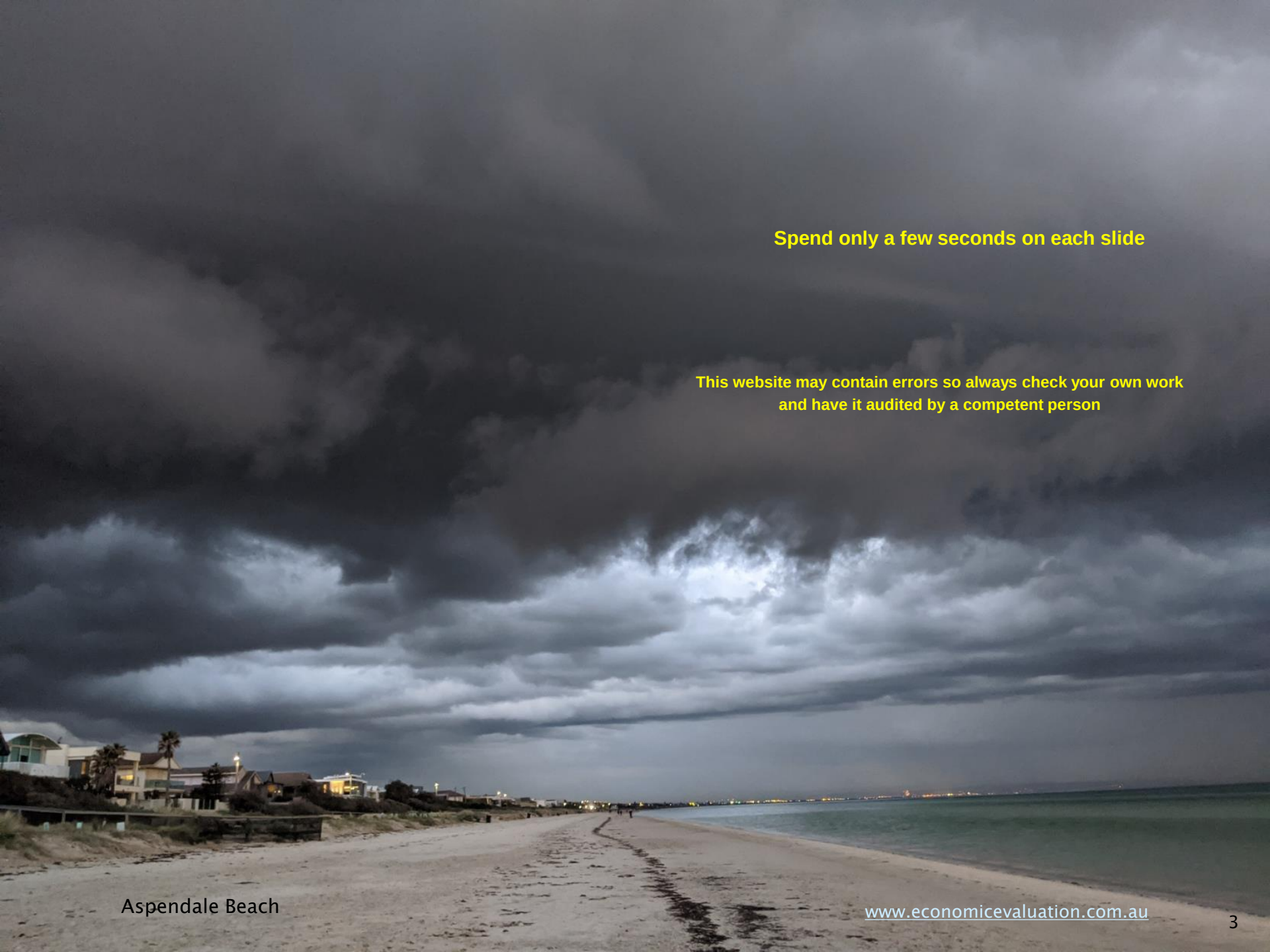
Teach yourself how to build a Business Case

for any industry including mining

Module 0: **Start Here**

Mordialloc Creek

There is a parallel stream in this website for social enterprises



Spend only a few seconds on each slide

This website may contain errors so always check your own work and have it audited by a competent person

Aspendale Beach

A Simple Assessment

NPV	A$ millions real	**26**										
IRR	Real	**16.8%**										
Years -->	units	**Total**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**
Cashstream 1: Production and Revenue												
Production												
3 Nov 2020 Michel Basil: Email of production throughputs and output of saleable products												
Waste removed	000 tonnes	**11,000**		3,000	3,000	2,500	1,500	1,000	0			
Ore mined	000 tonnes	**4,300**			800	1,000	1,000	1,000	500			
Head Grade - acid soluble copper	% Cu	**0**			2.1%	2.1%	2.1%	2.1%	2.1%			
Contained acid soluble copper	000 tonnes	**90**	0	0	17	21	21	21	11	0	0	0
Recovery of soluble copper in processing and SX-EW	% Cu	90%			90%	90%	90%	90%	90%			
Output and Sales of Cathode Copper	000 tonnes	81	0	0	15	19	19	19	9	0	0	0
Sales and Revenue												
5 Nov 2020 Peter Murphy: Company paired forecasts of copper price and exchange rate												
Copper price - SX-EW cathode	US$/lb real		3.00	3.00	3.00	3.00	3.00	3.00	3.00			
Output and Sales of Cathode Copper	US$ millions real	**538**	0	0	100	125	125	125	63	0	0	0
Forex A$	A$1.00 = US$...		0.80	0.80	0.80	0.80	0.80	0.80	0.80			
Cashstream 1: Revenue	A$ millions real	**672**	**0**	**0**	**125**	**156**	**156**	**156**	**78**	**0**	**0**	**0**
Years -->	units	Total	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030

Building a business case (or economic evaluation)
is <u>much, much</u> more than creating a 'clever' model to compute NPV.

Years -->	units	Total	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Cashstream 3: Operating Costs												
3 Nov 2020 Carlos Bas: email outlined operating costs												
variable opex												
waste cost - variable	A$ Real/ tonne waste		2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
waste cost	A$ millions real	28	0.0	7.5	7.5	6.3	3.8	2.5	0.0	0.0	0.0	0.0
ore cost - variable	A$ Real/ tonne ore		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
ore cost	A$ millions real	13	0.0	0.0	2.4	3.0	3.0	3.0	1.5	0.0	0.0	0.0
processing cost - variable	A$ Real/ tonne ore		35	35	35	35	35	35	35	35	35	35
processing cost	A$ millions real	151	0.0	0.0	28.0	35.0	35.0	35.0	17.5	0.0	0.0	0.0
SX-EW cost - variable	A$ Real/ tonne cathode		950	950	950	950	950	950	950	950	950	950
SX-EW cost	A$ millions real	77	0.0	0.0	14.4	18.0	18.0	18.0	9.0	0.0	0.0	0.0
fixed opex												
supervision and technical	A$ M/annum Real		2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
General & Admin	A$ M/annum Real		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
fixed opex	A$ millions real	41	0	0	8	8	8	8	8	0	0	0
private royalty												
private royalty rate	% of sales revenue		2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%
private royalty	A$ millions real	17	0	0	3	4	4	4	2	0	0	0
rehab												
rehabilitation	A$ Real/ tonne waste & ore		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
rehabilitation	A$ millions real	15	0	3	4	4	3	2	1	0	0	0
closure												
closure	A$ millions real				45	45	45	45	45	45	45	45
closure	A$ millions real	45			0	0	0	0	0	45	0	0
Cashstream 3: Operating Costs	A$ millions real	**386**	**0**	**11**	**67**	**78**	**74**	**73**	**39**	**45**	**0**	**0**
opex per ore (incl closure)	A$/tonne ore	90	0	0	84	78	74	73	77	0	0	0
opex per tonne final product (incl closure)	A$/tonne cathode	4,752	0	0	4,457	4,117	3,932	3,839	4,088	0	0	0
Years -->	units	Total	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Cashstream 4: Taxes												
Government Royalties												
21Dec20 G Rose: The government royalty rate is 6% of gross revenue												
government royalty rate	% of sales revenue		6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%
government royalty	A$ millions real		0	0	8	9	9	9	5	0	0	0
Income tax												
21Dec14 G Rose: The company income tax rate is 30% and the company expects to be paying income tax in future years so any losses can be used immediately.												
Cashstream 1: Revenue	A$ millions real	672	0	0	125	156	156	156	78	0	0	0
less												
Cashstream 3: Operating Costs	A$ millions real	386	0	11	67	78	74	73	39	45	0	0
government royalty	A$ millions real	40	0	0	8	9	9	9	5	0	0	0
tax deduction for capital expenditure	A$ millions real	156	0	0	39	29	22	18	47	0	0	0
Assessable Income	A$ millions real	90	0	-11	11	40	50	57	-12	-45	0	0
Company Income Tax Rate	% of assessable income		30%	30%	30%	30%	30%	30%	30%	30%	30%	30%
Income Tax	A$ millions real	27	0	-3	3	12	15	17	-4	-14	0	0
Cashstream 4: Taxes	A$ millions real	**67**	**0**	**-3**	**11**	**21**	**24**	**26**	**1**	**-14**	**0**	**0**
Years -->	units	Total	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Cashflow and NPV												
Cashlows												
Cashstream 1: Revenue	A$ millions real	672	0	0	125	156	156	156	78	0	0	0
Cashstream 2: Capital Costs	A$ millions real	154	25	98	6	6	6	6	0	0	0	0
Cashstream 3: Operating Costs	A$ millions real	386	0	11	67	78	74	73	39	45	0	0
Cashstream 4: Taxes	A$ millions real	67	0	-3	11	21	24	26	1	-14	0	0
Net Cashflow	A$ millions real	**65**	**-25**	**-13**	**41**	**51**	**51**	**51**	**32**	**-32**	**0**	**0**
IRR	Real	**16.8%**										
Discounting												
7Jul20 F Green email: discount rate for investment in gold industry is 8% Real.												
Discount Rate	% Real		8%	8%	8%	8%	8%	8%	8%	8%	8%	8%
Discount Factor			1.00	0.93	0.86	0.79	0.74	0.68	0.63	0.58	0.54	0.50
Discounted Cashflow	A$ millions real	**26**	-25	-12	35	40	38	35	20	-18	0	0
Cumulative NPV	A$ millions real		-24	-37	-2	38	76	111	131	113	113	113
NPV	A$ millions real	**26**										

NPV

Building a business case (or economic evaluation) **has activities on three levels …**

Level 3: Decision making

Level 2: Evaluating the business/project

Level 1: Hands-on business modelling

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To get things into perspective, modelling is the lowest level.
It is the workhorse of the two higher and more important levels.

Building a business case (economic evaluation)
has activities on three levels …

Level 3: Decision making

Level 2: Evaluating the business/project

Level 1: Hands-on business modelling

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Building a business case (economic evaluation) **has activities on three levels …**

Level 3: Decision making

Level 2: Evaluating the business/project

Level 1: Hands-on business modelling

Some people call this lowest level
"financial modelling" or "financial analysis

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The most important and the most rewarding activity is Level 2:
using the 'workhorse' business model
to fully evaluate and understand the business/project.

Building a business case (economic evaluation)
has activities on three levels …

Level 3: Decision making

Level 2: Evaluating the business/project

Level 1: Hands-on business modelling

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Finally, decisions can be made with confidence in Level 3, once the business/project is properly understood and characterised by the evaluation work in Level 2.

Building a business case (economic evaluation) **has activities on three levels …**

Level 3: Decision making

Level 2: Evaluating the business/project

Level 1: Hands-on business modelling

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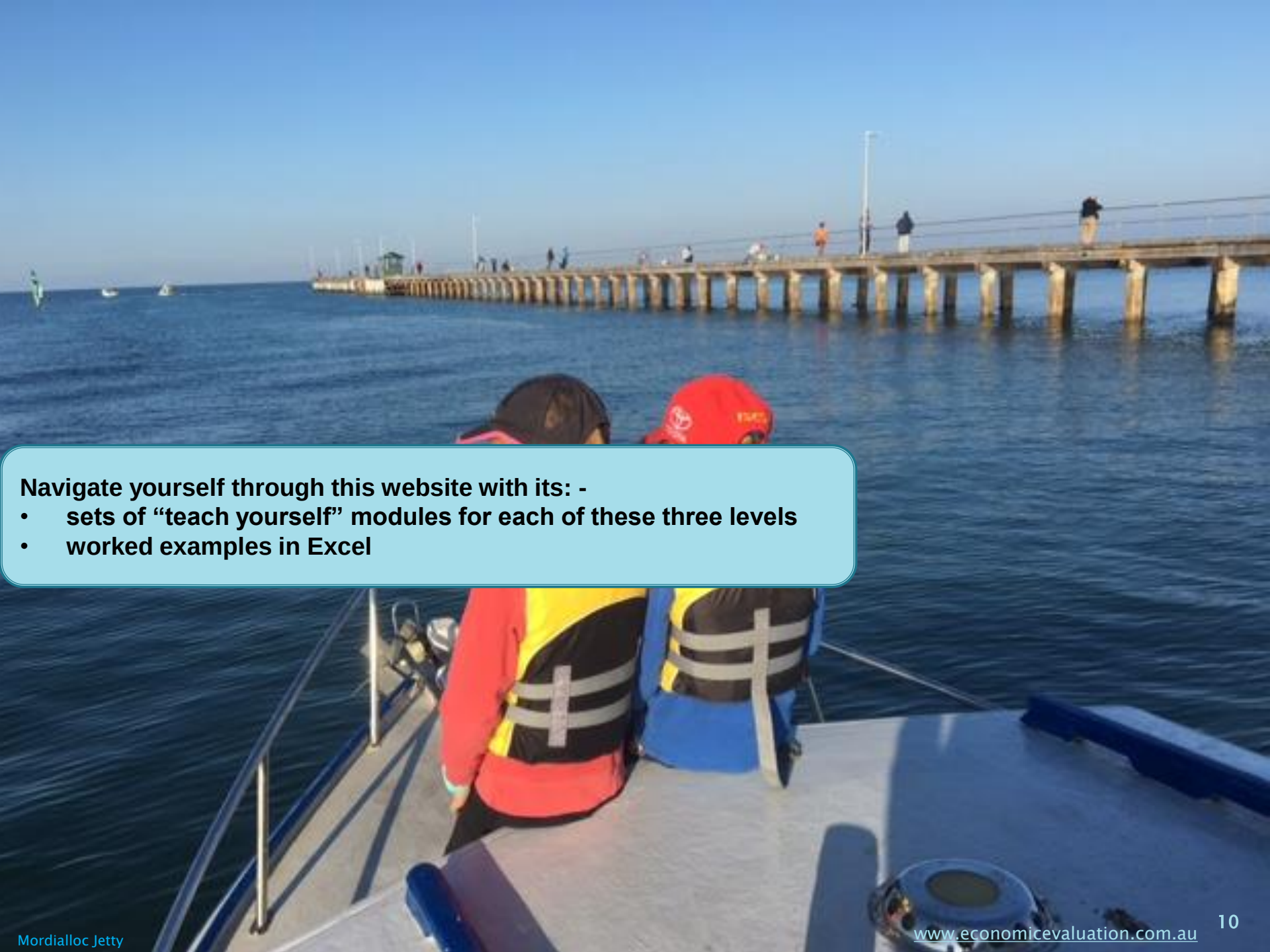

Navigate yourself through this website with its: -

- **sets of “teach yourself” modules for each of these three levels**
- **worked examples in Excel**

Mordialloc Jetty

Making yourself relevant ...

Building a business case is not creating a 'financial model' and churning out an NPV!!!

It is a Profession where you use an economic evaluation model with your colleagues
→ to evaluate the full range of possibilities for a business or a project.

It is working directly with colleagues to analyse, synthesise, create, test, discuss, understand and decide.
It is assessing your project within your business.
It is assessing your business within your industry.

Then it is thinking laterally with colleagues to create a better project and a better business

It is earning yourself a position amongst those people who will be making the final decision.
Therefore it is all about hard work, competency, rigour, being easy-to-follow and lucid

It is all about making sure that the decision makers have their 'eyes wide open'

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The excitement of modelling: -

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When you get assigned an evaluation task, you probably will want to jump straight into the detailed hands-on modelling. (This is fine as long as you retain a helicopter view of the business.)

As you get to understand the business/project more and more you will want to incorporate lots of your knowledge into your model. Some people love to create a 'sophisticated' model with a myriad of detail, with lots of complex interactions and lots of 'clever' Excel functions. They know how to use Excel to its limits and they focus on getting recalculations done quickly with draw-down menus, tables, complex algorithms, links and sophisticated functions.

This sort of modelling will prove very rewarding for those people at an intellectual level. They will go home at night feeling proud of their state-of-the-art 'trophy' model and be so pleased with what they can do with the 'click of a draw-down menu'. They will have a full matrix of results in one magical Table. Wow!

The excitement of modelling: -

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But everyone else will hate it!!!

Your colleagues will much prefer an evaluation model that is easy to follow: -

- Visually obvious
- Completely intuitive
- No advanced Excel functions, no Tables, no draw down menus, definitely no Links.
- No macro calculations
- Nothing 'smart'!!!

This does not mean the evaluation model needs to be small and simplistic!
Many models need to be long and complex: but they will work in small, easy-to-follow steps with an obvious architecture and a natural flow.

They need to be intuitive to people unfamiliar with Excel or unfamiliar with the Project/Business.

Use your brains in a better way…

Firstly …

If you work with others, a 'sophisticated' model with advanced Excel usually will be a failure. If colleagues and managers find your modelling 'advanced' and challenging to understand then you will lose your own relevance. You will degrade yourself to become an old fashioned, 'backroom', 'spreadsheet jockey' churning out numbers for a document. You will be left out!

Instead, clever evaluation experts use their intellect and expertise to make complexity and detail in an economic model flow intuitively in lots of small easy-to-understand steps. Colleagues will see the detail and the complexity but will readily understand the big picture and readily follow the project/business from beginning to end.

'Easy-to-follow' modelling does not mean 'simplistic', 'small' and 'naive'.

→ Some of your models will become very long, very detailed and very complex. But you must create models so others can easily understand the flow and visually distinguish the inputs from computations and from results. It must be <u>completely intuitive!</u>

The author at Aspendale Beach by Richard Newton

Use your brains in a better way…

Secondly …

The model is no more than a workhorse.

It is a tool !!!

Do not get lost in 'advanced' Excel.

Much more important is the work to be done at Level 2 with that model.

Level 2 is where you add value, where you can make your mark, and earn a key position in the project team or business management team.

We suggest that you follow the guidelines for model creation in the following modules for Level 1 in this website - **without fussing about the colours and the details**. Then work through Level 2 to become a creative and positive influence on the business outcome.

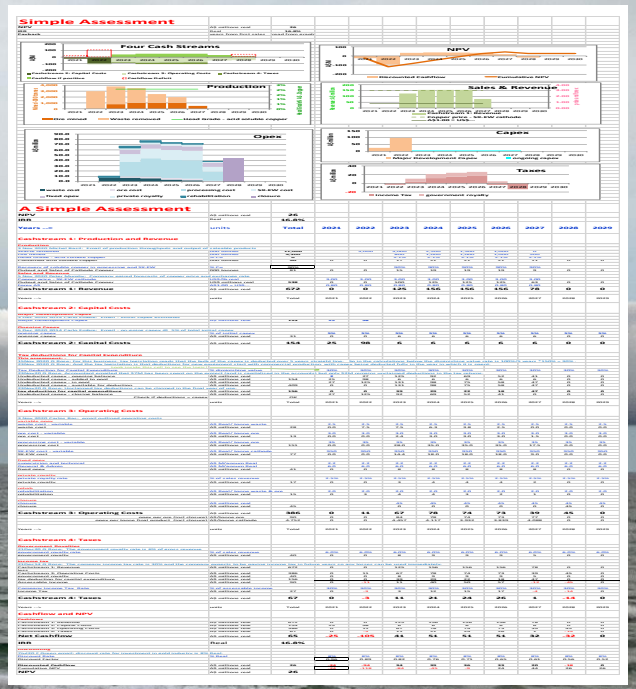
Set yourself up to be amongst the decision makers!

The author at Aspendale Beach by Richard Newton

This means business modelling must be done with: -

1. **discipline,**
2. **rigour,**
3. **consistency,**
4. **transparency,**
5. **tailored-to-purpose**
6. **audits.**

Modelling MUST follow a strict set of simple, global rules so as to be easily understood by others.



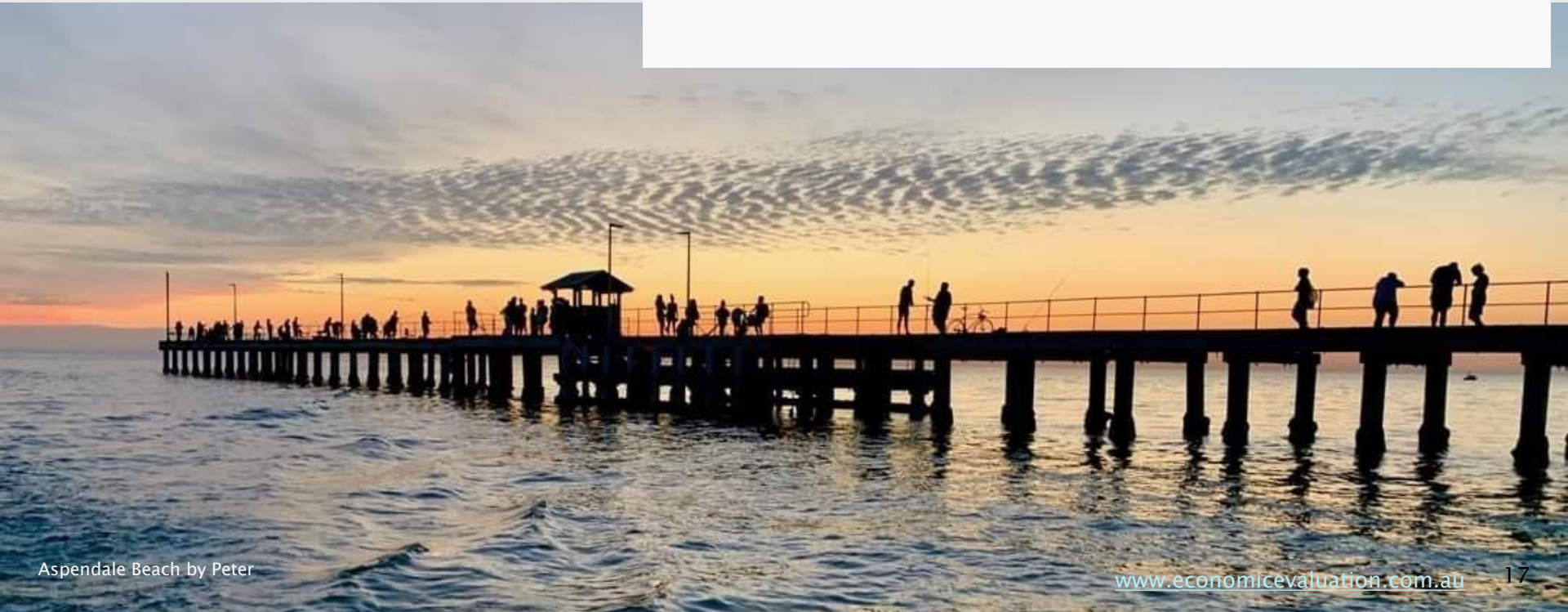
Think:

Level 2 is where I do my most important work
The model created in Level1 is simply my tool
(not my trophy!)

Level 3: Decision making

Level 2: Evaluating the business/project

Level 1: Hands-on business modelling



Aspendale Beach by Peter

Mantra: -

"If you do not readily understand my model then you do not have a problem, but I do!"

End of Module:0

Edithvale Beach by Richard Newton