

Lighthouse Specialised Track- Branding and Marketing:

Business Case Modelling

15 October 2009

Roadmap

1. Introduction
2. Objectives of Today's Workshop
3. Business modelling
4. Business model walk-through
5. Wrapping-up

2. Objectives of the Workshop: What do we wish to achieve today?

- ▶ Define what a business model is
- ▶ Highlight the value-add of business modelling in your decision-making
- ▶ Share our methodology and approach to business modelling
- ▶ Illustrate a business model build-up

3. Business modelling

- ▶ What is a business model?
- ▶ Value proposition
- ▶ Methodology and approach
- ▶ Financial appraisal discussion
 - ▶ Payback period
 - ▶ Internal rate of return (“IRR”)

3. Business modelling: What is a business model?

- ▶ Decision-making tool (also referred to as “financial model” interchangeably)
- ▶ Spreadsheet
- ▶ Basic elements:
 - ▶ Inputs
 - ▶ Calculations
 - ▶ Outputs

3. Business modelling: What is a business model? (cont'd)

- ▶ Examples of business/ financial models
 - ▶ Cost / revenue estimations
 - ▶ Calculating budgets
 - ▶ Cash-flow forecasting
 - ▶ Business valuation
 - ▶ Monitoring performance / returns

3. Business modelling (cont'd): Value proposition

(i) Decision making

- ▶ Feasibility studies
 - ▶ Product development
 - ▶ Product demand
 - ▶ Cost structure
- ▶ Product rollout planning
- ▶ Pricing
- ▶ Financing
 - ▶ Capital structure optimisation
 - ▶ Capital budgeting
- ▶ Scenario & risk analyses

3. Business modelling: Value proposition (cont'd)

(i) Decision making (cont'd)

- ▶ Strategic investments
- ▶ Mergers and acquisitions
- ▶ Restructuring
 - ▶ Corporate
 - ▶ Debt
 - ▶ Operational
- ▶ Transfer pricing and tax optimisation
- ▶ Exit strategies
 - ▶ Divestment
 - ▶ IPO

3. Business modelling: Value proposition (cont'd)

(ii) Fund raising

- ▶ Presenting a viable business case to financiers supported by a robust financial model
 - ▶ Robustness of business case, i.e., key business drivers (penetration rates, subscribers base, etc.)
 - ▶ Sources and uses of funds
 - ▶ Phasing of required funding (Timing)
 - ▶ Debt-equity ratios

3. Business modelling: Value proposition (cont'd)

(ii) Fund raising (cont'd)

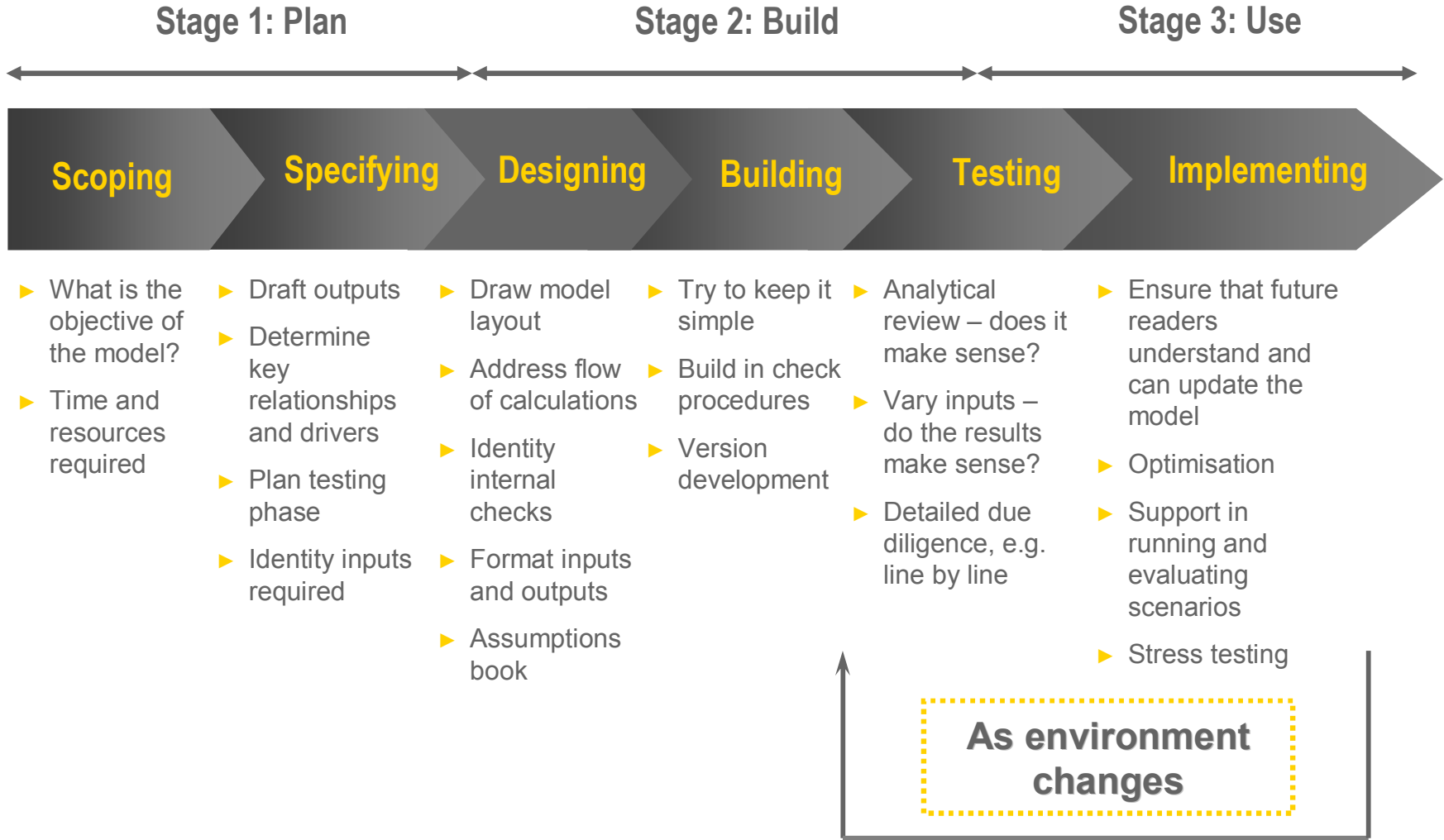
- ▶ Equity investors
 - ▶ Payback period
 - ▶ Equity IRR vs. hurdle rate
 - ▶ Exit strategies
 - ▶ Funding gap
- ▶ Debt financiers
 - ▶ Ability to meet debt servicing/obligations e.g. covenants, debt service cover ratios, liquidity ratios

3. Business modelling: Value proposition (cont'd)

(iii) Operations

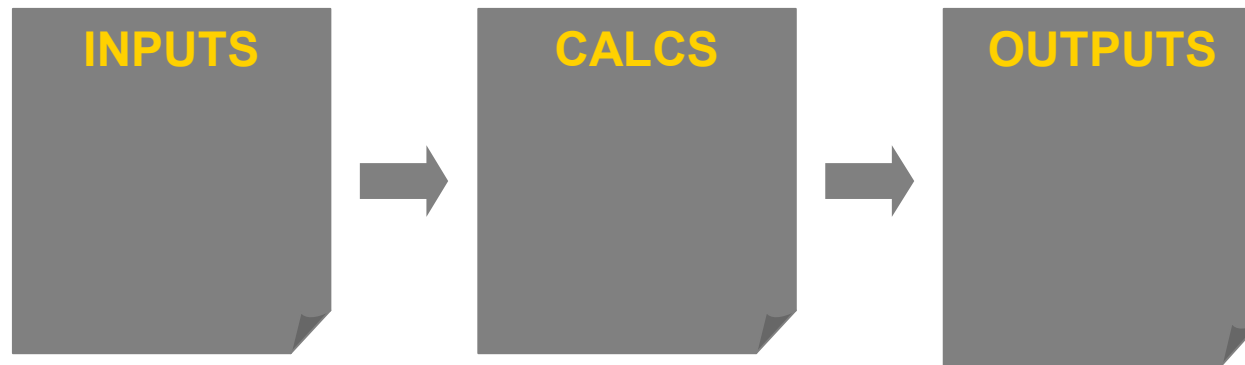
- ▶ Continuous usage of model supporting ongoing **decision making** (operational models)
- ▶ Financial reporting
- ▶ Annual budgeting
- ▶ Management reporting
 - ▶ Allocation of overheads
 - ▶ Performance analyses
- ▶ Working capital/Cashflow management

3. Business modelling (cont'd): Methodology and approach



3. Business modelling: Methodology and approach (cont'd)

- ▶ Rule 1: Separate inputs, calculations and outputs

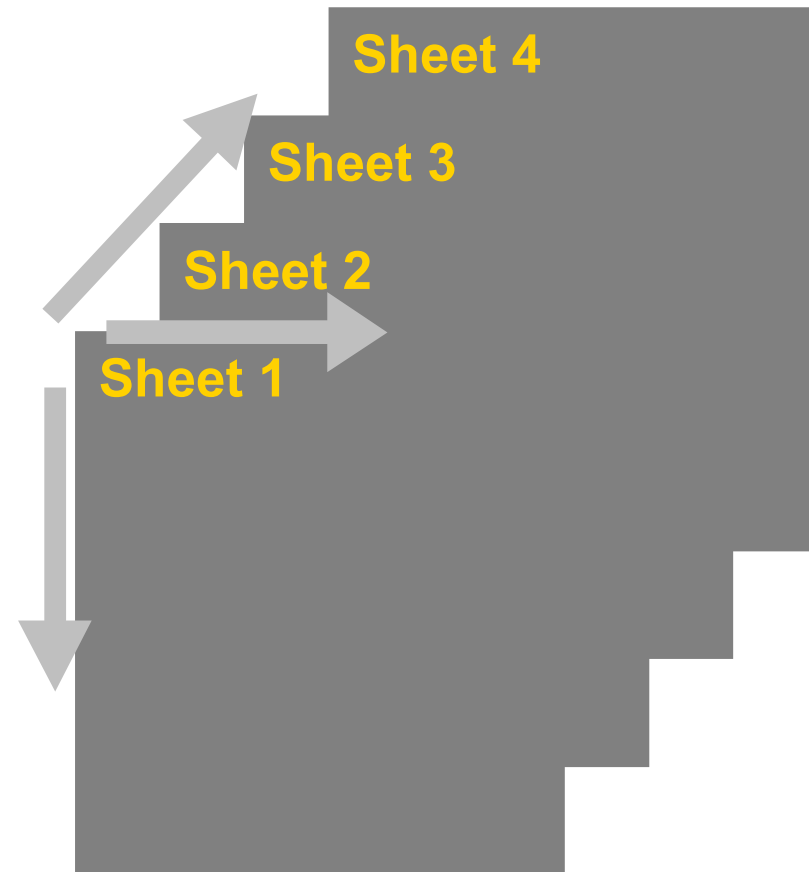


Clear separation of inputs

- ✓ Users can easily locate all inputs to the model
- ✓ Helps ensure that each input can only be entered **once**
- ✓ Makes it easier when performing sensitivities

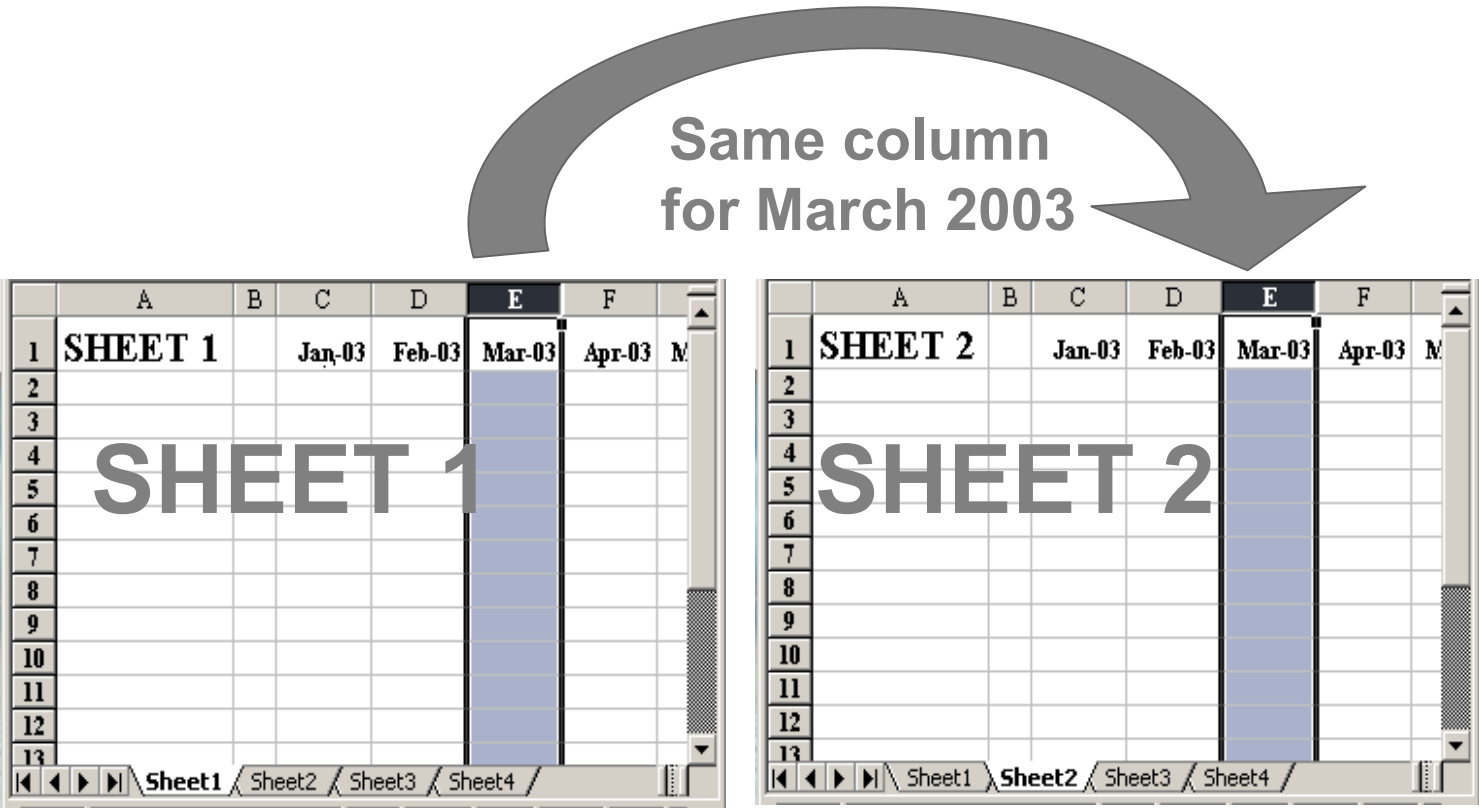
3. Business modelling: Methodology and approach (cont'd)

- ▶ **Rule 2: Logical calculation order**
- ▶ Logic should flow
 - ▶ from **left to right**
 - ▶ from **top to bottom**
 - ▶ from **front to back**
- ▶ Model easier to follow
- ▶ Speeds calculation time
- ▶ ... but cannot be strictly applied



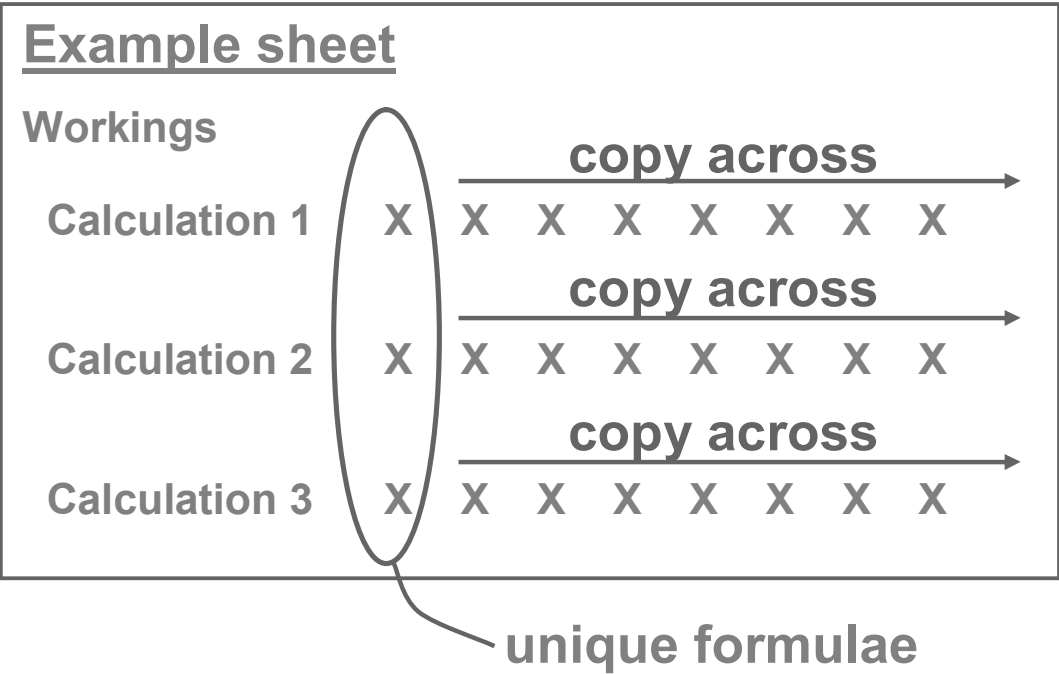
3. Business modelling: Methodology and approach (cont'd)

- ▶ **Rule 3: Use consistent columns**
 - ▶ You **MUST** include the same time period in the same column on every sheet



3. Business modelling: Methodology and approach (cont'd)

- ▶ **Rule 4: Use consistent formulae 1**
 - ▶ Minimise the number of 'unique formulae' by using the same formula across the WHOLE ROW

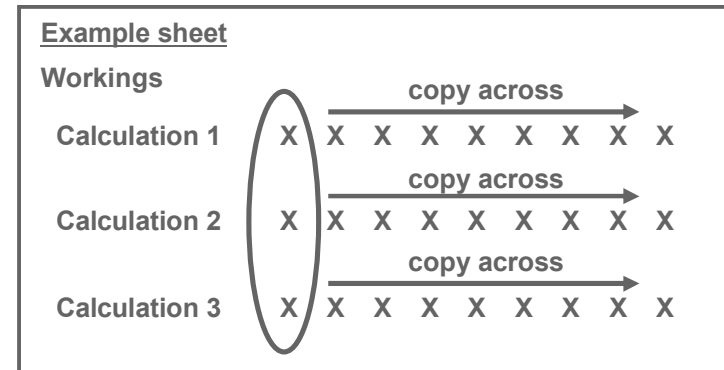


3. Business modelling: Methodology and approach (cont'd)

▶ **Rule 4: Use consistent formulae (cont'd)**

▶ *Benefits:*

- ▶ Easier to change
- ▶ Simpler to test (consider use of Spreadsheet Detective)
- ▶ More likely to work



▶ *Practicalities:*

- ▶ Hide columns, Use Ctrl + Shift + → and Ctrl + ENTER
- ▶ May require timing flags for periodic events
- ▶ Does not allow annual total columns to be inserted
- ▶ Exceptions can occur – highlight them as 'deviant'

3. Business modelling: Methodology and approach (cont'd)

► Rule 5: Do not embed inputs into formulae

	A	B	C	D	E	F
1						
2	TAXABLE PROFITS	20	40	60	80	
3	TAX CHARGE	6	12	18	24	
4						
5						
6	TAX RATE	30%				
7	TAXABLE PROFITS	20	40	60	80	
8	TAX CHARGE	6	12	18	24	
9						
10						

= C2 * 30%

= C7 * \$B6

With 'hard codes'

- ✗ Harder to change
- ✗ Cannot separate inputs
- ✗ No explanation for inputs

Without 'hard codes'

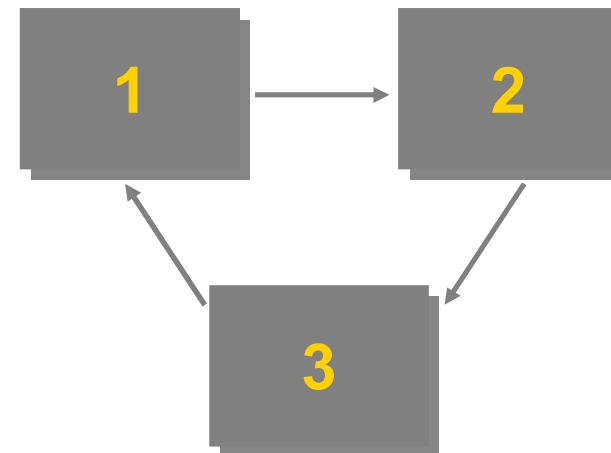
- ✓ Flexible
- ✓ Transparent

3. Business modelling: Methodology and approach (cont'd)

- ▶ **Rule 6: Do not leave circular references in models**
 - ▶ What is a circular reference?
 - ▶ How do you know when your model has a circular reference?

Problems with circular references;

- ✘ Loss of credibility in model
- ✘ Model may not be able to calculate fully
- ✘ Multiple solutions...or NO solutions!



3. Business modelling: Methodology and approach (cont'd)

- ▶ Rule 8: Do not over use range names
 - ▶ Usually in Excel, formulas include 'A1' style referencing e.g. '= D4*(1+D3)'
 - ▶ However you can assign a RANGE NAME to an individual cell or collection of cells e.g. '=sales*(1+inflation)'

- | | |
|--|---|
| ✓ Formulae may make more sense since they are given qualitative info | ✗ Likely to run out of 'sensible' range names quickly |
| ✓ Useful in 'macros' | ✗ Range name may be ambiguous or redundant |
| | ✗ Typically more difficult to test |

3. Business modelling: Methodology and approach (cont'd)

- ▶ **Rule 9: Keep it simple**
 - ▶ Break down complicated calculations
 - ▶ better to have 5 simple calculations
 - ▶ unwrap nested IF functions
 - ▶ Don't use methods that will be unfamiliar to others
 - ▶ avoid uncommon functions
 - ▶ avoid array formulae / custom functions
 - ▶ do not hide rows and columns

3. Business modelling: Methodology and approach (cont'd)

▶ **Rule 10: Consistent sign convention**

- ▶ If cash inflows are positive, cash outflows should be negative
- ▶ If income is positive, expenses should be negative

Sales	115	120	140
Cost of Sales	(70)	(80)	(90)
Gross Profit	45	40	50

- ▶ If assets are positive, liabilities are negative

✓ Can use simple sum formulae

✓ Easier to insert additional lines

3. Business modelling: Methodology and approach (cont'd)

Best practice golden rules:

1. Separate inputs, calculations and outputs
2. Logical calculation order
3. Use consistent columns
4. Use consistent formulae
5. Do not embed hard coded inputs into formulae
6. Do not leave circular references in models, unless necessary
7. Do not hide rows or columns
8. Do not over use range names
9. Keep it simple
10. Consistent sign convention

3. Business modelling (cont'd): Financial appraisal discussion – Payback Period

Definition

- ▶ Amount of time for a given project's cumulative net cash inflows to recoup initial investment¹

1. Corporate Finance By Scott B Smart, William L Megginson

3. Business modelling: Financial appraisal discussion – Payback period (cont'd)

Pros & Cons

- ▶ Advantages:
 - ▶ Simplicity
 - ▶ Good measure of project liquidity

- ▶ Disadvantages:
 - ▶ Does not take into account time value of money
 - ▶ Does not take into account cash flows beyond payback period, i.e. terminal or salvage value not considered.

3. Business modelling (cont'd): Financial appraisal discussion – Internal rate of return (“IRR”)

Definition

- ▶ Discount rate that equates present value of project's net cash inflows to initial investment²:

$$NPV_0 = 0 = CF_0 + CF_1/(1 + r)^1 + CF_2/(1 + r)^2 \dots + CF_n/(1 + r)^n$$

where r is the IRR

3. Business modelling: Financial appraisal discussion – Internal rate of return (“IRR”) (cont’d)

Pros & Cons

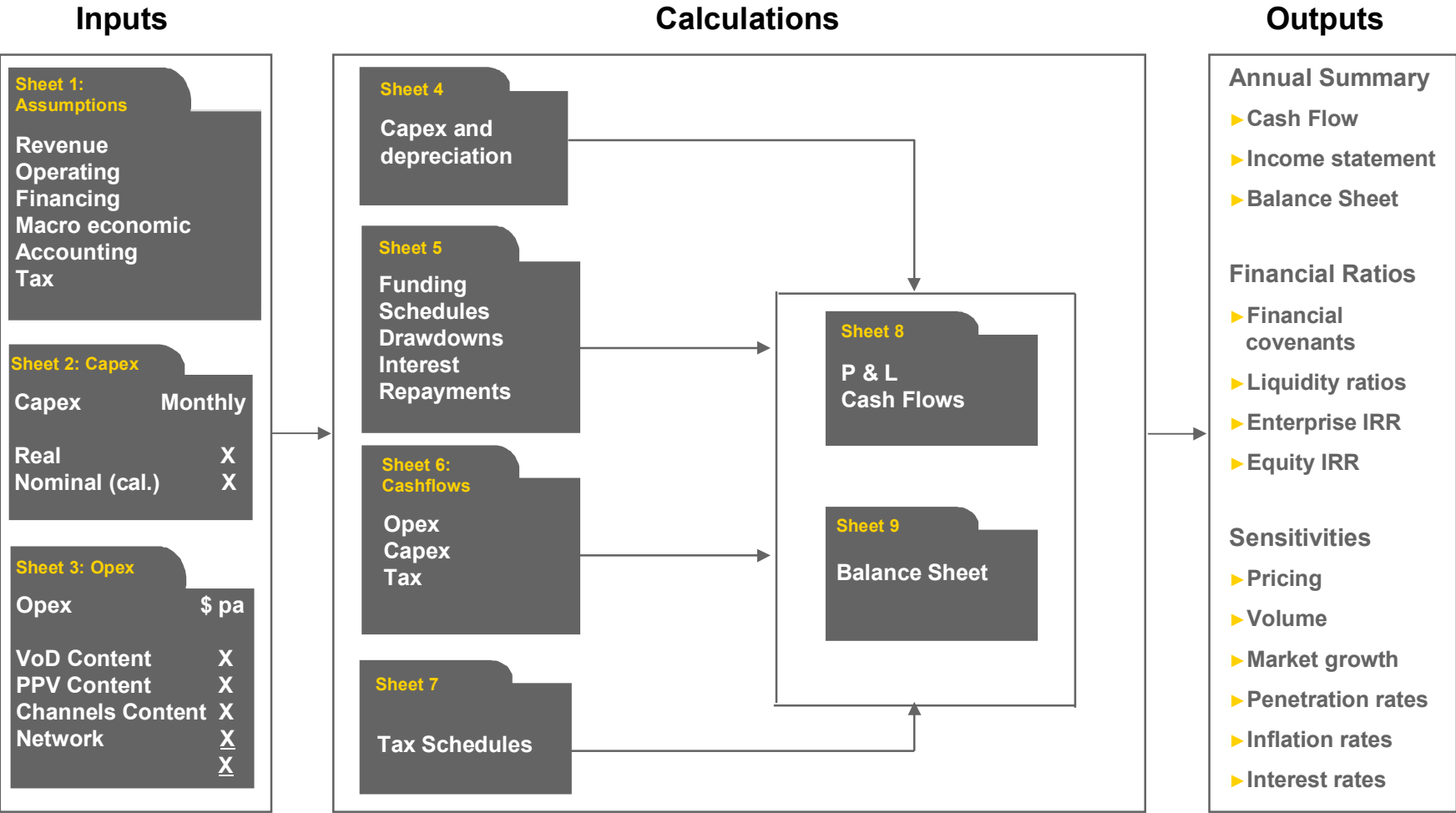
- ▶ Advantages:
 - ▶ Takes into account time value of money
 - ▶ Measures profitability as a percentage

- ▶ Disadvantages:
 - ▶ Possibility of multiple IRRs or no IRR for a project

4. Business model walk-through – IPTV (Residential) example

- ▶ Snap-shot of basic elements
- ▶ Model inputs
- ▶ Model calculations
- ▶ Model outputs

4. Business model walk-through - IPTV (Residential): Snap-shot of basic elements



4. Business model walk-through: IPTV (Residential) (cont'd)

(i) Inputs

Economic

- ▶ Inflation rates
- ▶ GDP growth rates
- ▶ Price escalation rates

Scenario selector

- ▶ Base Case
- ▶ High/Optimistic
- ▶ Low/Pessimistic

4. Business model walk-through: IPTV (Residential) (cont'd)

(i) Inputs (cont'd)

▶ Revenue

- ▶ Subscriber base and growth rates
- ▶ Market share/penetration assumptions
- ▶ Churn rate assumptions
- ▶ Subscription prices/rates
- ▶ PPV / VoD revenues

4. Business model walk-through: IPTV (Residential) (cont'd)

(i) Inputs (cont'd)

▶ Cost structure

- ▶ PPV / VoD / Channels content costs
- ▶ Network costs
- ▶ Manpower costs
- ▶ Other general & administrative costs
- ▶ License/rights of distribution related costs

▶ Working capital

- ▶ Accounts receivable / accounts payable days

4. Business model walk-through: IPTV (Residential) (cont'd)

(i) Inputs (cont'd)

▶ Capex

- ▶ Infrastructure costs (network, cable wiring, servers, set-up boxes, etc.)
- ▶ Depreciation
- ▶ Useful life

▶ Financing

- ▶ Loan amount
- ▶ Maturity date
- ▶ Repayment schedules and rates
- ▶ Commitment fees, upfront fees, agency fees, etc.

4. Business model walk-through: IPTV (Residential) (cont'd)

(ii) Calculations

- ▶ Revenue
- ▶ Costs
- ▶ Capex
- ▶ Financing

4. Business model walk-through: IPTV (Residential) (cont'd)

(iii) Outputs

▶ Financial statements

- ▶ Cash flow
- ▶ Income statement
- ▶ Balance sheet

▶ Financial ratios

- ▶ Project IRR
- ▶ Equity IRR
- ▶ Debt service cover ratio

▶ Graphs

- ▶ Revenue (Product) mix
- ▶ Outstanding debt

4. Business model walk-through: IPTV (Residential) (cont'd)

(iii) Outputs (cont'd)

RSP Sample Model 2 Oct 2009
3.4 Investment Analysis

All model checks are OK
 All checks in sheet are OK

	Units	Constants	Comments	Totals	OK Checks	Period From To	1 1-Jan-10 31-Dec-10	2 1-Jan-11 31-Dec-11	3 1-Jan-12 31-Dec-12	4 1-Jan-13 31-Dec-13	5 1-Jan-14 31-Dec-14	6 1-Jan-15 31-Dec-15	7 1-Jan-16 31-Dec-16	8 1-Jan-17 31-Dec-17	9 1-Jan-18 31-Dec-18	10 1-Jan-19 31-Dec-19	11 1-Jan-20 31-Dec-20
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1. Internal rate of return (IRR)

Project cash flows	[SGD '000]			158,174	-	(61,236)	9,068	9,386	(7,050)	(2,382)	24,563	(17,063)	36,054	4,958	788	161,119
Project IRR	[%]	16.8%														
Equity cash flows	[SGD '000]			293,540	-	(23,991)	9,068	4,023	(12,392)	(7,724)	19,220	(22,405)	30,712	(385)	(4,654)	301,979
Equity IRR	[%]	32.4%														

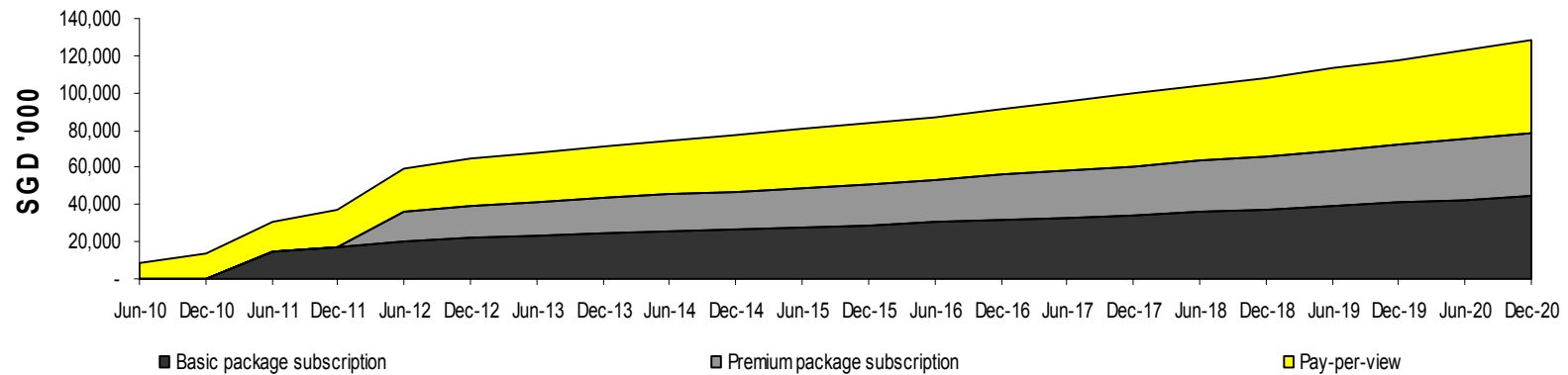
2. Payback

Accumulated cash flows	[SGD '000]			(187,949)		(61,236)	(52,178)	(42,812)	(49,862)	(52,244)	(27,681)	(44,744)	(8,690)	(3,732)	(2,044)	158,174
Payback counter	[years]			10.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0
Project payback period	[years]	10.0														
Accumulated cash flows	[SGD '000]			127,539		(23,991)	(14,933)	(10,910)	(23,302)	(31,026)	(11,806)	(34,211)	(3,499)	(3,884)	(8,439)	293,540
Payback counter	[years]			10.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0
Equity payback period	[years]	10.0														

4. Business model walk-through: IPTV (Residential) (cont'd)

(iii) Outputs (cont'd)

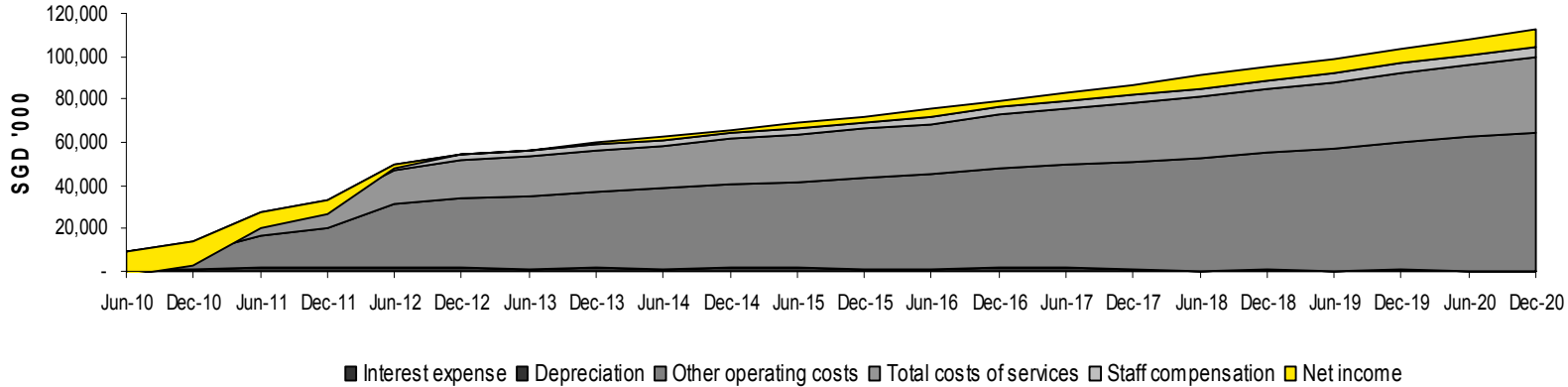
Revenue Breakdown by Segments



4. Business model walk-through: IPTV (Residential) (cont'd)

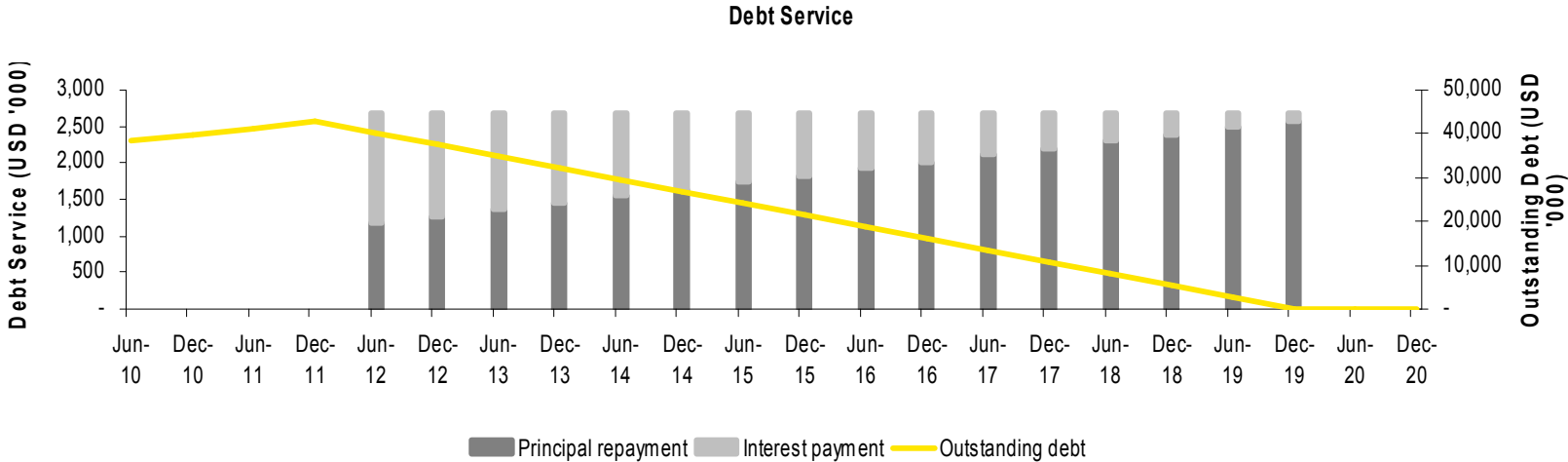
(iii) Outputs (cont'd)

Revenue Breakdown



4. Business model walk-through: IPTV (Residential) (cont'd)

(iii) Outputs (cont'd)



5. Wrapping-up

- ▶ Recap
- ▶ EY business modelling
- ▶ Questions & answers

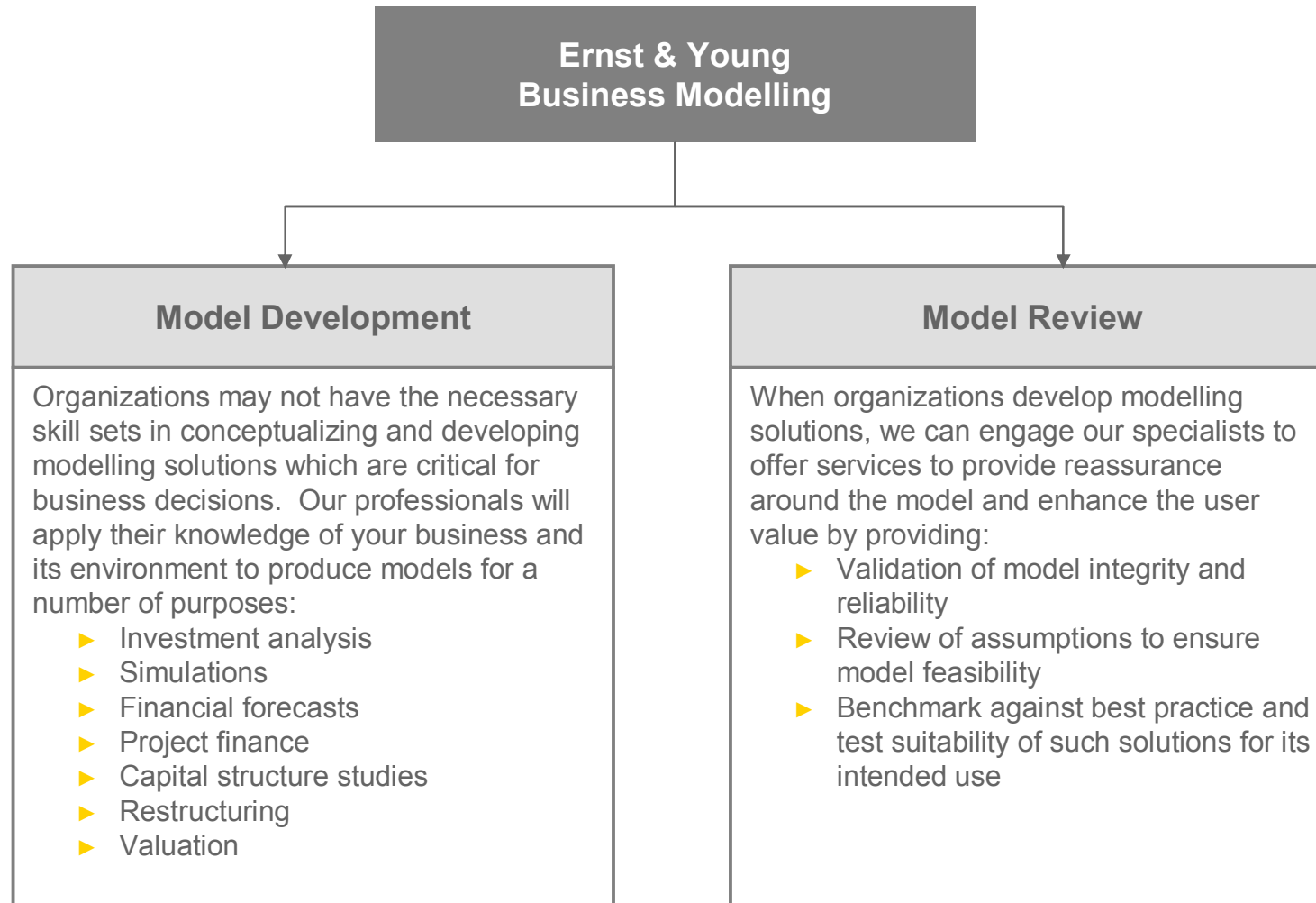
5. Wrapping-up: Recap

- ▶ What a business model is
- ▶ Value-add of business modelling in your decision-making
- ▶ Methodology and approach
- ▶ Illustrative example of business model

5. Wrapping-up (cont'd): EY business modelling

- ▶ Ernst & Young Solutions LLP (EY Solutions) can **assist** you in finding modelling solutions to your financial and business needs or help you improve the **reliability** of your own model
- ▶ Our advanced technical capabilities along with our strong business acumen will enable us to take your business requirements and translate them into a set of tangible and informative outputs
- ▶ Our expert modelling resources and specialist business advisory services are uniquely placed to help deliver efficient and accurate models that support your business decisions
- ▶ Our group is closely linked with over 100 dedicated modellers globally. We routinely work with Ernst & Young's network of specialist Transaction Advisory Staff worldwide

5. Wrapping-up: EY business modelling (cont'd)



5. Wrapping-up: EY business modelling (cont'd)



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- ▶ Harsha is a transaction advisory specialist and has more than 17 years of experience with Ernst & Young in Singapore and Colombo offices working in Transaction Advisory Services (TAS) as well as Assurance and Advisory Business Services.
- ▶ Harsha is the Southeast Asia Markets Leader for TAS and is also the leader for Far East Area, Valuation & Business Modelling practice.
- ▶ Harsha has been involved in a variety of engagements relating to a wide range of clients including private businesses, investment banks, private equity funds, public listed companies and statutory boards. The nature of the engagements he has led includes provision of advice relating to debt restructuring, due diligence reviews, financial modelling, valuations, mergers and acquisitions and litigation support.
- ▶ Harsha specializes in valuations, financial modelling, mergers and acquisitions and debt restructuring. He has significant experience in valuation of businesses, shares and intangible assets in a variety of circumstances.
- ▶ Harsha is an associate member of the Institute of Chartered Accountants of Sri Lanka.

5. Wrapping-up: Questions & answers

Value proposition...

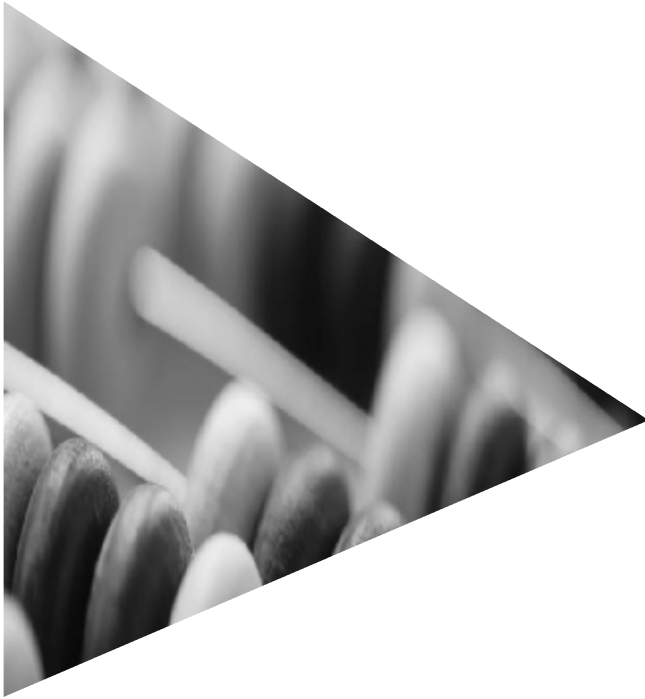
Modelling techniques and approach...

EY modelling services...

Etc etc...

Important information

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Thank you much