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

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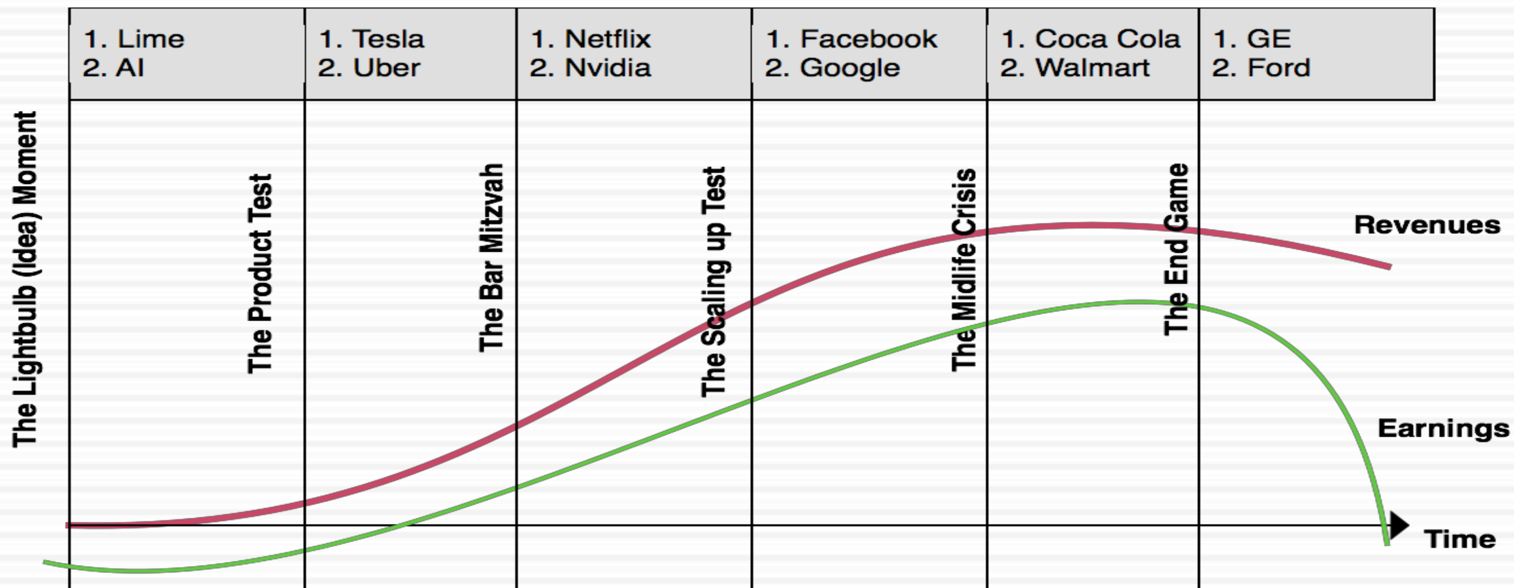
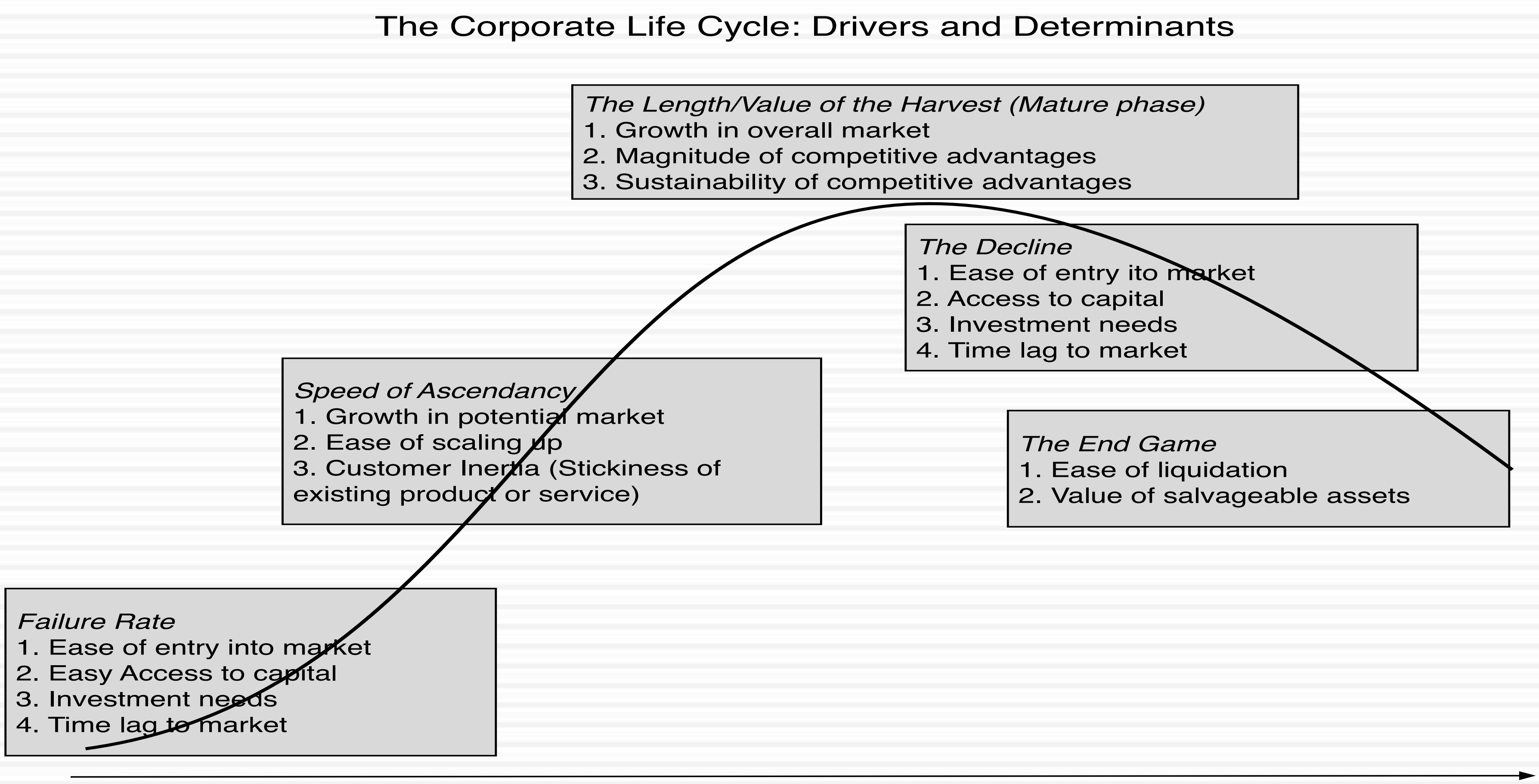
The Corporate Life Cycle

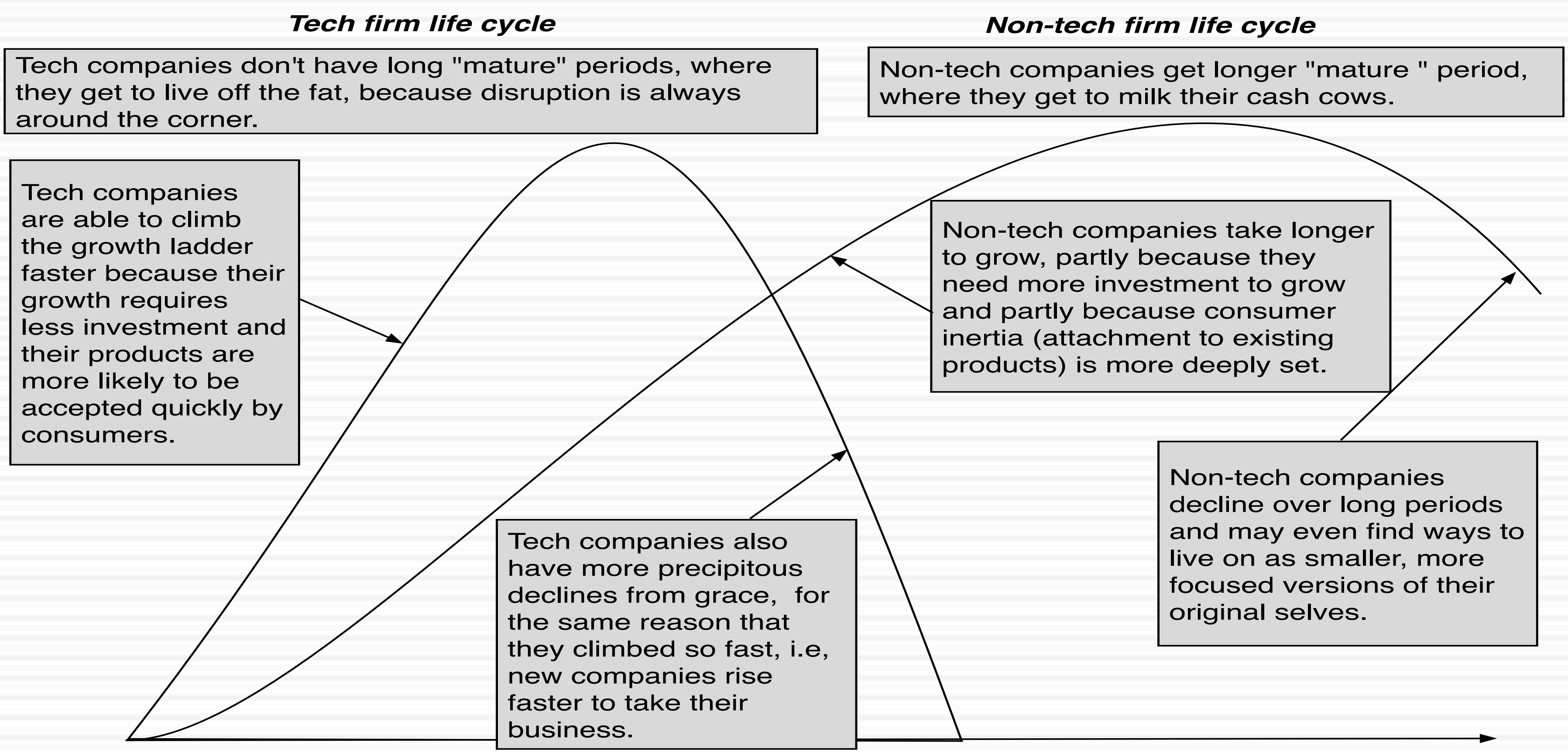


Lifecycle stage	**Start-up**	**Young Growth**	**High Growth**	**Mature Growth**	**Mature Stable**	**Decline**
Description	Have an idea for a business that meets an unmet need in the market.	Create a business model that converts ideas into revenues	Build the business, looking for scaling benefits (moving 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.

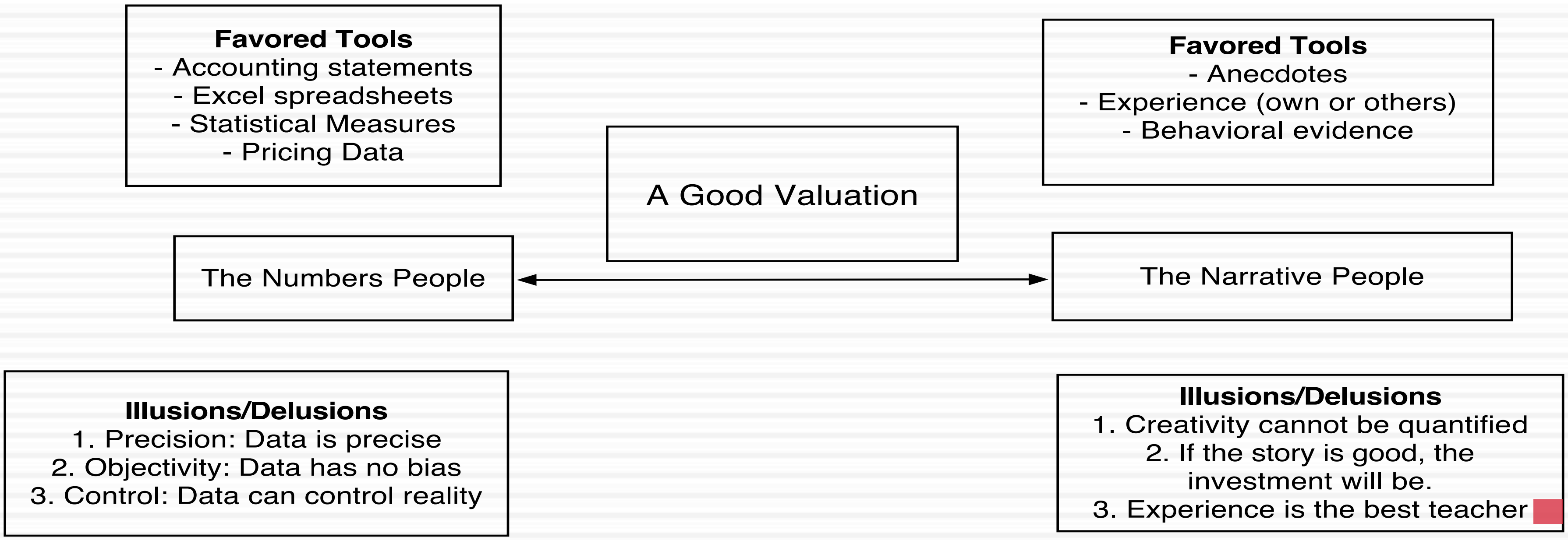
The determinants of the life cycle



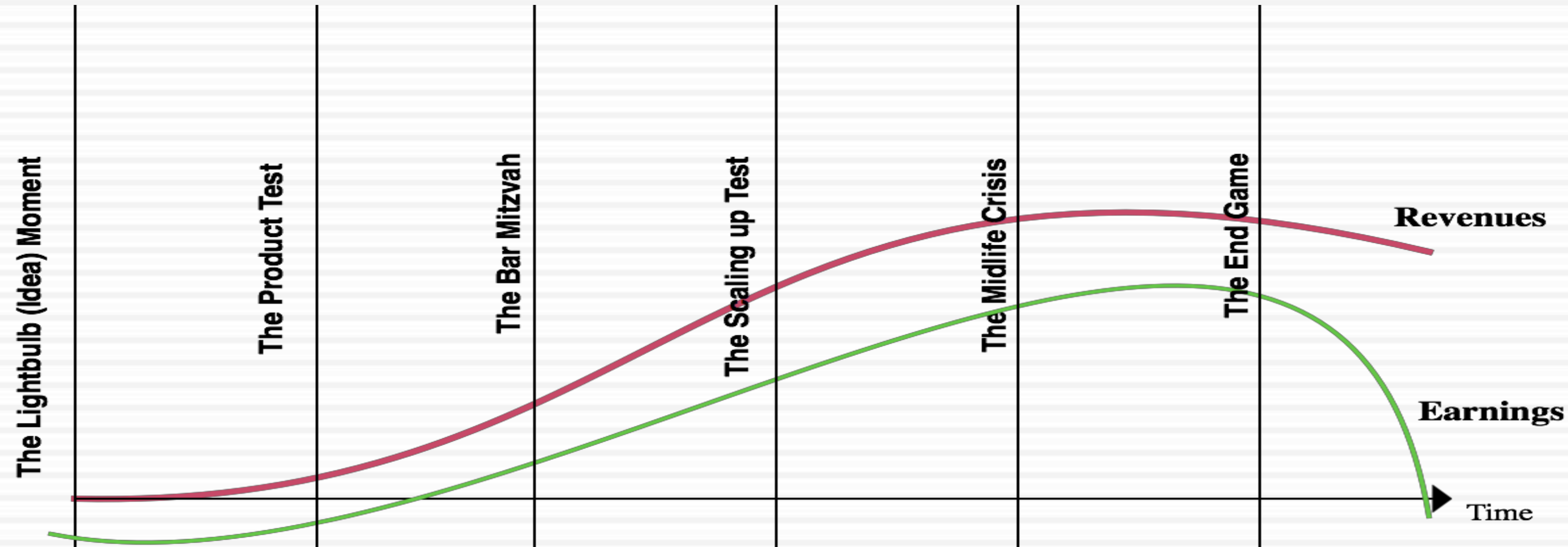
Tech versus Non-tech life cycles



Value = Story + Numbers



Narrative versus 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.

Lyft, The US Car Service Company (March 2019)

The Story

Lyft is a company focused on the transportation business in the US, taking advantage of a shift away from not just taxi service but also from private cars and public transporrtation. With strong networking benefits, it will end up as one of the two or three dominant players in the market, with high market share but a shaky transition to profitability, fending off competitors and also dealing with legal and regulatory changes that increase costs. While there is a clear pathway to being a going concern, the cash burn over the next 3-5 years ezposes the firm to failure risk.

The Assumptions

	Base year	*Years 1-5*	*Years 6-10*	*After year 10*	*Story link*
Total Market	$120,000	Grow 10.39% a year		Grows 2.75% a year	US car service
Gross Market Share	6.71%	6.71%>40%		40%	Network benefits winner
Revenue Share	26.77%	26.77% -> 20%		20.00%	Market dominance keeps billing share high.
Operating Margin	-42.25%	-42.25% ->20%		15.00%	Legal & regulatory changes
Reinvestment	NA	Sales to capital ratio of 3.00		Reinvestment rate = 7.5%	Low capital investment model
Cost of capital	NA	9.97%	10%->8.00%	8.24%	At 75th percentile of US firms
Risk of failure	10% chance of failure, if pricing meltdown leads to capital being cut off				Cash on hand + Capital access

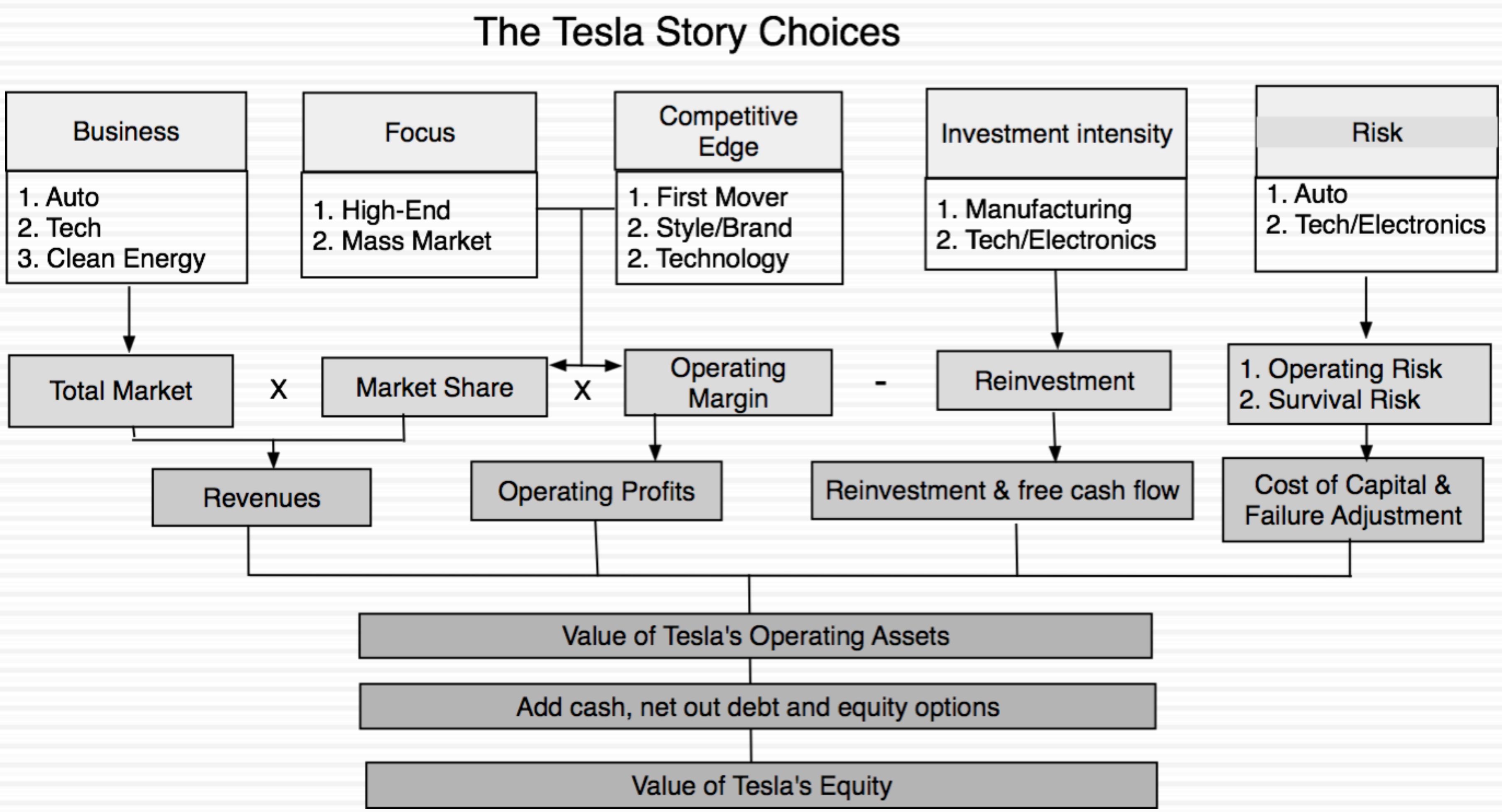
The Cash Flows

	Total Market	*Market Share*	*Revenues*	*EBIT (1-t)*	*Reinvestment*	*FCFF*
1	$ 132,468	10.04%	$ 3,470	$ (887)	$ 526	$ (1,413)
2	$ 146,231	13.37%	$ 4,969	$ (965)	$ 599	$ (1,564)
3	$ 161,425	16.70%	$ 6,668	$ (886)	$ 680	$ (1,566)
4	$ 178,197	20.03%	$ 8,587	$ (614)	$ 767	$ (1,382)
5	$ 196,712	23.36%	$ 10,744	$ (109)	$ 863	$ (972)
6	$ 217,150	26.68%	$ 13,158	$ 673	$ 966	$ (293)
7	$ 239,712	30.01%	$ 15,850	$ 1,783	$ 1,077	$ 706
8	$ 264,618	33.34%	$ 18,840	$ 2,120	$ 1,196	$ 923
9	$ 292,112	36.67%	$ 22,149	$ 2,492	$ 1,324	$ 1,168
10	$ 322,462	40.00%	$ 25,797	$ 2,902	$ 1,459	$ 1,443
Terminal year	$ 331,330	40.00%	$ 26,506	$ 2,982	$ 410	$ 2,572

The Value

Terminal value	$ 46,848
PV(Terminal value)	$ 18,992
PV (CF over next 10 years)	$ (3,567)
Value of operating assets =	$ 15,425
Probability of failure	10%
Value in case of failure	$ -
Adjusted Value for operating assets	$ 13,883
+ Cash on hand	$ 518
+ IPO Proceeds	$ 2,000
Value of equity	$ 16,401
Value per share	$ 58.78

Divergent Stories? Tesla Story Choices in 2016



And how they translate to numbers

High End → *Higher Revenues* → Mass Market

Auto ↑ *Less sales per $ invested (More reinvestment)* ↑ Tech

Weaker competitive advantages ↓ Higher profit margins ↓ Stronger competitive advantages

		Revenue in 2026 (in billions) with 9% margin				
		$ 60	$ 70	$ 80	$ 90	$ 100
Sales/Capital	1.19 (Auto)	$ (60.34)	$ (63.30)	$ (66.29)	$ (68.74)	$ (71.16)
	1.58 (Current)	$ (12.34)	$ (7.28)	$ (1.50)	$ 3.78	$ 9.47
	2.24 (Tech)	$ 30.81	$ 43.08	$ 56.75	$ 68.99	$ 81.97

		Revenue in 2026 (in billions) with 12% margin				
		$ 60	$ 70	$ 80	$ 90	$ 100
Sales/Capital	1.19 (Auto)	$ 11.25	$ 19.51	$ 28.81	$ 37.22	$ 46.22
	1.58 (Current)	$ 59.25	$ 75.53	$ 93.60	$ 109.75	$ 126.85
	2.24 (Tech)	$ 102.40	$ 125.89	$ 151.85	$ 174.96	$ 199.35

		Revenue in 2026 (in billions) with 15% margin				
		$ 60	$ 70	$ 80	$ 90	$ 100
Sales/Capital	1.19 (Auto)	$ 82.66	$ 102.11	$ 123.68	$ 142.95	$ 163.33
	1.58 (Current)	$ 130.65	$ 158.13	$ 188.47	$ 215.48	$ 243.97
	2.24 (Tech)	$ 173.80	$ 208.49	$ 246.72	$ 280.68	$ 316.46

My base case

As companies mature, their stories become bounded..

Levi Strauss (IPO)

The Story

In its return to public markets, Levi Strauss is riding its iconic brand name to moderate growth and solid operating margins. It's brand name will persist, while the company pursues global growth while holding on to current operating margins, which are higher than the rest of the apparel business.

The Assumptions

	Base year	*Years 1-5*	*Years 6-10*		*After year 10*	*Link to story*
Revenues (a)	$ 5,575	8.00%	2.45%		2.45%	Global growth opportunities
Operating margin (b)	11.60%	11.60%	11.60%		11.60%	Brand name allows margin preservation
Tax rate	18.41%	18.41%	25.00%		25.00%	Tax rate converges on global average
Reinvestment (c)		Sales to capital ratio	3.11	RIR =	24.50%	Hold to current investment efficiency
Return on capital	29.46%	Marginal ROIC =	36.11%		10.00%	Earn excess returns in long term
Cost of capital (d)		6.78%	6.95%		6.95%	Low cost of capital

The Cash Flows

	Revenues	*Operating Margin*	*EBIT*	*EBIT (1-t)*	*Reinvestment*	*FCFF*
1	$ 6,021	11.60%	$ 698	$ 570	$ 143	$ 427
2	$ 6,503	11.60%	$ 754	$ 615	$ 155	$ 461
3	$ 7,023	11.60%	$ 815	$ 665	$ 167	$ 498
4	$ 7,585	11.60%	$ 880	$ 718	$ 180	$ 537
5	$ 8,192	11.60%	$ 950	$ 775	$ 195	$ 580
6	$ 8,757	11.60%	$ 1,016	$ 815	$ 181	$ 634
7	$ 9,263	11.60%	$ 1,074	$ 848	$ 163	$ 686
8	$ 9,695	11.60%	$ 1,124	$ 873	$ 139	$ 734
9	$ 10,040	11.60%	$ 1,164	$ 889	$ 111	$ 778
10	$ 10,286	11.60%	$ 1,193	$ 895	$ 79	$ 816
Terminal year	$ 10,538	11.60%	$ 1,222	$ 917	$ 225	$ 692

The Value

Terminal value	$ 15,380		
PV(Terminal value)	$ 7,944		
PV (CF over next 10 years)	$ 4,189		
Value of operating assets =	$ 12,132		
Adjustment for distress	$ -	Probability of failure =	0.00%
- Debt & Mnority Interests	$ 2,324		
+ Cash & Other Non-operating assets	$ 713		
Value of equity	$ 10,522		
- Value of equity options	$ 284		
Number of shares	376.03		
Value per share	$ 27.23	Stock was trading at =	$22.00

And in decline, they can be depressing..

JC Penney in 2016: Road to Nowhere?

Declining business: Revenues expected to drop by 3% a year fo 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%										
Proceeds if firm fails =	$2,421										
Value of operating assets =	$4,357										

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

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: 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

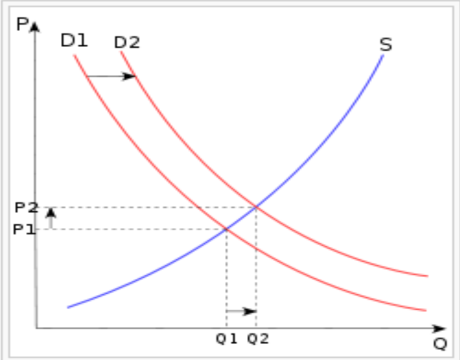
INTRINSIC VALUE

Value

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

Price

PRICE



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

Multiple = Numerator = What you are paying for the asset / 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

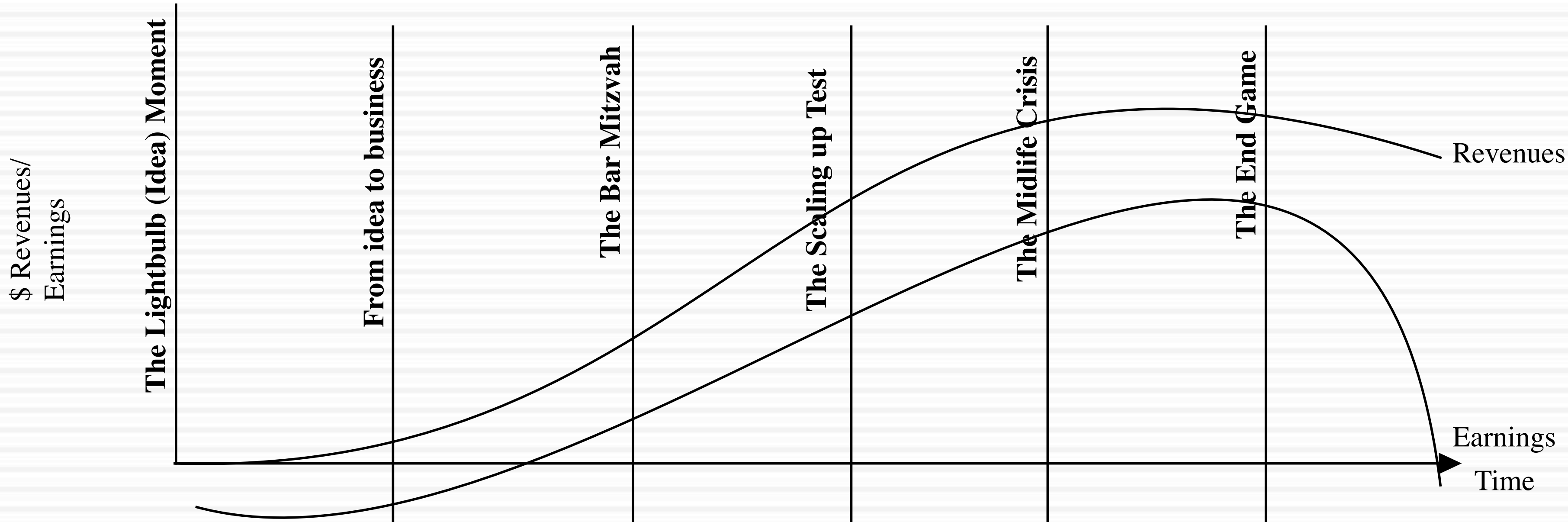
Risk
- Lower risk for higher value
- Higher risk for lower value

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

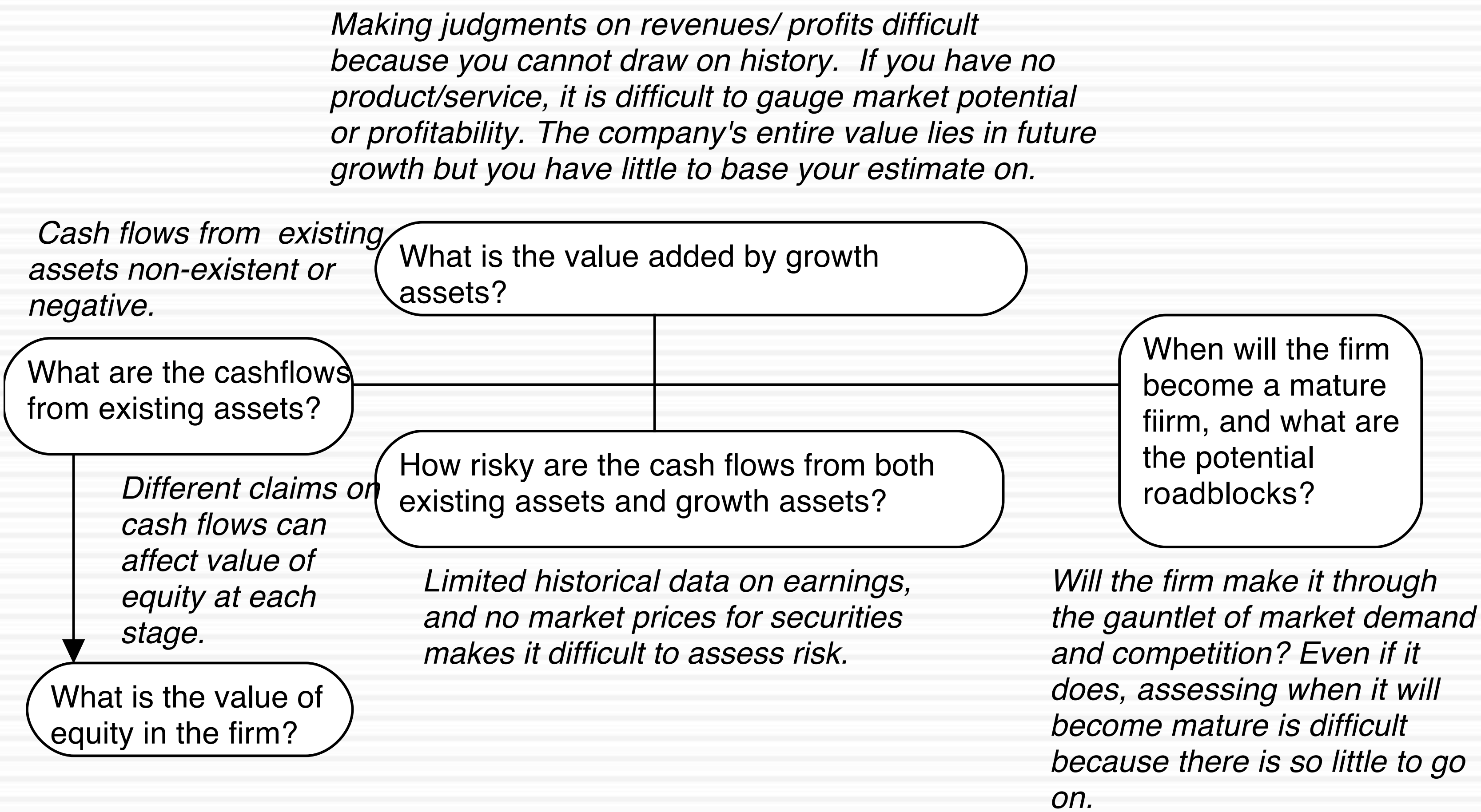
The Evolution of Uncertainty



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*

Why valuation is hard at young companies…

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



Twitter: Priming the Pump for Valuation

1. Make small revenues into big revenues

	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

		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)

2. Make losses into profits

Company	*Operating Margin*
Google Inc. (NasdaqGS:GOOG)	22.82%
Facebook, Inc. (NasdaqGS:FB)	29.99%
Yahoo! Inc. (NasdaqGS:YHOO)	13.79%
Netlfix	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%

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

Twitter Pre-IPO Valuation: October 27, 2013

Starting numbers

	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%; Beta = 1.00;
Cost of capital = 8%
ROC= **12**%;
Reinvestment Rate=2.5%/12% = 20.83%

Terminal Value$_{10}$= 1466/(.08-.025) = $26,657

	1	2	3	4	5	6	7	8	9	10
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

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

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

Cost of Equity
11.12%

Cost of Debt
(2.5%+5.5%)(1-.40)
= 5.16%

Weights
E = 98.1% D = 1.9%

Riskfree Rate:
Riskfree rate = 2.5%

\+

Beta
1.40

X

Risk Premium
6.15%

75% from US(5.75%) + 25% from rest of world (7.23%)

90% advertising (1.44) + 10% info svcs (1.05)

D/E=1.71%

Pricing Twitter: Start with the "comparables"

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
						Average	$130.01	11.32	350.80	267.44
						Median	$97.41	10.92	44.20	116.47

Read the tea leaves: See what the market cares about

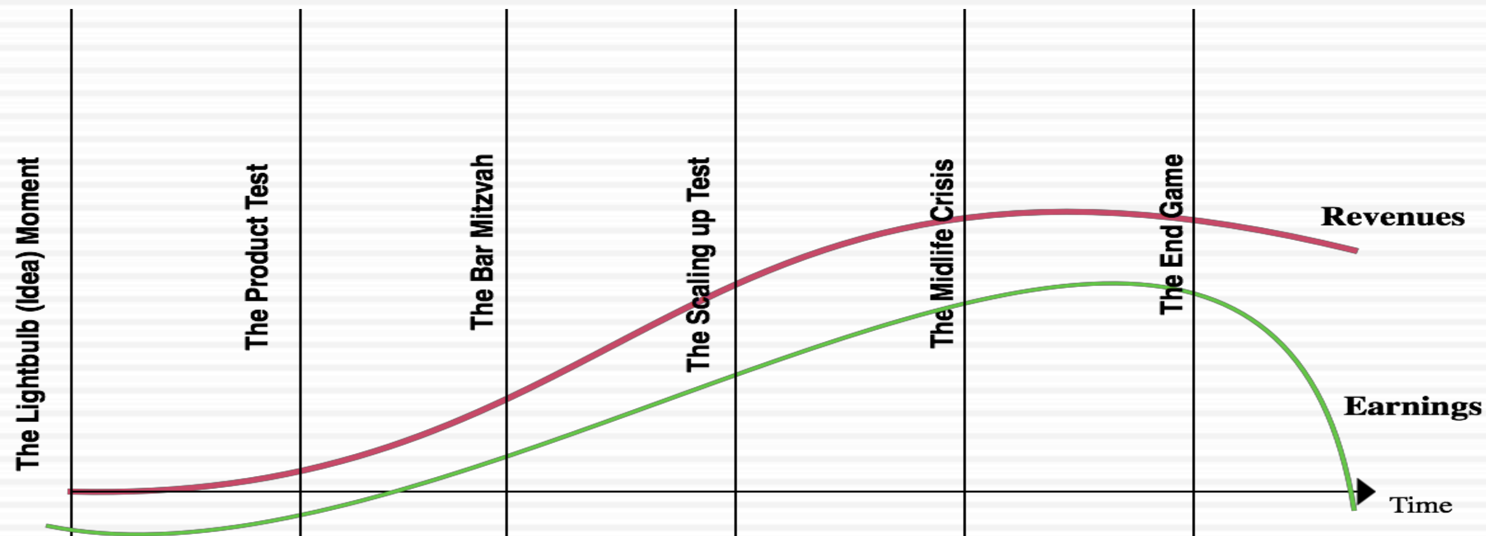
	Market Cap	Enterprise value	Revenues	EBITDA	Net Income	Number of users (millions)
Market Cap	1.					
Enterprise value	0.9998	1.				
Revenues	0.8933	0.8966	1.			
EBITDA	0.9709	0.9701	0.8869	1.		
Net Income	0.8978	0.8971	0.8466	0.9716	1.	
Number of users (millions)	0.9812	0.9789	0.8053	0.9354	0.8453	1.

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”

- 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

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



Lifecycle stage	Start-up	Young Growth	High Growth	Mature Growth	Mature Stable	Decline
The Game	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

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.

"Growing old is mandatory, Growing up is optional"