



HARMONY™

Strategy for Wafi and Golpu

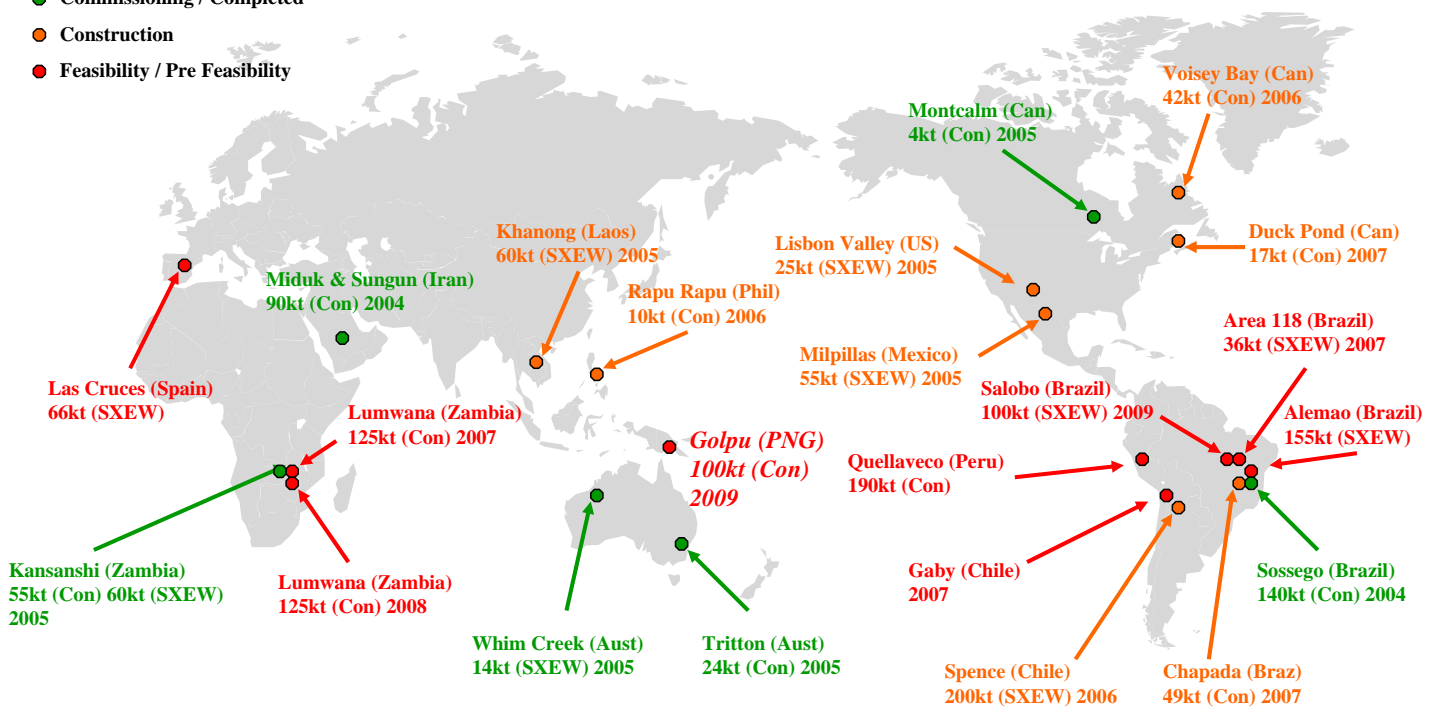
Graham Briggs



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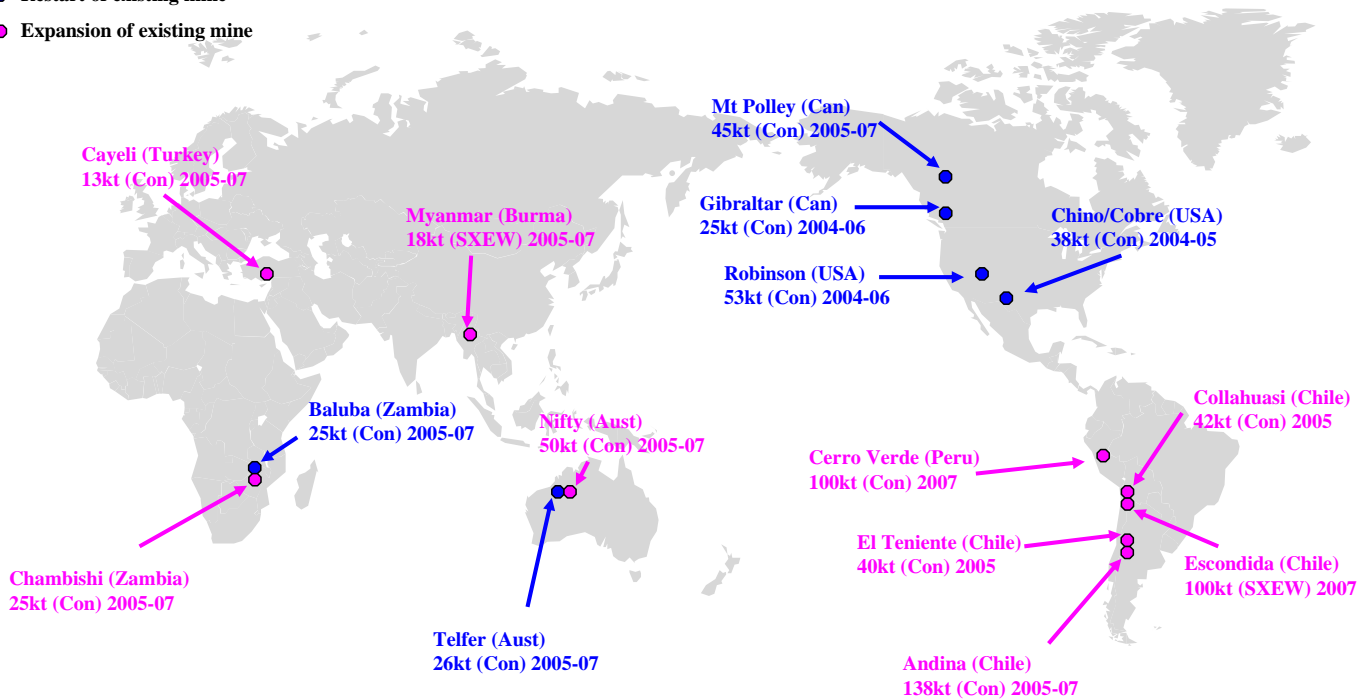
New Mines: Golpu is on the Map

- Commissioning / Completed
- Construction
- Feasibility / Pre Feasibility





- Restart of existing mine
- Expansion of existing mine



Source: AME Mineral Economics; Note locations are approximate; Production numbers are for additional supply above 2004 production



Considerations:

- Demand outlook
- Supply dynamics
- Price outlook
- Value chain analysis
- Expected margins etc.

Considerations:

- Harmony skills
- Cash flow diversification
- Equity market rating
- Growth opportunities

Considerations:

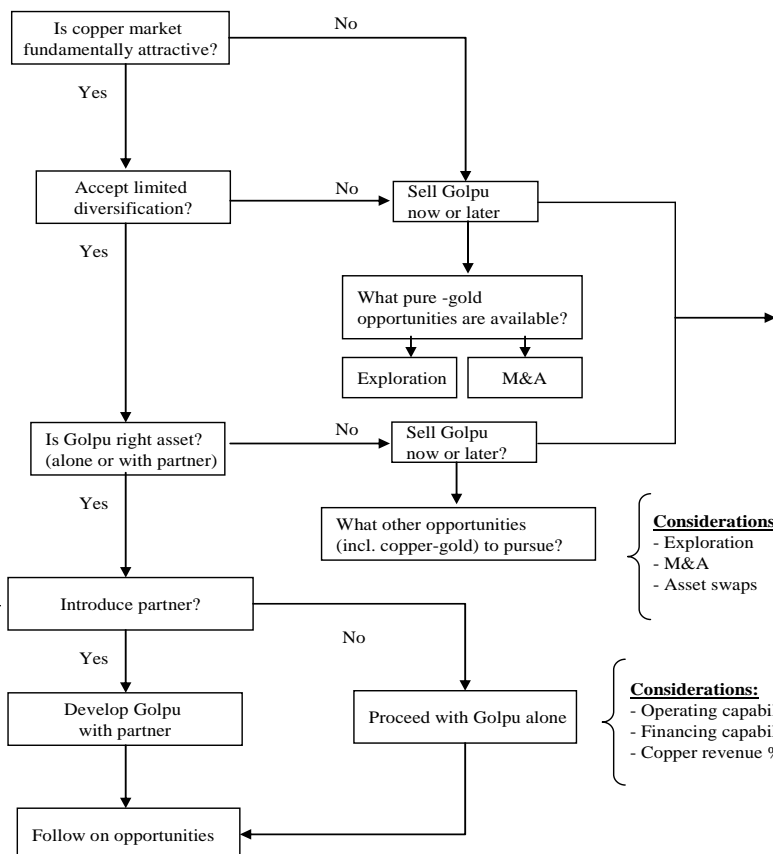
- Asset quality / returns
- Harmony skills/capability
- Environmental issues
- Political environment
- Technical issues
- Revenue diversity/balance
- Wafi integration

Considerations:

- Partner skills/capabilities/capital
- Who to partner with?
- When to introduce partner?

Considerations:

- Optimal structure?
- How to finance?
- What % to retain?
- How Wafi fits in



Considerations:

- Best time to sell?
- Pre-sale development?
- Optimal sale process?
- Optimal sale structure?
- Sell Wafi also?

Considerations:

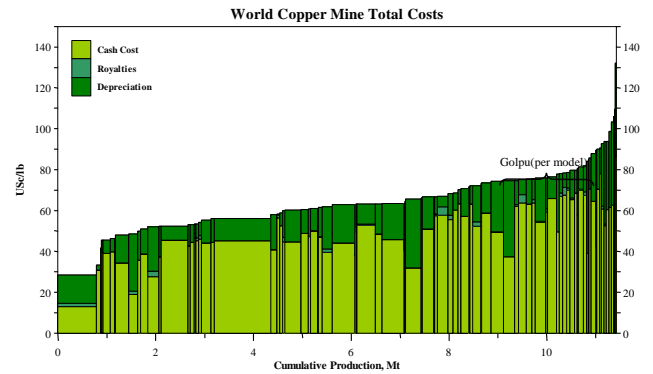
- Exploration
- M&A
- Asset swaps

Considerations:

- Operating capability?
- Financing capability?
- Copper revenue %



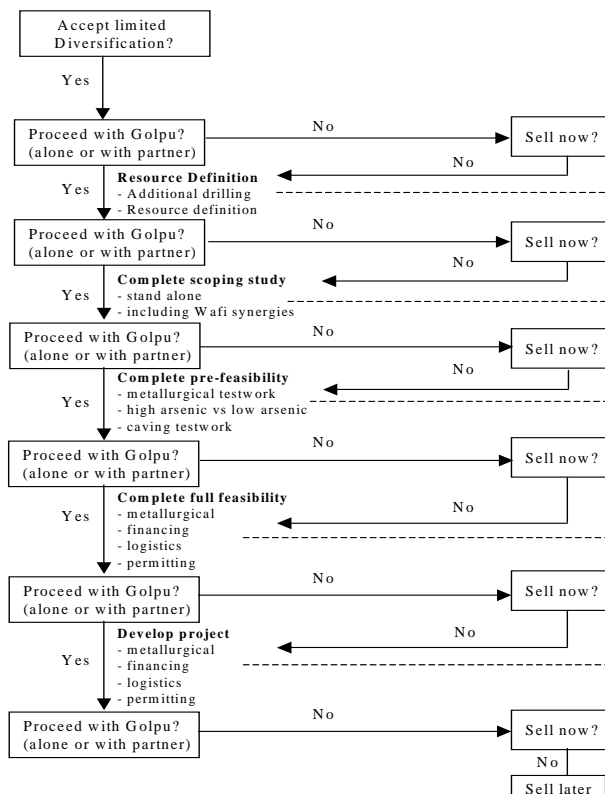
- A major investment will be required, US\$300 – 700 million depending on the chosen scale
- The project likely to be integrated with Wafi development and operation
- It requires large scale bulk underground mining - caving has low operating costs but long lead times
- Remote location will require substantial infrastructure
- Production will be substantial – up to 100,000 t.p.a. of contained copper and 100,000 oz p.a. gold over a long life
- Copper revenue less than 10% of total Harmony gold revenue, if wholly owned
- Golpu is a significant project, but would be challenging for any resource company



- Golpu as currently modelled appears to be at the upper end of the cost curve with respect to operating costs
- Project viability at longer term copper prices must be determined
- High Arsenic could cause issues as typical smelter contract



Introducing a partner ; to maximise value to Harmony



Est. Costs (US\$MM)	Completed by	Forecast copper price US c/lb	Comment
N/A	July '05	140-130	Strong copper price likely to attract buyer or JV partner
2-5	Dec '05	128	Additional resource definition likely to enhance terms of sale/JV at modest cost to Harmony
2-5	Dec '05	128	Scoping study should examine optimal NPV outcomes (rather than maximise resource recovery)
5-10	Dec '06	109	Introducing partners before pre-feasibility study likely to maximise interest of potential partners and facilitate optimal project design.
10-20	Dec '07	90	Capital expenditure and design risk in going alone. Copper price environment may be less attractive. Partners introduced at this late stage may wish to "re-invent the wheel"
600	Dec '09	80-90*	Significant capital and skills required. Successful completion of the project may facilitate sale but will market for copper projects still be robust?

*long-term price subject to revision by AME in coming months

- Copper is modern and relevant with intensity of use continuing to increase
- Demand growth has accelerated to >3.5% p.a. (vs 2% long term) mainly as a result of China's industrialisation
- Supply is struggling to keep pace given:
 - Paucity of current projects and decline in exploration
 - Low inventories and long lead times to development
 - Heightened company risk aversion and higher hurdle rates
 - Increased environmental, political, social and legislative barriers to entry
- Price has come to the rescue rising to US140c/lb and beyond. This is a powerful inducer of new capacity together with the concern for security of supply (e.g. China)
- AME forecasts copper prices to remain buoyant to 2006 declining thereafter as supply catches up with forecast demand
- Price volatility is likely to remain a feature with quality low cost assets the key to long term prosperity in the industry

Similar considerations apply to a buyer or a joint venture partner:

- Interest will be heightened during periods of strong copper price
- Site co-operation will be required even if no interest in Golpu is retained by Harmony
 - Potential synergies likely to be significant

When is the best time to introduce a third party?

- Interest in copper projects is stronger during periods of high copper prices
- There is a trade-off between optimising the business for sale and over-committing to investment and a particular way of approaching project development
- Arguably, post scoping study is best time to commence discussions in any detail
- Consideration of partners can commence while scoping study and drilling progresses
- Choice of partner will be influenced by value proposition, project and operating expertise, financial capacity and culture

Copper price erosion represents a risk:

- AME price forecasts point to price erosion
 - copper price is very sensitive to new supply
- Harmony's negotiating position could be strong with a world class orebody potentially producing 100 tonne of copper and 100 000 oz of gold per annum

Wafi – Optimisation Challenge	Golpu – Simpler Decision
<p>Large resource with significant potential, however;</p> <ul style="list-style-type: none"> – High proportion of primary ore – Primary ore is refractory <ul style="list-style-type: none"> • High sulphur ore will be high cost as processing options sized to sulphur content • Link Zone ore requires underground mining – Oxide production will be limited – Open pit waste will have acid issues – Potential for high return underground operation (bulk mining option) – Low capex for 720 000 t/yr 	<p>Clean copper / gold ore at depth</p> <ul style="list-style-type: none"> – Transition and high arsenic zones best mined and treated separately (if economic) – Low grade gold cap potential for treatment in Wafi gold plant (if economic) – Underground access likely to be shared for exploration, assessment, development and operations with Wafi – High degree of shared services (power, ventilation, communications, logistics, etc.) with Wafi – High capex
<p>Value solutions will evolve with knowledge</p>	<p>Likely initial driver of site value</p>

Harmony is firmly focused on Gold
PNG has abundant mineral opportunities.

Questions ?

