

Teach yourself how to build a Business Case for any industry incl mining

2e
Four
more
most
useful
metrics
to evaluate a
business/project

Inside Level 2 there usually are five steps ...

Level 3: Decision making

Level 2: Evaluating the business/project

Level 1: Hands-on business modelling



Continuing through Step 3 →

- Step 1: Decide which business entity is to be evaluated
- Step 2: Create the hands-on model
- **Step 3: Compute the basket of powerful economic measures:** NPV, IRR, Payback, **cash break even, key drivers, dollar trees, four cash streams**, uncertainty, risk, optionality
- Step 4: Assess alternatives, flexibility, options, risks, the business, the industry
- Step 5: Interact so the decision makers “have their eyes wide open”

Four more most useful metrics

- Break even analysis
- Key drivers
- Dollar trees &
- The four cashstreams

are fundamental to understanding the business/project.

- Educate your managers and colleagues using these simple business concepts
- Create easy-to-understand diagrams.
- Have the decision made with “**eyes wide open**”



You can leave in your wake, those evaluation specialists who think it is all about creating a ‘trophy’ model and then pumping out NPV using sophisticated mathematics that almost no-one else can follow or trust.

☐ Cash Breakeven “What are we getting into?”

This metric is often overlooked because it gets swamped by NPV and IRR.

Some naïve managers wrongly think that a positive NPV means “Let’s go!”. But there is a lot more for these managers to discover about the business/project.

Breakeven is so revealing!

Cash breakeven helps you understand how robust the business is or how close it is to disaster.

Are we getting into a business with high margins and low fixed costs that could survive market slumps and then harvest market upturns?

Or are we getting into a business with low margins and high fixed costs – such as labour intensive manufacturing industries – which are more likely to be battling to survive in downturns?

Most businesses will go through cyclical peaks and troughs.

Will this business survive an extended downturn?

You must characterise the business/project and educate your managers and colleagues to its strengths and vulnerabilities. In each scenario, how low can prices drop or operating costs rise before revenue does not cover opex plus sustaining capex plus taxes? - ***Before it starts bleeding cash?***

Is there lots or just a little ‘freeboard’ before the business/project starts to sink?



□ Key Drivers

(This is very different to 'sensitivity' analysis.)

Drivers need to be assessed systematically.

1. Work down through your model changing the more important parameters. Some can be changed one-by-one whereas others need to be changed in inter-related groups.
2. Vary each by the amount that your colleagues estimate is reasonable. *For example, the marketing experts might estimate that sales volumes are confident within 30% and prices are confident within 50%. The engineers might estimate that the construction cost is good within 15%. The operations experts might be confident that employee costs are well understood and good to within 5%. The tax experts might say tax rates are unlikely to change.*
3. Select those parameters that have major impact on the economics of the business.

This is a subjective exercise, but can be most illuminating for everyone.

This will help you to characterise the underlying business for managers and colleagues.

Some of these people will not appreciate the significance of this work because they are focusing on their own areas of expertise.

Too many leaders do not understand they are building a business. They need to be given a helicopter view. Instead they love to get into the details of product design, schedules, technical reports and cost estimates where they feel they can 'drive performance'.

Ironically, some leaders with technical backgrounds lack business perspective and do not appreciate that the humble marketing experts in a back office who are forecasting market supply, demand and hence prices probably have far, far more impact on the business decision than all of the technical details they love to examine. Further, too many of these leaders then take the best estimates by these marketing experts as sacrosanct and fail to test higher and low market scenarios.

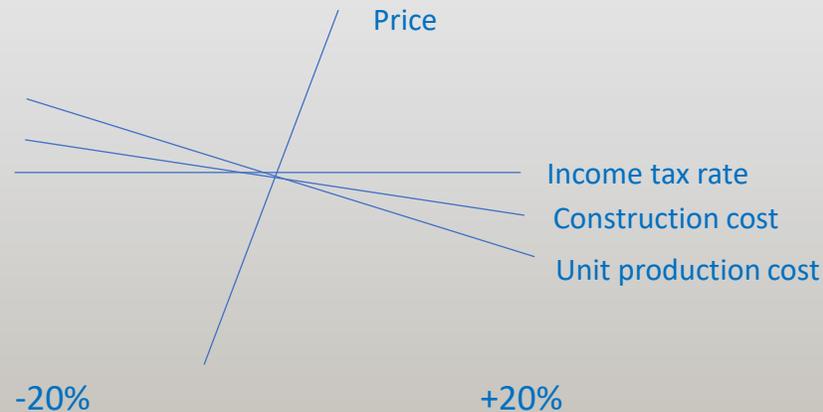
NPV
IRR
Payback
Life
Cash Breakeven
Key Driver #1
Key Driver #2
Key Driver #3
Closure /Disposal
Social & Community
Environmental
Governance

□ Key Drivers

This is not sensitivity analysis!

I think sensitivity testing is pretty useless for two reasons.

- 1. Predictable:** Normally, the simple maths of a business is that revenue has to be bigger than capex + opex + taxes for it to be viable. Therefore, the business will be most sensitive to the parameters that directly impact revenue, such as price and sales volume. Frequently the business is next most sensitive to parameters in opex and then to parameters in capex. Income taxes are computed as a fraction of the remaining surplus and so normally have least impact.
- 2. Misleading:** To create a sensitivity diagram, each of the key parameters is varied by the same amount. Typically each is varied by 10% or by 20% or by 30%. This is rubbish, because each of the key parameters are not likely to vary by the same amount. As an example, prices might be estimated to vary by say 50%, opex is well known in this example and so should be confident to within 20%, capex is mainly in a fixed price contract and tax rates are unlikely to change. So why are they all changed by 20%? Contrast this with Key Drivers.



□ Dollar Trees can be very popular with business leaders and accountants because they clearly show the relative importance of the components of the business/project.

Start with net cashflow before discounting in the first column (not the NPV),
 then the four cash streams in the second column,
 each cash stream splits into its key parameters in the third column,
 then each of these into its component parameters in the fourth column, again into fifth column, etc.

Undiscounted net cashflow = \$277

Cashstream	Component			
Revenue = \$1 223	Revenue - Product 1	\$745	Sales volume - Product 1	200 units →
			Price – Product 1	\$3.73/unit →
	Revenue - Product 2	\$478	Sales volume - Product 2	100 units →
			Price – Product 2	\$4.78/unit →
Capex = (\$296)	Capex – initial capex	(\$220)	Initial capex – plant	\$190 →
			Initial capex – equipment	\$30 →
	Capex – sustaining capex	(\$76)	Sustaining capex – plant	\$31 →
			Sust’g capex – equipment	\$45 →
Opex = (\$569)	Raw Materials	(\$56)	etc	→
	Utilities	(\$201)	etc	→
	Employees	(\$312)	etc	→
Taxes = (\$81)	VAT	(\$39)	etc	→
	Income Tax	(\$42)	etc	→

□ Graphs of the four cash streams give an incisive picture of any business/project...

To refresh your understanding of this graph ...

Cash might be invested upfront to get a business/project constructed (blue = capex and yellow = pre-opex)

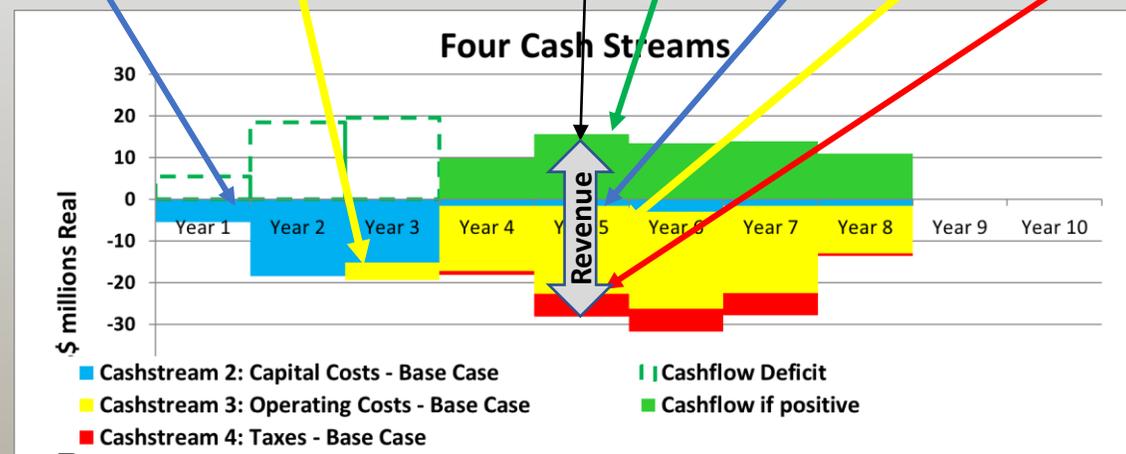
The dotted boxes represent the cash needed to be pumped in each year. (cash deficit)

Once sales commence the height of the column each year is the cash revenue.

In each year this is spent as cash on capex (blue), opex (yellow) & taxes (red)

This leaves surplus cash (green) above the zero axis

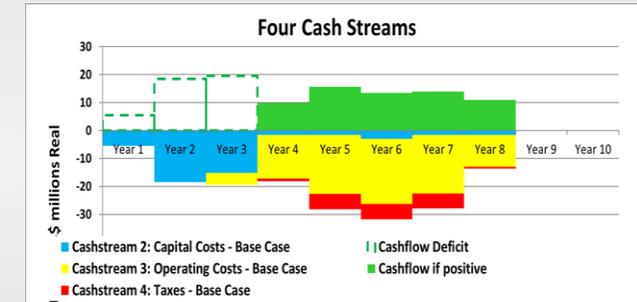
In a way they are like ice bergs floating with the surplus cash above waterline.



A graph of the four cash streams gives me immediate understanding the underlying business.

To me it is as important as NPV and IRR because I can see:

- the relative importance of revenue, operating costs, capex and tax over its life
- the profile of the surplus/deficit cashflows over the life
- the cash margin on sales over life
- by how much the costs could rise before wiping out any cash surplus
- the impact if costs can be reduced
- the profile of surplus cashflow



One look at the graph of four cash streams and I get an instant picture of the underlying business/ project.

- Does it have high capex upfront then low operating costs/good margins?
- Is it low capex upfront then thin margins?
- When in its business life is the cash generated?
- When and where is it vulnerable/offering opportunity?

I then generate another scenario and look at its four cash streams.

The basket of metrics is most powerful but our role is much, much more than pumping out numbers!

You must work with your colleagues to assess the business/project's ...

- ❖ ability to flex and adapt to a wide range of business and operating conditions
- ❖ uncertainties, risks, rewards, optionality
- ❖ strengths and weaknesses
- ❖ fit inside your company
- ❖ direct, indirect and coming competitors

and most importantly

- ❖ the future for that industry



You can make economic evaluation the best job of all!!!



Mordialloc Creek – Richard Newton

End of Module

www.economicvaluation.com.au