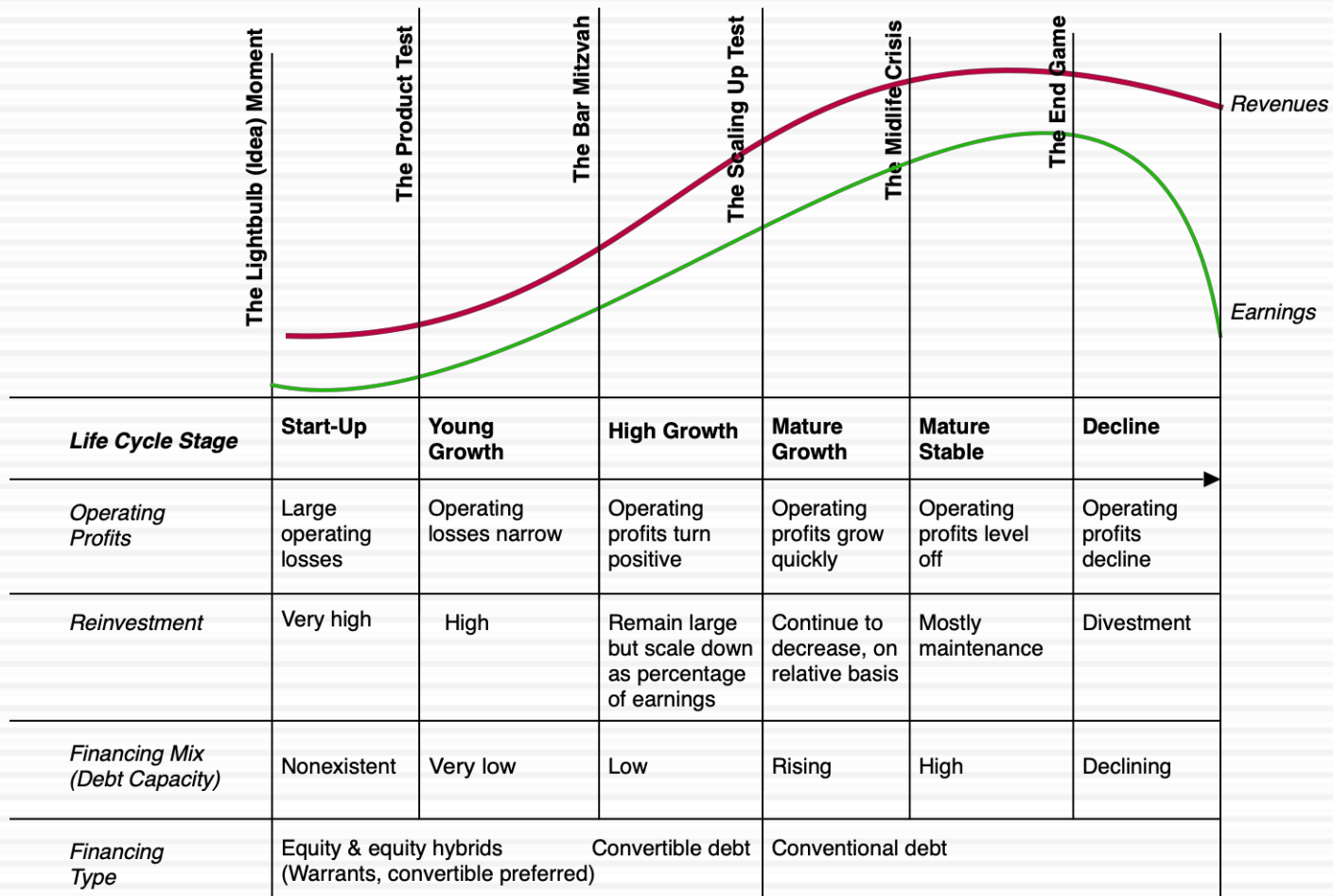
# The emphasis in corporate finance shifts... as companies age



# Investing: From too many projects to too few..

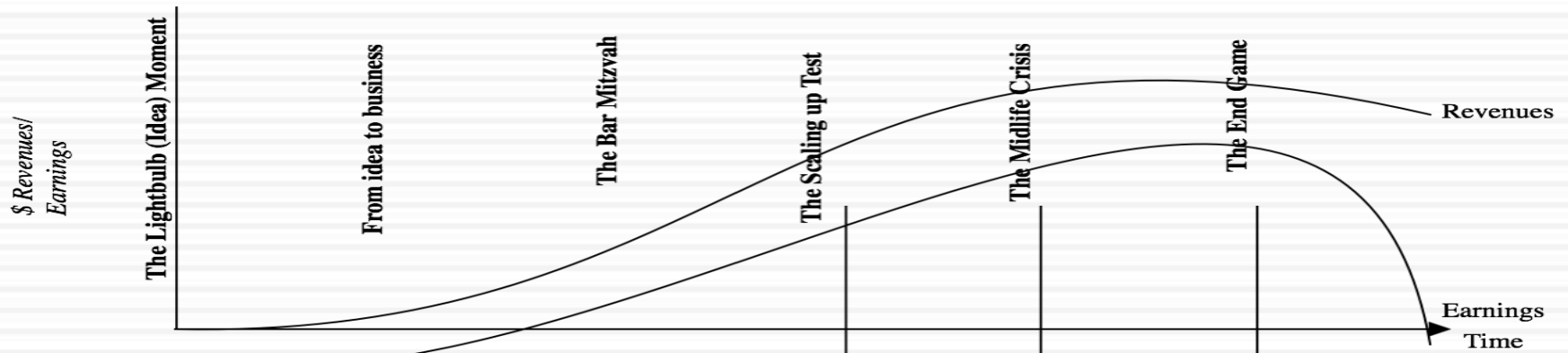


# Financing, from start to finish..



# And with it, debt capacity

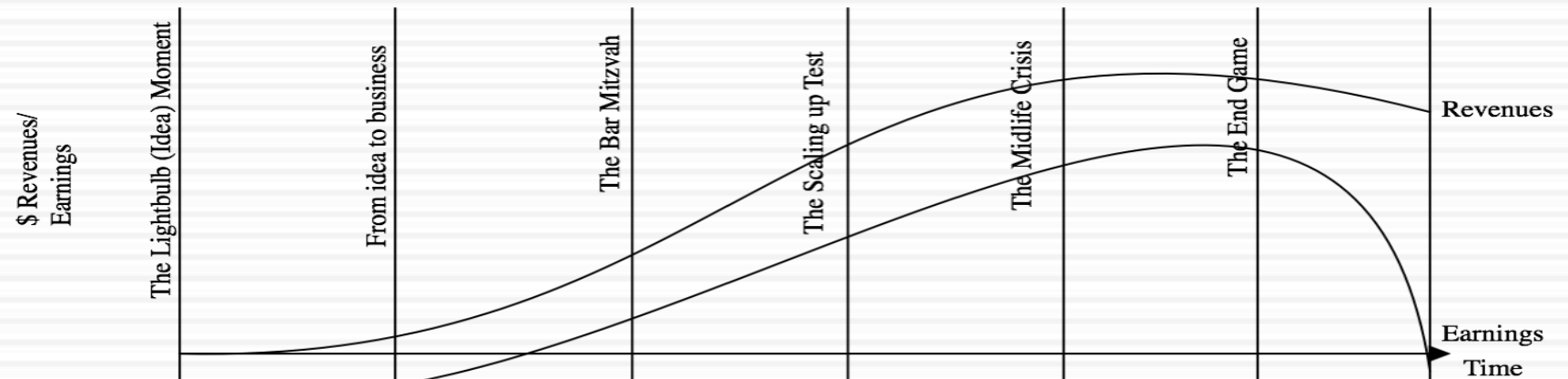
*Debt Capacity across Life Cycle*



<i>Growth stage</i>	Stage 1 Start-up	Stage 2 Young Growth	Stage 3: High Growth	Stage 4 Mature Growth	Stage 5 Mature Stable	Stage 6 Decline
<i>Profits &amp; Cash Flows</i>	Large losses & negative cashflows	Losses narrow but cashflows still negative	Profits turn positive but reinvestment needs make cashflows low/negative	Cash flows turn positive, as profits grow & reinvestment drops	Cashflows continue to rise, as earnings stabilize	Operating profits decline but divestitures add to cashflow
<i>Tax Benefits</i>	None	None	Low, as NOLS shelter income	Rising, as NOLs expire	High	Positive, but dropping
<i>Expected Bankruptcy Costs</i>	Very high, since earnings are negative	Very high, as probability of default still stays high.	High, as costs of bankruptcy (indirect) rise.	Dropping, as earnings grow and bankruptcy cost drops	Lower, as earnings become more predictable	Manageable, if debt scales down as firm gets smaller
<i>Debt Capacity</i>	<b>Non-existent</b>	<b>Very low</b>	<b>Low</b>	<b>Rising</b>	<b>High</b>	<b>High, but dropping</b>



# Dividends, from seed to harvest..



<i>Growth Stage</i>	<i>Stage 1 Start-up</i>	<i>Stage 2 Young Growth</i>	<i>Stage 3: High Growth</i>	<i>Stage 4 Mature Growth</i>	<i>Stage 5 Mature Stable</i>	<i>Stage 6 Decline</i>
<i>Operating Cashflow to Equity</i>	Negative	Negative	Small +ve -> Big Positive	Big, growing Positive	Big, stable Positive	Declining
<i>Reinvestment</i>	High	High	High, but dropping	High, approaching average	Low	Negative (Divesting)
<i>Debt</i>	No debt	No debt	Low debt	Medium debt	High debt	Retiring debt
<i>Potential Dividend (FCFE)</i>	Negative FCFE	Negative FCFE	Negative -> Low +ve FCFE	Positive & growing FCFE	Positive & stable FCFE	Positive & dropping FCFE
<i>Regular Dividends</i>	No. Don't have cash flow	No. Don't have cash flow	No. Cash flow is too uncertain.	Initiate, but keep low.	<b>Sweet spot. Big &amp; stable</b>	Shrinking Dividends
<i>Special Dividends/ Buybacks</i>	No. Don't have cash flow	No. Don't have cash flow	Perhaps, if you have a good year	<b>Sweet Spot. Big &amp; recurrent.</b>	Supplement in good years	Liquidating Dividends

# The Bottom Line

- Early in the life of a business, it is the creative part of the business (R&D, New Product development) that will drive the business, since value is created primarily from making great investments.
- As a business ages, you will see power shift towards the “finance” portion of the business, as projects start to get less attractive and financial engineering (changing debt mixes, debt types) will start to be potentially more value creating.
- As the business enters its declining phase, it will be decisions about how much to return to owners and in what form that will become the core discussion.
- By observing what a company is focusing its energies on, you can usually get a sense of where it thinks it is in the life cycle, but only if it is behaving sensibly.

# Companies, act your age!

- For many reasons, companies try to speed up or slow down aging
  - Young companies that borrow money to grow faster, invest without a purpose or with too much focus on short term profits or pay dividends.
  - Mature growth companies that act young and refuse to return cash.
  - Stable companies that try to be growth companies through acquisitions.
  - Declining companies that think they can reverse decline, with new management and a new business plan.

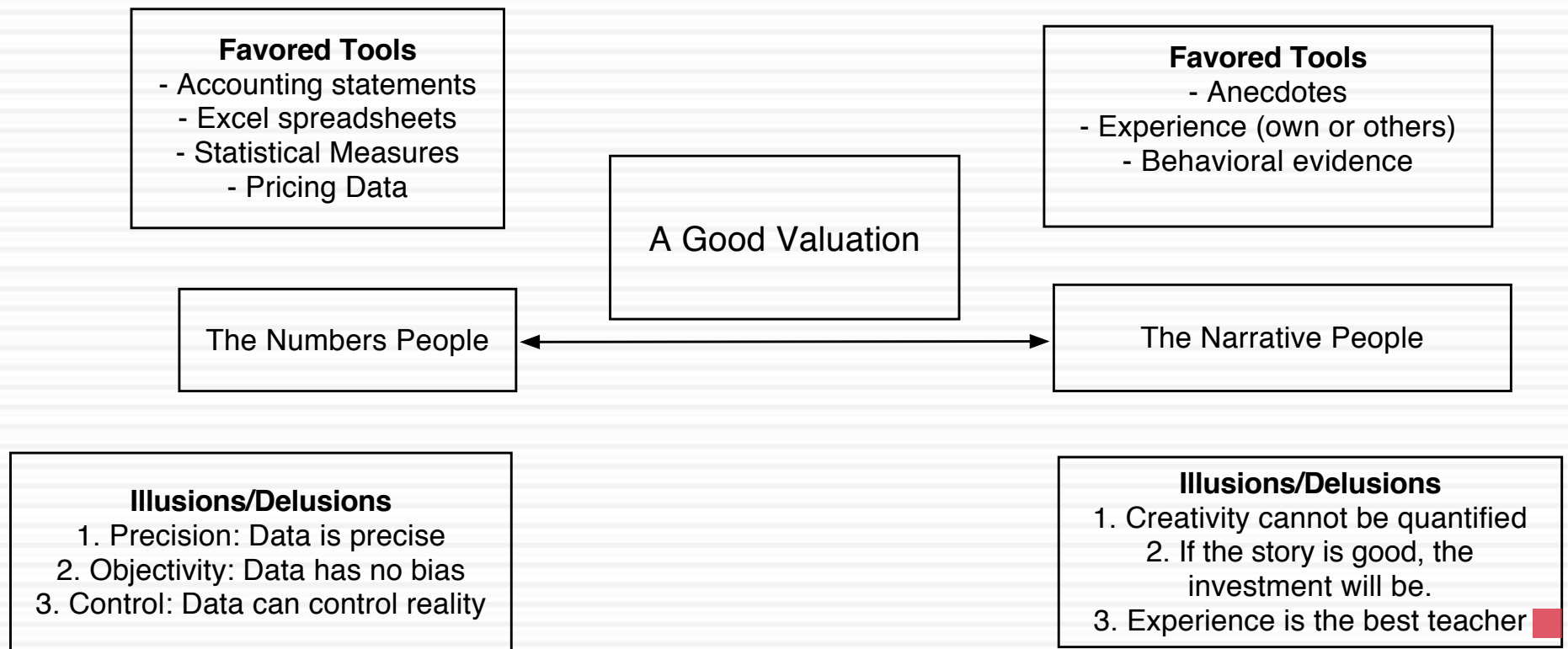
**Companies that don't "act their age" will destroy value.**



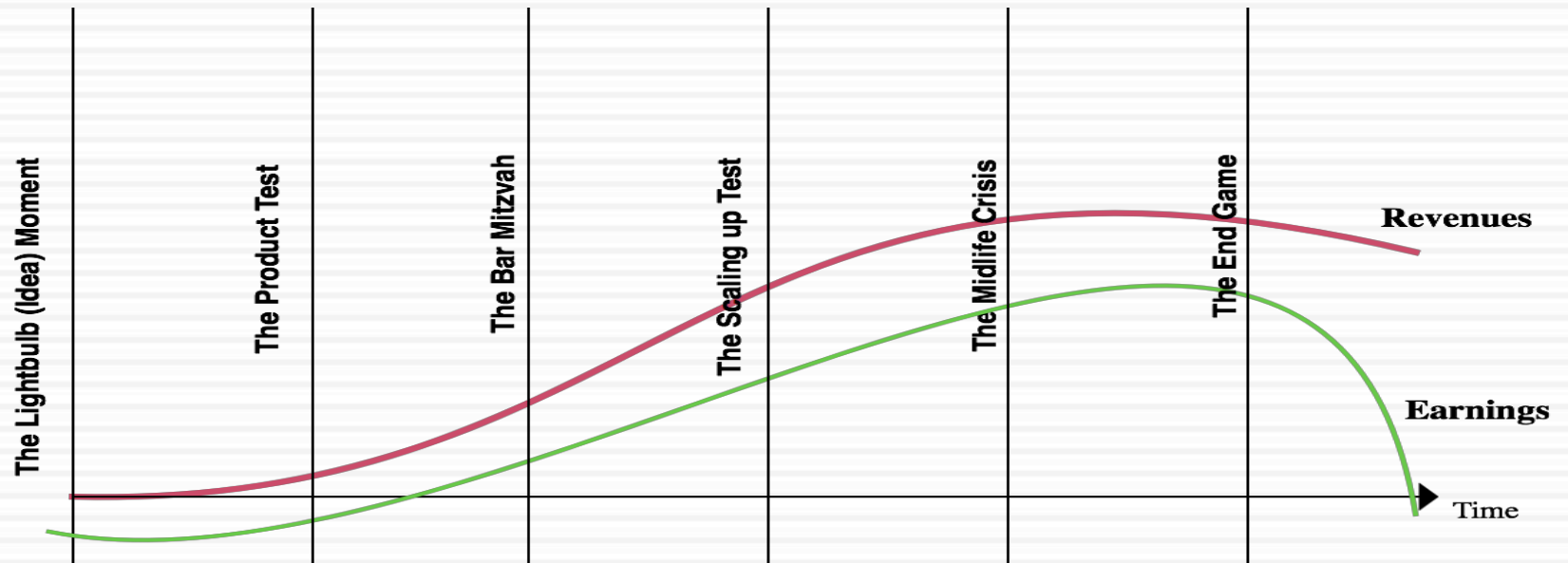
# From narrative to numbers

All story to mostly numbers..

# Valuation as a bridge



# Narrative versus Numbers



<i>Lifecycle stage</i>	<b>Start-up</b>	<b>Young Growth</b>	<b>High Growth</b>	<b>Mature Growth</b>	<b>Mature Stable</b>	<b>Decline</b>	
<i>Narrative versus Numbers</i>	All Narrative	Mostly narrative	Narrative + Numbers	Numbers + Narrative	Mostly Numbers	All Numbers	
<i>Narrative Drivers</i>	How big is the narrative?	How plausible is narrative?	How profitable is narrative?	How scalable is narrative?	How sustainable is narrative?	How happy is the ending?	
<i>Narrative Differences</i>	Unconstrained & Large differences	<i>Constraints mount as numbers build up</i>				→	Constrained & Narrow differences
		<i>Differences across investors narrow, as history deepens</i>					

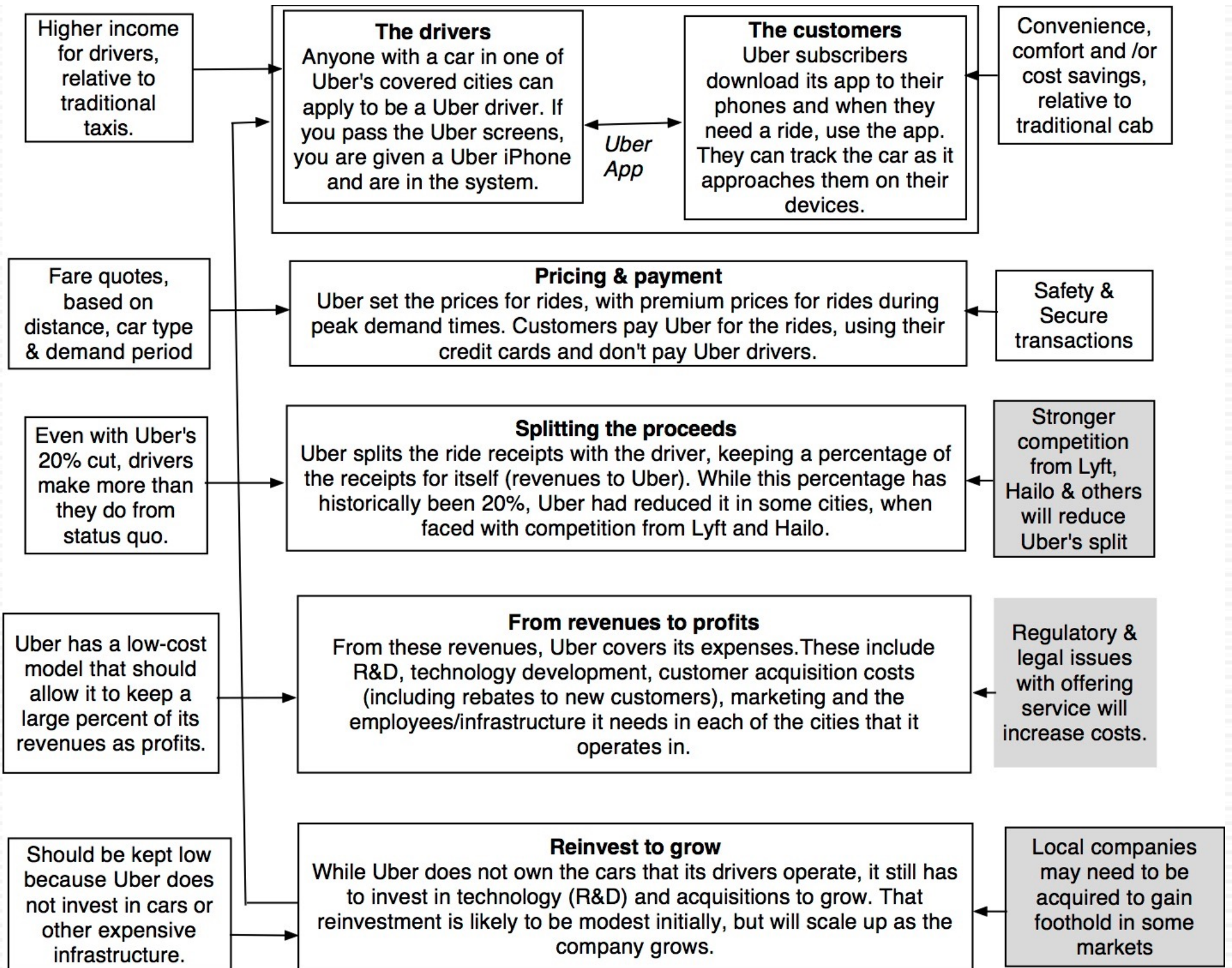
# Narrative to Numbers for companies

- With a young company, narrative is central, divergent and volatile.
  - ▣ It is central because it is the only thing that you are offering investors, since you have no history.
  - ▣ It is divergent because you can still offer widely different narratives, since it is early in the game.
  - ▣ It is volatile, because the real world will deliver surprises that will require you to adjust your narrative.
- As companies age, their narratives get narrower as their histories, size and culture start to become binding. The numbers often drive the narrative, rather than the other way around.

# Step 1: 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.





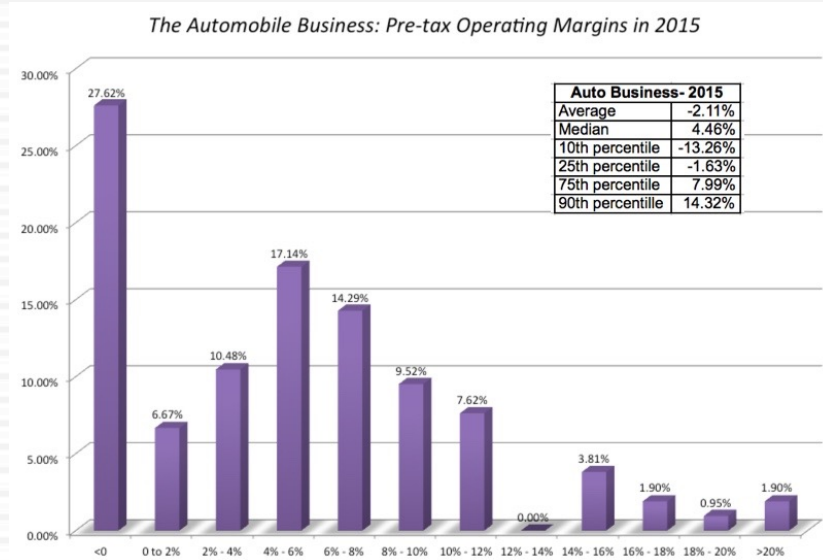
# The Auto Business

## Anemic Revenue Growth

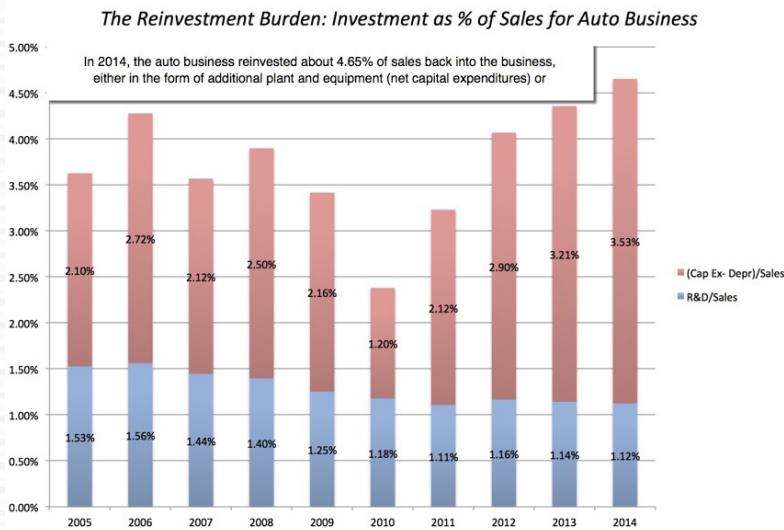
Year	Revenues (\$)	% Growth Rate
2005	1,274,716.6	
2006	1,421,804.2	11.54%
2007	1,854,576.4	30.44%
2008	1,818,533.0	-1.94%
2009	1,572,890.1	-13.51%
2010	1,816,269.4	15.47%
2011	1,962,630.4	8.06%
2012	2,110,572.2	7.54%
2013	2,158,603.0	2.28%
2014	2,086,124.8	-3.36%

Compounded annual revenue growth of 5.63% between 2005 and 2014.

## + Poor Operating Margins



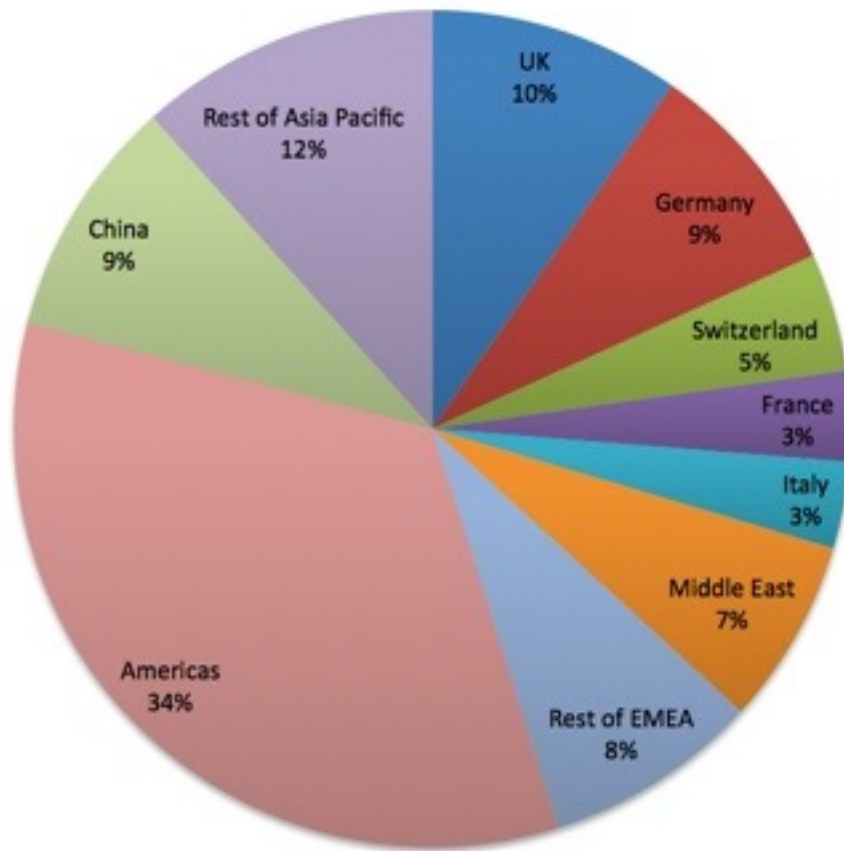
## + Increasing Reinvestment



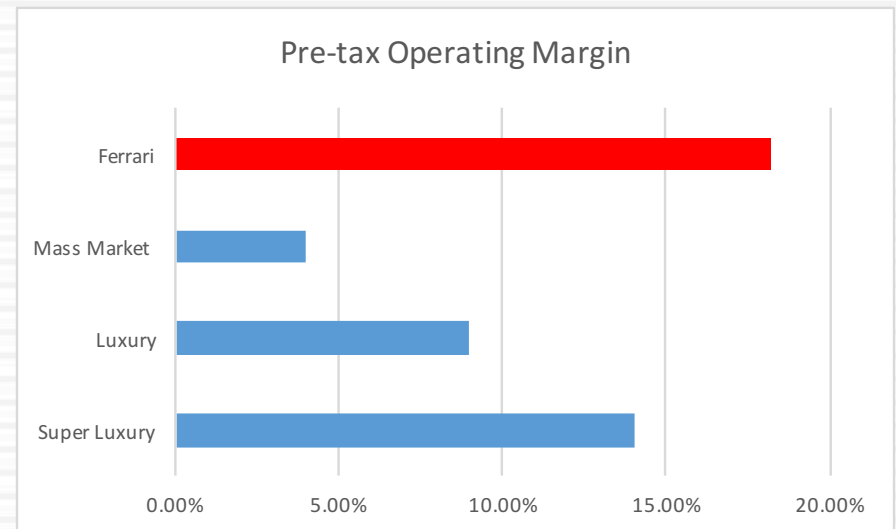
= *Bad Business*

# But super luxury cars look better..

*Ferrari: Geographical Sales (2014)*



Pre-tax Operating Margin



## Step 2: 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

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

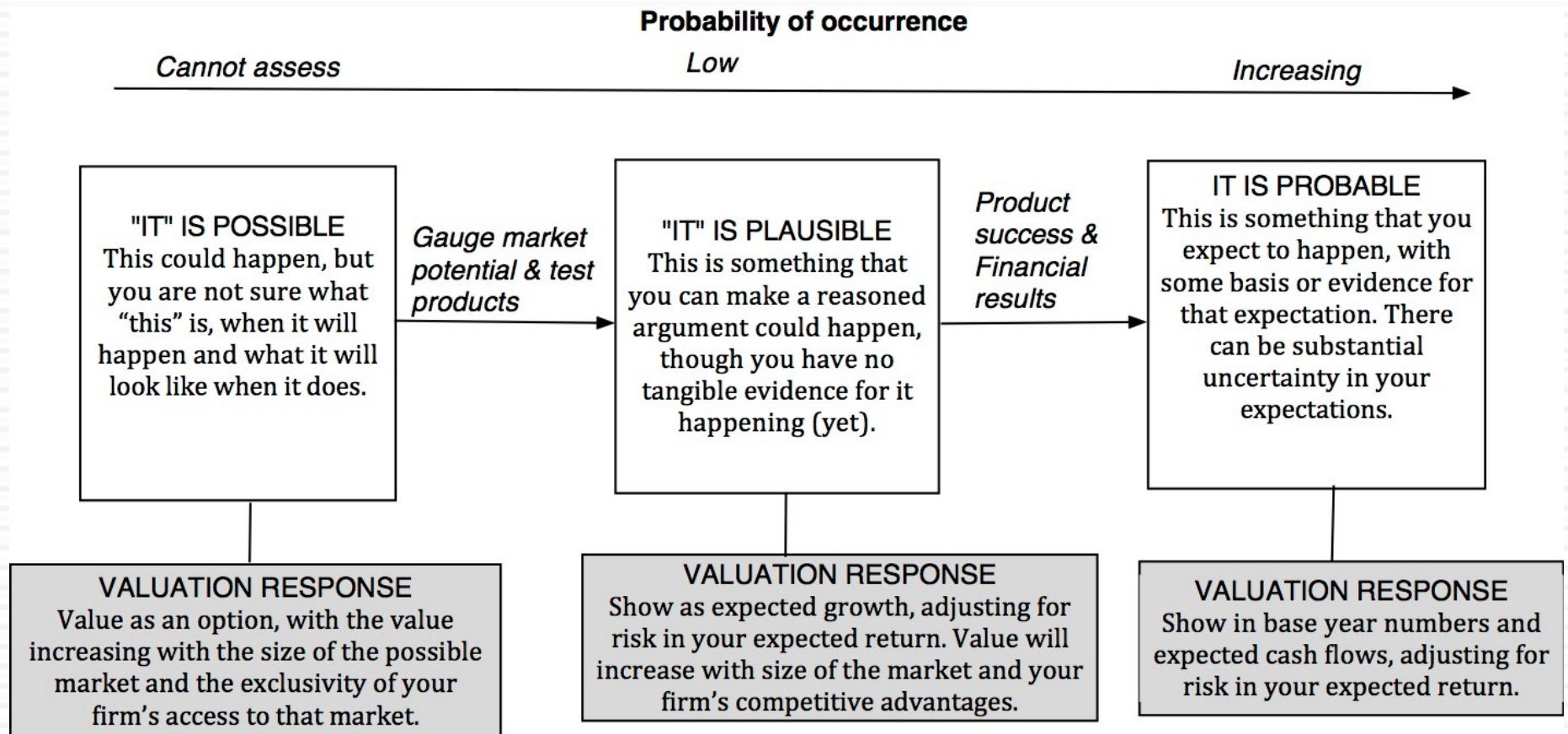
1. An urban car service business: I saw Uber primarily as a force in urban areas and only in the car service business.
2. Which would expand the business moderately (about 40% over ten years) by bringing in new users.
3. With local networking benefits: If Uber becomes large enough in any city, it will 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

- After the IPO, Ferrari will continue to be run by the same managers who run it today and will continue to be controlled by the Agnelli family and Ferrari (just as it is now).
- In my base narrative, I expect the company to stick to the status quo and
  - Stay super exclusive (Ferrari's sales have been flat over much of the last decade) and global.
  - Charge exceptionally high prices
  - Spend little or nothing on advertising
  - Be only lightly affected by economic ups and downs (since these are the super rich)

# Step 3: Check the narrative against history, economic first principles & common sense

39



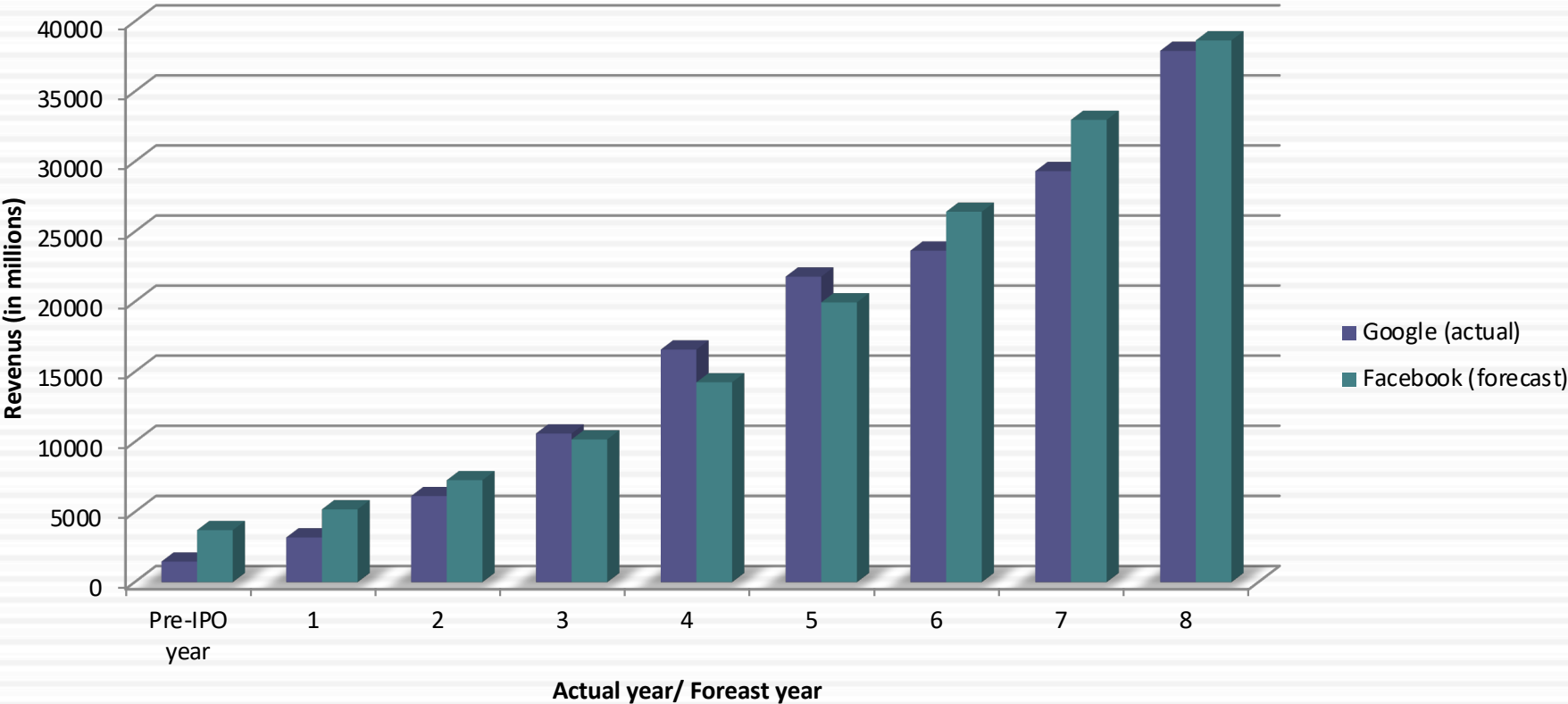
# Test 1: The “Big Market” Delusion

Company	Market Capitalization	Enterprise Value	Current Revenues	Breakeven Revenues (2023)	% from Online Ads (2012)	Imputed Online Ad Revenue (2023)	Cost of capital	Target margin
Google	\$291,586.00	\$240,579.00	\$56,594.00	\$168,336.00	87.07%	\$146,570.16	10%	22.49%
Facebook	\$119,769.00	\$111,684.00	\$6,118.00	\$90,959.00	84.08%	\$76,478.33	10%	29.99%
Yahoo!	\$34,688.00	\$29,955.00	\$4,823.00	\$17,695.00	100%	\$17,695.00	10%	25.00%
Linkedin	\$27,044.00	\$26,171.00	\$1,244.00	\$32,110.00	80.41%	\$25,819.65	10%	25.00%
Twitter (Est)	\$12,000.00	\$11,000.00	\$448.00	\$7,846.00	90.00%	\$7,061.40	10%	25.00%
Pandora	\$4,833.00	\$4,774.00	\$528.00	\$3,085.00	87.84%	\$2,709.86	10%	25.00%
Yelp	\$4,422.00	\$4,325.00	\$179.00	\$2,825.00	94.31%	\$2,664.26	10%	25.00%
Zillow	\$3,192.00	\$3,060.00	\$152.00	\$1,984.00	25.83%	\$512.47	10%	25.00%
AOL	\$2,586.00	\$2,208.00	\$2,211.00	\$10,055.00	64.72%	\$6,507.60	10%	9.32%
Retailmenot	\$1,718.00	\$1,644.00	\$169.00	\$1,605.00	100%	\$1,605.00	10%	25.00%
OpenTable	\$1,597.00	\$1,505.00	\$173.77	\$1,361.38	74.22%	\$1,010.42	10%	25.00%
<b>US based</b>	<b>\$503,435.00</b>	<b>\$436,905.00</b>	<b>\$72,639.77</b>	<b>\$337,861.38</b>	<b>\$8.88</b>	<b>\$288,634.13</b>		
Baidu	\$53,589.00	\$49,961.00	\$4,182.00	\$15,526.00	99.73%	\$15,484.08	10%	25.00%
Sohu.com	\$3,166.00	\$2,540.00	\$1,231.00	\$1,338.00	36.33%	\$486.10	10%	21.45%
Naver	\$17,843.00	\$17,595.00	\$133.00	\$11,227.00	62.94%	\$7,066.27	10%	25.00%
Yandex	\$12,654.00	\$11,872.00	\$1,065.00	\$7,684.00	98%	\$7,505.73	10%	25.00%
<b>Global</b>	<b>\$590,687.00</b>	<b>\$518,873.00</b>	<b>\$79,250.77</b>	<b>\$373,636.38</b>	<b>\$11.85</b>	<b>\$319,176.31</b>		



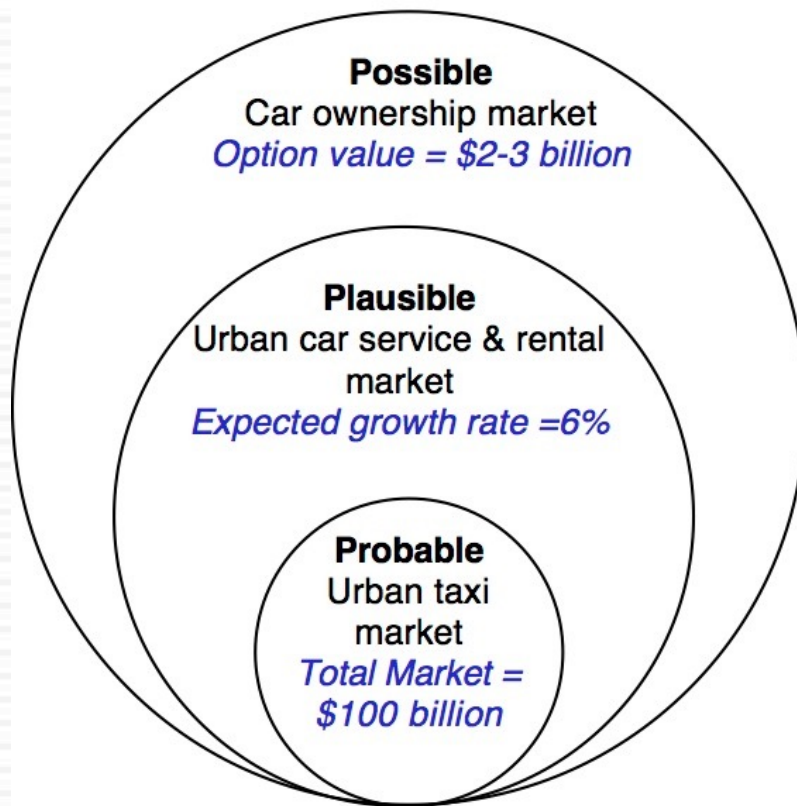
# Test 2: Measure up against past winners

## Google's actual revenues versus Facebook Revenue Forecasts (at IPO)

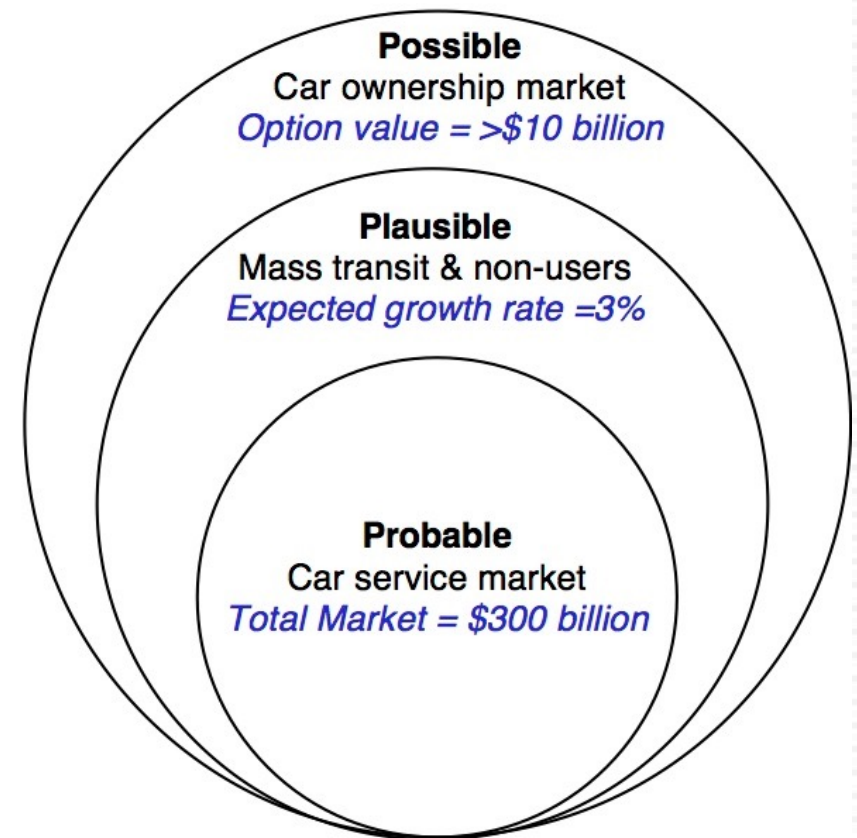


# Uber: Possible, Plausible and Probable

Uber (My valuation))



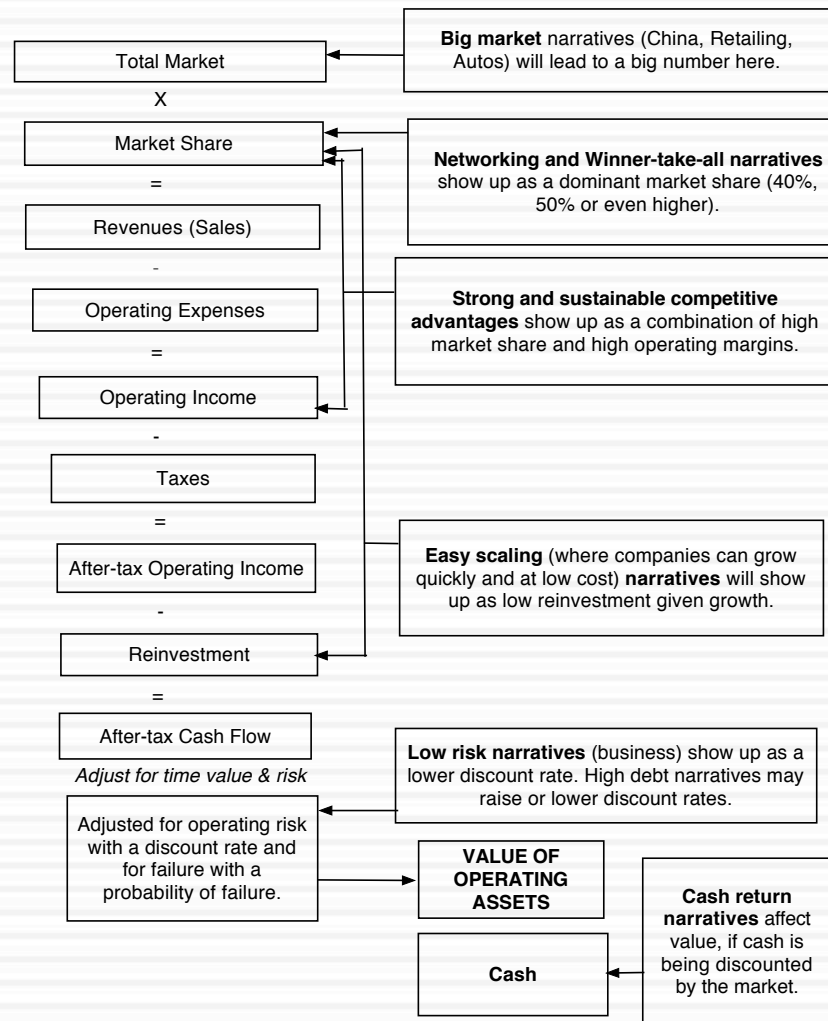
Uber (Bill Gurley)



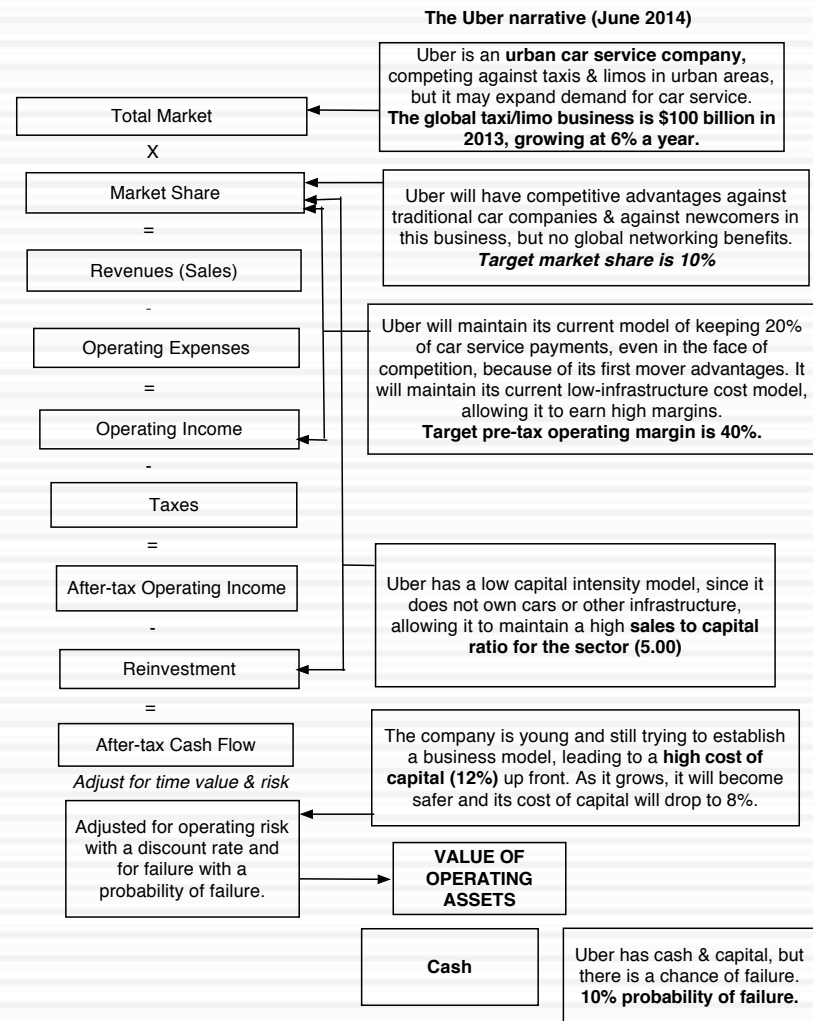
# Ferrari: Probable, Plausible and Impossible

- It is probable: Ferrari will continue on its current path of staying an exclusive car maker that sells cars without any conventional advertising/selling at very high prices to a global market.
- It is plausible: Ferrari will try to go for a higher growth model, introducing perhaps a lower-cost Ferrari, increasing advertising/selling expenses and settling for lower margins.
- It is impossible: Ferrari will go for sharply higher revenue growth, without cutting prices or increasing selling expenses.

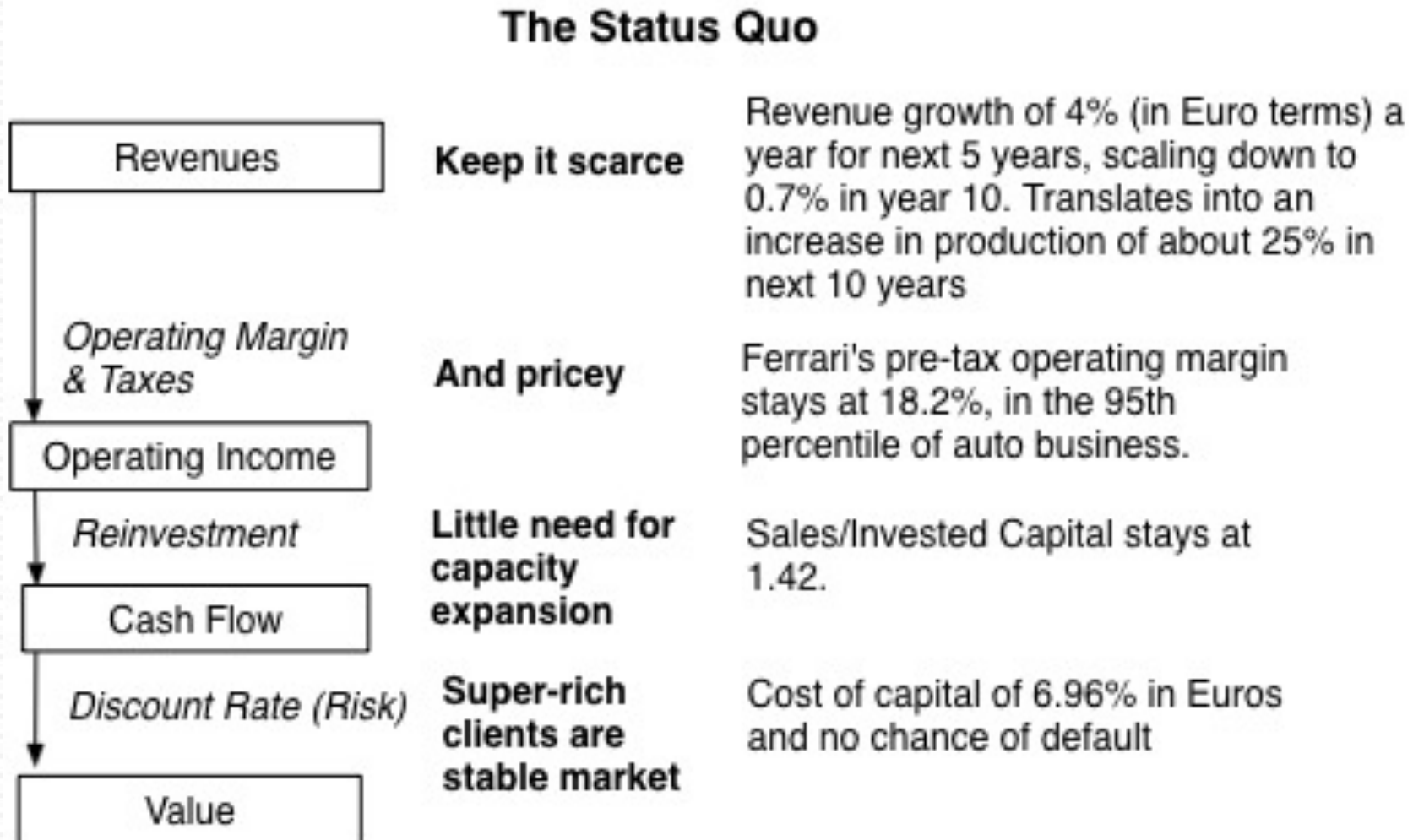
# Step 4: Connect your narrative to key drivers of value



# With Uber



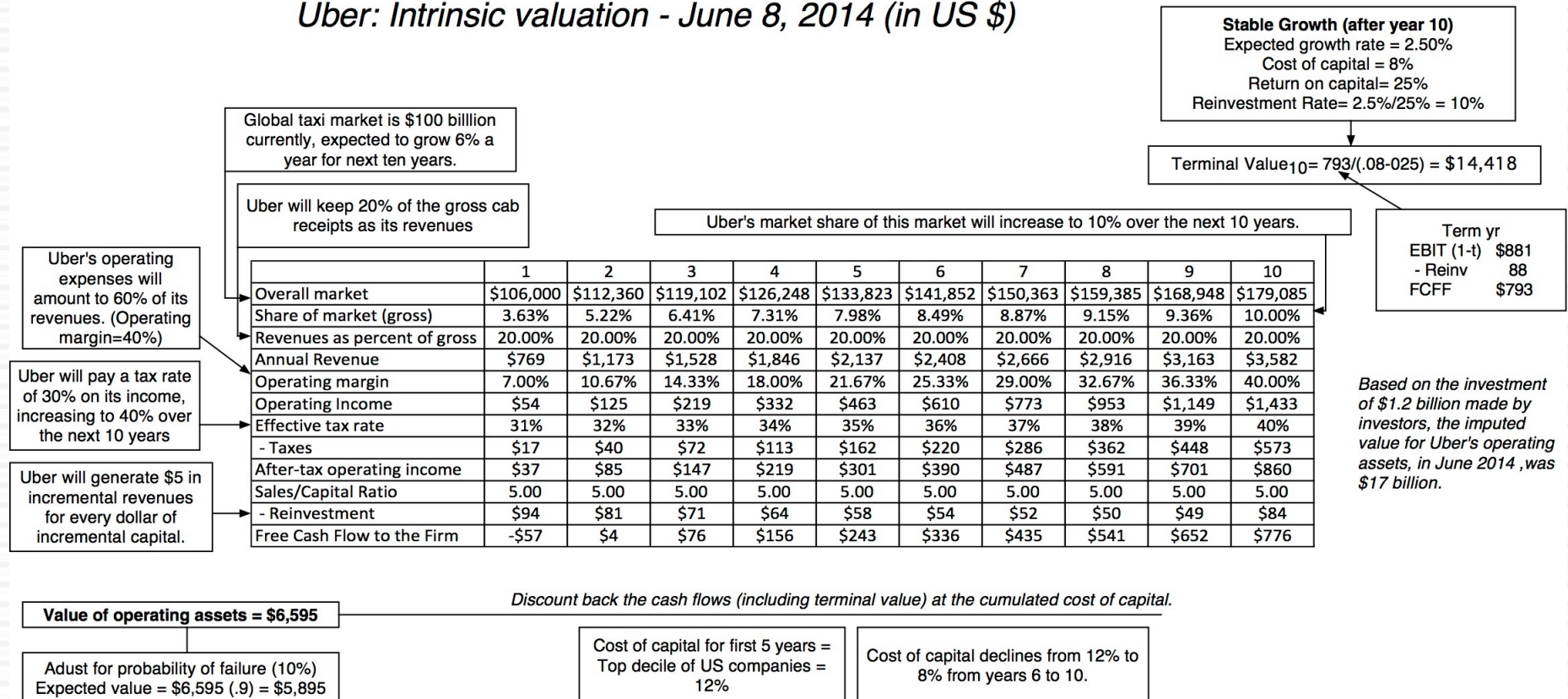
# With Ferrari



# Step 4: Value the company (Uber)

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



# And Ferrari

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



# Step 5: Keep the feedback loop

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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.

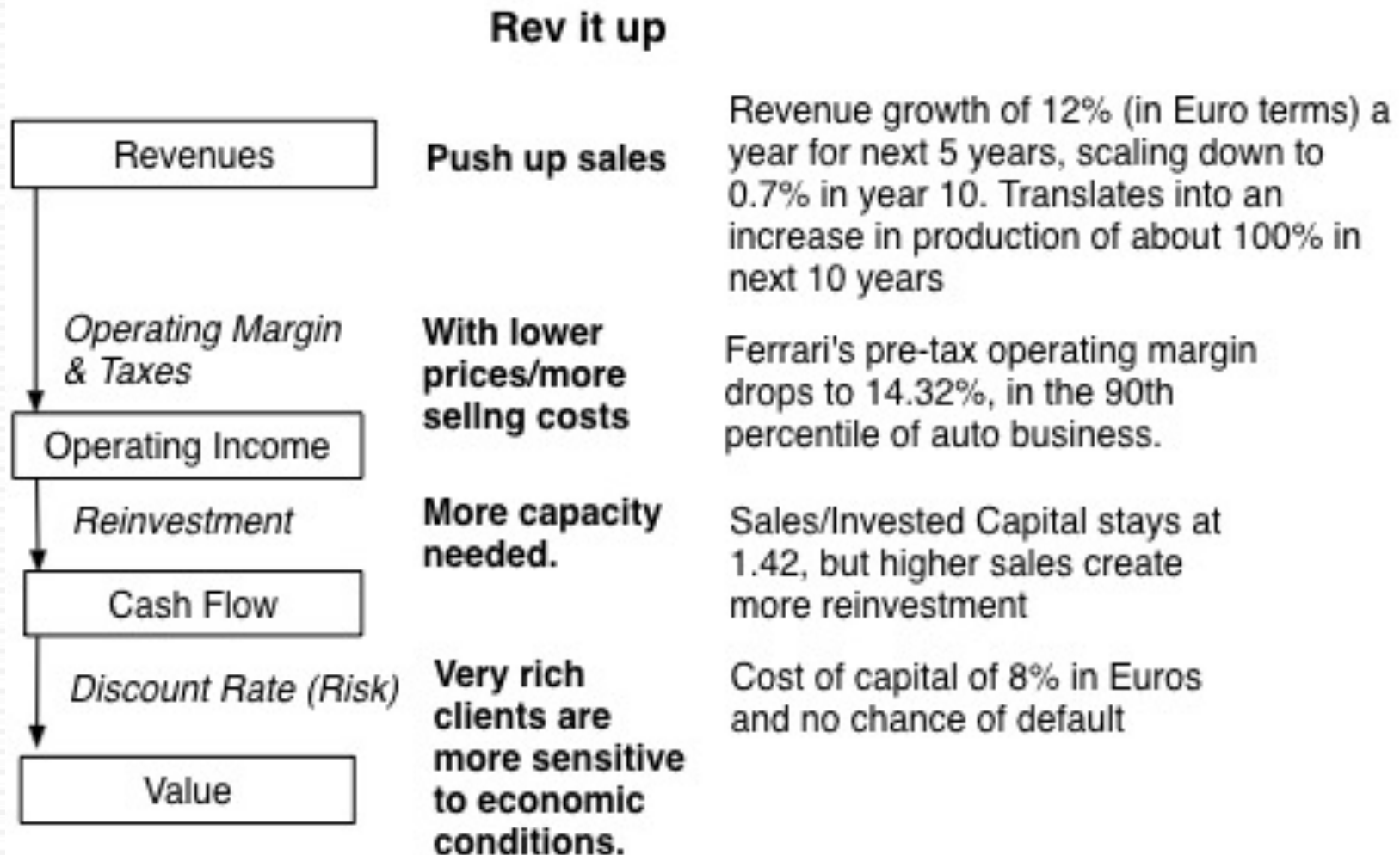
# Valuing Bill Gurley's Uber narrative

	<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</u> to gain a <u>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</u> to gain a <u>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</u> to get a <u>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

# Ferrari: A Rev it up Narrative



# And valuation..

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

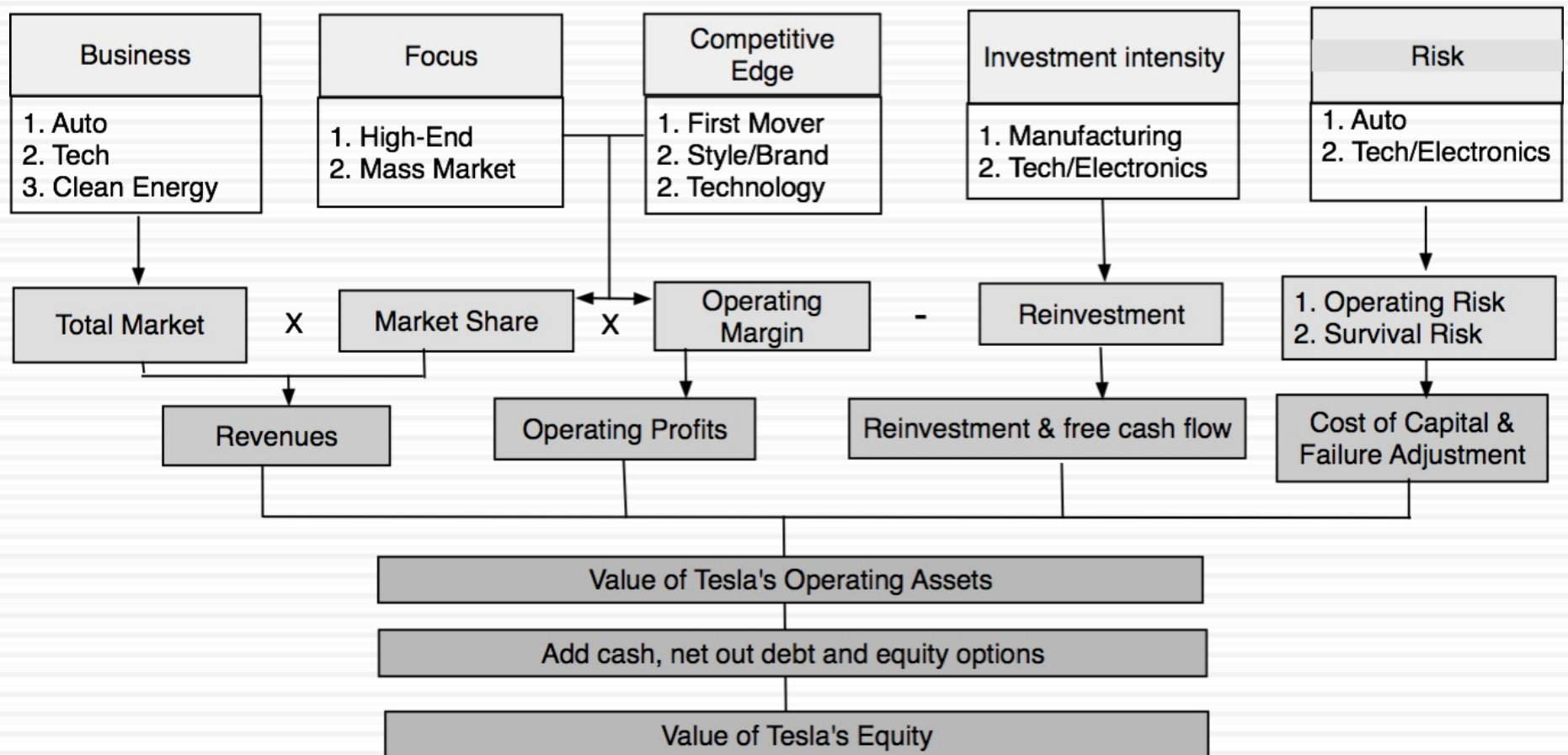
# Step 6: Be ready to modify narrative as events unfold

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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

# Divergent Stories? Tesla Story Choices

## The Tesla Story Choices



# And how they translate to numbers

<i>Story</i>	<i>Revenues</i>	<i>Operating Margins</i>	<i>Reinvestment Efficiency</i>	<i>Risk</i>	<i>Value/Share</i>	<i>Equity Value</i>
The Big Auto	BMW-like (\$100 billion)	Auto 75th percentile	Auto 75th percentile	Auto median	\$ 105.79	\$ 27,547
	Daimler-like (\$200 billion)	Auto 75th percentile	Auto 75th percentile	Auto median	\$ 227.42	\$ 49,076
	VW/Toyota-like (\$300 billion)	Auto 75th percentile	Auto 75th percentile	Auto median	\$ 332.82	\$ 67,731
Auto+ Tech	BMW-like (\$100 billion)	Tech median	Tech median	Tech median	\$ 110.96	\$ 28,461
	Daimler-like (\$200 billion)	Tech median	Tech median	Tech median	\$ 211.84	\$ 46,317
	VW/Toyota-like (\$300 billion)	Tech median	Tech median	Tech median	\$ 297.86	\$ 61,544
An Auto FAANG	BMW-like (\$100 billion)	FAANG aggregate	FAANG aggregate	Tech median	\$ 458.37	\$ 89,953
	Daimler-like (\$200 billion)	FAANG aggregate	FAANG aggregate	Tech median	\$ 854.64	\$ 160,094
	VW/Toyota-like (\$300 billion)	FAANG aggregate	FAANG aggregate	Tech median	\$ 1,204.62	\$ 222,040
FAANG	VW/Toyota-like (\$300 billion)	Software median	Revolutionary Manufacturing	Auto median	\$ 2,105.55	\$ 381,504



# As companies mature, their stories become bounded..

Apple						
The Story						
<p>Apple is a cash machine, deriving much of its cash and value from its iPhone franchise. It's large size will make it disruptive growth difficult and I expect the company to continue to churn out cash from its existing businesses, albeit with almost flat revenues and declining margins, as competition increases. In spite of its size, the company will continue to be riskier than average, because it has to reinvent itself every two years to survive. Finally, the tax rate paid by the company will gradually rise over time to a global average and trapped cash will be returned with a tax penalty.</p>						
The Assumptions						
	Base year	Years 1-5	Years 6-10		After year 10	Link to story
Revenues (a)	\$ 218,118	1.50%	1.00%		1.00%	Mature company; size impedes growth
Operating margin (b)	29.18%	29.18%	25.00%		25.00%	Margins decrease with competition
Tax rate	26.01%	26.01%	30.00%		30.00%	Tax rate increases to global average
Reinvestment (c)		Sales to capital ratio = 1.60		RIR =	14.35%	Reinvest like electronics company
Return on capital	-7189.38%	Marginal ROIC = -6.60%			6.97%	ROIC converges on cost of capital
Cost of capital (d)		9.09%			6.97%	In the 75th risk percentile of US firms
The Cash Flows						
	Revenues	Operating Margin	EBIT	EBIT (1-t)	Reinvestment	FCFF
1	\$ 221,390	28.76%	\$ 63,674	\$ 47,113	\$ 2,045	\$ 45,068
2	\$ 224,711	28.34%	\$ 63,690	\$ 47,125	\$ 2,076	\$ 45,049
3	\$ 228,081	27.93%	\$ 63,692	\$ 47,127	\$ 2,107	\$ 45,020
4	\$ 231,502	27.51%	\$ 63,680	\$ 47,118	\$ 2,138	\$ 44,979
5	\$ 234,975	27.09%	\$ 63,654	\$ 47,098	\$ 2,170	\$ 44,927
6	\$ 238,265	26.67%	\$ 63,549	\$ 46,513	\$ 2,056	\$ 44,457
7	\$ 241,362	26.25%	\$ 63,366	\$ 45,874	\$ 1,936	\$ 43,938
8	\$ 244,258	25.84%	\$ 63,106	\$ 45,182	\$ 1,810	\$ 43,371
9	\$ 246,945	25.42%	\$ 62,768	\$ 44,439	\$ 1,679	\$ 42,760
10	\$ 249,415	25.00%	\$ 62,354	\$ 43,648	\$ 1,543	\$ 42,104
Terminal year	\$ 251,909	25.00%	\$ 62,977	\$ 44,084	\$ 6,325	\$ 37,759
The Value						
Terminal value			\$ 632,483			
PV(Terminal value)			\$ 281,080			
PV (CF over next 10 years)			\$ 286,557			
Value of operating assets =			\$ 567,637			
Adjustment for distress			\$ -		Probability of failure = 0.00%	
- Debt & Minority Interests			\$ 94,141			
+ Cash & Other Non-operating assets			\$ 215,090			
Value of equity			\$ 688,586			
- Value of equity options			\$ 128			
Number of shares			5,336.17			
Value per share			\$ 129.02		Stock was trading at = \$130.27	

# And in decline, they can be depressing..

## JC Penney in 2016: Road to Nowhere?

Declining business: Revenues expected to drop by 3% a year for next 5 years

	Base year	1	2	3	4	5	6	7	8	9	10
Revenue growth rate		-3.00%	-3.00%	-3.00%	-3.00%	-3.00%	-2.00%	-1.00%	0.00%	1.00%	2.00%
Revenues	\$ 12,522	\$12,146	\$11,782	\$11,428	\$11,086	\$10,753	\$10,538	\$10,433	\$10,433	\$10,537	\$10,748
EBIT (Operating) margin	1.32%	1.82%	2.31%	2.80%	3.29%	3.79%	4.28%	4.77%	5.26%	5.76%	6.25%
EBIT (Operating income)	\$ 166	\$ 221	\$ 272	\$ 320	\$ 365	\$ 407	\$ 451	\$ 498	\$ 549	\$ 607	\$ 672
Tax rate	35.00%	35.00%	35.00%	35.00%	35.00%	35.00%	36.00%	37.00%	38.00%	39.00%	40.00%
EBIT(1-t)	\$ 108	\$ 143	\$ 177	\$ 208	\$ 237	\$ 265	\$ 289	\$ 314	\$ 341	\$ 370	\$ 403
- Reinvestment		\$ (188)	\$ (182)	\$ (177)	\$ (171)	\$ (166)	\$ (108)	\$ (53)	\$ -	\$ 52	\$ 105
FCFF		\$ 331	\$ 359	\$ 385	\$ 409	\$ 431	\$ 396	\$ 366	\$ 341	\$ 318	\$ 298
Cost of capital		9.00%	9.00%	9.00%	9.00%	9.00%	8.80%	8.60%	8.40%	8.20%	8.00%
PV(FCFF)		\$ 304	\$ 302	\$ 297	\$ 290	\$ 280	\$ 237	\$ 201	\$ 173	\$ 149	\$ 129
Terminal value	\$ 5,710										
PV(Terminal value)	\$ 2,479										
PV (CF over next 10 years)	\$ 2,362										
Sum of PV	\$ 4,841										
Probability of failure =	20.00%	High debt load and poor earnings put survival at risk. Based on bond rating, 20% chance of failure and liquidation will bring in 50% of book value									
Proceeds if firm fails =	\$2,421										
Value of operating assets =	\$4,357										

Margins improve gradually to median for US retail sector (6.25%)

As stores shut down, cash released from real estate.

The cost of capital is at 9%, higher because of high cost of debt.

# The Bottom Line for Investors

- To be a successful investor in or to value early-stage businesses, you need to be a good judge of narrative.
  - Not only do you need to be able to find good stories to invest in, but you also have to be able to separate impossible stories (fairy tales) from plausible stories, and then providing support (financial or management) to make the plausible into the probable.
  - You will also get much bigger disagreements about value and story, across investors.
- To be a successful in mature businesses, you need to be able to use the numbers that the business has already produced to decide on a narrative that is right for it, and then invest in companies where (you believe) the market has a mistaken narrative.



# Investing across the life cycle

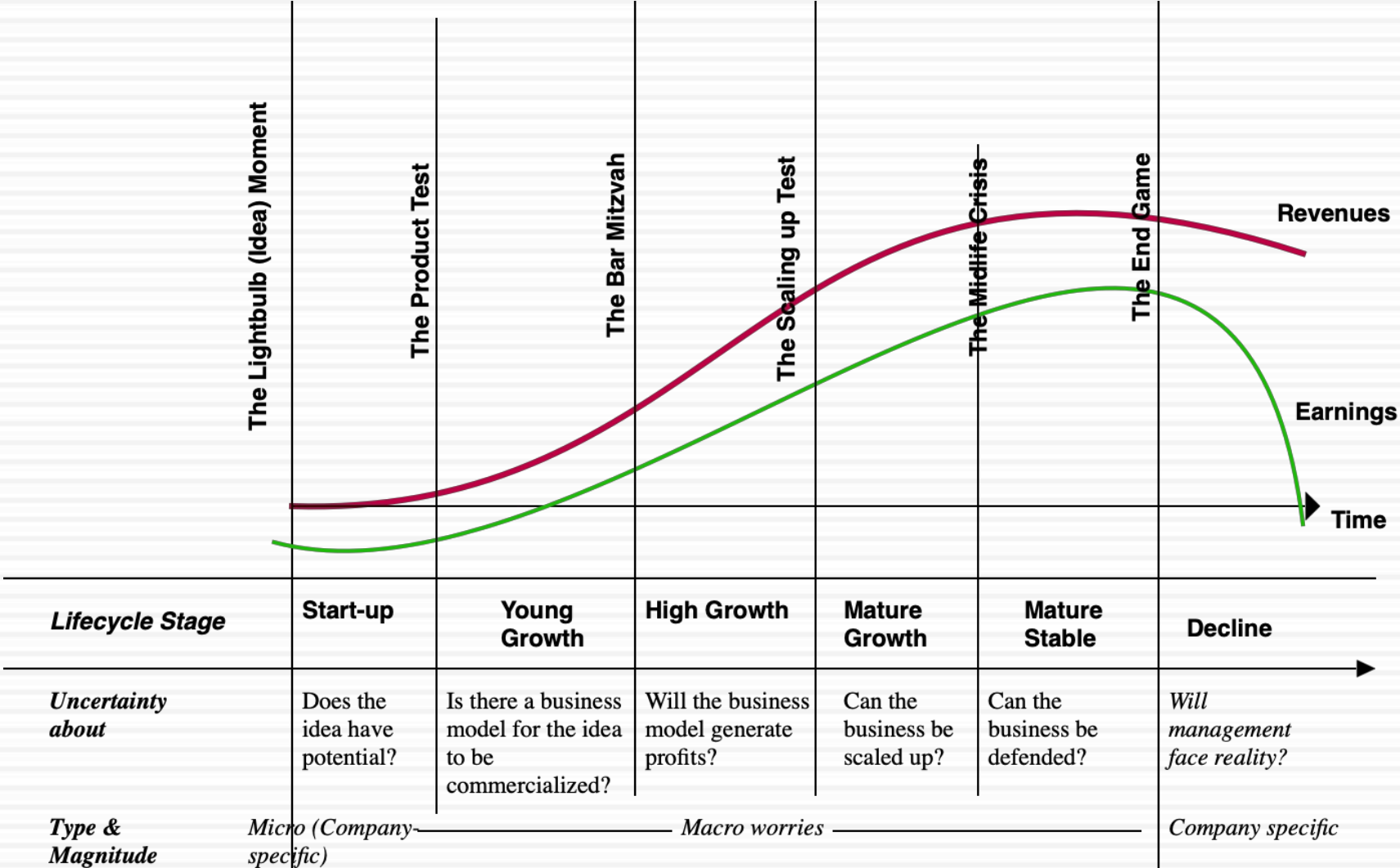
There are no facts, just opinions

# Uncertainty in Business

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- Estimation versus Economic uncertainty
  - ▣ Estimation uncertainty reflects the possibility that you could have the “wrong model” or estimated inputs incorrectly within this model.
  - ▣ Economic uncertainty comes the fact that markets and economies can change over time and that even the best models will fail to capture these unexpected changes.
- Micro uncertainty versus Macro uncertainty
  - ▣ Micro uncertainty refers to uncertainty about the potential market for a firm’s products, the competition it will face and the quality of its management team.
  - ▣ Macro uncertainty reflects the reality that your firm’s fortunes can be affected by changes in the macro economic environment.
- Discrete versus continuous uncertainty
  - ▣ Discrete risk: Risks that lie dormant for periods but show up at points in time. (Examples: A drug working its way through the FDA pipeline may fail at some stage of the approval process or a company in Venezuela may be nationalized)
  - ▣ Continuous risk: Risks changes in interest rates or economic growth occur continuously and affect value as they happen.

# The Evolution of Uncertainty



# And unhealthy ways of dealing with it..

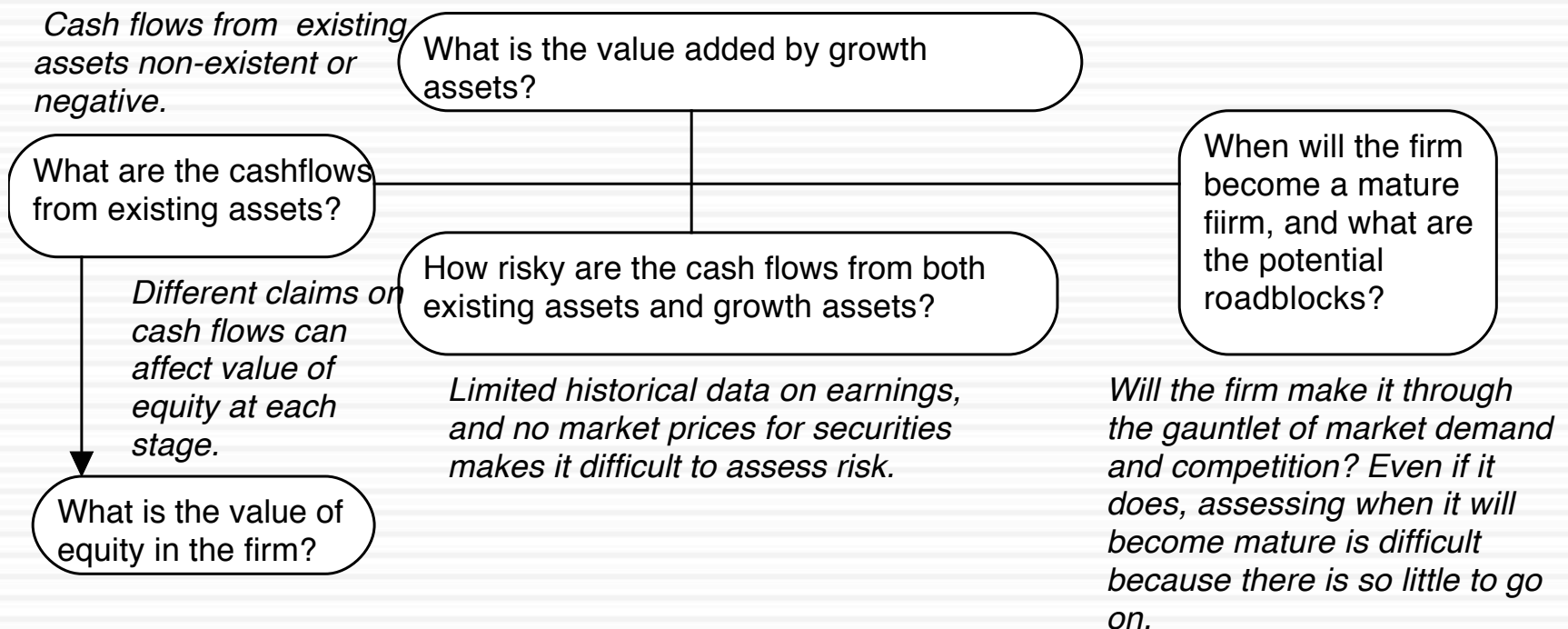
63

- Divine Intervention: Praying for intervention from a higher power is the oldest and most practiced risk management system of all.
- Paralysis & Denial: When faced with uncertainty, some of us get paralyzed. Accompanying the paralysis is the hope that if you close your eyes to it, the uncertainty will go away
- Mental short cuts (rules of thumb): Behavioral economists note that investors faced with uncertainty adopt mental short cuts that have no basis in reality. And here is the clincher. More intelligent people are more likely to be prone to this.
- Herding: When in doubt, it is safest to go with the crowd.. The herding instinct is deeply engrained and very difficult to fight.
- Outsourcing: Assuming that there are experts out there who have the answers does take a weight off your shoulders, even if those experts have no idea of what they are talking about.

# Uncertainty in Young Companies...

Figure 3: Estimation Issues - Young and Start-up Companies

*Making judgments on revenues/ profits difficult because you cannot draw on history. If you have no product/service, it is difficult to gauge market potential or profitability. The company's entire value lies in future growth but you have little to base your estimate on.*





# The dark side will beckon.. Don't be tempted..

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- With young start up companies, you will be told that it is “too difficult” or even “impossible” to value these companies, because there is so little history and so much uncertainty in the future.
- Instead, you will be asked to come over to the “dark side”, where
  - ▣ You will see value metrics that you have never seen before
  - ▣ You will hear “macro” stories, justifying value
  - ▣ You will be asked to play the momentum game
- While all of this behavior is understandable, none of it makes the uncertainty go away. You have a choice. You can either hide from uncertainty or face up to it.

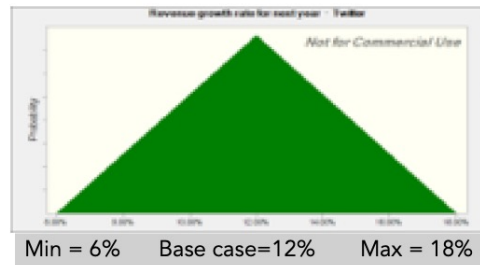
# Facing up to uncertainty...

- Uncertainty is a feature, not a bug: Uncertainty is part and parcel of investing life, and while denial may make you more comfortable, it will not make it go away.
- Uncertainty varies across the life cycle: You will face more uncertainty in valuing young companies, with little financial history and unformed business models, than more mature companies with lots of history and established business models.
- Uncertainty is not an excuse for not valuing companies: That does not mean that you cannot value young companies. It is just that you will face more estimation error in your valuations, but so will everyone else in the market.

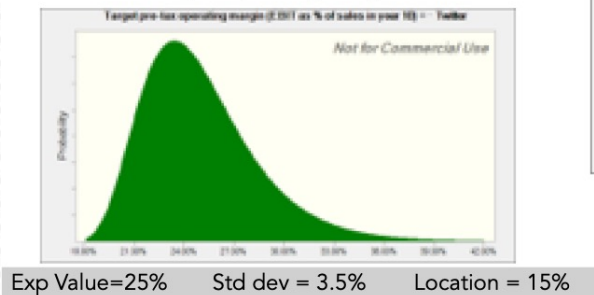
# Uncertainty in valuation: Twitter in 2022

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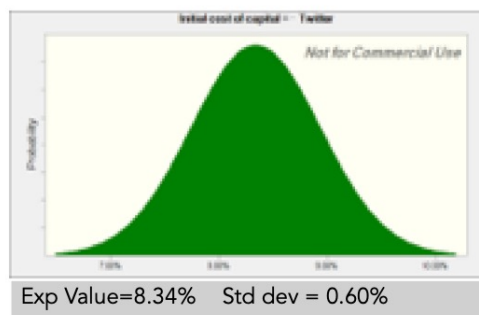
Revenue Growth Rate - Years 1- 5



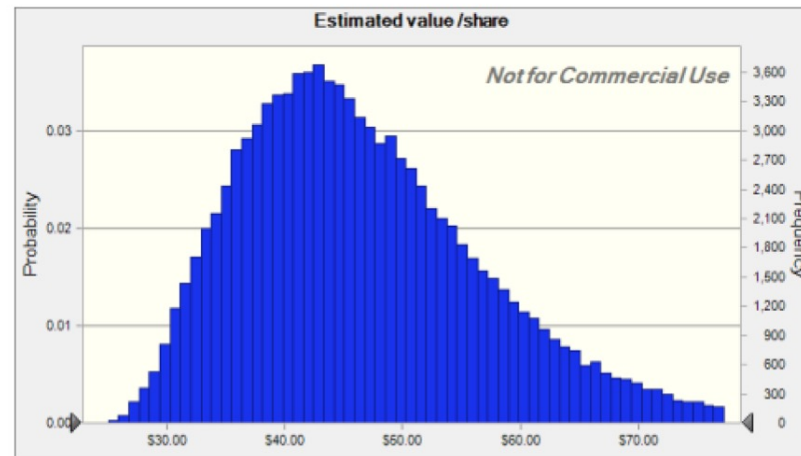
Target Operating Margin



Cost of Capital



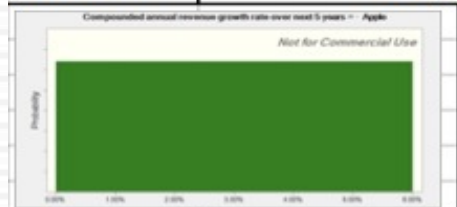
Twitter Valuation in April 2022: Simulation



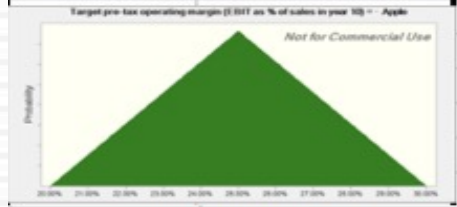
Percentile	Value per share
0%	\$ 24.14
10%	\$ 34.42
20%	\$ 37.61
30%	\$ 40.27
40%	\$ 42.69
50%	\$ 45.17
60%	\$ 47.95
70%	\$ 51.08
80%	\$ 55.15
90%	\$ 61.32
100%	\$ 138.18

# Uncertainty in valuation: Apple in 2018

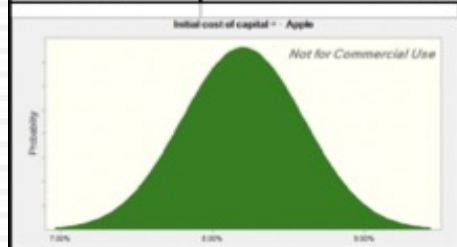
Growth Rate in Revenues	
Minimum	0.00%
Maximum	6.00%



Operating Margin (year 5)	
Minimum	20.00%
Likeliest	25.00%
Maximum	30.00%



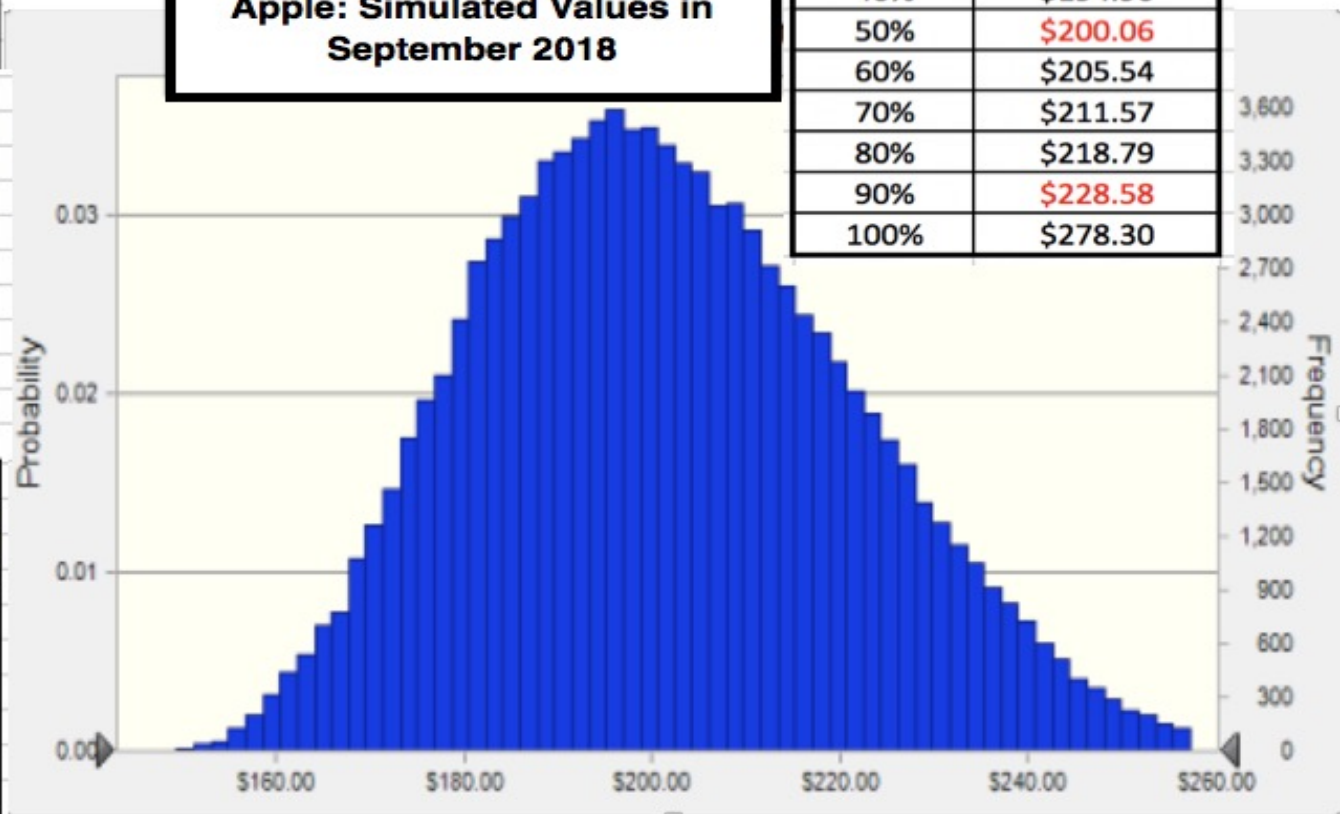
Cost of Capital	
Mean	8.20%
Std. Dev.	0.40%



Base Case	\$200.71
Mean	\$201.42
Median	\$200.06

**Apple: Simulated Values in September 2018**

Percentiles	Forecast values
0%	\$145.84
10%	\$176.28
20%	\$183.69
30%	\$189.57
40%	\$194.90
50%	\$200.06
60%	\$205.54
70%	\$211.57
80%	\$218.79
90%	\$228.58
100%	\$278.30



# The Bottom Line

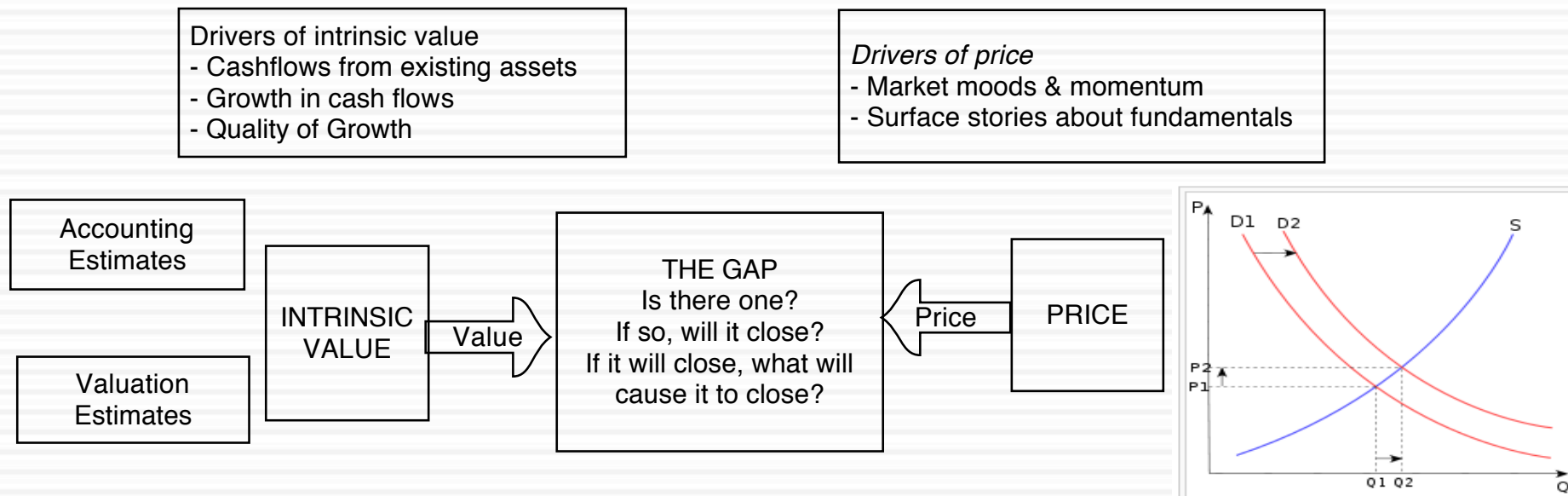
- Early in a company's life, it is a fact of life that everything is uncertain. Consulting with experts, collecting more data or building bigger models will not make the uncertainty go away.
- As you move from mature companies to young companies, you have to be willing to move from
  - ▣ Rule-based valuation to principle-based valuation
  - ▣ Being reliant on historical data to market-based best judgments
  - ▣ Wanting the right answer to being okay with being wrong (sometimes horribly so).
  - ▣ Point estimate valuations to valuation distributions



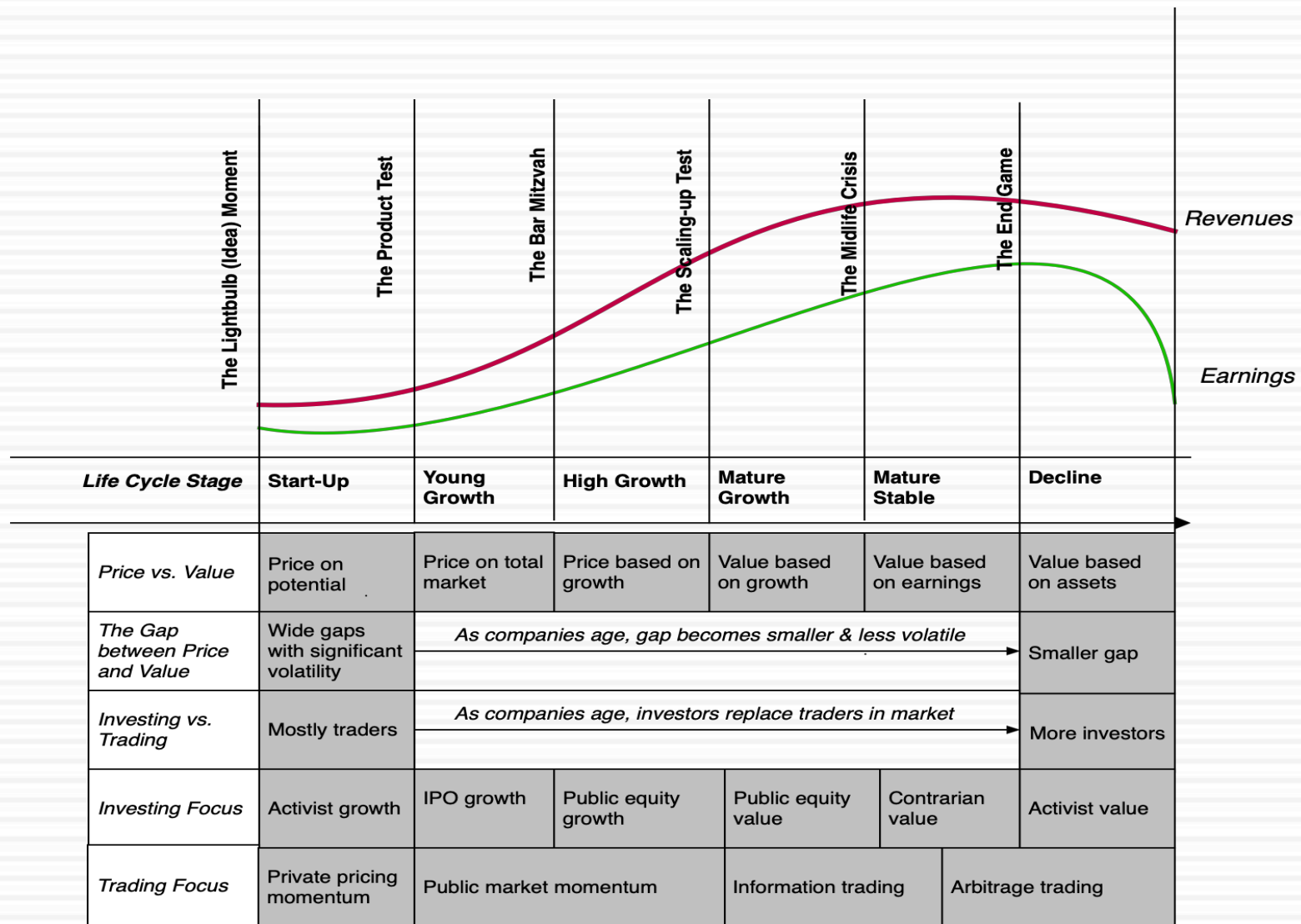
# Price versus value, Across the life cycle

# Price versus Value: The Set up

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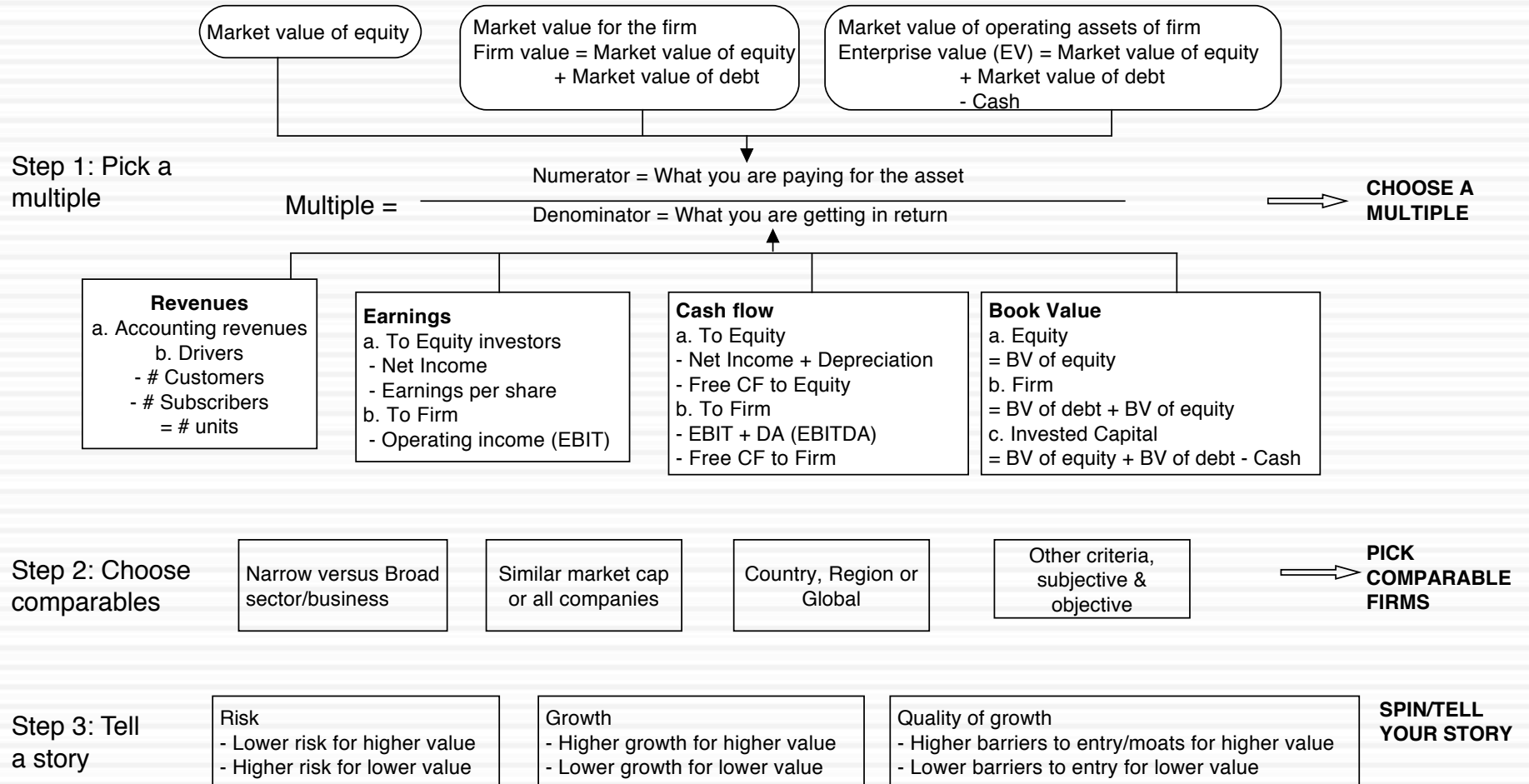


# Price versus Value: Across the Life Cycle





# Multiples and Comparable Transactions



# Uncertainty and the Pricing Imperative

- As investors/analysts face more uncertainty about the future, they become less willing to grapple with it and make estimates for the future, a requirement for valuation.
- Instead, they choose to price companies/assets, thus anchoring what they are willing to pay to what others are paying for similar assets.
- Note that while this reaction is understandable, the uncertainty still remains.
  - You are in denial. Hiding from uncertainty does not make it go away.
  - You are letting the crowd, just as uncertain as you are, determine what you should pay.

# Twitter: Setting the table in October 2013

	Last 10K	Trailing 12 month
Revenues	\$316.93	\$534.46
Operating Income	(\$77.06)	(\$134.91)
Adjusted Operating Income		\$7.66
Invested Capital		\$955.00
Adjusted Operating Margin		1.44%
Sales/ Invested Capital		\$0.56

# Twitter: Priming the Pump for Valuation

## 1. Make small revenues into big revenues

## 2. Make losses into profits

	2011		2012		2013	
	%	\$	%	\$	%	\$
Google	32.09%	\$27.74	31.46%	\$32.73	33.24%	\$38.83
Facebook	3.65%	\$3.15	4.11%	\$4.28	5.04%	\$5.89
Yahoo!	3.95%	\$3.41	3.37%	\$3.51	3.10%	\$3.62
Microsoft	1.27%	\$1.10	1.63%	\$1.70	1.78%	\$2.08
IAC	1.15%	\$0.99	1.39%	\$1.45	1.47%	\$1.72
AOL	1.17%	\$1.01	1.02%	\$1.06	0.95%	\$1.11
Amazon	0.48%	\$0.41	0.59%	\$0.61	0.71%	\$0.83
Pandora	0.28%	\$0.24	0.36%	\$0.37	0.50%	\$0.58
Twitter	0.16%	\$0.14	0.28%	\$0.29	0.50%	\$0.58
Linkedin	0.18%	\$0.16	0.25%	\$0.26	0.32%	\$0.37
Millennial Media	0.05%	\$0.04	0.07%	\$0.07	0.10%	\$0.12
Other	55.59%	\$48.05	55.47%	\$57.71	52.29%	\$61.09
Total Market	100%	\$86.43	100.00%	\$104.04	100.00%	\$116.82

Company	Operating Margin
Google Inc. (NasdaqGS:GOOG)	22.82%
Facebook, Inc. (NasdaqGS:FB)	29.99%
Yahoo! Inc. (NasdaqGS:YHOO)	13.79%
Netflix	3.16%
Groupon	2.53%
LinkedIn Corporation (NYSE:LNKD)	5.18%
Pandora Media, Inc. (NYSE:P)	-9.13%
Yelp, Inc. (NYSE:YELP)	-6.19%
OpenTable, Inc. (NasdaqGS:OPEN)	24.90%
RetailMeNot	45.40%
Travelzoo Inc. (NasdaqGS:TZOO)	15.66%
Zillow, Inc. (NasdaqGS:Z)	-66.60%
Trulia, Inc. (NYSE:TRLA)	-6.79%
Aggregate	20.40%

		Annual growth rate in Global Advertising Spending				
		2.00%	2.50%	3.00%	3.50%	4.00%
Online advertising share of market	20%	\$124.78	\$131.03	\$137.56	\$144.39	\$151.52
	25%	\$155.97	\$163.79	\$171.95	\$180.49	\$189.40
	30%	\$187.16	\$196.54	\$206.34	\$216.58	\$227.28
	35%	\$218.36	\$229.30	\$240.74	\$252.68	\$265.16
	40%	\$249.55	\$262.06	\$275.13	\$288.78	\$303.04

*My estimate for 2023: Overall online advertising market will be close to \$200 billion and Twitter will have about 5.7% (\$11.5 billion)*

*My estimate for Twitter: Operating margin of 25% in year 10*

## 3. Reinvest for growth

	Sales/ Invested Capital
Twitter (2013)	1.10
Advertising Companies	1.40
Social Media Companies	1.05

*My estimate for Twitter: Sales/Capital will be 1.50 for next 10 years*

Starting numbers

Twitter Pre-IPO Valuation: October 27, 2013

	Last 10K	Trailing 12 month
Revenues	\$316.93	\$534.46
Operating income	-\$77.06	-\$134.91
Adjusted Operating Income		\$7.67
Invested Capital		\$955.00
Adjusted Operatng Margin		1.44%
Sales/ Invested Capital		0.56
Interest expenses	\$2.49	\$5.30

Revenue growth of 51.5% a year for 5 years, tapering down to 2.5% in year 10

Pre-tax operating margin increases to 25% over the next 10 years

Sales to capital ratio of 1.50 for incremental sales

**Stable Growth**  
 $g = 2.5\%$ ;  $\text{Beta} = 1.00$ ;  
 Cost of capital = 8%  
 $\text{ROC} = 12\%$ ;  
 Reinvestment Rate =  $2.5\%/12\% = 20.83\%$

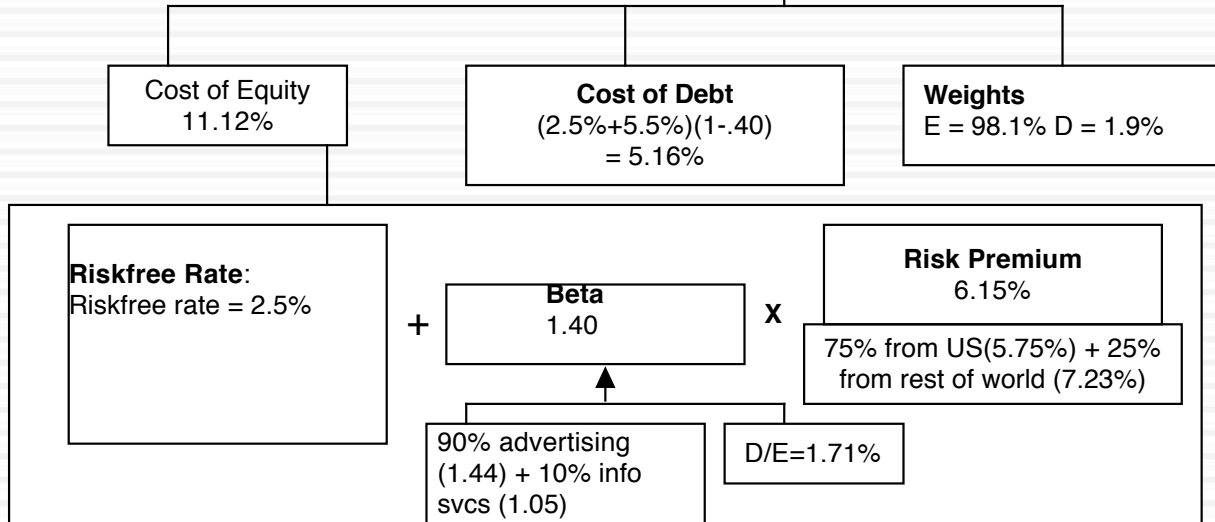
Terminal Value<sub>10</sub> =  $1466 / (.08 - .025) = \$26,657$

		1	2	3	4	5	6	7	8	9	10
Operating assets	\$9,705										
+ Cash	321										
+ IPO Proceeds	1295										
- Debt	214										
Value of equity	11,106										
- Options	713										
Value in stock	10,394										
/ # of shares	582.46										
Value/share	\$17.84										
Revenues		\$ 810	\$1,227	\$1,858	\$2,816	\$4,266	\$6,044	\$7,973	\$9,734	\$10,932	\$11,205
Operating Income		\$ 31	\$ 75	\$ 158	\$ 306	\$ 564	\$ 941	\$1,430	\$1,975	\$ 2,475	\$ 2,801
Operating Income after tax		\$ 31	\$ 75	\$ 158	\$ 294	\$ 395	\$ 649	\$ 969	\$1,317	\$ 1,624	\$ 1,807
- Reinvestment		\$ 183	\$ 278	\$ 421	\$ 638	\$ 967	\$1,186	\$1,285	\$1,175	\$ 798	\$ 182
FCFF		\$(153)	\$(203)	\$(263)	\$(344)	\$(572)	\$(537)	\$(316)	\$ 143	\$ 826	\$ 1,625

**Terminal year (11)**  
 EBIT (1-t) \$ 1,852  
 - Reinvestment \$ 386  
 FCFF \$ 1,466

Cost of capital =  $11.12\% (.981) + 5.16\% (.019) = 11.01\%$

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



# Pricing Twitter: Start with the “comparables”

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Company	Market Cap	Enterprise value	Revenues	EBITDA	Net Income	Number of users (millions)	EV/User	EV/Revenue	EV/EBITDA	PE
Facebook	\$173,540.00	\$160,090.00	\$7,870.00	\$3,930.00	\$1,490.00	1230.00	\$130.15	20.34	40.74	116.47
Linkedin	\$23,530.00	\$19,980.00	\$1,530.00	\$182.00	\$27.00	277.00	\$72.13	13.06	109.78	871.48
Pandora	\$7,320.00	\$7,150.00	\$655.00	-\$18.00	-\$29.00	73.40	\$97.41	10.92	NA	NA
Groupon	\$6,690.00	\$5,880.00	\$2,440.00	\$125.00	-\$95.00	43.00	\$136.74	2.41	47.04	NA
Netflix	\$25,900.00	\$25,380.00	\$4,370.00	\$277.00	\$112.00	44.00	\$576.82	5.81	91.62	231.25
Yelp	\$6,200.00	\$5,790.00	\$233.00	\$2.40	-\$10.00	120.00	\$48.25	24.85	2412.50	NA
Open Table	\$1,720.00	\$1,500.00	\$190.00	\$63.00	\$33.00	14.00	\$107.14	7.89	23.81	52.12
Zynga	\$4,200.00	\$2,930.00	\$873.00	\$74.00	-\$37.00	27.00	\$108.52	3.36	39.59	NA
Zillow	\$3,070.00	\$2,860.00	\$197.00	-\$13.00	-\$12.45	34.50	\$82.90	14.52	NA	NA
Trulia	\$1,140.00	\$1,120.00	\$144.00	-\$6.00	-\$18.00	54.40	\$20.59	7.78	NA	NA
Tripadvisor	\$13,510.00	\$12,860.00	\$945.00	\$311.00	\$205.00	260.00	\$49.46	13.61	41.35	65.90
						<b>Average</b>	\$130.01	11.32	350.80	267.44
						<b>Median</b>	\$97.41	10.92	44.20	116.47

# Read the tea leaves: See what the market cares about

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	<i>Market Cap</i>	<i>Enterprise value</i>	<i>Revenues</i>	<i>EBITDA</i>	<i>Net Income</i>	<i>Number of users (millions)</i>
<i>Market Cap</i>	1.					
<i>Enterprise value</i>	0.9998	1.				
<i>Revenues</i>	0.8933	0.8966	1.			
<i>EBITDA</i>	0.9709	0.9701	0.8869	1.		
<i>Net Income</i>	0.8978	0.8971	0.8466	0.9716	1.	
<i>Number of users (millions)</i>	0.9812	0.9789	0.8053	0.9354	0.8453	1.

*Twitter had 240 million users at the time of its IPO. What price would you attach to the company?*

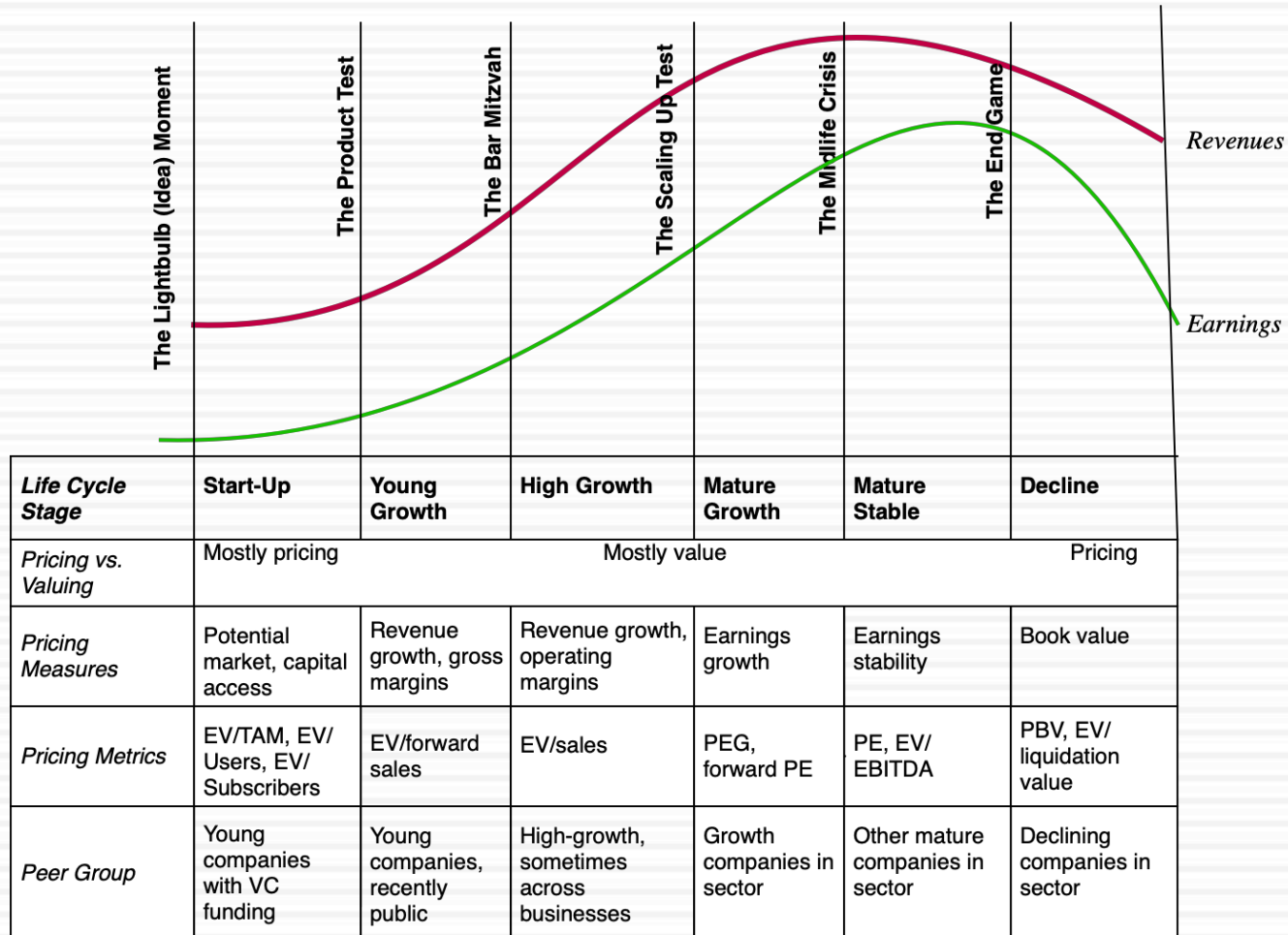
# Use the “market metric” and “market price”

80

- The most important variable, in late 2013, in determining market value and price in this sector (social media, ill defined as that is) is the number of users that a company has.
- Looking at comparable firms, it looks like the market is paying about \$100/user in valuing social media companies, with a premium for “predictable” revenues (subscriptions) and user intensity.
- Twitter has about 240 million users and can be valued based on the \$100/user:
- Enterprise value =  $240 * 100 = \$24$  billion



# Pricing and Value: Across the Life Cycle

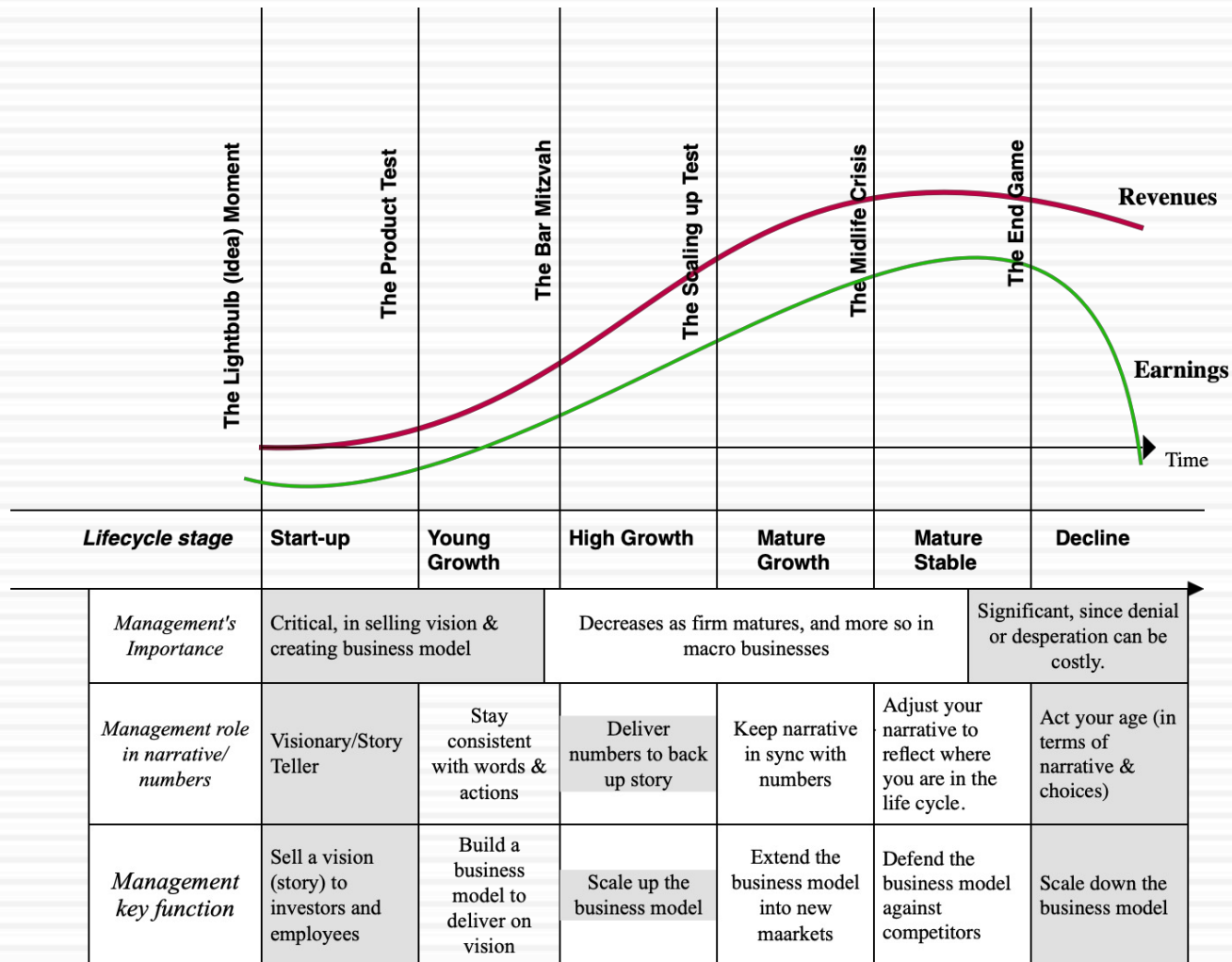




# The "Right" Manager

Story Tellers, Business Builders and Managers

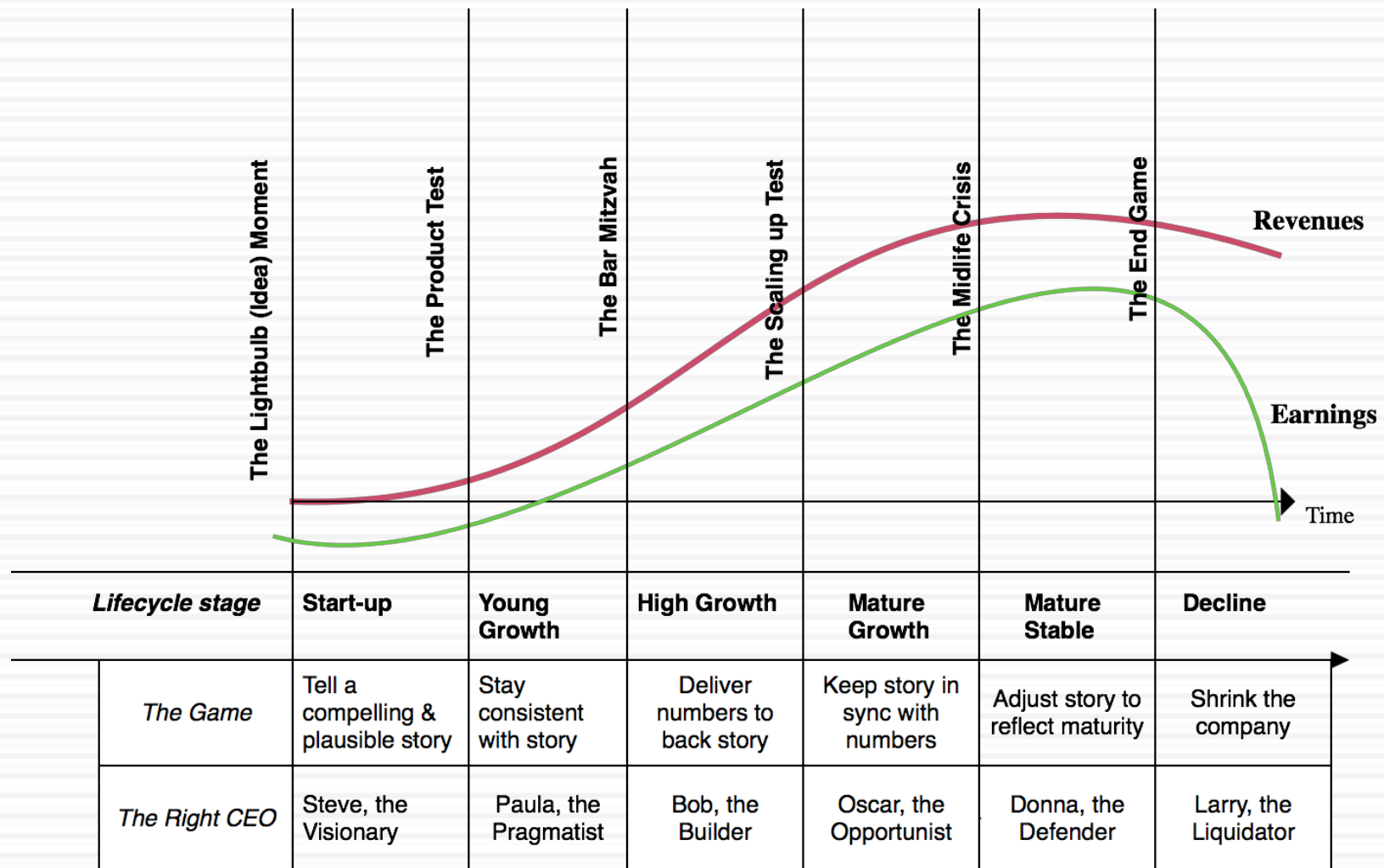
# The focus for management, for different stages in the life cycle..



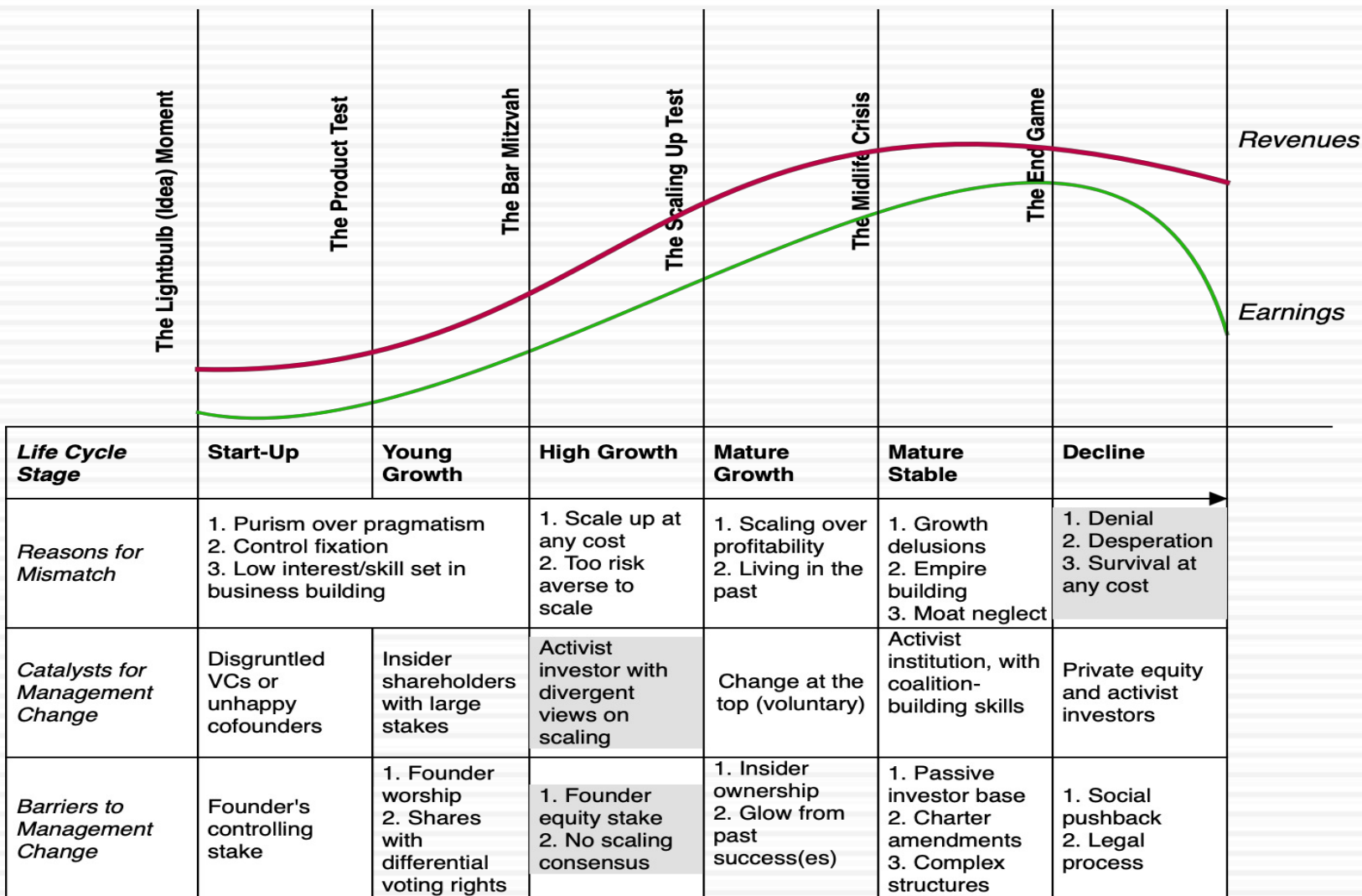
# As companies age, the emphasis shifts..

- 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, 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 are stronger on numbers.

# The Right CEO for your company? It depends..



# Management Mismatches



# 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.
- With investors, the transition is made easier by the existence of public markets. As companies go public, these investors can cash out and go back to their preferred habitat. Investors who stray far from their strengths will pay a price.

# The challenge of shorter life cycles..

- 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.





“Growing old is mandatory, Growing up is optional”

*Amvath Javodeen*