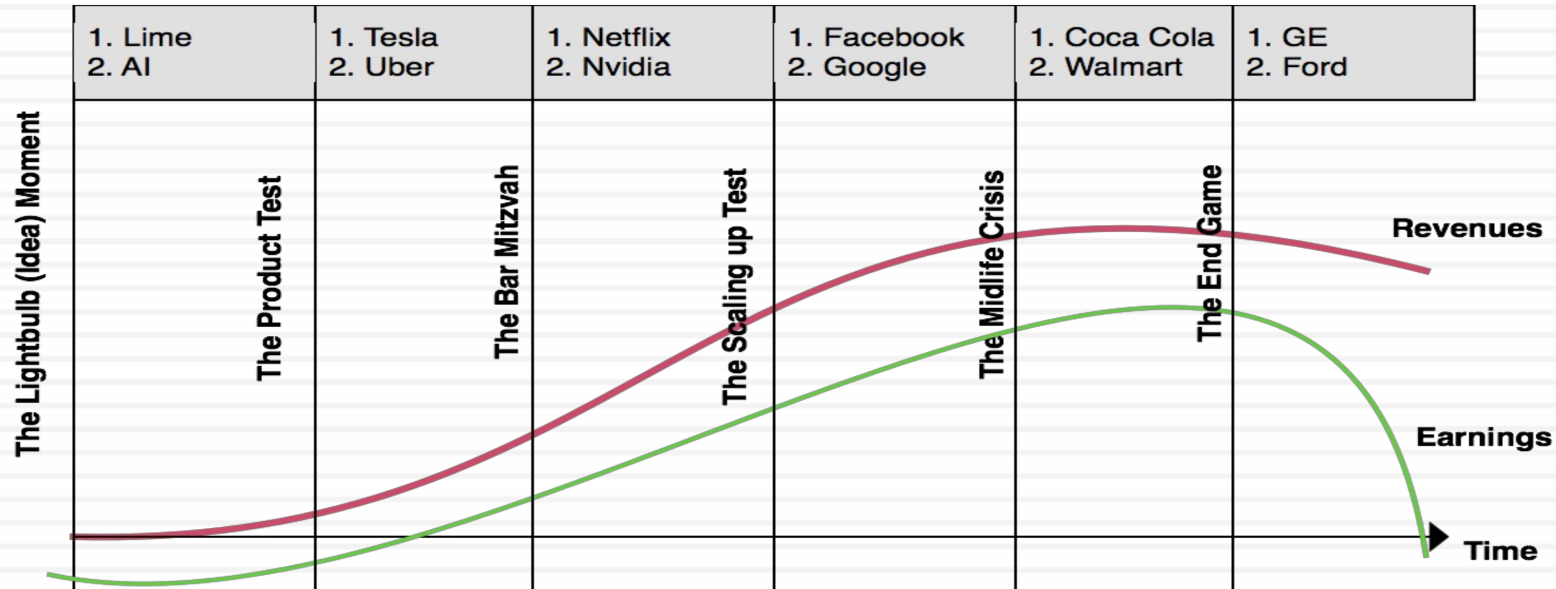
THE CORPORATE LIFE CYCLE: GROWING UP IS HARD TO DO, GROWING OLD IS EVEN HARDER!

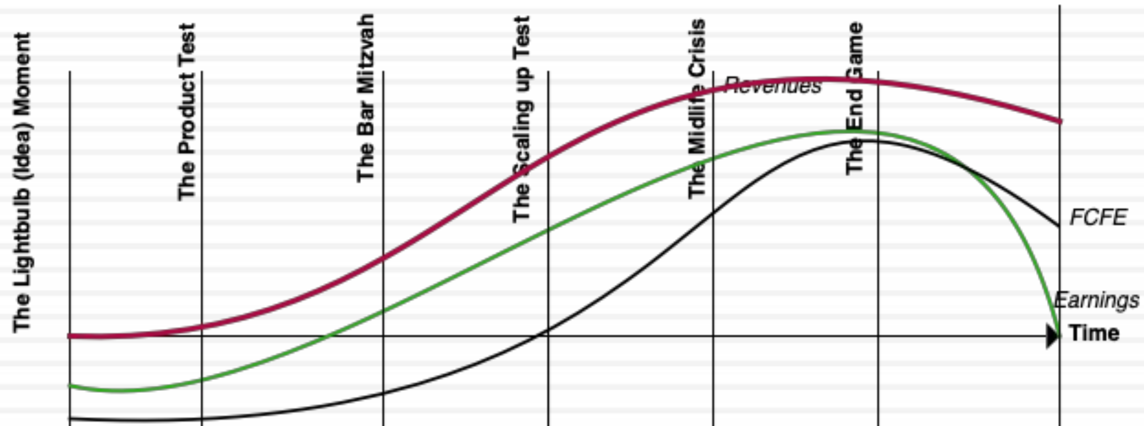
Aswath Damodaran

The Corporate Life Cycle



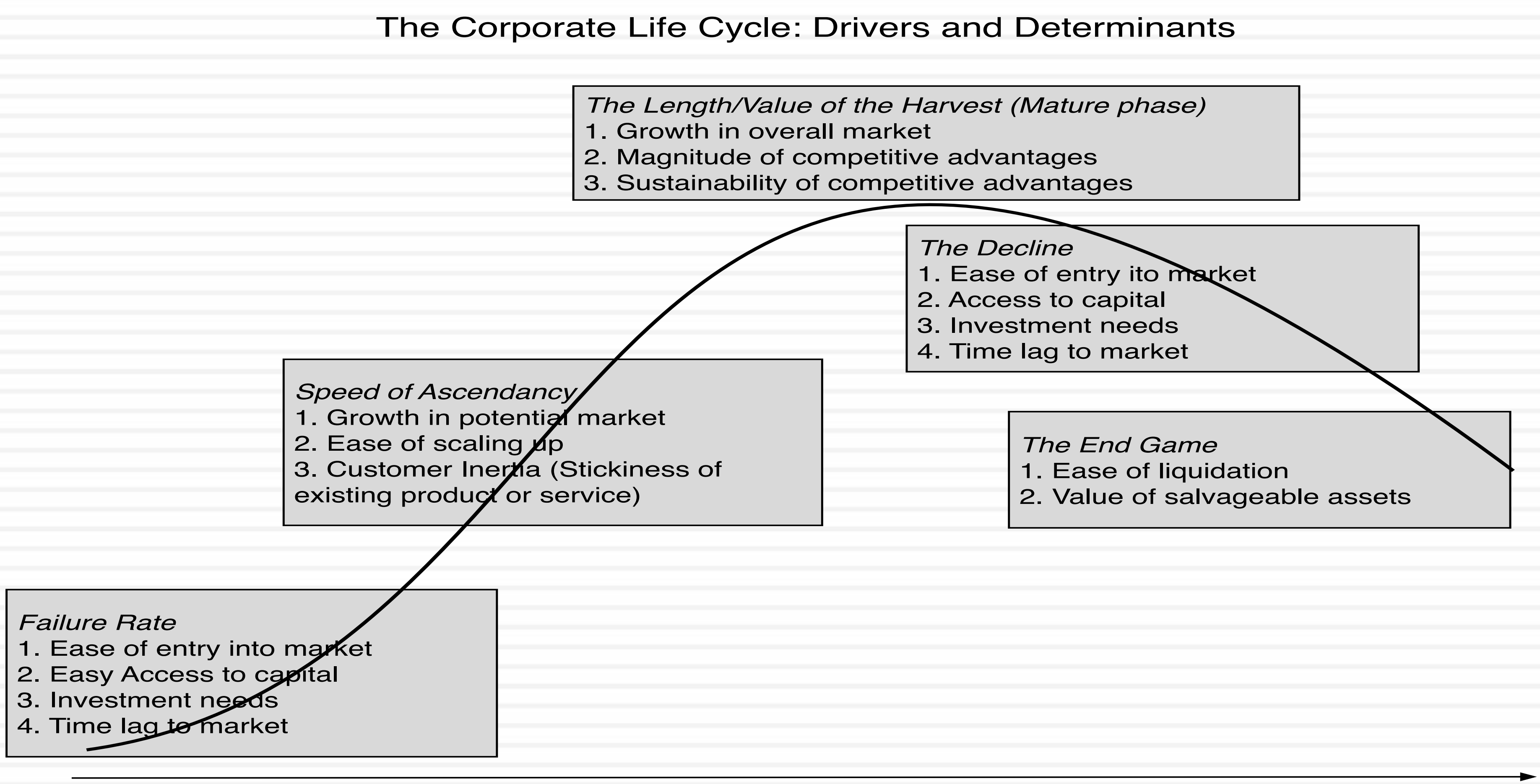
Lifecycle stage	**Start-up**	**Young Growth**	**High Growth**	**Mature Growth**	**Mature Stable**	**Decline**
Description	Have an idea for a business that meets an unmet need in the market.	Create a business model that converts ideas into revenues	Build the business, looking for scaling benefits (moving to profitability)	Grow your business, with revenue growth & higher margins	Defend your business from competitors & find new markets	Scale down your business as market shrinks.

Life Cycle Characteristics

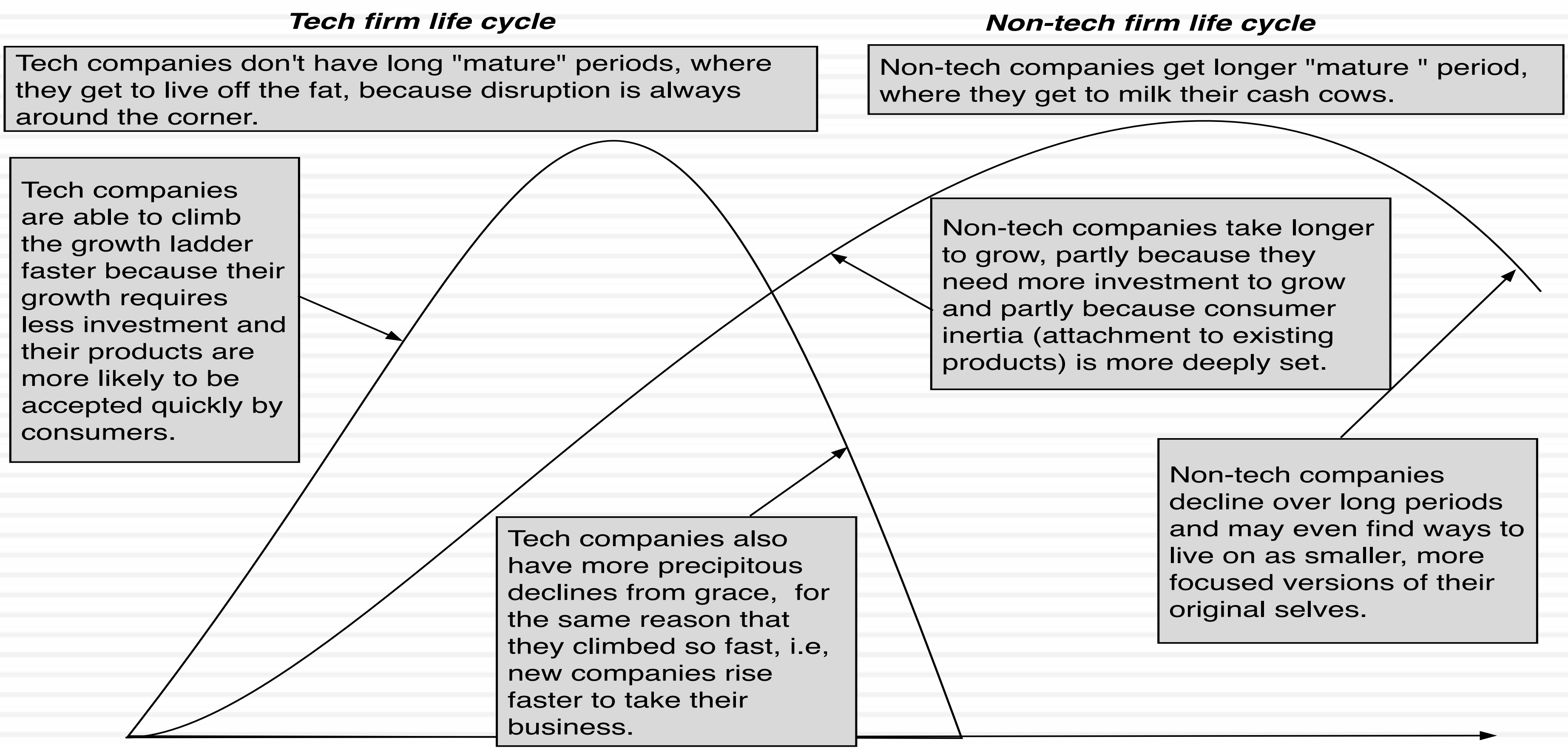


Lifecycle Stage	**Start-up**	**Young Growth**	**High Growth**	**Mature Growth**	**Mature Stable**	**Decline**
Earnings	Large net losses	Net losses narrow	Net profits turn positive	Net profits grow quickly	Net profits level off, with debt as wild card.	Net profits decline
Reinvestment needed for growth	Very High	High	Remain large, but scale down in percent.	Continue to decrease on scaled basis.	Low	Divestment (creating positive cash flows)
Debt cash flow (Debt issued - repaid)	Usually none	Usually none	If debt exists, net positive, but small.	Net debt cash flow positive.	Net debt cash flow neutal.	Net debt cash flow negative.
Free CF to Equity (Potential cash return)	Negative	May get more negative, with growth	Turns positive as growth slows	Positive & growing (faster than earnings)	Positive & more stable	Positive & higher than earnings.
Cash from/to Equity	Equity Issuances		Self-funding	Equity Buybacks	Dividends + Buybacks	Liquidating Dividends

The determinants of the life cycle



Tech versus Non-tech life cycles

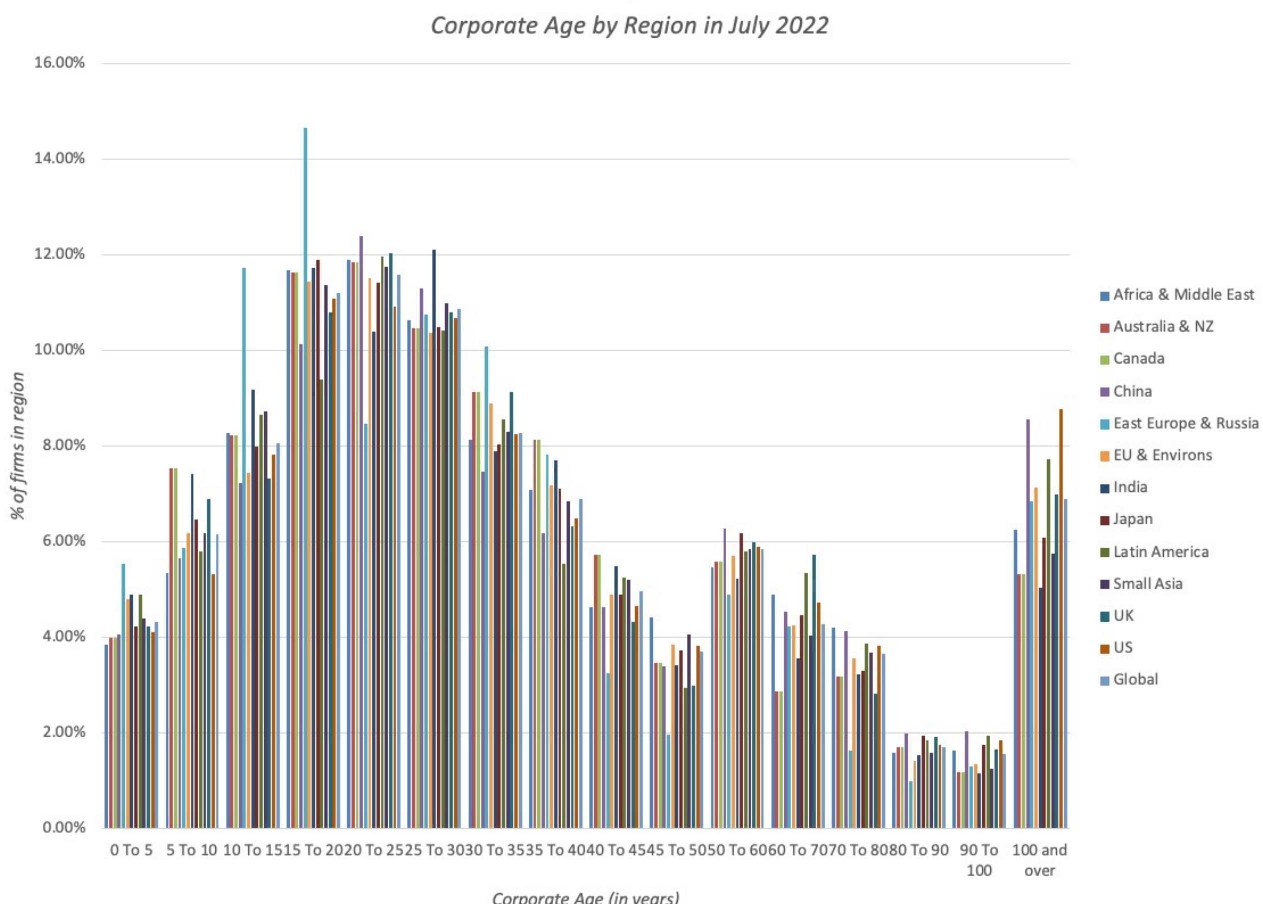


Life Cycle Classifications

Chronological Age: Growth and Margin Statistics

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

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

			Revenue Growth Rate (CAGR over last 3 years)				Operating Margin			
Primary Sector	# firms	Median Age	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%

Accounting across the Life Cycle

Accounting and Financial Balance Sheets

Accounting Balance Sheet

Assets		Liabilities	
Long Lived Real Assets	Fixed Assets	Current Liabilties	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

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
ASSETS		
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
TOTAL ASSETS	$ 93,394	$ 99,830
LIABILITIES AND EQUITY		
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
TOTAL LIABILITIES	43,942	49,587
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
TOTAL EQUITY	49,448	50,243
TOTAL LIABILITIES AND EQUITY	$ 93,394	$ 99,830

Kraft Heinz: Financial Balance Sheet

A Market Balance Sheet

Assets		*Liabilities & Equity*	
Assets in Place	$ 51,900	Debt	$ 28,306
Growth Assets	$ 25,854	Equity	$ 49,448
Total Assets	$ 77,754	Total Capital	$ 77,754

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

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	As of January 31, 2020
Assets		
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
Total assets	$ 5,297,993	$ 1,289,845
Liabilities and stockholders' equity		
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
Total liabilities	1,437,226	455,902
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
Total stockholders' equity	3,860,767	833,943
Total liabilities and stockholders' equity	$ 5,297,993	$ 1,289,845

Zoom: Financial Balance Sheet

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

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

Market Cap

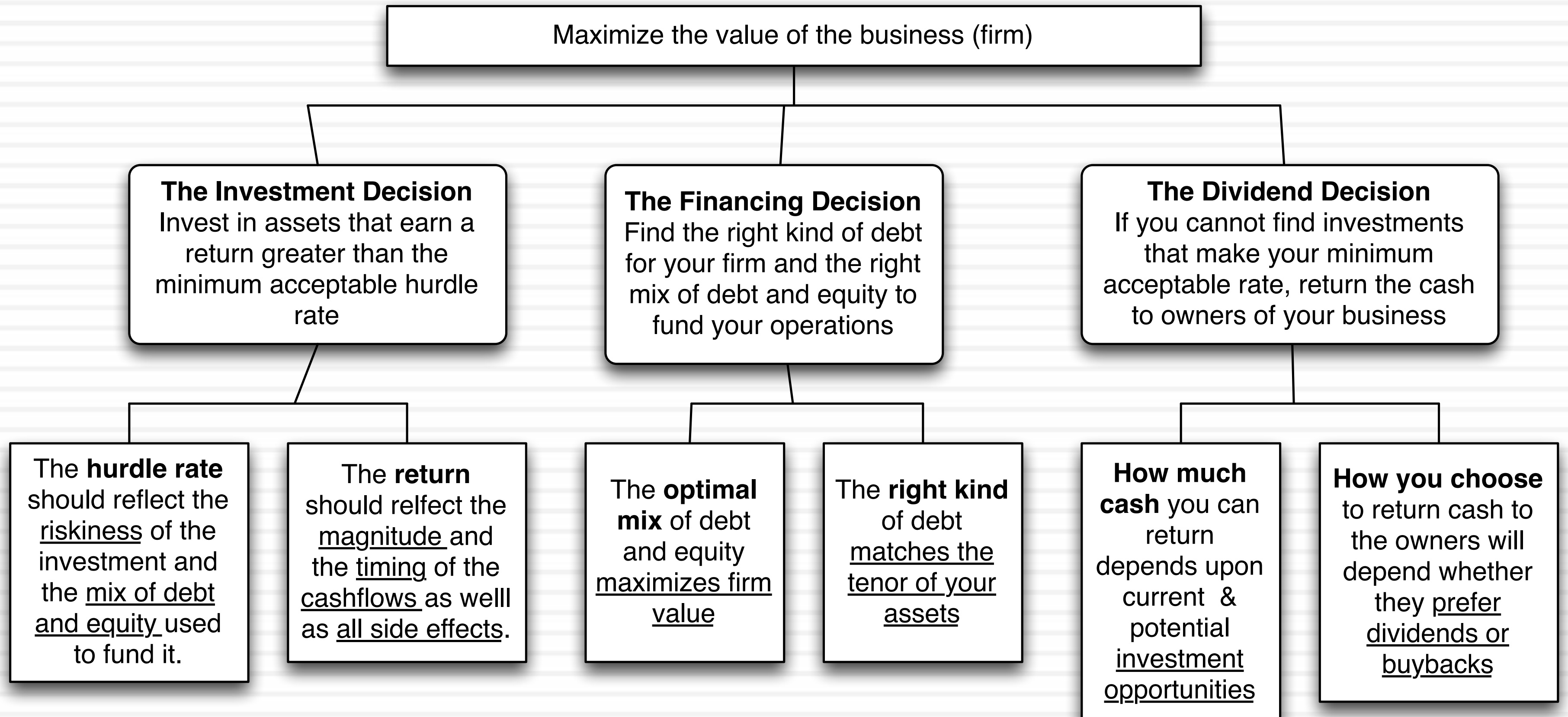
The Bottom Line

- 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, 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.

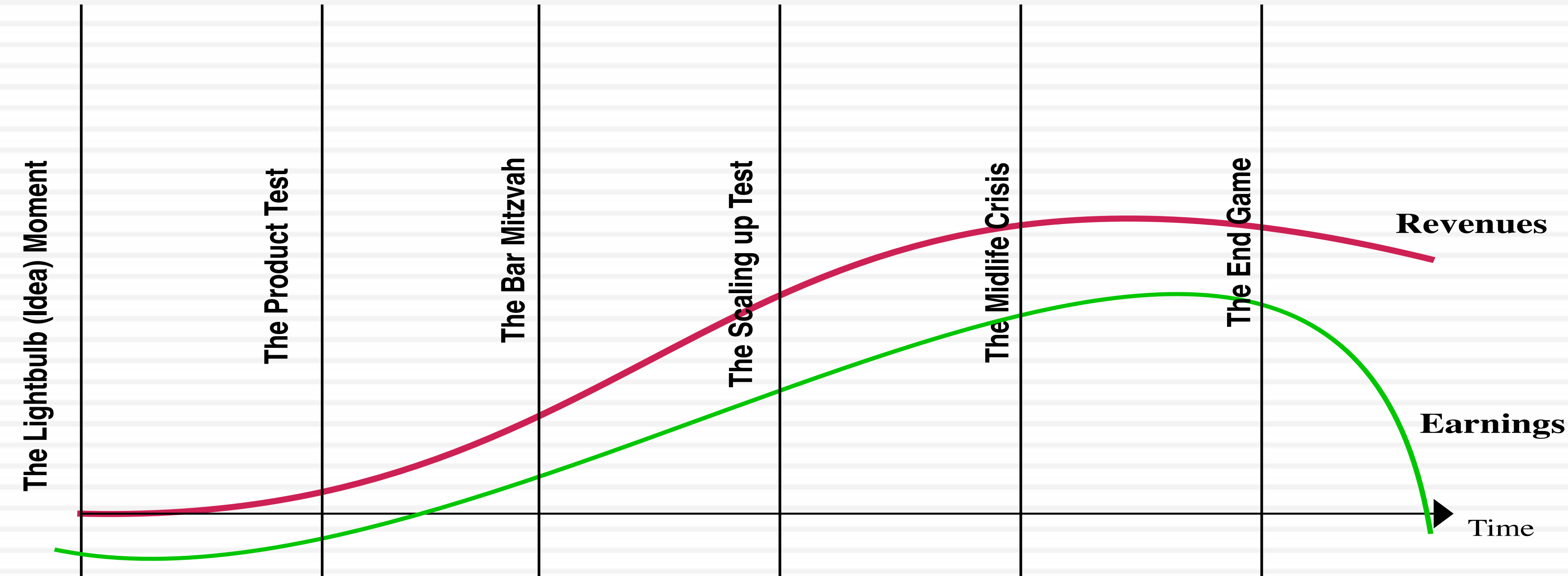
CORPORATE FINANCE ACROSS THE LIFE CYCLE

Act your (corporate) age..

Corporate Finance: The Big Picture

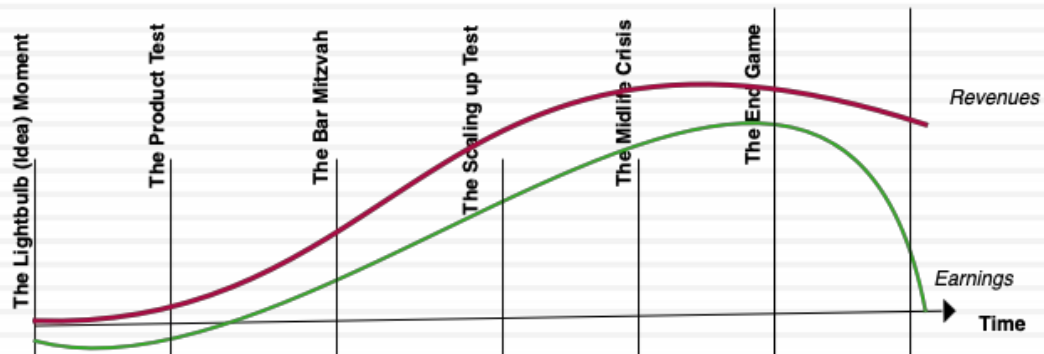


The emphasis in corporate finance shifts..



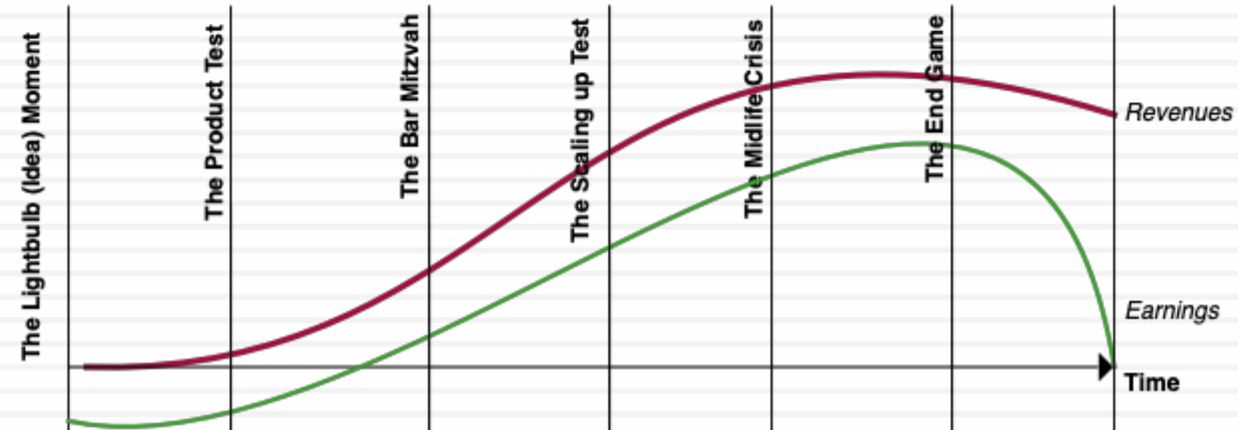
Lifecycle stage	**Start-up**	**Young Growth**	**High Growth**	**Mature Growth**	**Mature Stable**	**Decline**
Investing Policy	New product development	Market testing and build up	Scale up production	Augment capacity + New Products	Maintain capacity + Acquisitions	Reduce capacity
Financing Policy	Equity 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
Dividend Policy	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

Investment Policy across the life cycle



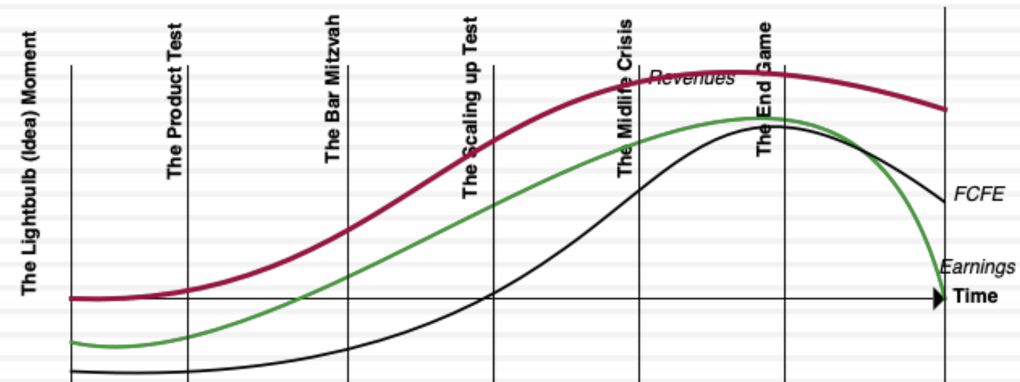
Lifecycle Stage	**Start-up**	**Young Growth**	**High Growth**	**Mature Growth**	**Mature Stable**	**Decline**
Biggest Challenge(s)	No history, untested product/ market & lack of capital	Uncertainty in forecasts, evolving business model and limited capital.	More projects to analyze, and on a larger scale than in past.	New projects may be in new markets/ businesses.	Too much capital chasing too few investments	Existing investments start turning "bad".
Biggest Mistake(s)	Project choice driven by intuition & gut feeling	Resist formal investment analysis, using uncertainty as a shield.	Reject 'good" projects as percent returns fall below returns earned on past projects.	Rigidity in investment analysis impedes new market entry.	Using one hurdle rate for all projects creates risk subsidization.	Refusal to view divestitures as investment analysis.
Investment Technique	Option Models. All about upside	Maximize IRR (maximize bang for buck)	Profitability Index (NPV as % of investment)	Net Present Value, as capital constraints ease	ROIC and Excess Return Models	Divesiture & Liquidation Analysis
Investment Type	Organic Investments & Focused Acquisitions		Acquisitions for potential growth	Acquisitions to maintain current growth		Divestitures

Financing Policy across the Life Cycle



Lifecycle Stage	Start-up	Young Growth	High Growth	Mature Growth	Mature Stable	Decline
Operating Profits	Large operating losses	Operating losses narrow	Operating profits turn positive	Operating profits grow quickly	Operating profits level off	Operating profits decline
Reinvestment	Very high	High	Remain large, but scale down as percent of earnings	Continue to decrease, on relative basis.	Mostly maintenance	Divestment
Financing Mix (Debt Capacity)	Non-existent	Very low	Low	Rising	High	Declining
Financing Type	Equity & Equity Hybrids (Warrants, Conv Preferred)		Convertible Debt	Conventional Debt		

Dividend Policy across the Life Cycle



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Reinvestment needed for growth	Very High	High	Remain large, but scale down in percent.	Continue to decrease on scaled basis.	Low	Divestment (creating positive cash flows)
Debt cash flow (Debt issued - repaid)	Usually none	Usually none	If debt exists, net positive, but small.	Net debt cash flow positive.	Net debt cash flow neutal.	Net debt cash flow negative.
Free CF to Equity (Potential cash return)	Negative	May get more negative, with growth	Turns positive as growth slows	Positive & growing (faster than earnings)	Positive & more stable	Positive & higher than earnings.
Cash from/to Equity	Equity Issuances		Self-funding	Equity Buybacks	Dividends + Buybacks	Liquidating Dividends

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!

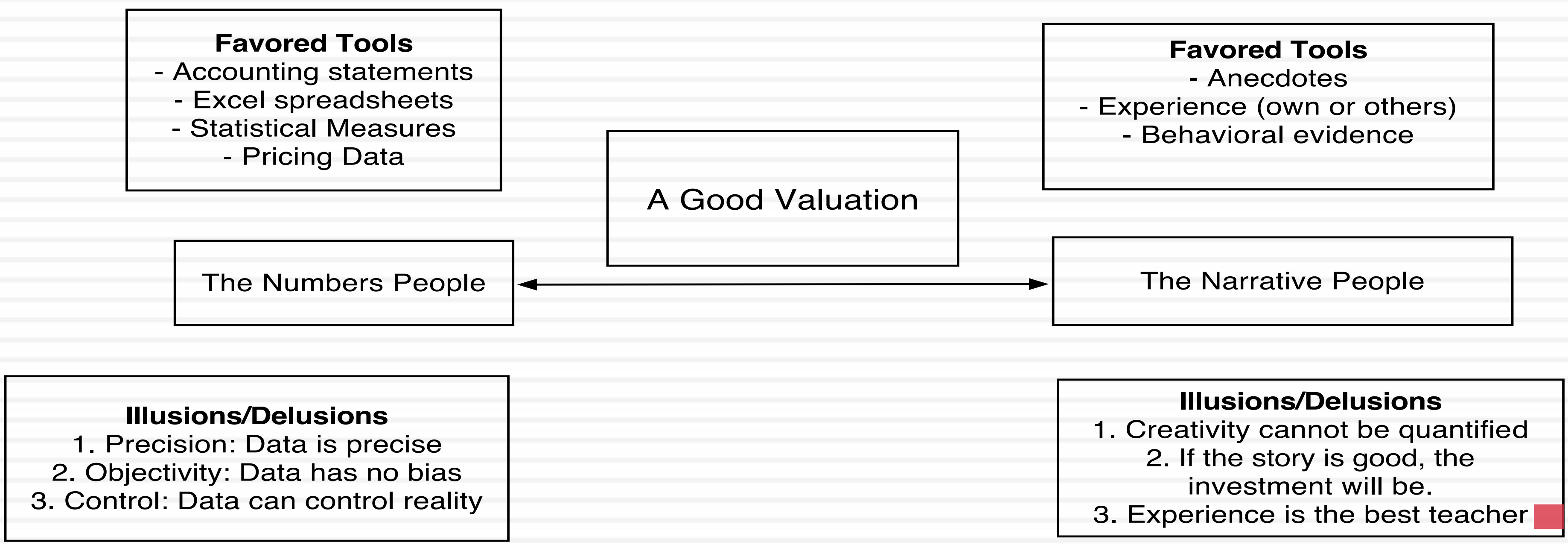
- For many reasons, companies try to speed up or slow down aging
  - Young companies that borrow money to grow faster, invest without a purpose or with too much focus on short term profits or pay dividends.
  - Mature growth companies that act young and refuse to return cash.
  - Stable companies that 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.

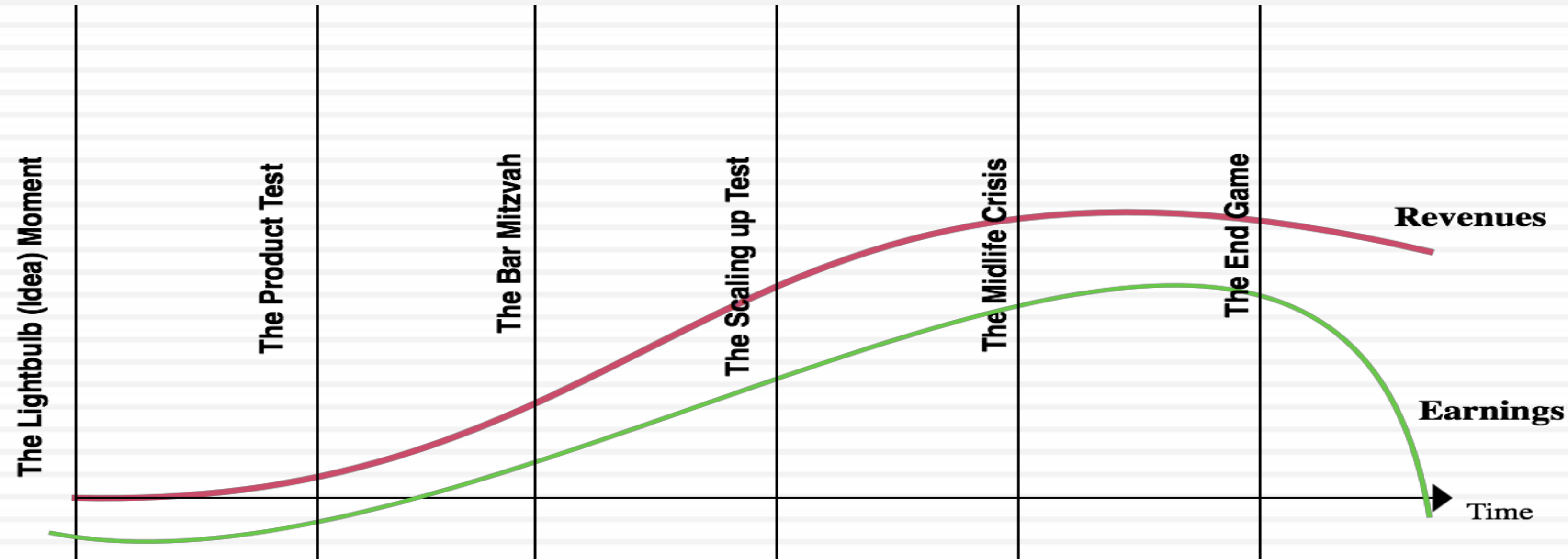
VALUATION ACROSS THE LIFE CYCLE

All story to mostly numbers..

Value = Story + Numbers



In value, the emphasis shifts, from narrative to numbers…



Lifecycle stage	Start-up	Young Growth	High Growth	Mature Growth	Mature Stable	Decline
Narrative versus Numbers	All Narrative	Mostly narrative	Narrative + Numbers	Numbers + Narrative	Mostly Numbers	All Numbers
Narrative Drivers	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?
Narrative Differences	Unconstrained & Large differences	*Constraints mount as numbers build up* *Differences across investors narrow, as history deepens*				Constrained & Narrow differences

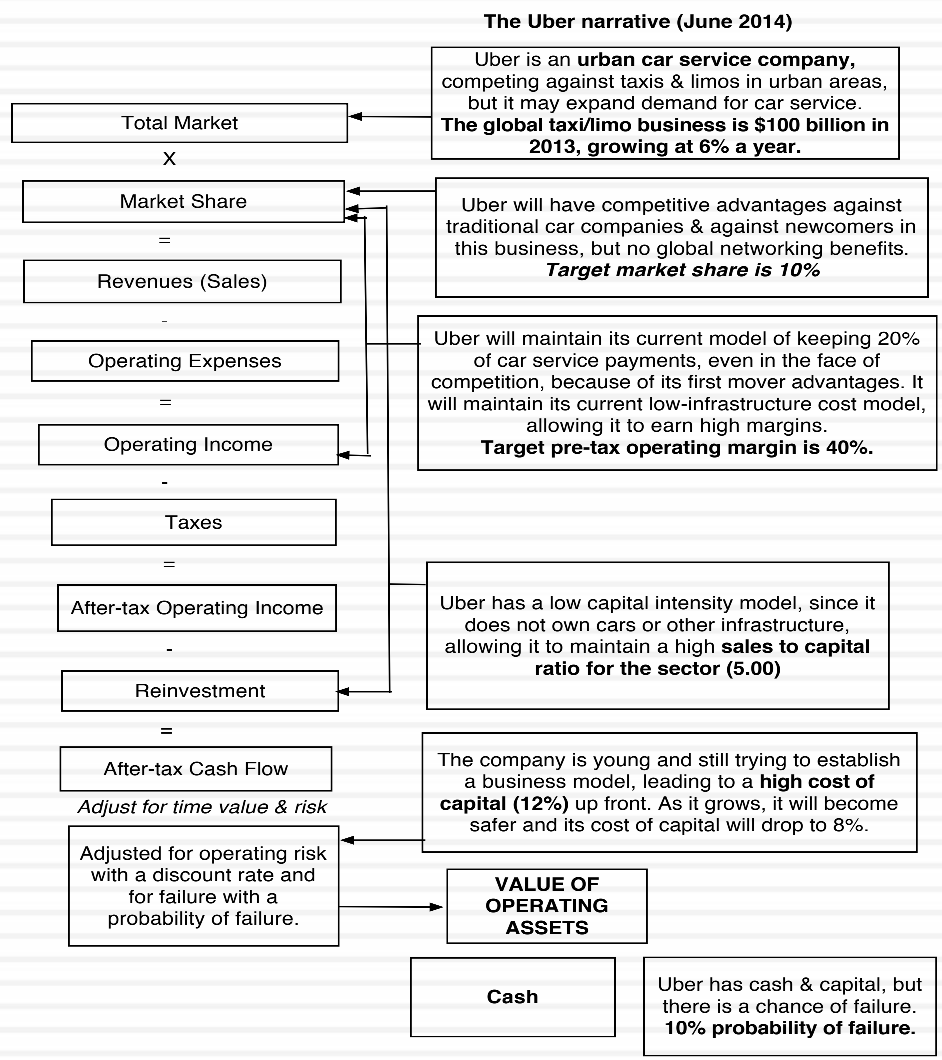
Narrative to Numbers for companies

- 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

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 $)

Stable Growth (after year 10)
Expected growth rate = 2.50%
Cost of capital = 8%
Return on capital= 25%
Reinvestment Rate= 2.5%/25% = 10%

Terminal Value$_{10}$= 793/(.08-025) = $14,418

Term yr
EBIT (1-t) $881
- Reinv 88
FCFF $793

Global taxi market is $100 billlion currently, expected to grow 6% a year for next ten years.

Uber will keep 20% of the gross cab receipts as its revenues

Uber's market share of this market will increase to 10% over the next 10 years.

Uber's operating expenses will amount to 60% of its revenues. (Operating margin=40%)

Uber will pay a tax rate of 30% on its income, increasing to 40% over the next 10 years

Uber will generate $5 in incremental revenues for every dollar of incremental capital.

	1	2	3	4	5	6	7	8	9	10
Overall market	$106,000	$112,360	$119,102	$126,248	$133,823	$141,852	$150,363	$159,385	$168,948	$179,085
Share of market (gross)	3.63%	5.22%	6.41%	7.31%	7.98%	8.49%	8.87%	9.15%	9.36%	10.00%
Revenues as percent of gross	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%
Annual Revenue	$769	$1,173	$1,528	$1,846	$2,137	$2,408	$2,666	$2,916	$3,163	$3,582
Operating margin	7.00%	10.67%	14.33%	18.00%	21.67%	25.33%	29.00%	32.67%	36.33%	40.00%
Operating Income	$54	$125	$219	$332	$463	$610	$773	$953	$1,149	$1,433
Effective tax rate	31%	32%	33%	34%	35%	36%	37%	38%	39%	40%
- Taxes	$17	$40	$72	$113	$162	$220	$286	$362	$448	$573
After-tax operating income	$37	$85	$147	$219	$301	$390	$487	$591	$701	$860
Sales/Capital Ratio	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
- Reinvestment	$94	$81	$71	$64	$58	$54	$52	$50	$49	$84
Free Cash Flow to the Firm	-$57	$4	$76	$156	$243	$336	$435	$541	$652	$776

Based on the investment of $1.2 billion made by investors, the imputed value for Uber's operating assets, in June 2014 ,was $17 billion.

Discount back the cash flows (including terminal value) at the cumulated cost of capital.

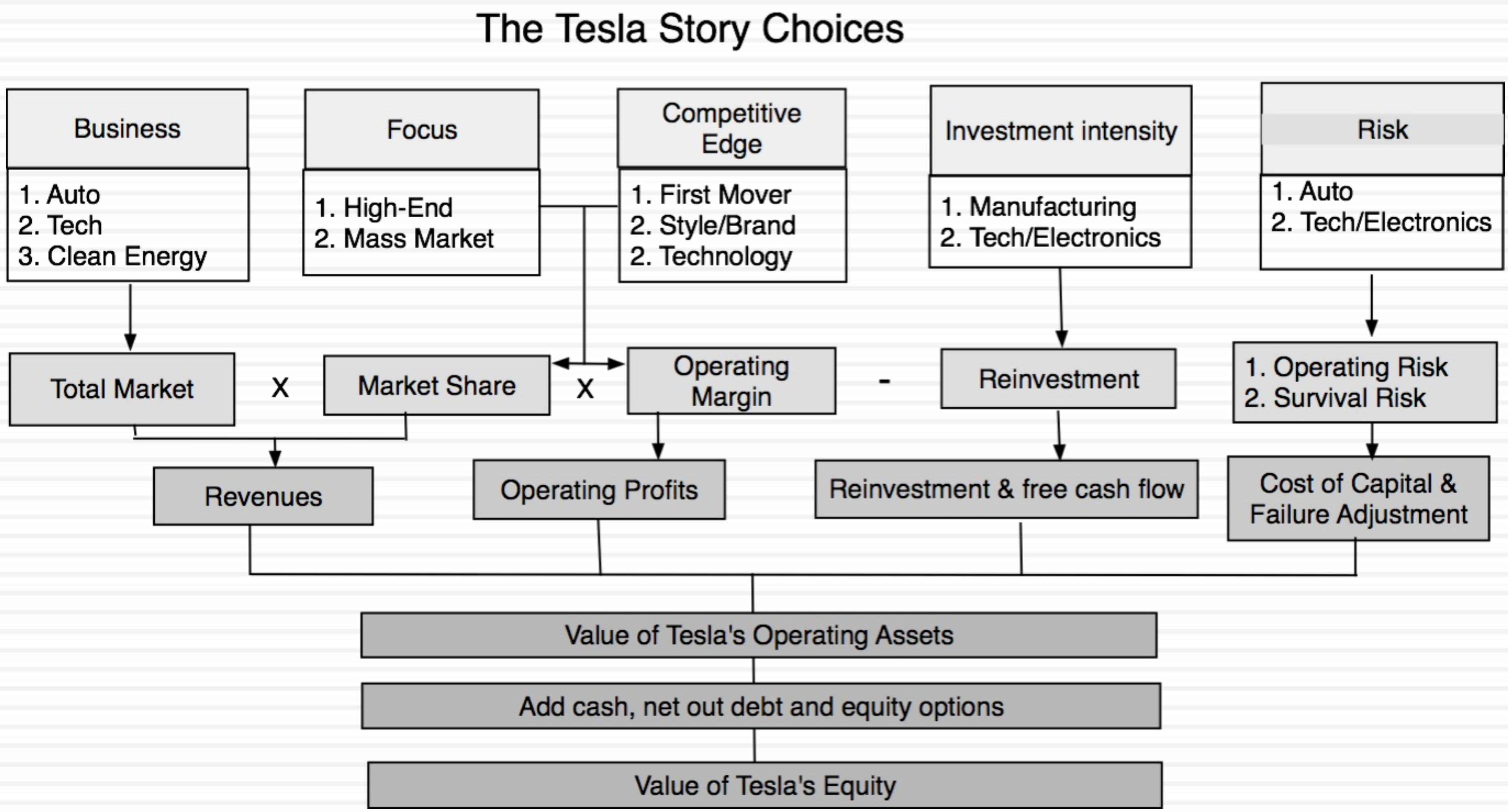
Value of operating assets = $6,595

Adust for probability of failure (10%)
Expected value = $6,595 (.9) = $5,895

Cost of capital for first 5 years = Top decile of US companies = 12%

Cost of capital declines from 12% to 8% from years 6 to 10.

Divergent Stories? Tesla Story Choices



And how they translate to numbers

Story	Revenues	Operating Margins	Reinvestment Efficiency	Risk	Value/Share	Equity Value
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..

Unilever						Sep-22
Low Growth						
Amazon continues on its transformation from online retailer to disruption platform, willling to enter any business that it perceives as inefficiently run, and changing it. Along the way, it will invest large amounts of capital and wait for long periods to attain profitability.						
The Assumptions						
	Base year	*Next year*	*Years 2-5*	*Years 6-10*	*After year 10*	*Link to story*
Revenues (a)	€ 52,444.00	2.0%	2.00%	2.00%	2.00%	Limited growth prospects
Operating margin (b)	18.38%	18.4%	18.38%	18.00%	18.00%	Margins stay at levels reached in most recent five years.
Tax rate	25.00%		25.00%	25.00%	25.00%	Global/US marginal tax rate over time
Reinvestment (c)		1.80	1.80	1.80	16.67%	Maintained at global industry average
Return on capital	14.39%	Marginal ROIC =	29.36%		12.00%	Stronge brands
Cost of capital (d)			8.97%	8.97%	8.97%	Cost of capital based on current financing and geographic mix.

The Cash Flows

	Revenues	*Operating Margin*	*EBIT*	*EBIT (1-t)*	*Reinvestment*	*FCFF*
1	€ 53,492.88	18.38%	€ 9,829.74	€ 7,372.31	€ 581.71	€ 6,790.60
2	€ 54,562.74	18.30%	€ 9,985.33	€ 7,488.99	€ 593.34	€ 6,895.66
3	€ 55,653.99	18.26%	€ 10,164.12	€ 7,623.09	€ 605.21	€ 7,017.88
4	€ 56,767.07	18.23%	€ 10,346.07	€ 7,759.55	€ 617.31	€ 7,142.24
5	€ 57,902.41	18.19%	€ 10,531.23	€ 7,898.42	€ 629.66	€ 7,268.77
6	€ 59,060.46	18.15%	€ 10,719.66	€ 8,039.75	€ 642.25	€ 7,397.50
7	€ 60,241.67	18.11%	€ 10,911.42	€ 8,183.56	€ 655.09	€ 7,528.47
8	€ 61,446.50	18.08%	€ 11,106.55	€ 8,329.91	€ 668.20	€ 7,661.72
9	€ 62,675.43	18.04%	€ 11,305.13	€ 8,478.85	€ 681.56	€ 7,797.29
10	€ 63,928.94	18.00%	€ 11,507.21	€ 8,630.41	€ 695.19	€ 7,935.22
Terminal year	€ 65,207.52	18.00%	€ 11,737.35	€ 8,803.02	€ 1,467.17	€ 7,335.85

The Value

Terminal value	€ 105,317.15		
PV(Terminal value)	€ 44,628.23		
PV (CF over next 10 years)	€ 46,626.14		
Value of operating assets =	€ 91,254.37		
Adjustment for distress	€ -	Probability of failure =	0.00%
- Debt & Minority Interests	€ 36,686.00		
+ Cash & Other Non-operating assets	€ 7,613.00		
Value of equity	€ 62,181.37		
- Value of equity options	$0.00		
Number of shares	2,569.20		
Value per share	€ 24.20	Stock was trading at =	€ 45.60

And in decline, they can be depressing..

Bed, Bath & Beyond						Sep-22
Incredible Shrinking Store						
Bed Bath and Beyond is in a downward spiral, but we see a glimmer of hope, where the company shuts stores that require the most capital and get the least foot traffic over the next decade, shrinking already-shrunk revenues further, but seeing its operating margins improve to the US brick-and-mortar sector average margin, over the next five years. Along the way, the divestritures and shut downs will relase cash that can be returned and used to pay down debt. By the end of the forecast period, BB&B finds a niche market, albeit wiht a smaller footprint, growing at the same rate as the economy and earning no excess returns..						
The Assumptions						
	Base year	*Next year*	*Years 2-5*	*Years 6-10*	*After year 10*	*Link to story*
Revenues (a)	$7,868.00	-10.0%	-5.00% →	3.00%	3.00%	Disruption platform in multiple businesses
Operating margin (b)	-1.00%	-1.0%	-1.00% →	5.54%	5.54%	Margins improve, aided by cloud business & continued economies of scale.
Tax rate	25.00%		25.00% →	25.00%	25.00%	Global/US marginal tax rate over time
Reinvestment (c)		2.00	2.00	2.00	30.00%	Maintined at Amazon's current level
Return on capital	-2.80%	Marginal ROIC =	-57.31%		10.00%	Stronge competitive edges
Cost of capital (d)			8.79% →	7.50%	7.50%	Cost of capital close to median company
The Cash Flows						
	Revenues	*Operating Margin*	*EBIT*	*EBIT (1-t)*	*Reinvestment*	*FCFF*
1	$7,081.20	-1.00%	-$70.81	-$70.81	$0.00	-$70.81
2	$6,727.14	1.62%	$108.72	$108.72	-$177.03	$285.75
3	$6,390.78	2.92%	$186.89	$186.89	-$168.18	$355.06
4	$6,071.24	4.23%	$256.96	$256.96	-$159.77	$416.73
5	$5,767.68	5.54%	$319.56	$244.23	-$151.78	$396.01
6	$5,571.58	5.54%	$308.69	$231.52	-$98.05	$329.57
7	$5,471.29	5.54%	$303.14	$227.35	-$50.14	$277.50
8	$5,460.35	5.54%	$302.53	$226.90	-$5.47	$232.37
9	$5,536.79	5.54%	$306.77	$230.07	$38.22	$191.85
10	$5,702.90	5.54%	$315.97	$236.98	$83.05	$153.92
Terminal year	$5,873.99	5.54%	$325.45	$244.09	$73.23	$170.86
The Value						
Terminal value			$3,796.89			
PV(Terminal value)			$1,695.10			
PV (CF over next 10 years)			$1,644.97			
Value of operating assets =			$3,340.07			
Adjustment for distress			$396.47		Probability of failure =	23.74%
- Debt & Minority Interests			$3,085.00			
+ Cash & Other Non-operating assets			$440.00			
Value of equity			$298.60			
- Value of equity options			$0.00			
Number of shares			92.50			
Value per share			$3.23		Stock was trading at =	$8.79

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

Drivers of intrinsic value
- Cashflows from existing assets
- Growth in cash flows
- Quality of Growth

Drivers of price
- Market moods & momentum
- Surface stories about fundamentals

Accounting Estimates

Valuation Estimates

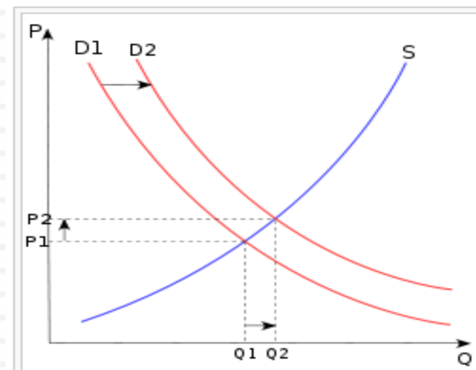
INTRINSIC VALUE

Value

THE GAP
Is there one?
If so, will it close?
If it will close, what will cause it to close?

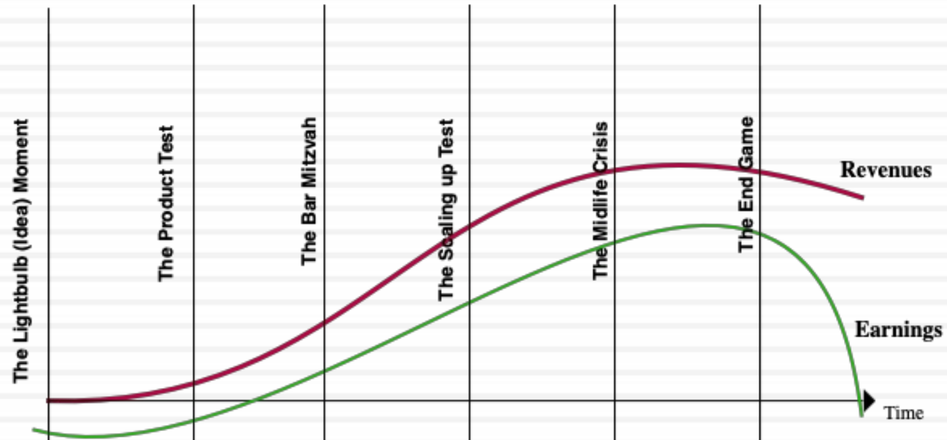
Price

PRICE



Price versus Value: Across the life cycle

Figure 14.9:: Investment Philosophies across the Life Cycle



Lifecycle stage	Start-up	Young Growth	High Growth	Mature Growth	Mature Stable	Decline
Price vs Value	Price on potential	Price on total market	Price based upon growth	Value based upon growth	Value based upon earnings	Value based upon assets
The Gap between Price and Value	Wide gaps with significant volatility	*As companies age, gap becomes smaller & less volatile* →				Smaller gap
Investing vs Trading	Mostly traders	*As companies age, investors replace traders in market* →				More investors
Investing Focus	Activist Growth	IPO Growth	Public Equity Growth	Public Equity Value	Contrarian Value	Activist Value
Trading Focus	Private Pricing Momentum	Public Market Momentum		Information Trading	Arbitrage Trading	

Multiples and Comparable Transactions

Market value of equity

Market value for the firm
Firm value = Market value of equity
+ Market value of debt

Market value of operating assets of firm
Enterprise value (EV) = Market value of equity
+ Market value of debt
- Cash

Step 1: Pick a multiple

$$\text{Multiple} = \frac{\text{Numerator = What you are paying for the asset}}{\text{Denominator = What you are getting in return}}$$

CHOOSE A MULTIPLE

Revenues
a. Accounting revenues
b. Drivers
- # Customers
- # Subscribers
= # units

Earnings
a. To Equity investors
- Net Income
- Earnings per share
b. To Firm
- Operating income (EBIT)

Cash flow
a. To Equity
- Net Income + Depreciation
- Free CF to Equity
b. To Firm
- EBIT + DA (EBITDA)
- Free CF to Firm

Book Value
a. Equity
= BV of equity
b. Firm
= BV of debt + BV of equity
c. Invested Capital
= BV of equity + BV of debt - Cash

Step 2: Choose comparables

- Narrow versus Broad sector/business
- Similar market cap or all companies
- Country, Region or Global
- Other criteria, subjective & objective

PICK COMPARABLE FIRMS

Step 3: Tell a story

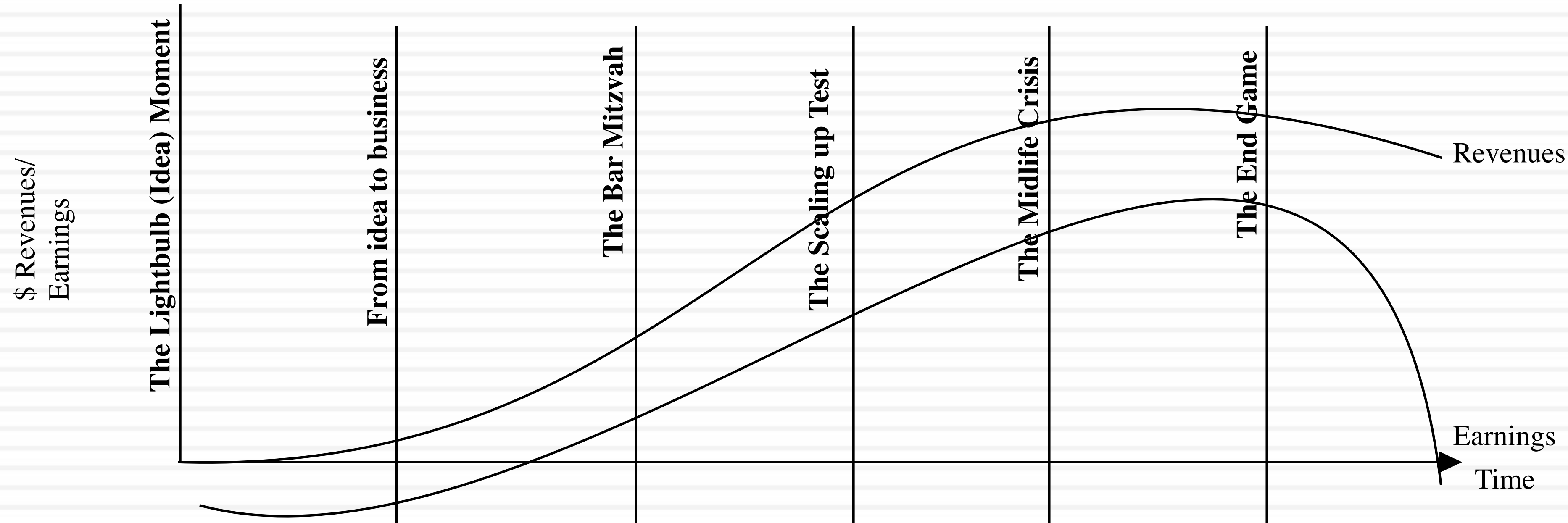
Risk
- Lower risk for higher value
- Higher risk for lower value

Growth
- Higher growth for higher value
- Lower growth for lower value

Quality of growth
- Higher barriers to entry/moats for higher value
- Lower barriers to entry for lower value

SPIN/TELL YOUR STORY

The Evolution of Uncertainty

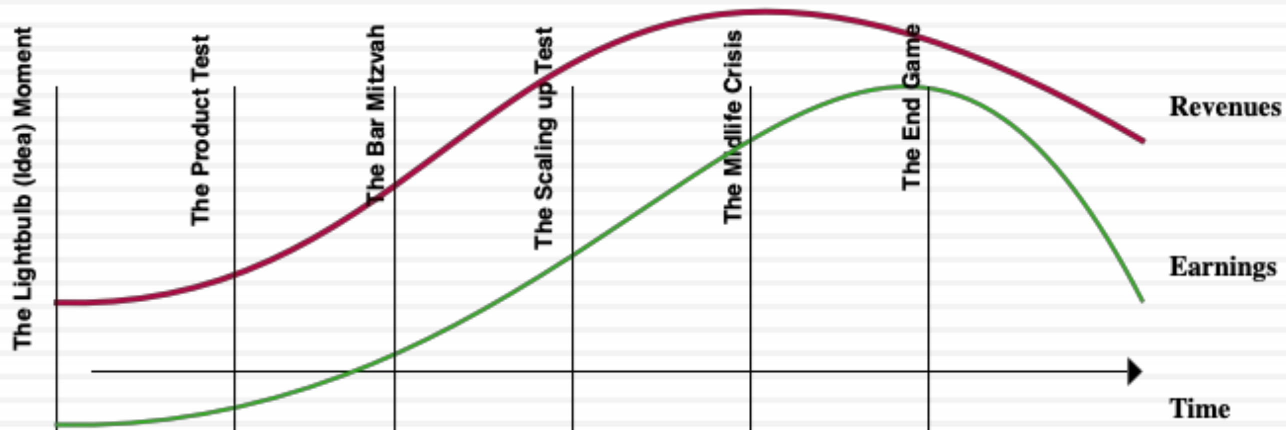


Growth stage	Stage 1 Start-up	Stage 2 Young Growth	Stage 3: High Growth	Stage 4 Mature Growth	Stage 5 Mature Stable	Stage 6 Decline
Uncertainty about	Does the idea have potential?	Is there a business model for the idea to be commercialized?	Will the business model generate profits?	Can the business be scaled up?	Can the business be defended?	Will management face reality?
Type & Magnitude	*High & company specific*	→	→	→	→	*Low & sector or macro driven*

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.

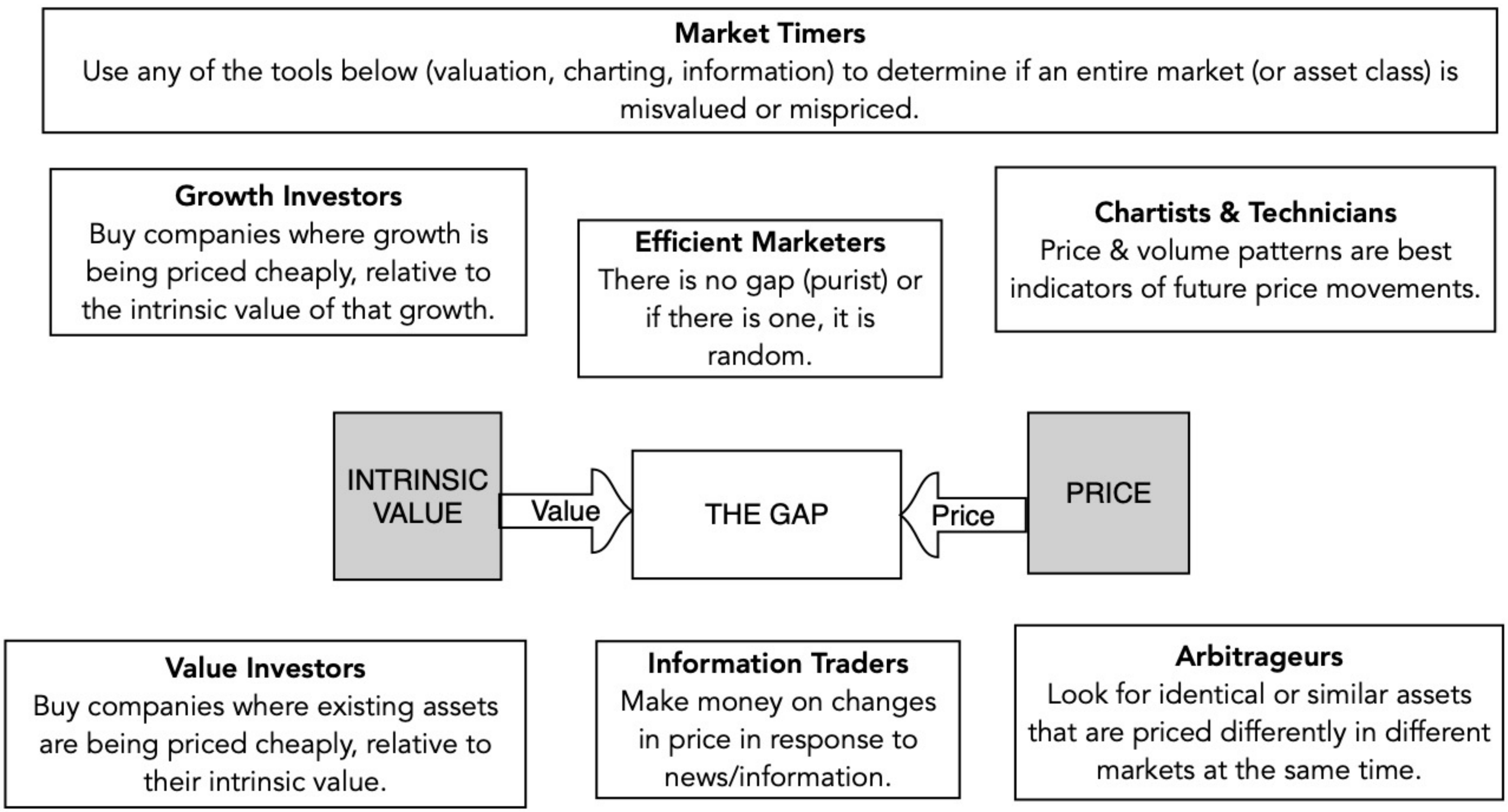
Pricing across the Life Cycle



Lifecycle stage	Start-up	Young Growth	High Growth	Mature Growth	Mature Stable	Decline
Pricing vs Valuing	Mostly Pricing			Mostly value		Pricing
Pricing Measures	Potential Market, Capital Acccess	Revenue growth, Gross margins	Revenue growth, Oper margins	Earnings growth	Earnings stability	Book Value
Pricing Metrics	EV/TAM, EV/Users, EV/Subscribers	EV/Forward Sales	EV/Sales	PEG, Forward PE	PE, EV/EBITDA	PBV, EV/Liquidation Value
Peer Group	Young companies that have accessed VC funding.	Young companies that have gone public recently	High growth firms, sometimes across sectors.	Growth companies in sector	Other mature companies in sector.	Declining companies in sector.

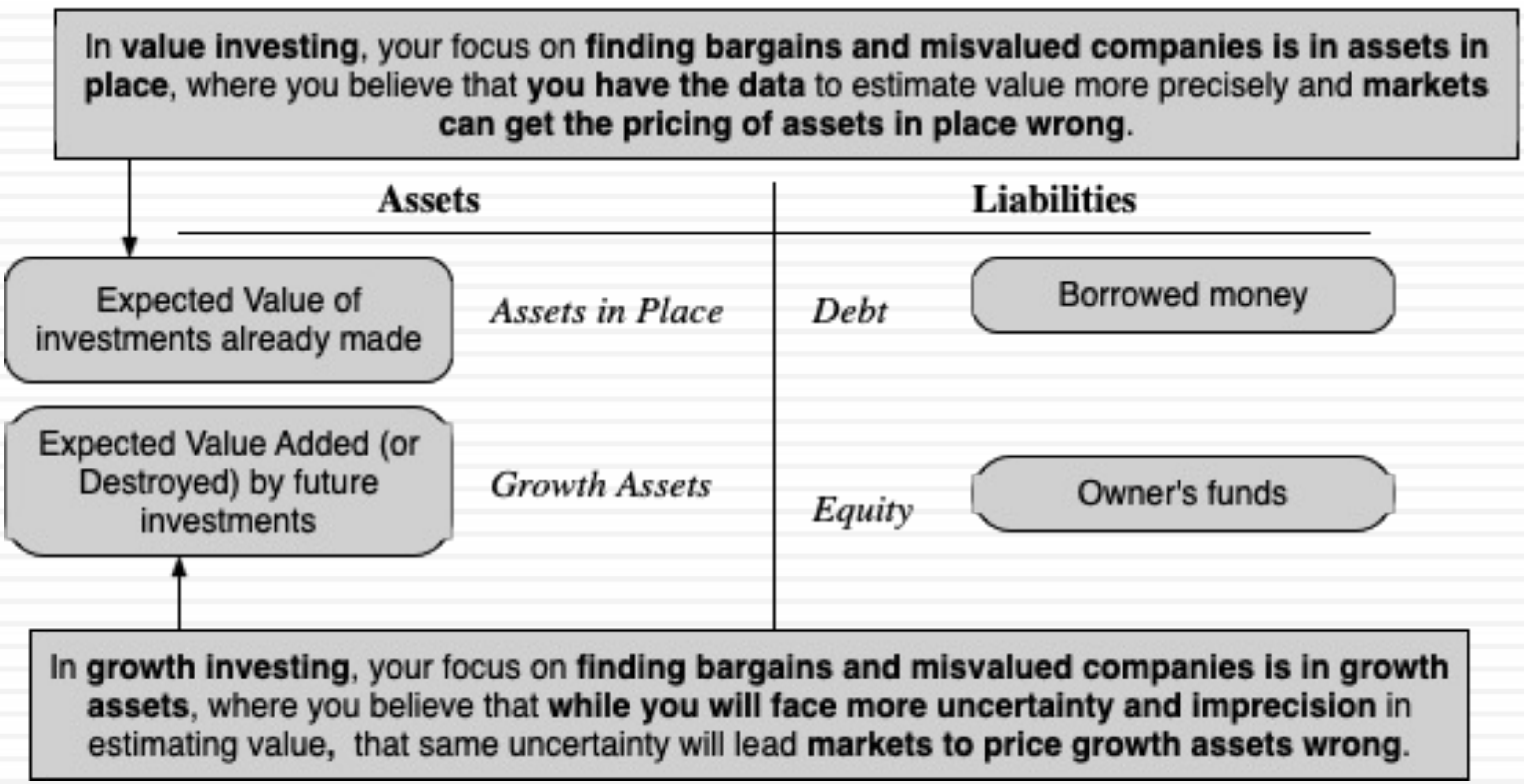
Investing across the life cycle

Investment Philosophies



Value versus Growth Investing: Financial Balance Sheet

Figure 14.6: Value versus Growth Investing in a Financial Balance Sheet

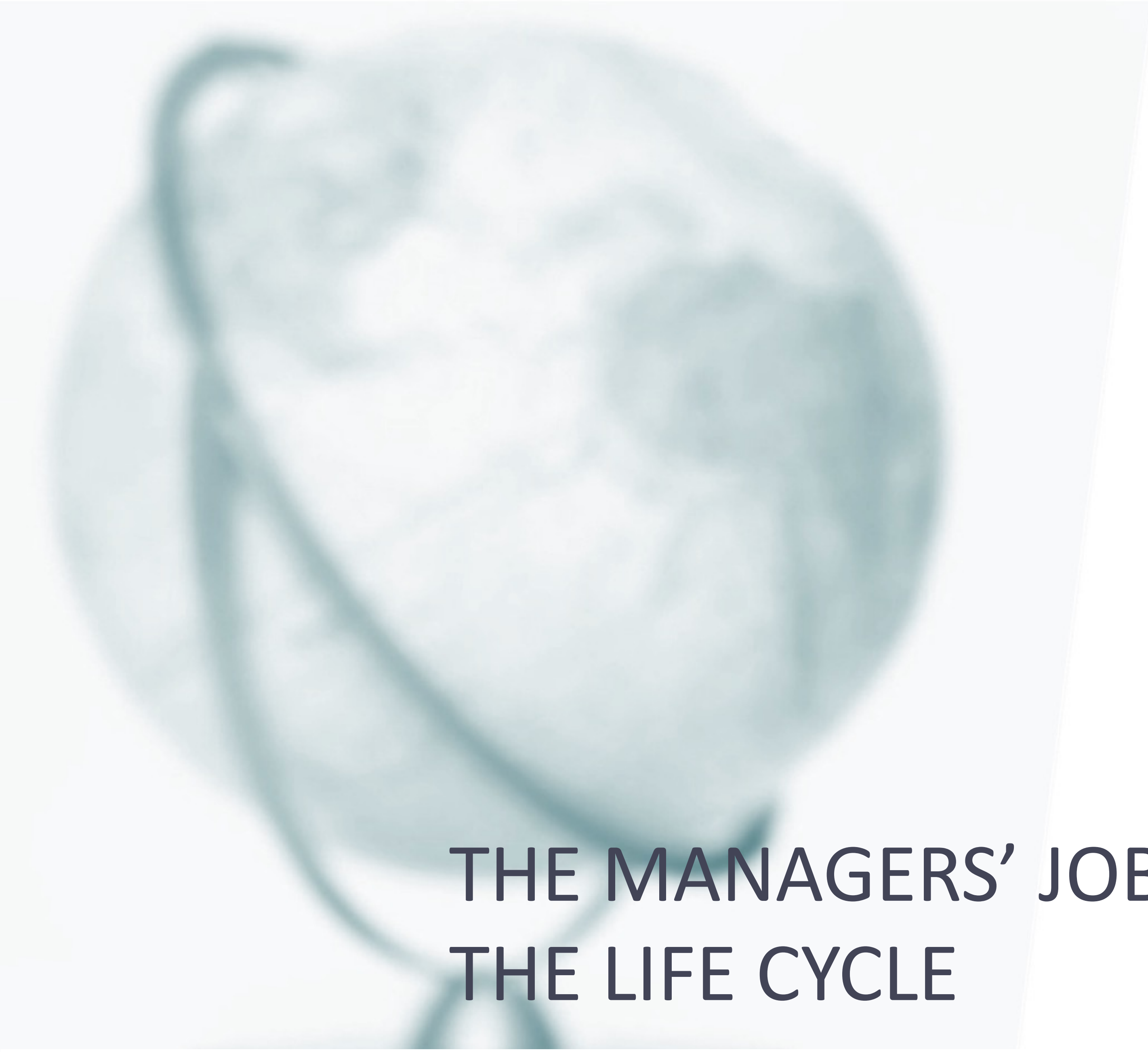


Lazy Growth investing…

- In lazy growth investing, you focus on firms early in the life cycle, especially in big markets, and you hope that the updraft will make you rich.
- The Cathie Wood story for any of the stocks in her portfolios reflects this lazy approach, where every stock is justified based upon a big market and lots of potential. It misses two factors:
  - Big markets are not always profitable markets, especially if competition is intense and pricing power is low.
  - Only a subset of young firms in a big market are successful, and without screening for these companies, you will end up a over priced growth companies, with prices driven by momentum and little else.

Rigid Value Investing

- In rigid value investing, i.e., the value investing described in the Ben Graham manual and by some of its leading advocates, you look for cheap companies, with arbitrary rules restricting you from buying
  - High priced stocks
  - Stocks with a lot of uncertainty about the future
  - Stocks you do not understand
- Not surprisingly, this will push you into investing more and more of your money in aging companies, with the dangers of
  - Value traps, where cheap companies become chaper
  - Disruption, undercutting the business model
  - Changing tastes and preferences



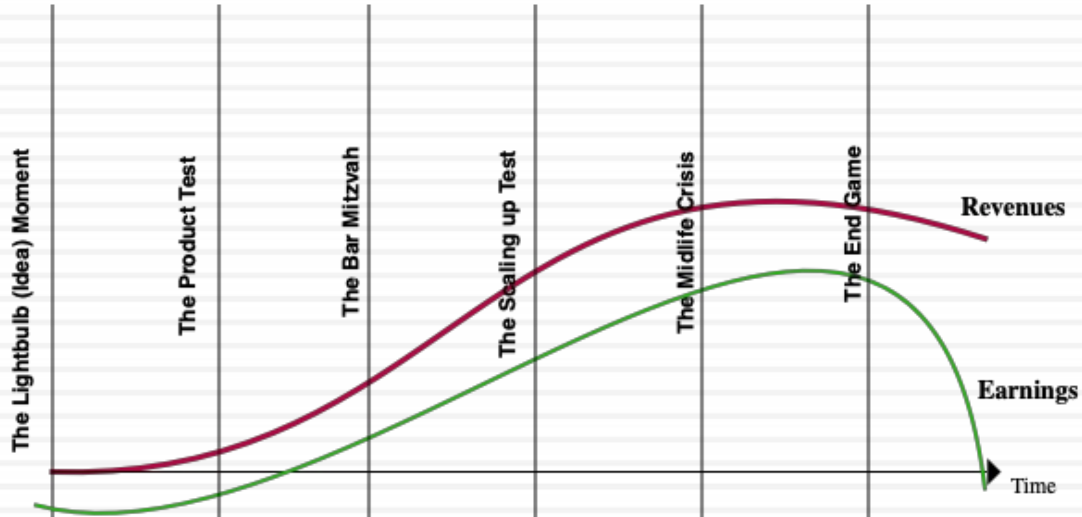
THE MANAGERS' JOB, ACROSS THE LIFE CYCLE

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.

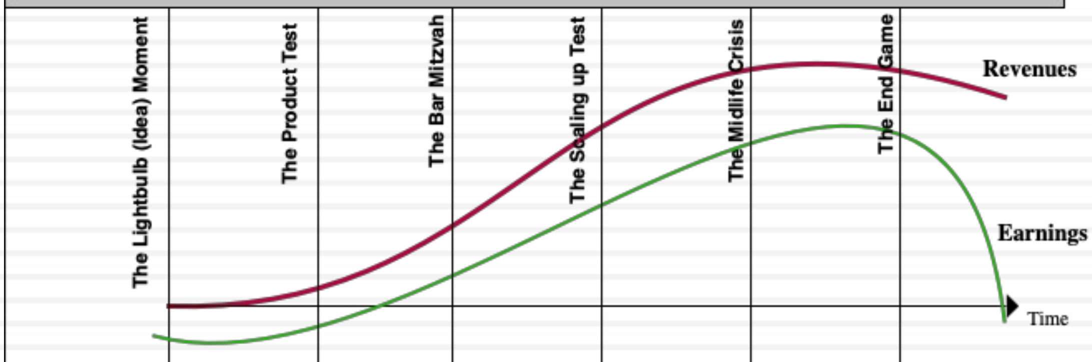
The most important function of a CEO…



Lifecycle stage	Start-up	Young Growth	High Growth	Mature Growth	Mature Stable	Decline
Management's Importance	Critical, in selling vision & creating business model		Decreases as firm matures, and more so in macro businesses			Significant, since denial or desperation can be costly.
Management role in narrative/ numbers	Visionary/Story Teller	Stay consistent with words & actions	Deliver numbers to back up story	Keep narrative in sync with numbers	Adjust your narrative to reflect where you are in the life cycle.	Act your age (in terms of narrative & choices)
Management key function	Sell a vision (story) to investors and employees	Build a business model to deliver on vision	Scale up the business model	Extend the business model into new maarkets	Defend the business model against competitors	Scale down the business model

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

The Corporate Life Cycle: The "Right" CEO

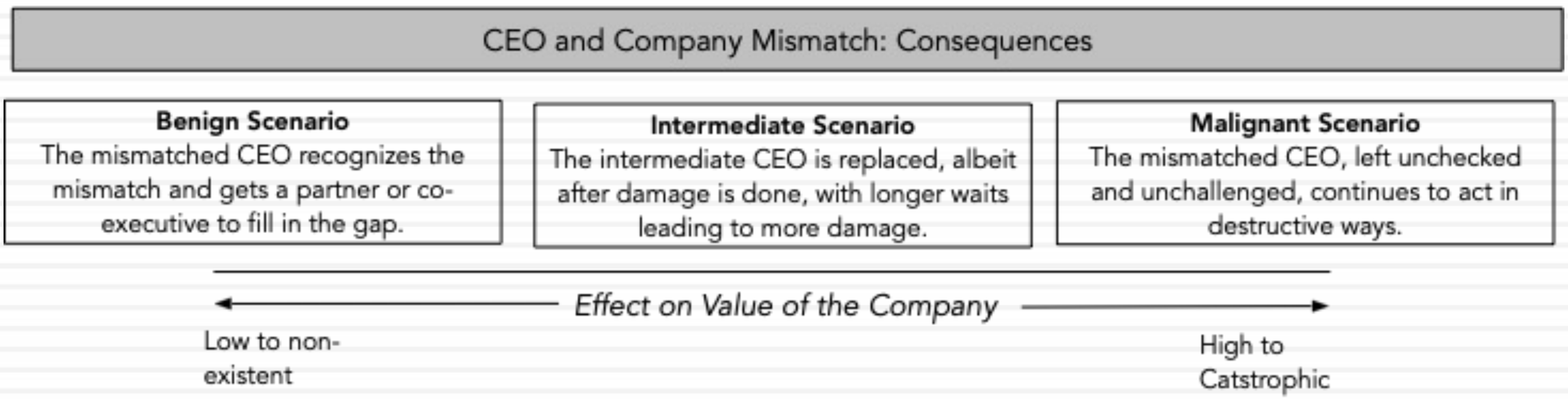


Lifecycle stage	Start-up	Young Growth	High Growth	Mature Growth	Mature Stable	Decline
Key Business Test	Have an idea for a business that meets an unmet need in the market.	Create a business model that converts ideas into revenues	Build the business, looking for scaling benefits (moving to profitability)	Grow your business, with revenue growth & higher margins	Defend your business from competitors & find new markets	Scale down your business as market shrinks.
Key for management success	Tell a compelling & plausible story	Stay consistent with story	Deliver numbers to back story	Keep story in sync with numbers	Adjust story to reflect maturity	Shrink the company
The Right CEO	**Steve, the Visionary**	**Paula, the Pragmatist**	**Bob, the Builder**	**Oscar, the Opportunist**	**Donna, the Defender**	**Larry, the Liquidator**
The CFO's role	Financial plans to back vision & help fund raising.	Manage cash burn for survival.	Supply chain financing & preparing for IPO	Direct to high quality growth rather than high growth.	Just say "No".	Manage orderly liquidation.
CFO Status	Sidekick	→	→	→	Ruler	

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.

Management Mismatches…



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"