

# Stories to Numbers

## The Assumptions

	Base year	Years 1-5	Years 6-10		After year 10	Link to story
Revenues (a)	76559.0	15.00%	2.00%		2.00%	
Operating margin (b)	-3.10%	-3.10%	9.60%		9.60%	
Tax rate	25.00%	25.00%	25.00%		25.00%	
Reinvestment (c )		Sales to capital ratio =	3.8	RIR=	20.00%	
Return on capital	-11.78%	Marginal ROIC =	75.98%		10.00%	
Cost of capital (d)		9.25%	7.50%		7.50%	

## The Cash Flows

	Revenues	Operating Margin	EBIT	EBIT (1-t)	Reinvestment	FCFF
1	68903.10	-5.00%	-3445.16	-3445.16	-2014.71	-1430.44
2	79238.57	5.00%	3747.98	3672.28	2719.86	952.42
3	91124.35	10.00%	8747.94	6560.95	3127.84	3433.12
4	104793.00	10.00%	10060.13	7545.10	3597.01	3948.08
5	120511.95	10.00%	11569.15	8676.86	4136.57	4540.29
6	135455.43	10.00%	13003.72	9752.79	3932.50	5820.30
7	148730.07	10.00%	14278.09	10708.56	3493.32	7215.24
8	159438.63	10.00%	15306.11	11479.58	2818.04	8661.54
9	166772.81	10.00%	16010.19	12007.64	1930.05	10077.60
10	170108.27	10.00%	16330.39	12247.80	877.75	11370.04
Terminal year	173510.43	10.00%	16657.00	12492.75	2498.55	9994.20

## The Value

Terminal value	181712.74	
PV(Terminal value)	78736.13	
PV (CF over next 10 years)	29139.75	
Value of operating assets	107875.89	
Adjustment for distress	10787.59	Probability of failure =0.20
- Debt & Mnority Interests	28532.00	
+ Cash & Other Non-operating assets	10030.00	
Value of equity	78586.30	
- Value of equity options	0.00	
Number of shares	566.00	
Value per share	138.85	Stock was trading at =127.68

## Input sheet

Date of valuation	
Company name	

## Numbers from your base year below ( in consistent units)

	This year
Country	
Industry	
Industry (Global)	
Revenues	76559.0
Operating income or EBIT	-2102.0
Interest expense	0.0
Book value of equity	-8617.0
Book value of debt	28532.0
Do you have R&D expenses to capitalize?	yes
Do you have operating lease commitments?	no
Cash and Marketable Securities	10030.0
Cross holdings and other non-operating assets	0.0
Minority interests	0.0
Number of shares outstanding =	566.0
Current stock price =	127.68
Effective tax rate =	25.00%
Marginal tax rate =	25.00%

## The value drivers

Revenue growth rate for next year	-10.00%
Operating Margin for next year	-5.00%
Compounded annual revenue growth rate - years 2-5 =	15.00%
Target pre-tax operating margin (EBIT as % of sales in year 10) =	9.60%
Year of convergence	3.0
Sales to capital ratio (for computing reinvestment) =	3.8

## Market numbers

Riskfree rate	85.00%
Riskfree rate	9.25%

## Other inputs

Do you have employee options outstanding?	no
Number of options outstanding =	7.27
Average strike price =	1.29
Average maturity =	7.0
Standard deviation on stock price =	45.00%

## Default assumptions.

In stable growth, I will assume that your firm will have a cost of capital similar to that of typical mature companies (riskfree rate + 4.5%)	
Do you want to override this assumption	yes
If yes, enter the cost of capital after year 10 =	7.50%

<b>I will assume that your firm will earn a return on capital equal to its cost of capital after year 10. I am assuming that whatever competitive advantages you have today will fade over time.</b>	
Do you want to override this assumption	yes
If yes, enter the return on capital you expect after year 10	10.00%
<b>I will assume that your firm has no chance of failure over the foreseeable future.</b>	
Do you want to override this assumption	yes
If yes, enter the probability of failure =	20.00%
What do you want to tie your proceeds in failure to?	V
Enter the distress proceeds as percentage of book or fair value	50.00%
<b>I will assume that your effective tax rate will adjust to your marginal tax rate by your terminal year. If you override this assumption, I will leave the tax rate at your effective tax rate.</b>	
Do you want to override this assumption	no
<b>I will assume that you have no losses carried forward from prior years ( NOL) coming into the valuation. If you have a money losing company, you may want to override tis.</b>	
Do you want to override this assumption	no
If yes, enter the NOL that you are carrying over into year 1	250.0
<b>I will assume that today's risk free rate will prevail in perpetuity. If you override this assumption, I will change the riskfree rate after year 10.</b>	
Do you want to override this assumption	yes
If yes, enter the riskfree rate after year 10	2.00%
<b>I will assume that the growth rate in perpetuity will be equal to the risk free rate. This allows for both valuation consistency and prevents "impossible" growth rates.</b>	
Do you want to override this assumption	no
<b>If yes, enter the growth rate in perpetuity</b>	-5.00%
<b>I have assumed that none of the cash is trapped (in foreign countries) and that there is no additional tax liability coming due and that cash is a neutral asset.</b>	
Do you want to override this assumption	no
If yes, enter trapped cash (if taxes) or entire balance (if mistrust)	140000.0
& Average tax rate of the foreign markets where the cash is trapped	15.00%

## Valuation output

	Revenue growth rate	Revenues	EBIT (Operating margin)	EBIT (Operating income)	Tax rate
Base year	0.00%	76559.00	-3.10%	-2373.40	25.00%
1	-10.00%	68903.10	-5.00%	-3445.16	25.00%
2	15.00%	79238.57	4.73%	3747.98	25.00%
3	15.00%	91124.35	9.60%	8747.94	25.00%
4	15.00%	104793.00	9.60%	10060.13	25.00%
5	15.00%	120511.95	9.60%	11569.15	25.00%
6	12.40%	135455.43	9.60%	13003.72	25.00%
7	9.80%	148730.07	9.60%	14278.09	25.00%
8	7.20%	159438.63	9.60%	15306.11	25.00%
9	4.60%	166772.81	9.60%	16010.19	25.00%
10	2.00%	170108.27	9.60%	16330.39	25.00%

Terminal year	2.00%	173510.43	9.60%	16657.00	25.00%
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	EBIT(1-t)	- Reinvestment	FCFF	NOL	Cost of capital
Base year	-2373.40	0.00	0.00	0.00	0.00%
1	-3445.16	-2014.71	-1430.44	3445.16	9.25%
2	3672.28	2719.86	952.42	0.00	9.25%
3	6560.95	3127.84	3433.12	0.00	9.25%
4	7545.10	3597.01	3948.08	0.00	9.25%
5	8676.86	4136.57	4540.29	0.00	9.25%
6	9752.79	3932.50	5820.30	0.00	8.90%
7	10708.56	3493.32	7215.24	0.00	8.55%
8	11479.58	2818.04	8661.54	0.00	8.20%
9	12007.64	1930.05	10077.60	0.00	7.85%
10	12247.80	877.75	11370.04	0.00	7.50%
Terminal year	12492.75	2498.55	9994.20	0.00	7.50%

	Cumulated discount factor	PV(FCFF)	Sales to capital ratio	Invested capital	ROIC
Base year	0.0	0.00	0.0	20143.20	-11.78%
1	0.9153	-1309.29	3.8	18128.49	-19.00%
2	0.8378	797.94	3.8	20848.35	17.61%
3	0.7669	2632.86	3.8	23976.19	27.36%
4	0.702	2771.55	3.8	27573.20	27.36%
5	0.6426	2917.59	3.8	31709.77	27.36%
6	0.5901	3434.56	3.8	35642.26	27.36%
7	0.5436	3922.20	3.8	39135.59	27.36%
8	0.5024	4351.56	3.8	41953.63	27.36%
9	0.4658	4694.14	3.8	43883.68	27.36%
10	0.4333	4926.64	3.8	44761.43	27.36%
Terminal year					0.1

Terminal cash flow	9994.20
Terminal cost of capital	7.50%
Terminal value	181712.74
PV(Terminal value)	78736.13
PV (CF over next 10 years)	29139.75
Sum of PV	107875.89
Probability of failure =	20.00%
Proceeds if firm fails =	53937.94
Value of operating assets =	97088.30
- Debt	28532.00
- Minority interests	0.00
+ Cash	10030.00
+ Non-operating assets	0.00
Value of equity	78586.30
- Value of options	0.00
Value of equity in common stock	78586.30
Number of shares	566.00
Estimated value /share	138.84

Price	127.68
Price as % of value	91.96%