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# Feasibility Consulting & Successful Study Completion

Philippines Mineral Exploration Association  
Manila ~ 04 July 2011

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- Today
- => Feasibility – What is this beast?
  - => Pathway(s) to a successful feasibility study
    - => Consultant selection
  - => Alignment scopes, deliverables rewards with corporate goals
    - => Which Contract type?
  - => Innovation in a consulting environment

*“We can easily represent things as we wish them to be” - Aesop*

# Feasibility Studies – What is this beast?

- What has changed?

- Mining – what is different about us as an industry?
- What is a “Mining” Feasibility Study?
- Why do we do these – as an industry?
- How do we do these studies.....
  - Scoping / Pre- Feasibility / Feasibility study
  - FEL 1 / FEL 2 / FEL 3....
  - Toll gates
  - The numbering approach
- Rise of Private Equity and China.....what is “bankable” ?



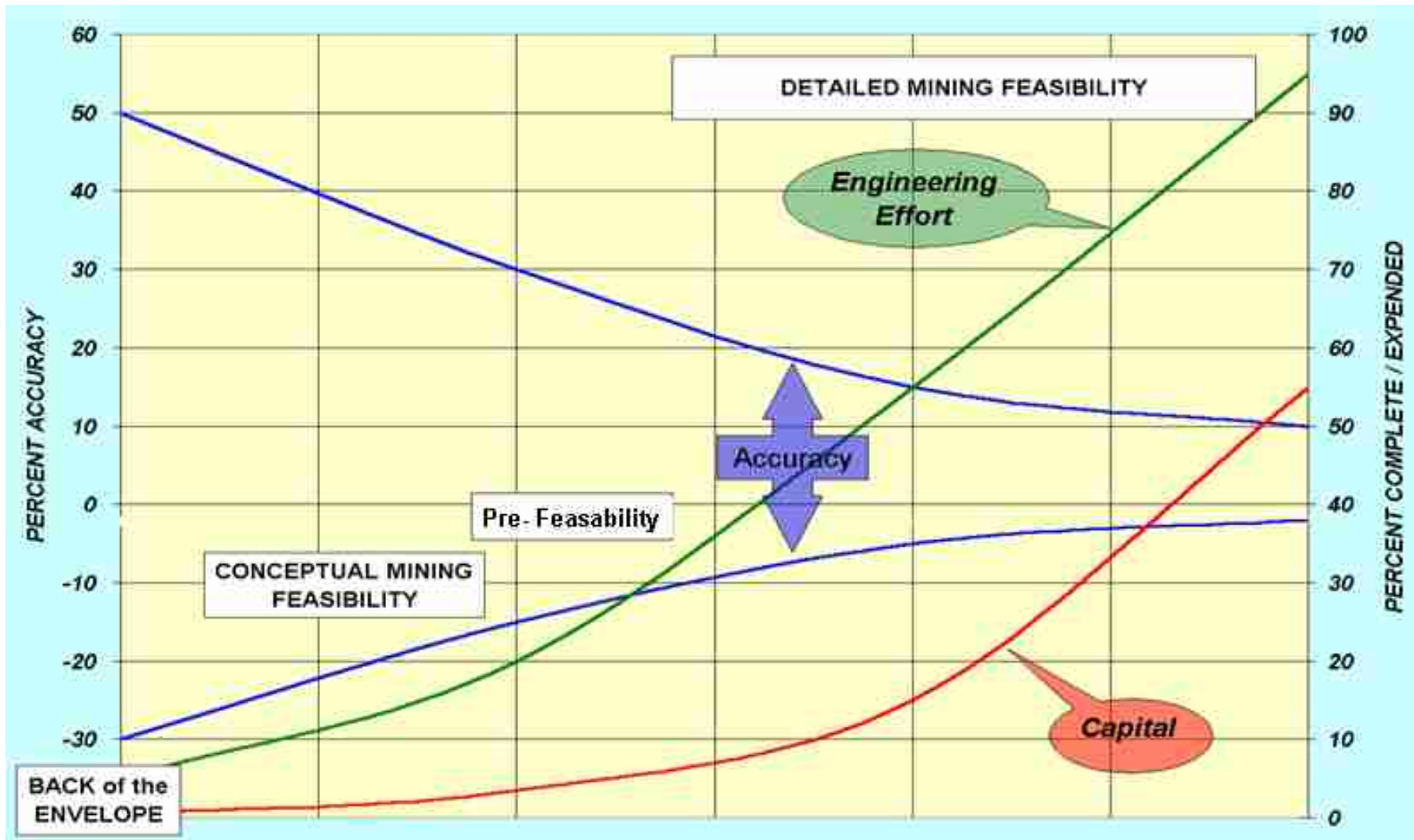
# Definitive Feasibility Study - Outcomes

## Required:

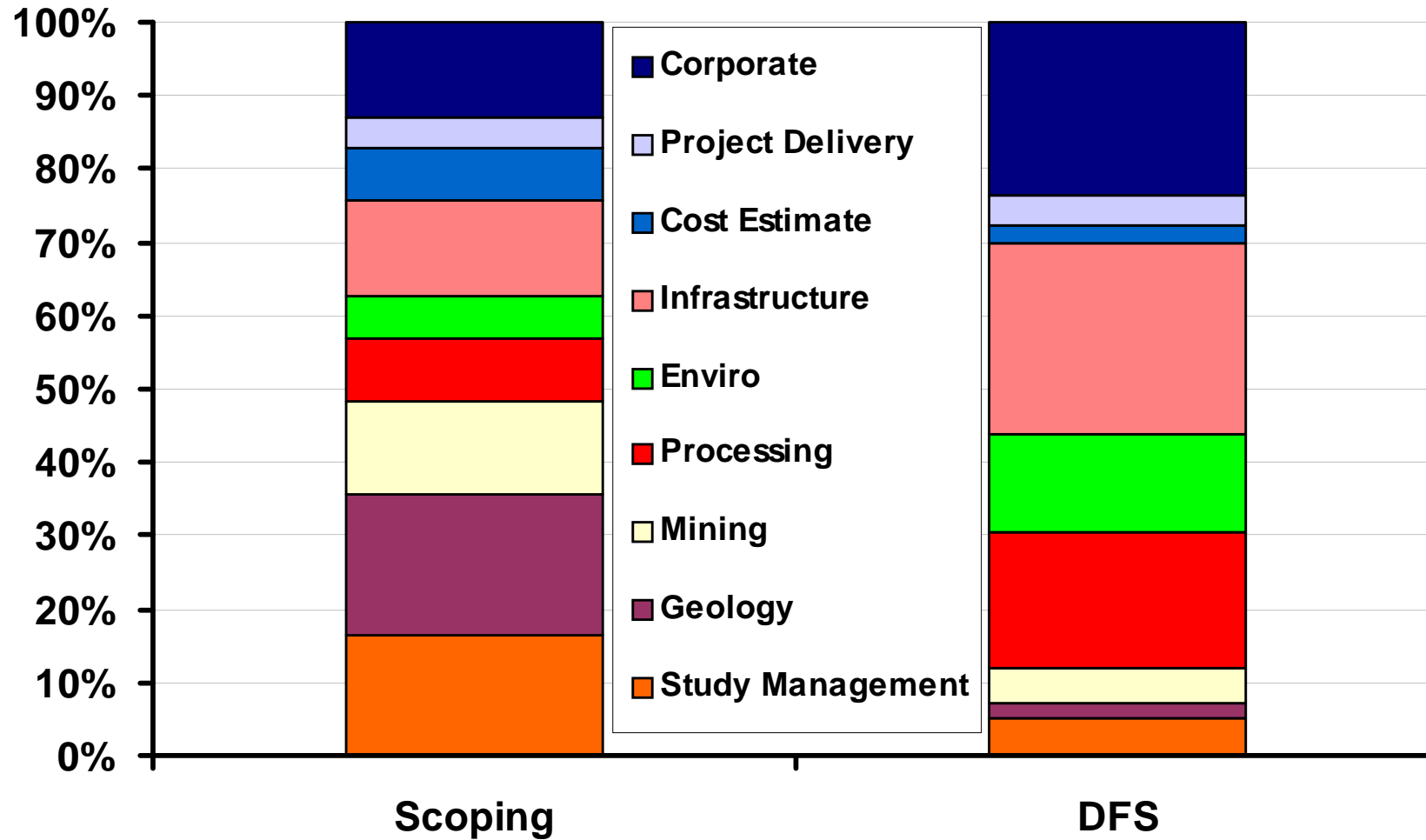
- Demonstrate technical and economic viability of the proposed project;
- Develop only one project configuration and investment case;
- Optimise the project for best use of the mineral, capital and human resources;
- Risk matrix / mitigation strategies to reduce the likelihood of significant changes;
- Develop an implementation plan => Baseline for operations phase;
- Facilitate the procurement of funds to develop in a timely manner; and
- Provide a comprehensive report with clear recommendation



# Feasibility Studies - What types and when?



## Scoping and Detailed Feasibility Study – by discipline



## Feasibility Study – Nature of the Disciplines - How to get people

Package	Comment – Consultant based
Environment	Local knowledge ~ legislation important. Corporate style transferable, but not bulk of work. High profile / sensitive for investors....Definition??
Geology	Commodity based; transferable. Local skills available / required. Source of Fatal Flaw / QAQC problems. Audit??
Mining	Method base; transferable. Senior skills in demand
Processing	Commodity based. Senior level transferable, lower level needs to be local content. (very relevant for Au, Cu, Ni)
Site Infrastructure	Volume based. High \$ component of total work. Thus need high local content.
Transport / Logistics :: Off-Site infrastructure	as above, but more legislation and community issues ??
Project Management / Delivery	Transferable - comms & culture skills important
Corporate	Some top-down (eg. Risk), a lot local (eg. Community). Corporate culture...



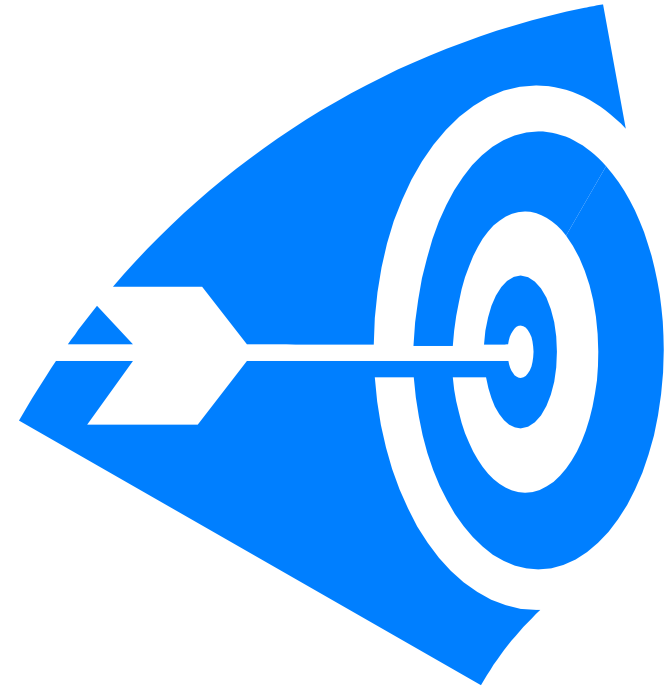
# Pathway - successful feasibility study

- Traditional Process
  - Scope => EOI => RFT => Short List => Negotiation => Award
- Success – is what?
  - ✓ Delivered “on-time” & “on-budget”.....for a DFS or a PFS?
  - ✓ Understanding the value in this opportunity?
  - ✓ Hallmarks of “success” - What does success look like?
- Acceptance
  - ✓ **What the deposit is**
  - ✓ Success measure
  - ✓ Battery limits
  - ✓ Business Case
- 360° reviews at @ 10 % of budget spend
  - ✓ What have we learnt?
  - ✓ What's missing?
  - ✓ What needs to change?
  - ✓ Communication plan
- Risk / Role assignment
- Reporting of interim findings



# Consultant Selection

- Client corporate requirement
- Consultant corporate requirement
- Scope conformance
- Paid Scopes
- Experience Profile
- Ability to Manage.....Project Management + more.....
- Personnel Management
- Client team
- Value Map of project
- What are you paying for? What do you want to pay for?  
ie. what would you want from a contractor versus a consultant
- One size fits.....One stop shop....???



## Feasibility Study – Risks to “On Time On Budget” completion

- Lack of Panorama / Vision
- Delay in progressing through phases;
- Insufficient coordination across disciplines;
- Inability to challenge / validate outcomes like outsider;
- Poor study planning resulting in funding shortages;
- Insufficient scope. Only one option taken forward;
- Failure to on-going review current study due to
  - broad economic changes or,
  - options results (running in parallel);
- Insufficient involvement / identification of stakeholders.



# Alignment – Scopes, Deliverables, Rewards & Corporate goals

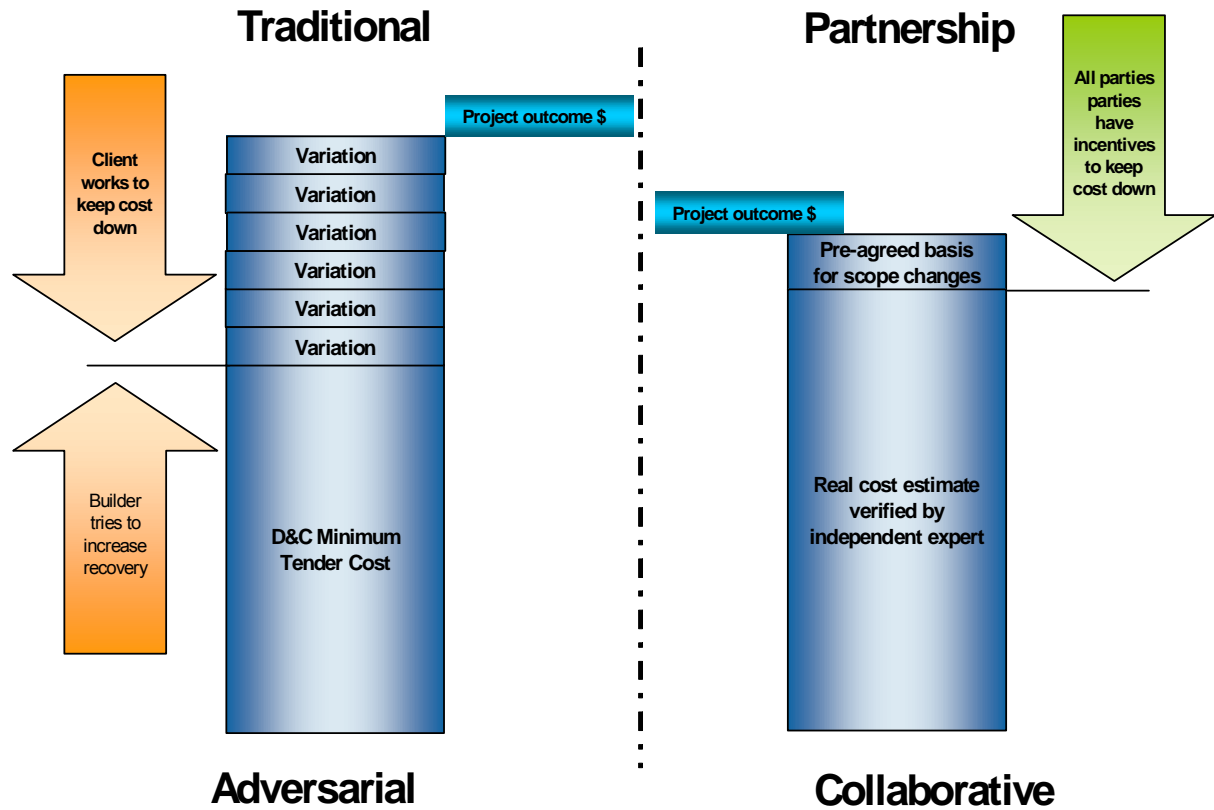
- Consultant Risks
  - ✓ Data
  - ✓ Interpretation
  - ✓ Skills
  - ✓ Scope creep
  
- Rewarding consultants - How
  - ✓ Payment – on-time
  - ✓ Volume incentives
  - ✓ Understanding the contract
  
- Team Wins / Team Rewards
- Innovation

*“there is nothing so disastrous as a rational  
investment policy in an irrational world”*  
- John Maynard Keynes



# Contract Type

- What behaviour do “we” want?
- How are “we” measuring success?
- How much do we want to invest up-front ?
- Deliverables well defined?
- Method certain?
- Who is taking what risk?
- Lump Sum
- Milestones
- Audit





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## Today

- => Feasibility – What?
- => Pathway to success
- => Selection
- => Alignment
- => Type?

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# Feasibility Studies – the Null hypothesis

- Feasibility Study ≠ Feasible Project
  
- A PFS is not....
  - Basis for legal obligations to long term service providers
  - An audit
  
- A DFS is not...
  - Environment for options studies
  - A Due Diligence



# Innovation in consulting environment

Hear lots about this.....

1. Innovation relates to renewal or improvement.
2. Novelty is a consequence of that improvement.
3. For Improvement to happen => People must change the way they make decisions.

So.....

Is it compatible with the existing contract?

How does this “New thing” get valued?

Intellectual Property.....



# Feasibility Study – What is it? :: Product

Package	Deliverables	
Environment	Development proposal and environmental management plan; Draft EIS submitted; Project potential impacts known; and Complete environmental monitoring plan	
Geology	Detailed mineralogy / lithology study; All sampling programs complete including density; and 3D resource model audited.	
Mining	Mining method and plan finalised; Detailed designs complete; and Annual schedules complete => physical & resource requirements	
Processing	Detailed 5-15% engineering complete; All design one-line diagrams; Detailed Layouts complete.	Major P&ID; Detailed flow sheets complete; and
Site Infrastructure	All support facilities identified, sized and costed; Communications licensing and standards known; and Power requirements and unit costs derived.	
Off-Site Physical	All roads, rail, ports detailed Route to market	
Project Delivery Study Management	Development schedule; Client and contractor liaison Capex / Opex Costing	Detailed project master schedule complete; Uncertainty model
Corporate	Stakeholder Engagement Marketing and Logistic study	Risk Assessment, OH&S systems Project financing and evaluation

