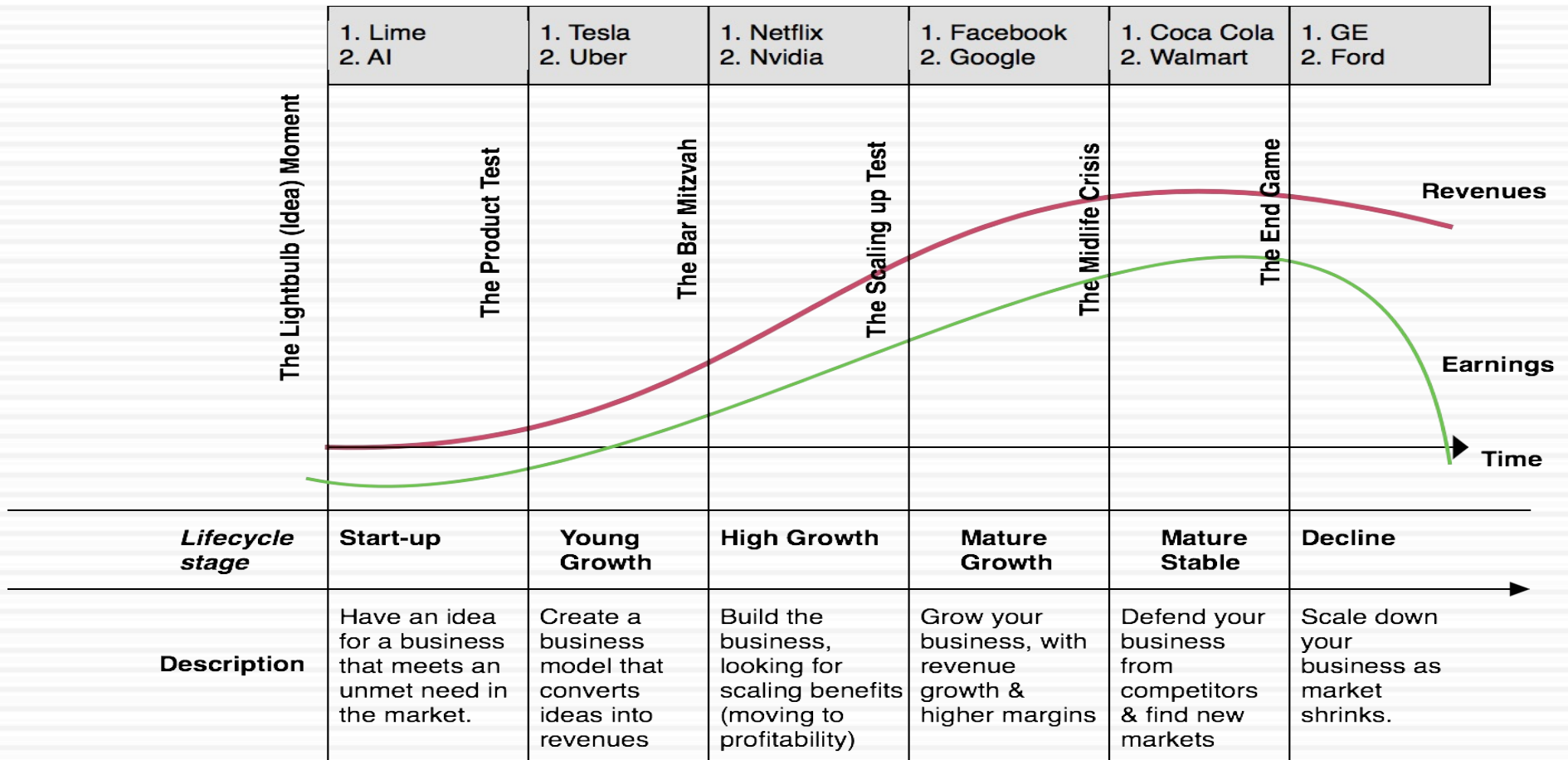




THE CORPORATE LIFE CYCLE:
GROWING UP IS HARD TO DO,
GROWING OLD IS EVEN HARDER!

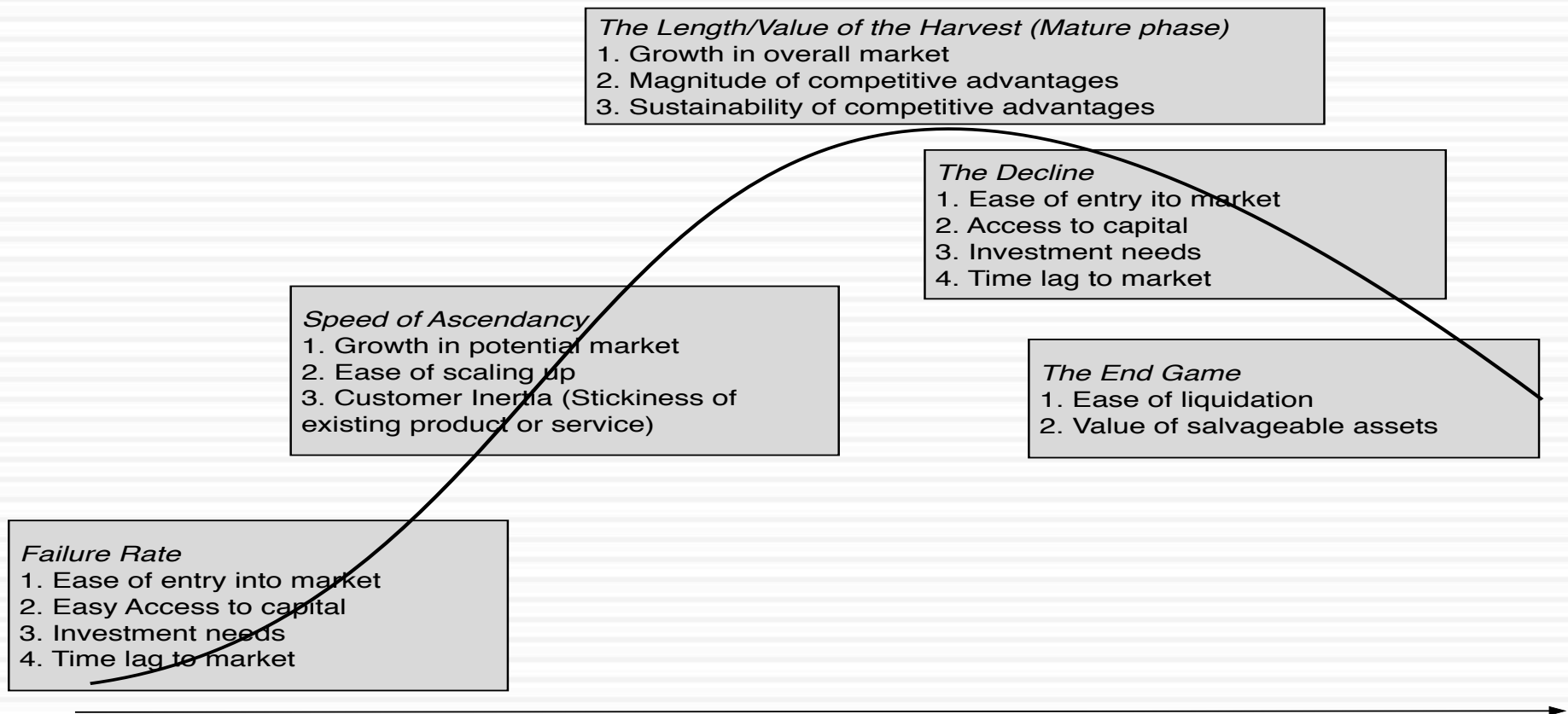
Aswath Damodaran

The Corporate Life Cycle



The determinants of the life cycle

The Corporate Life Cycle: Drivers and Determinants



Accounting and Financial Balance Sheets

Accounting Balance Sheet

Assets		Liabilities	
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


Assets		Liabilities	
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 you

The Bottom Line

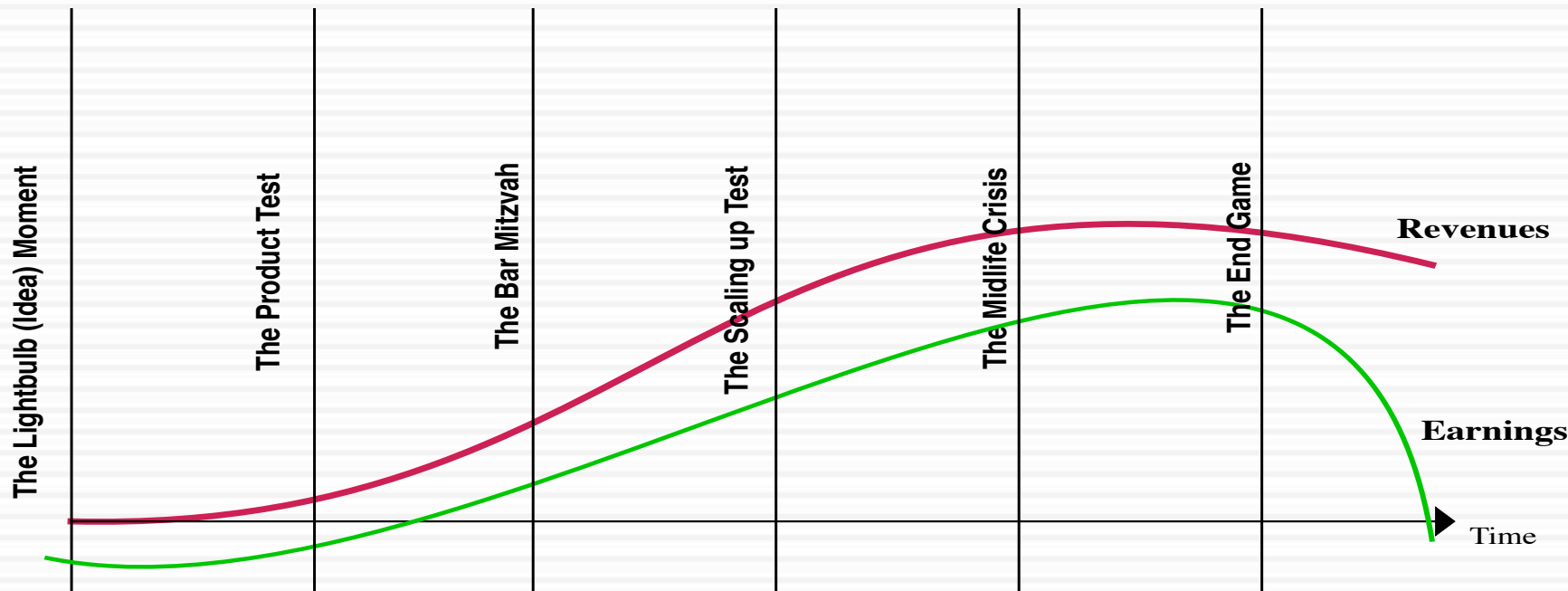
- Accounting statements get less and less useful if you are looking earlier in the life cycle, since accountants have neither a history to record nor an operating business to describe.
- As companies age, balance sheets mean more but they also become more cluttered, since they carry the legacy of “accounting” fixes and choices. Meaningless assets start to populate the balance sheet and meaningless liabilities are often created to offset them.
- Balance sheet based valuation, which is what most accounting valuation is (and is at the core of much of value investing) is useless with young companies. It is most useful in mature companies without accounting clutter.
- Fair value accounting is destined for failure everywhere, because accountants cannot be imaginative and/or creative, but it will fail most spectacularly with young companies.



CORPORATE FINANCE ACROSS THE LIFE CYCLE

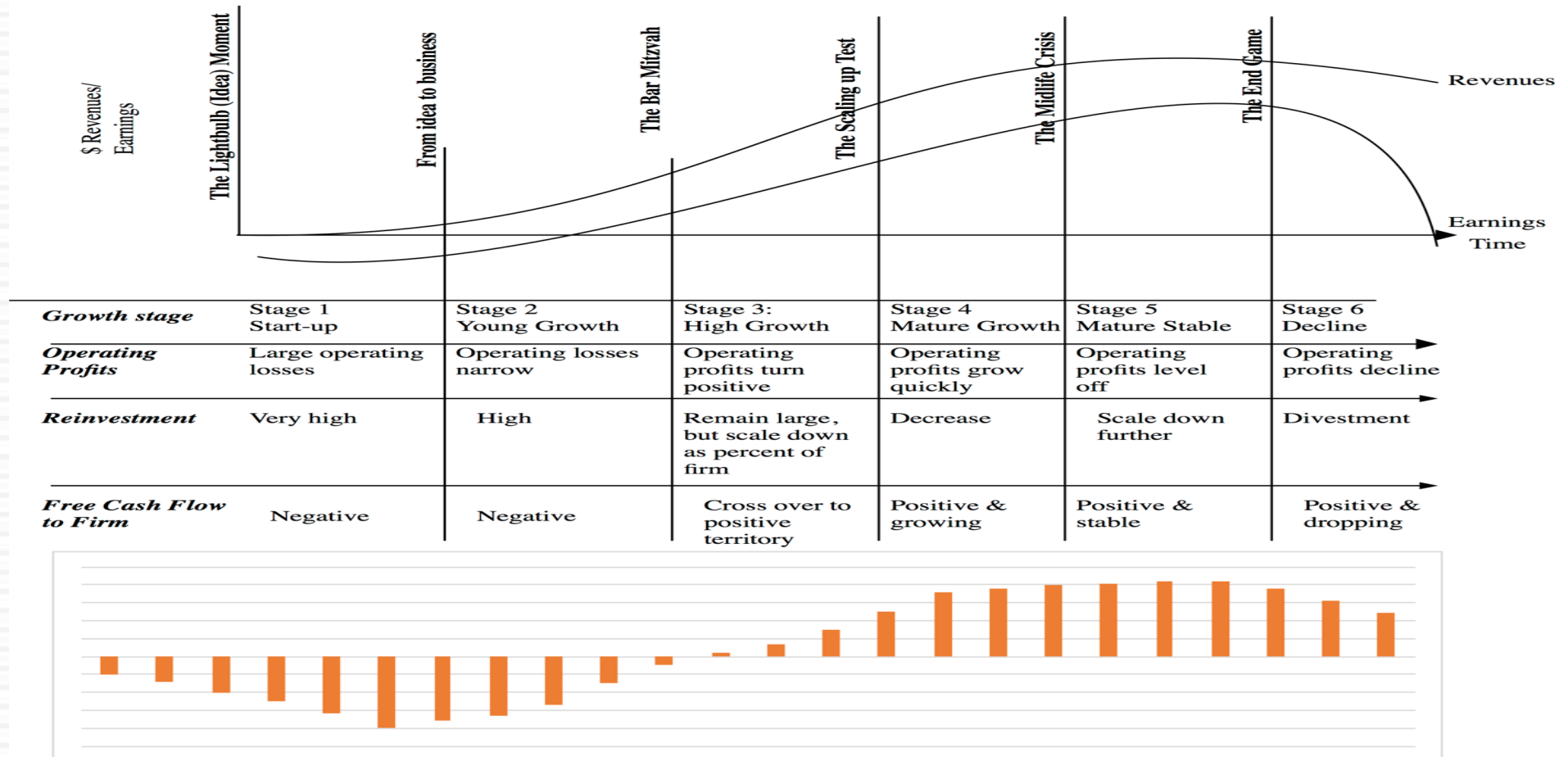
Act your (corporate) age..

The emphasis in corporate finance shifts..



<i>Lifecycle stage</i>	Start-up	Young Growth	High Growth	Mature Growth	Mature Stable	Decline
<i>Investing Policy</i>	New product development	Market testing and build up	Scale up production	Augment capacity + New Products	Maintain capacity + Acquisitions	Reduce capacity
<i>Financing Policy</i>	Equity funding, debt only if desperate	Equity, public market option	Equity mainly, with some debt capacity	Debt capacity increases	Debt capacity maximized	Debt scales down with firm
<i>Dividend Policy</i>	Cash burn, with equity infusions	Cash burn maximized	Beginnings of positive cash flows	Cash buildup, if not returned	Peak cash returns	Cash return from asset divestitures

And so do the cash flows...



With reality checks..

1. For young companies, cash burn is a feature, not a bug: With young companies, cash flows will be negative in the early years, requiring new equity to be raised and dilution.
2. As growth starts to ease and companies mature, cash balances will build up during the transition: When growth starts to ease, cash flows will rise faster than revenues/profits, and as companies take time to adjust, cash balances will balloon out.
3. Once companies adjust to being mature, there will be more cash returned to stockholders: Returning cash to stockholders is not a failure, but a consequence of success.

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.

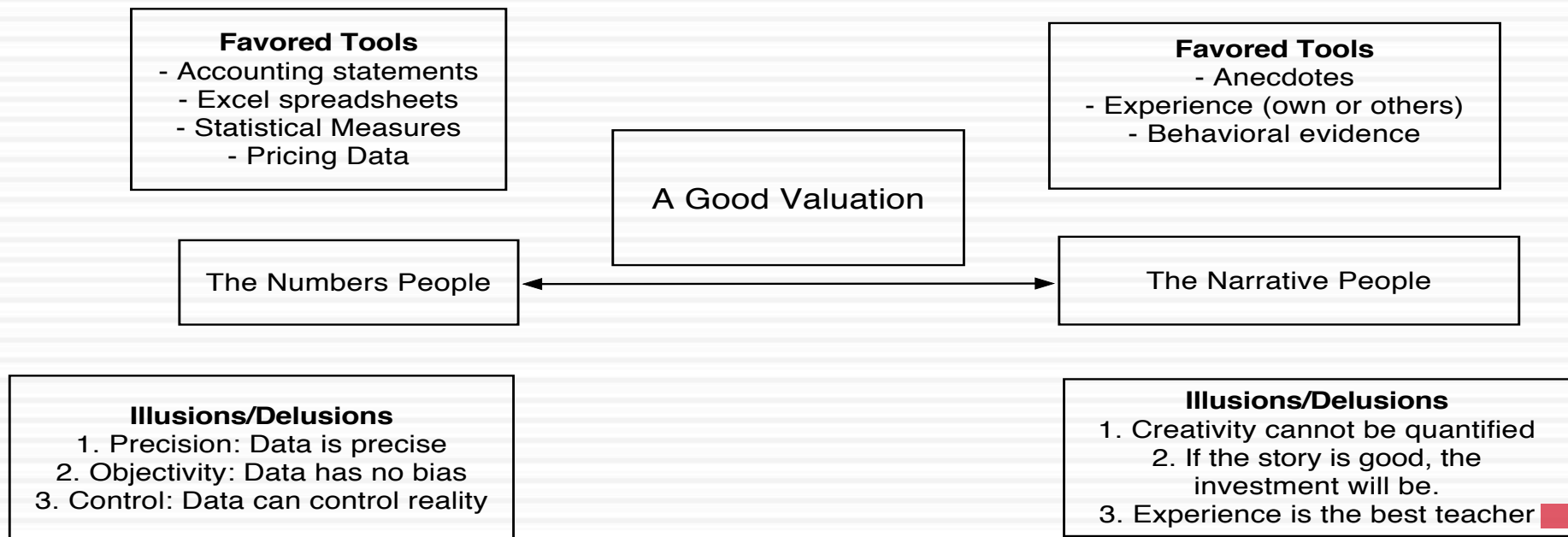
Companies that don't "act their age" will destroy value.



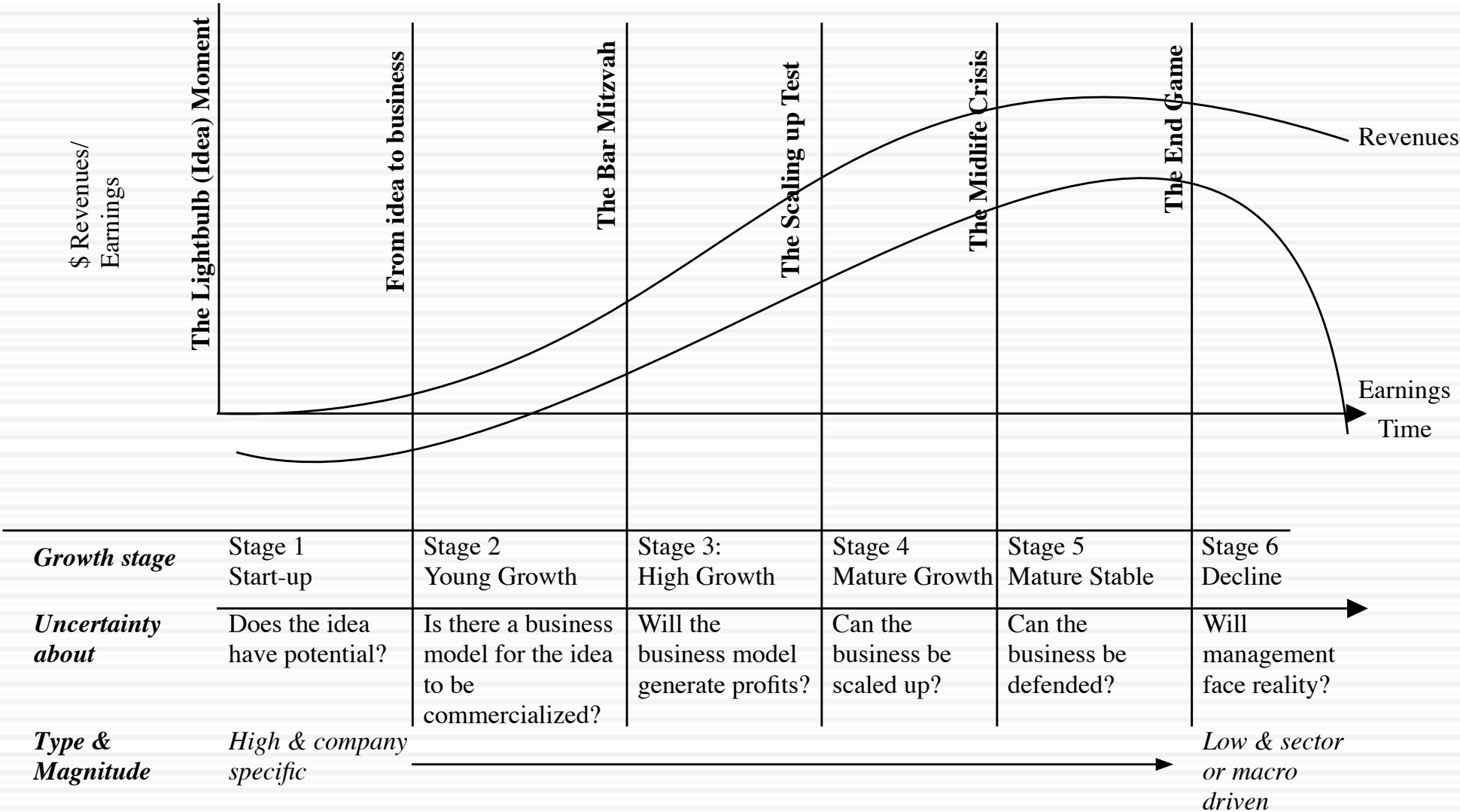
NARRATIVE TO NUMBERS,
ACROSS THE LIFE CYCLE

All story to mostly numbers..

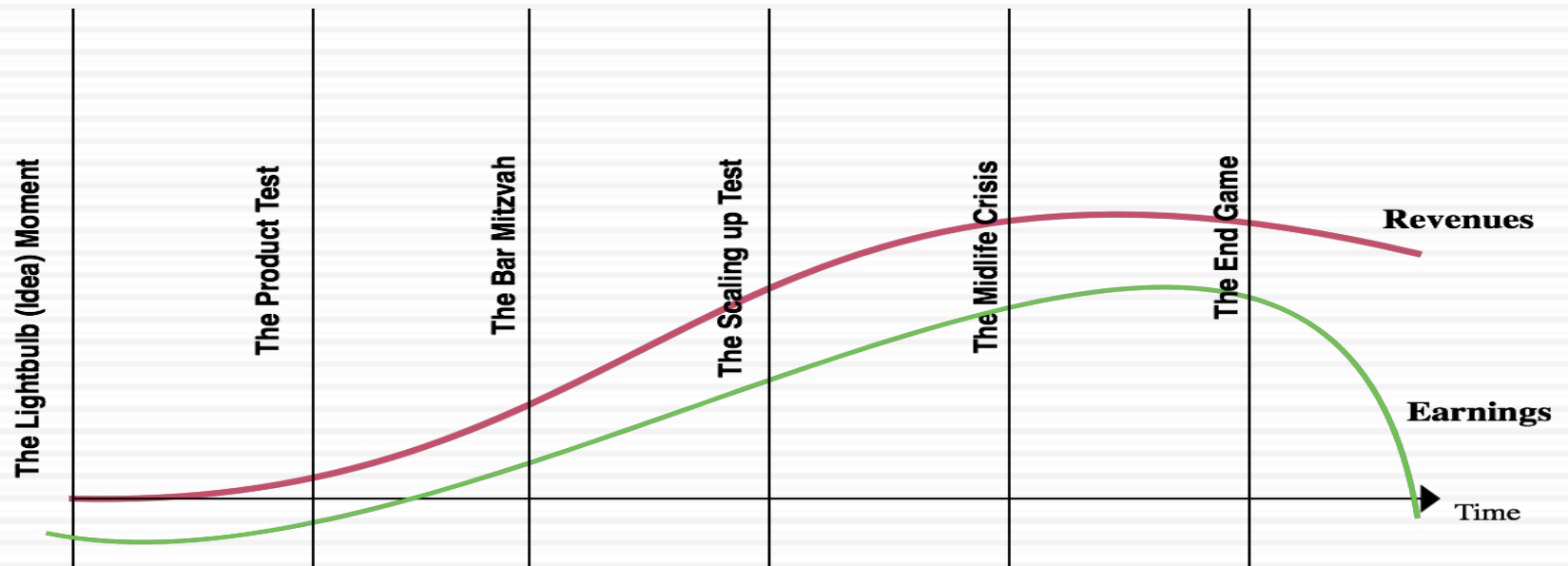
Value = Story + Numbers



The Evolution of Uncertainty



In value, the emphasis shifts as well, from narrative to numbers...



<i>Lifecycle stage</i>	Start-up	Young Growth	High Growth	Mature Growth	Mature Stable	Decline
<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

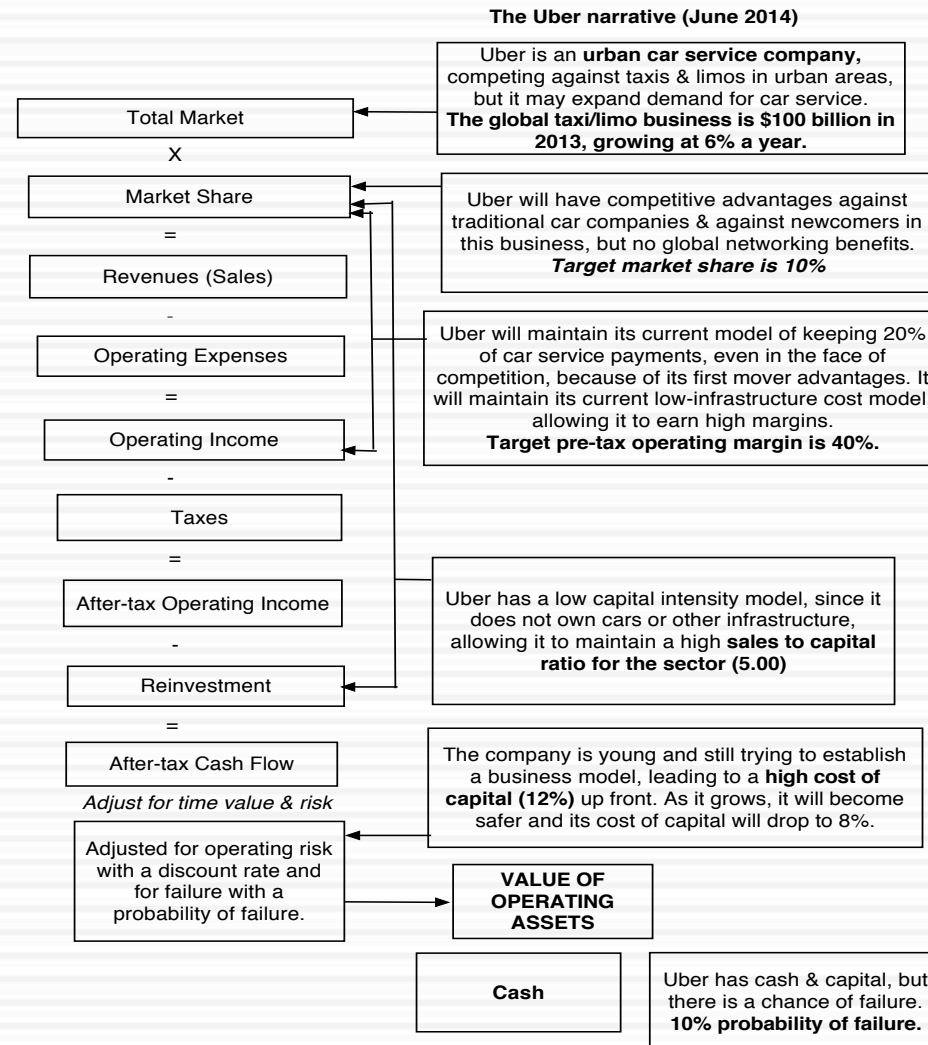
- With a young company, narrative is central, divergent and volatile.
 - ▣ It is central because it is the only thing that you are offering investors, since you have no history.
 - ▣ It is divergent because you can still offer widely different narratives, since it is early in the game.
 - ▣ It is volatile, 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.

A Young Company: My Uber Narrative in June 2014

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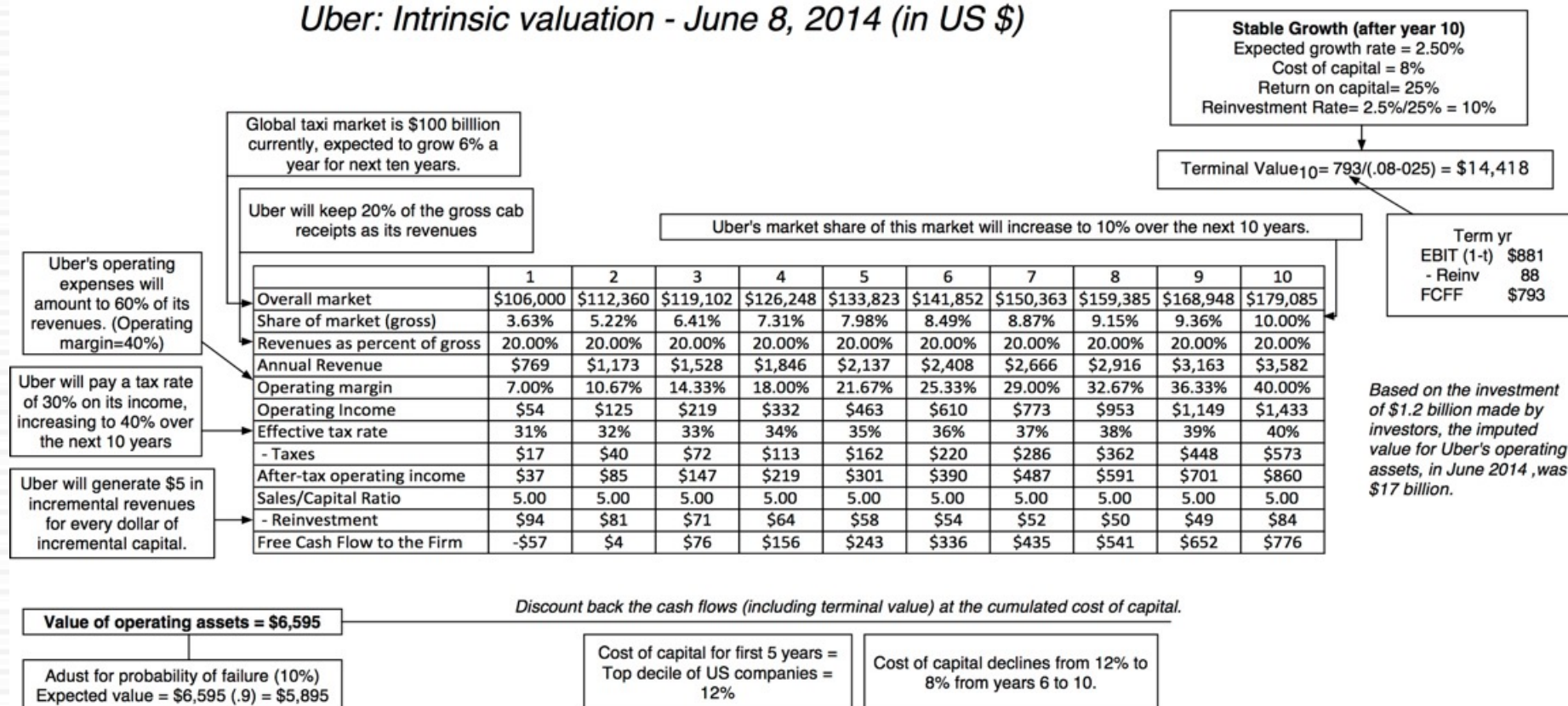
1. An urban car service business: I saw Uber primarily as a force in urban areas and only in the car service business.
2. Which would expand the business moderately (about 40% over ten years) by bringing in new users.
3. With local networking benefits: If Uber becomes large enough in any city, it will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

Uber in 2014: From Story to Inputs



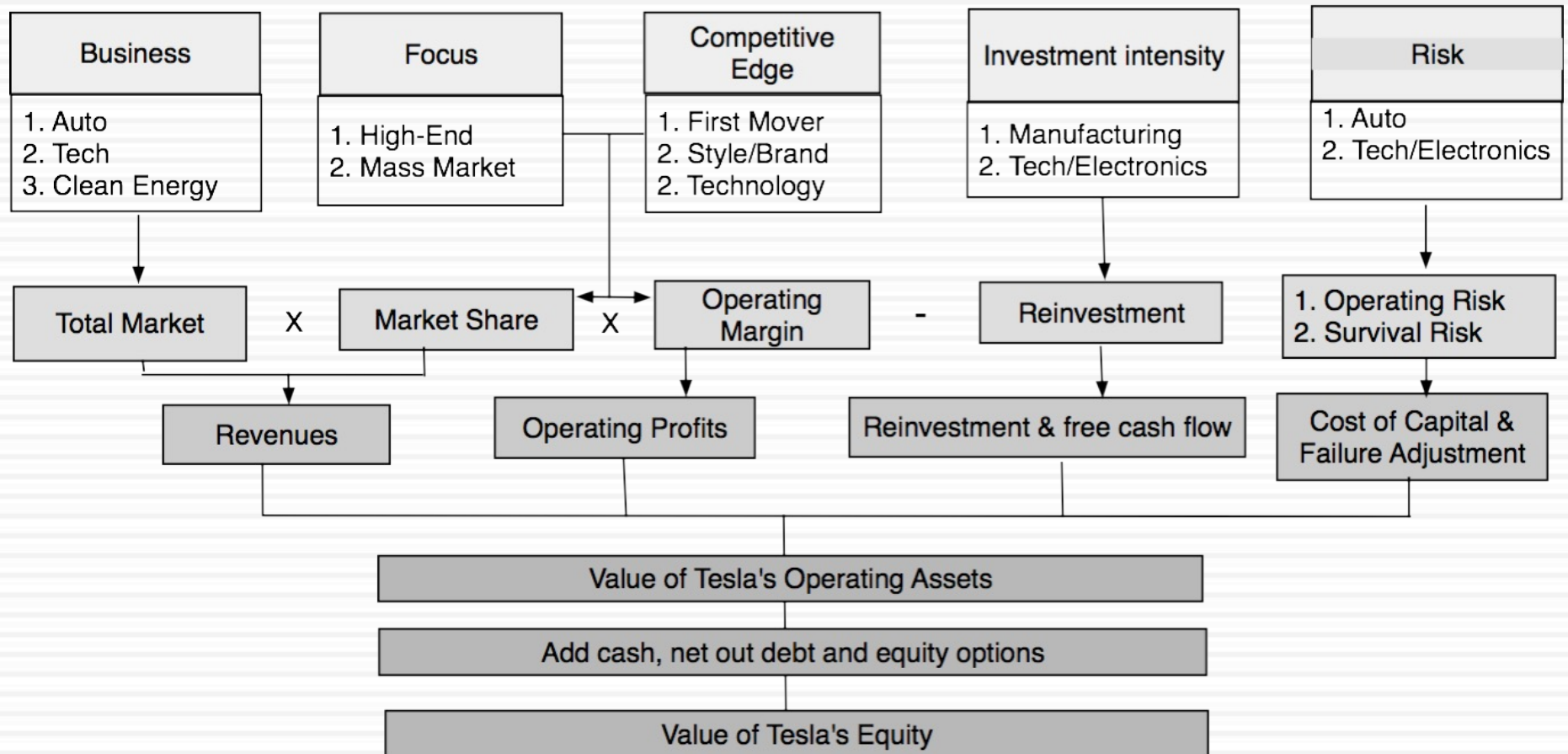
Uber in 2014: From Inputs to Value

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



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%			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%	<div data-bbox="604 1219 1178 1373" data-label="Text"> <p>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</p> </div>									
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 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.

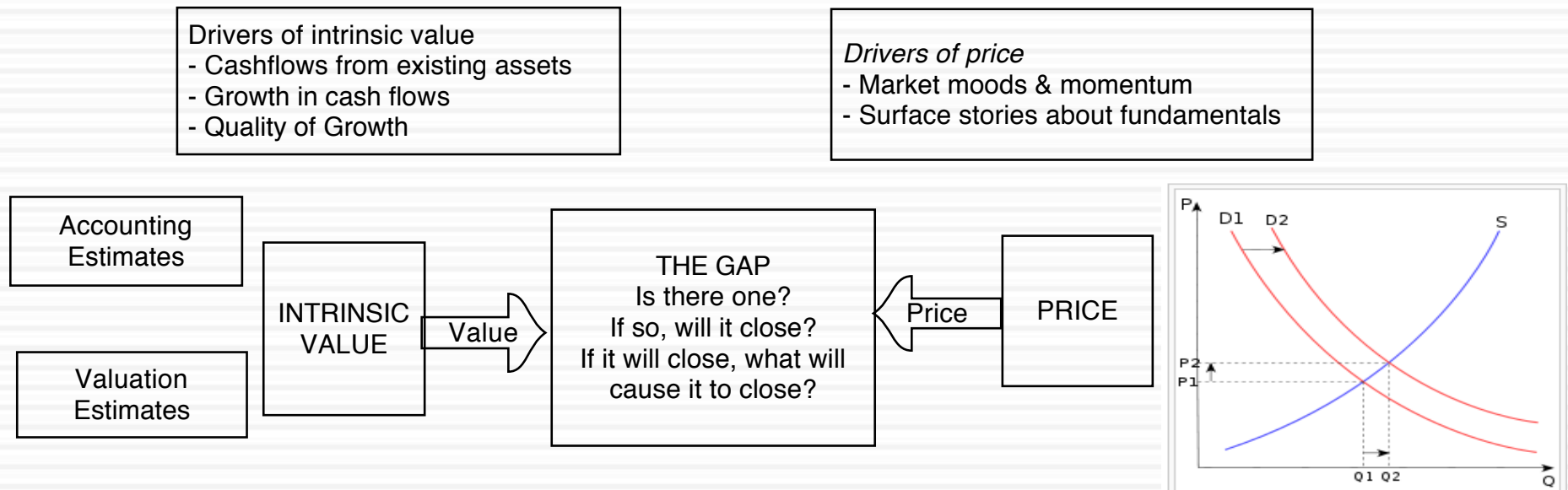


PRICE VERSUS VALUE, ACROSS
THE LIFE CYCLE

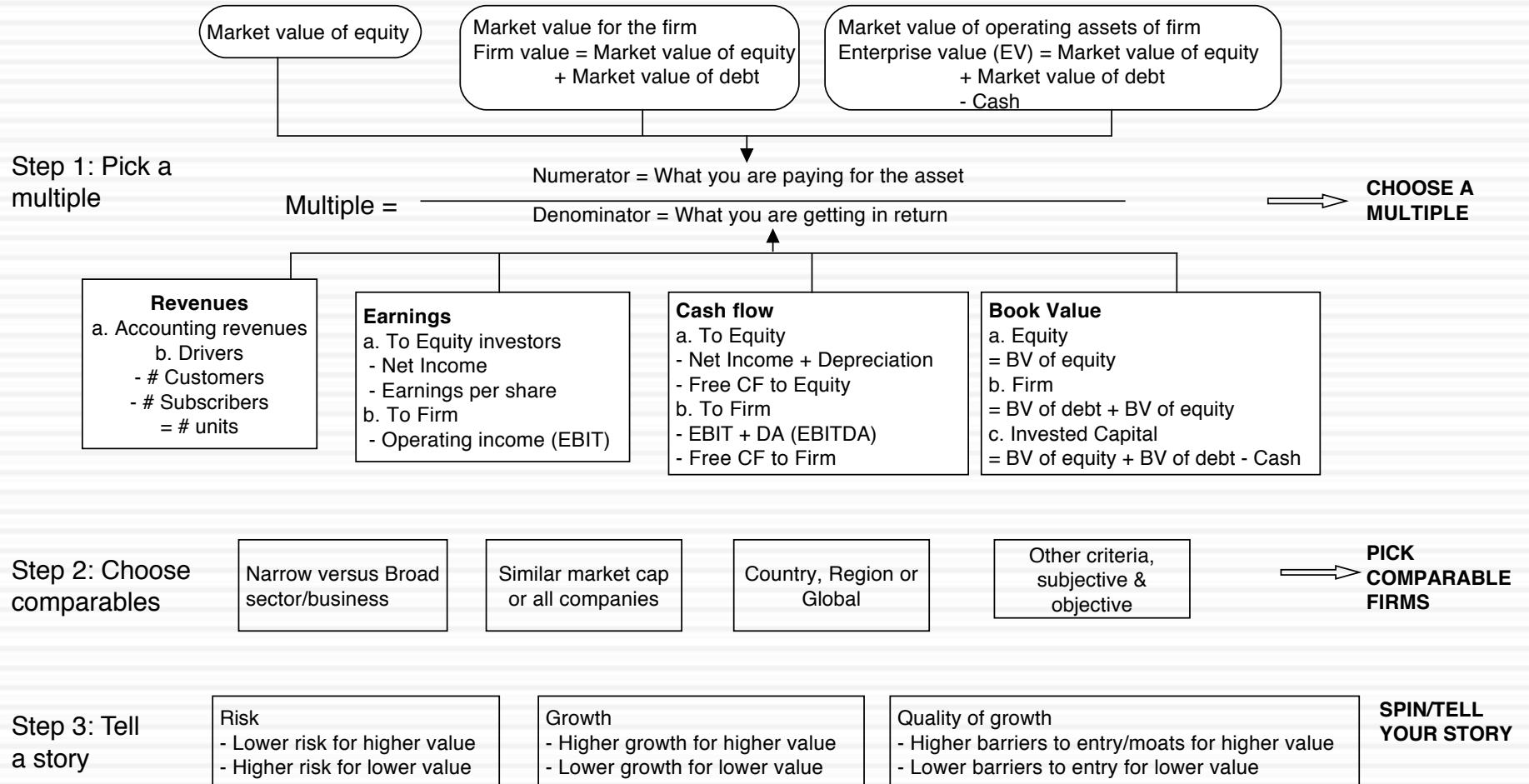


Price versus Value: The Set up

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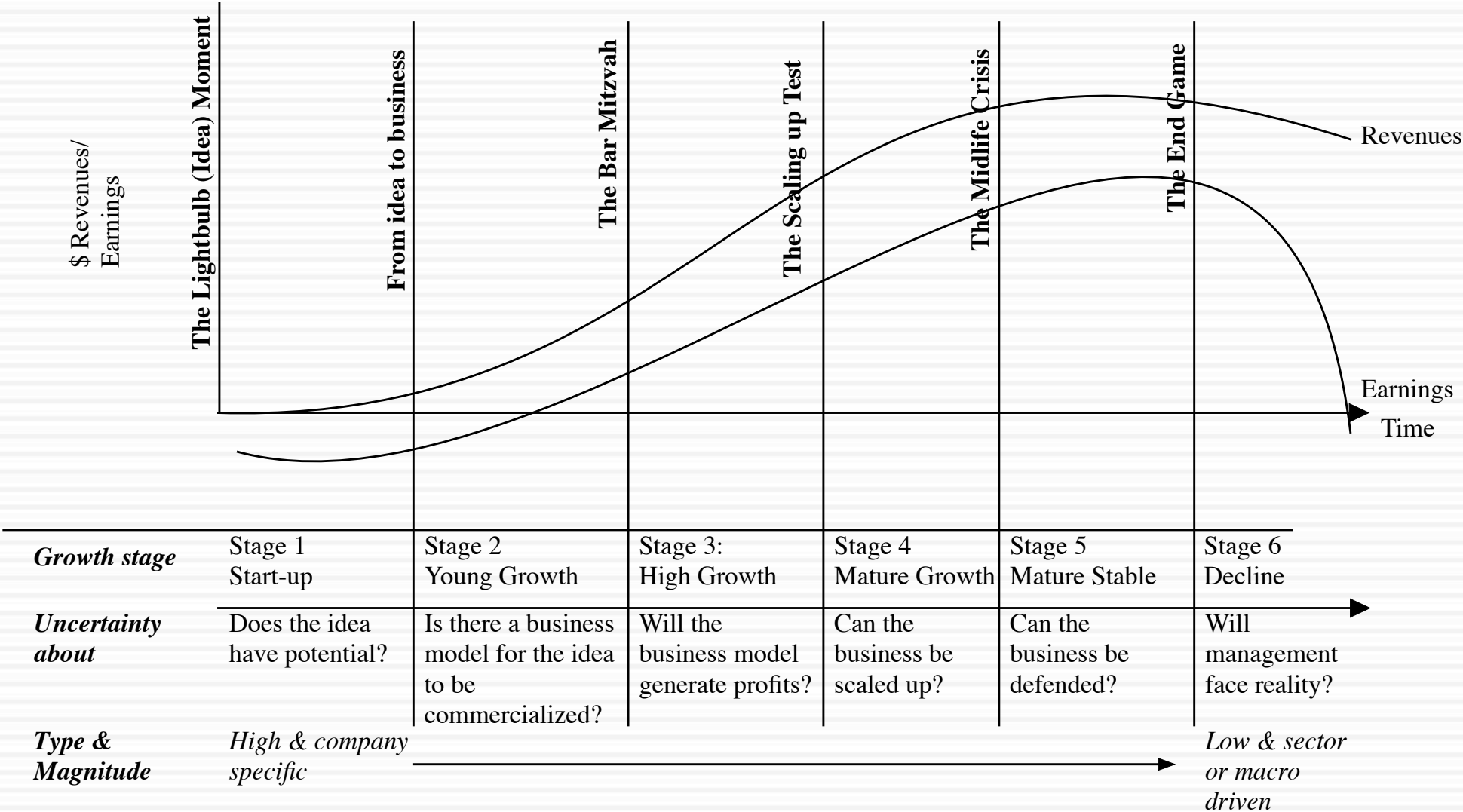
Multiples and Comparable Transactions



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.

The Evolution of Uncertainty



Pricing and Value: Across the Life Cycle

<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 & 5 Mature Stable</i>	<i>Stage 6 Decline</i>
<i>Key Questions</i>	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?
<i>Pricing Metrics & Measures</i>	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)
<i>Narrative vs Numbers</i>	Mostly or all narrative	More narrative than numbers	Mix of narrative & numbers	More numbers than narrative	Mostly or all numbers
<i>Value Drivers</i>	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
<i>Dangers</i>	<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.
<i>Transitions</i>	<div style="display: flex; justify-content: space-around; align-items: center;"> Potential to Product Product to Revenues Revenues to Profits Profits to Cash flows </div>				



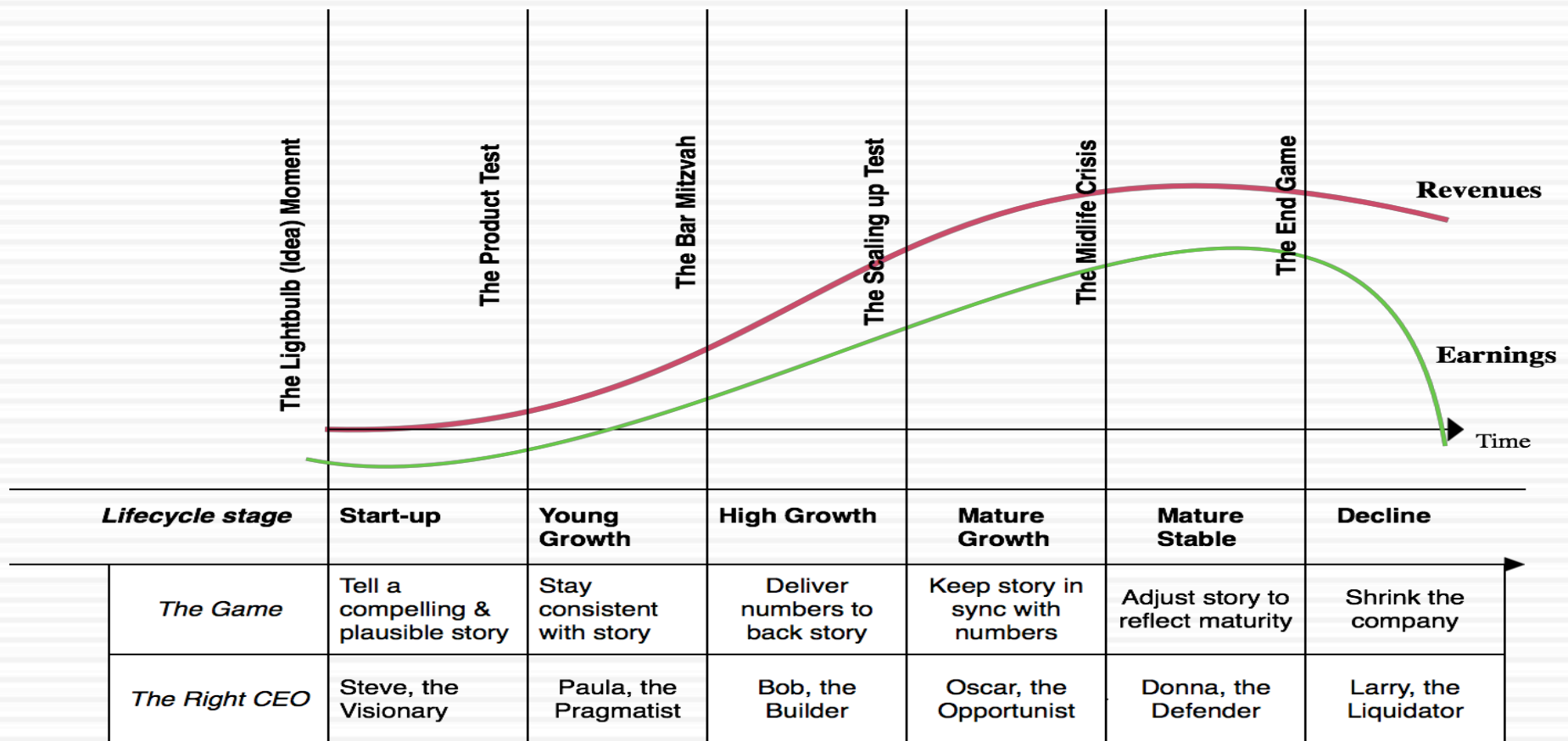
THE MANAGERS' JOB, ACROSS THE LIFE CYCLE

Story Tellers, Business Builders and Managers

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.

And the focus changes.... And so does the right CEO for the company



As emphasis shifts, managers 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.

Tech versus Non-tech life cycles

Tech firm life cycle

Tech companies don't have long "mature" periods, where they get to live off the fat, because disruption is always around the corner.

Tech companies are able to climb the growth ladder faster because their growth requires less investment and their products are more likely to be accepted quickly by consumers.

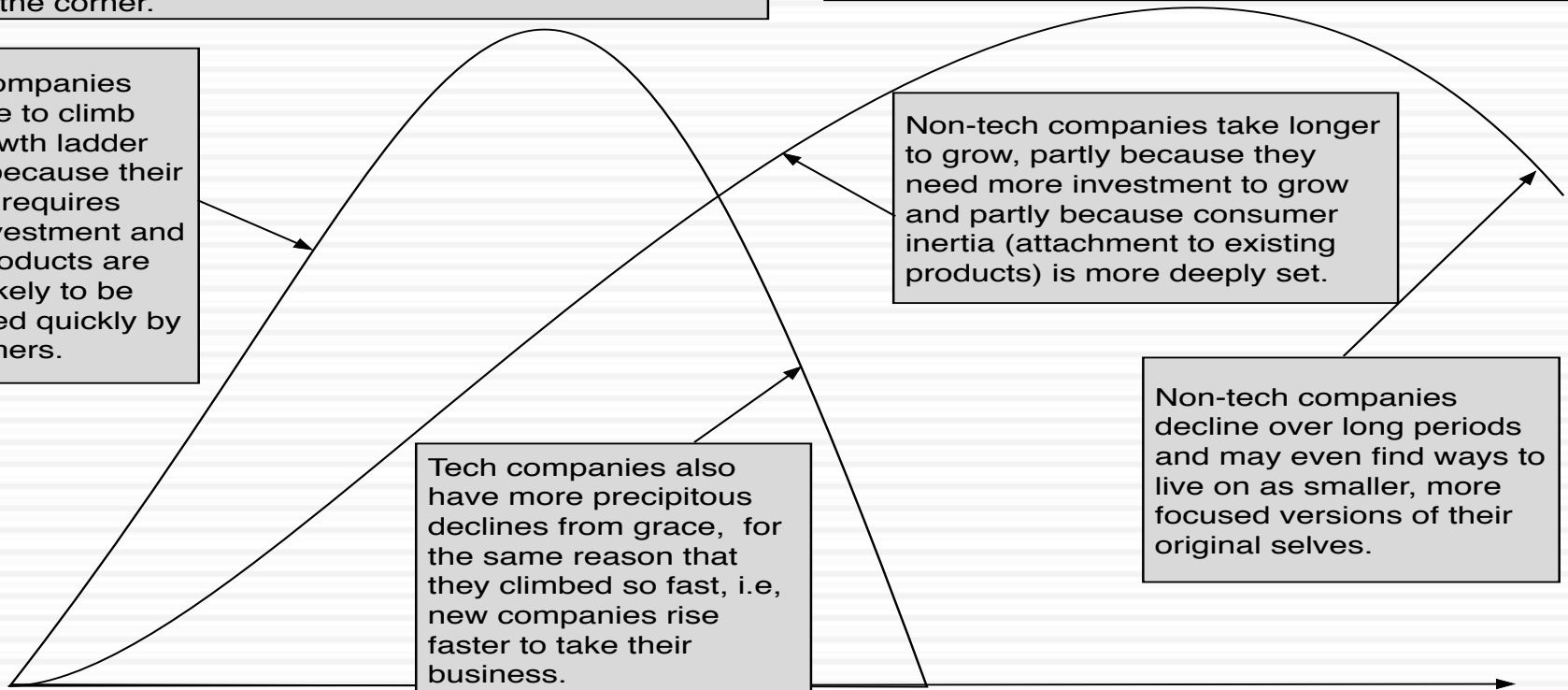
Tech companies also have more precipitous declines from grace, for the same reason that they climbed so fast, i.e., new companies rise faster to take their business.

Non-tech firm life cycle

Non-tech companies get longer "mature" periods, where they get to milk their cash cows.

Non-tech companies take longer to grow, partly because they need more investment to grow and partly because consumer inertia (attachment to existing products) is more deeply set.

Non-tech companies decline over long periods and may even find ways to live on as smaller, more focused versions of their original selves.



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”