

Breaking preconceived paradigms

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The last few years have been very challenging for the resources sector. Return on investment is at a 10 year low and the market capital of the mining sector has lost \$1.4 trillion since 2011. Is there hope? Whittle Consulting believes there is. Proactive strategic planning with sufficient flexibility to adjust the plan to changing circumstances is the path to profitability. The answers to economic success often conflict with conventional thinking:

Maximising metal production?: Metal produces revenue but the aim is to maximise net cash margin not revenue.

Maximising Reserves?: Historical high commodities prices seduced the industry into enlarging pits/stopes and lowering cut-off grades. This resulted in exciting increases to mineral resources and reserves. However, the industry did not account for the opportunity cost of including large volumes of low value material which occupied the bottleneck in the system and slowed down production of high value material. CEOs are talking big about focussing on cash flow, but how many mining companies have actually reduced their reserves, the inevitable consequence of lower commodity prices?

Minimising costs?: Lower commodity prices means the industry must cut costs. If it is possible to do the same work at lower costs why wasn't this done in the first place? Cost reduction is dangerous in mining if not carefully managed. Dismissing expert personnel will make it harder to weather the storm and mean the industry is not prepared when market recovery does come. Delaying pre-strip in a pit or underground development saves cost now but risks next year's production.

Maximising utilisation?: Guaranteed to maximise total cost, although it may give an illusion of efficiency by reducing unit costs. If the output of a part of the system that is not the bottleneck is increased, then the operation will go broke faster by doing work not needed at that time. Miners need to look at equipment actually required for the strategic plan and remove excess equipment from the budget thereby strategically maximising key equipment utilisation rather than across the board maximisation.

Maximising recoveries?: This cannot in itself be an objective. Studies show that coarser grind sizes with higher plant throughputs and lower processing costs usually give better financial results even though the recoveries are lower.

Minimising capital?: Trimming capacities in parts of the system can create risks and incidental bottlenecks, costing the business much more in economic value than the initial saving.

Increase productivity?: Yes of course with the primary bottleneck. Of any other part of the system, increased productivity is only useful if it allows

parking of equipment and laying off personnel.

Maximising the life of the mine?: Money has a time value so for a given mineral resource the objective should be to minimise the life of the mine. Exploit net cash out of the deposit as quickly as possible and close it down to avoid ongoing fixed costs which reduce the total net cash.

Aiming to be in the lowest cost quartile?: Very good, but 75% of operations aren't going to achieve that. It is possible to still run a very good business outside the lowest cost quartile, it just has to be run differently.

Eliminating stockpiles?: There is a belief that stockpiles tie up cash and working capital. Stockpiles are deferred dilution – if an operation is uncomfortable with them they can be called waste, just don't put them in the plant.

The aim is consistent production?: Not necessarily. The industry should focus on high value material and activities now, and do the rest later. Money has a time value, as do all stakeholder objectives. In a variable ore body a steady plan cannot be the optimal plan. Variation is opportunity, it is not a problem.

Grade is King?: Grade is only part of the value equation. "Net Value per Bottleneck Unit" is King.

Things will not improve until the industry acts differently. It is time for a new strategy, one that sensibly considers, through coordinated crossfunctional cooperation, the desired objective: *maximising stakeholder value*. Miners should apply a fundamental principle; maximising early cash flow (NPV) in the context of the economic, social, political and environmental context within which they work. A review of over 120 Whittle Consulting Studies reveals some common trends in the outcomes. Many of them simple, but counterintuitive compared to conventional thinking. It shows how miners need to change the way they think to improve the performance of the industry.

An integrated approach to strategic planning is guaranteed to increase NPV. The solution involves the systematic application of Activity Based Costing, Theory of Constraints, and the 12 Whittle Strategic Planning optimisation mechanisms – through whatever combination of consulting, training, mentoring and software fits an asset owners specific requirements.

As Albert Einstein said: "We cannot solve our problems with the same thinking we used when we created them."



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