

Why Asset Management Doesn't Work in the Mining Industry and How to Fix it.

Grahame Fogel and Stefan Terblanche

This article reviews asset management assessments undertaken at over 50 mines in order to create an understanding between which targeted investment areas have a direct correlation with asset performance. These correlations can then be used as strategic management enablers for targeted interventions in order to increase asset contribution.

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Analysis of the data from the results of asset management assessments, from over 50 mines shows that only a few in the mining industry are attaining results equivalent to industry averages. Leadership within a number of major mining companies have published visionary statements regarding the role of asset management that demonstrates a level of understanding of its importance to operating and financial success. Our study shows that in general there is a misalignment between the executive vision and execution at the operational level. Further, our results show that improving the execution of asset management to a level performed at many other asset intensive industries will yield major operational and financial improvements. A first step is demonstrating to operational management that asset management is an area worth investment. We propose the notion that operational management within the mining industry is, in general accustomed to living with

Asset:

Anything that adds or has the potential to add value.

Ref ISO 55000

Asset Management

The optimum way of managing assets to achieve a desired and sustainable outcome.

ref: ISO 55000

sub-optimal asset performance and therefore may be reluctant to depart from the familiar to address the challenges around creating optimised asset performance.

This data indicates a number of key findings.

Firstly there is a great opportunity to improve asset management maturity and performance to standards achieved by other asset intensive industries. Even the top 5% of performers within the mining industry, which need to be acknowledged for their achievements, could gain by attaining the performance equivalent to a well run and efficiently managed power plant or refinery.

Secondly and of significant importance, the study identifies a few key enabling processes that drive asset performance within the mining industry. Investment in these processes will lead directly to increased asset contribution with corresponding operating and financial benefits.

Finally, and more controversially the findings show that there is no clear correlation between increased investment in further investment in IT and computer systems, and asset performance. This is illustrated in Figure 2, which show the poor correlation between Information Management investment and asset performance.

These results are illustrated in Figure 1.

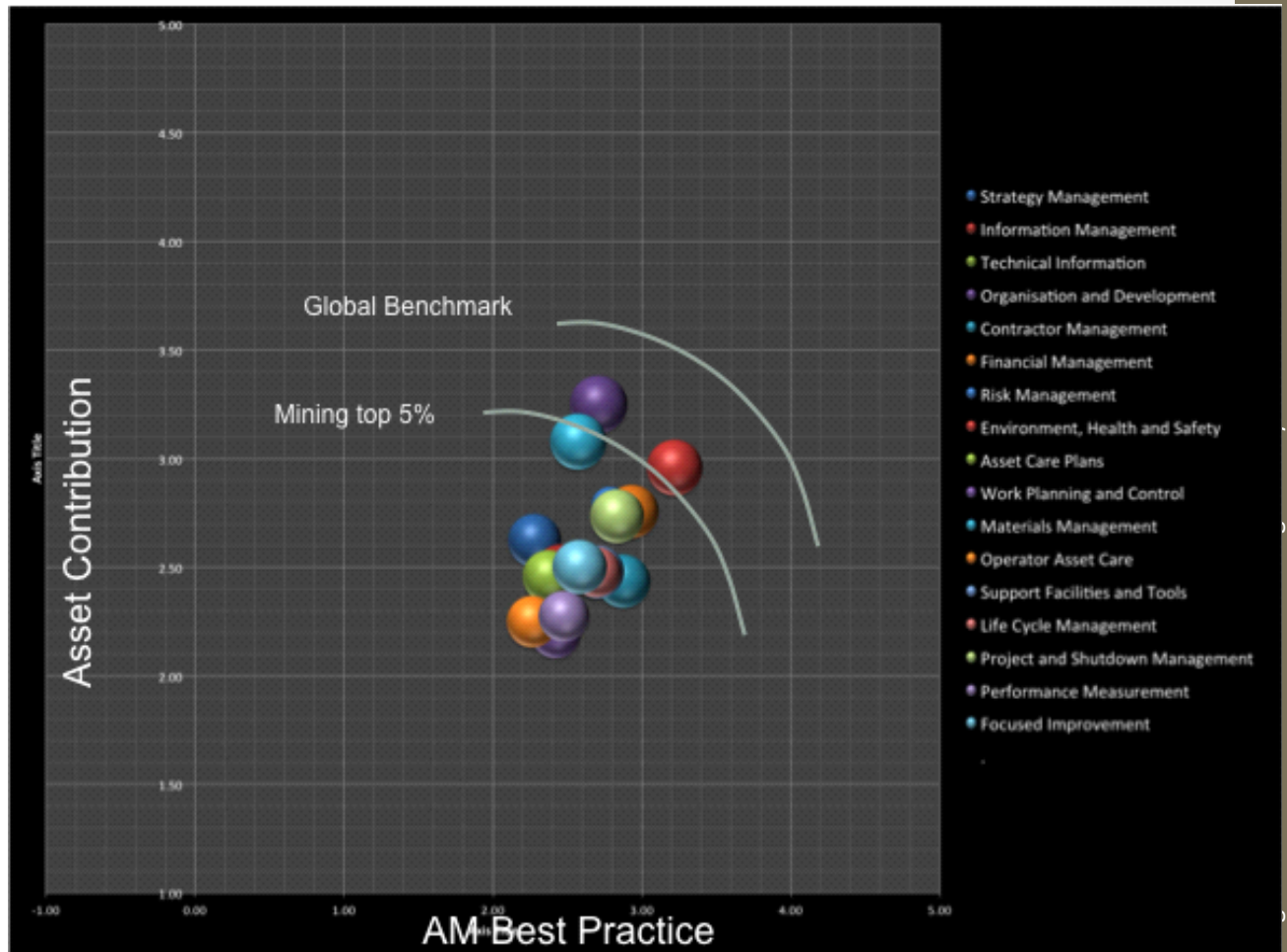


Figure 1 illustrating the results of the survey across 57 mines

Information Management

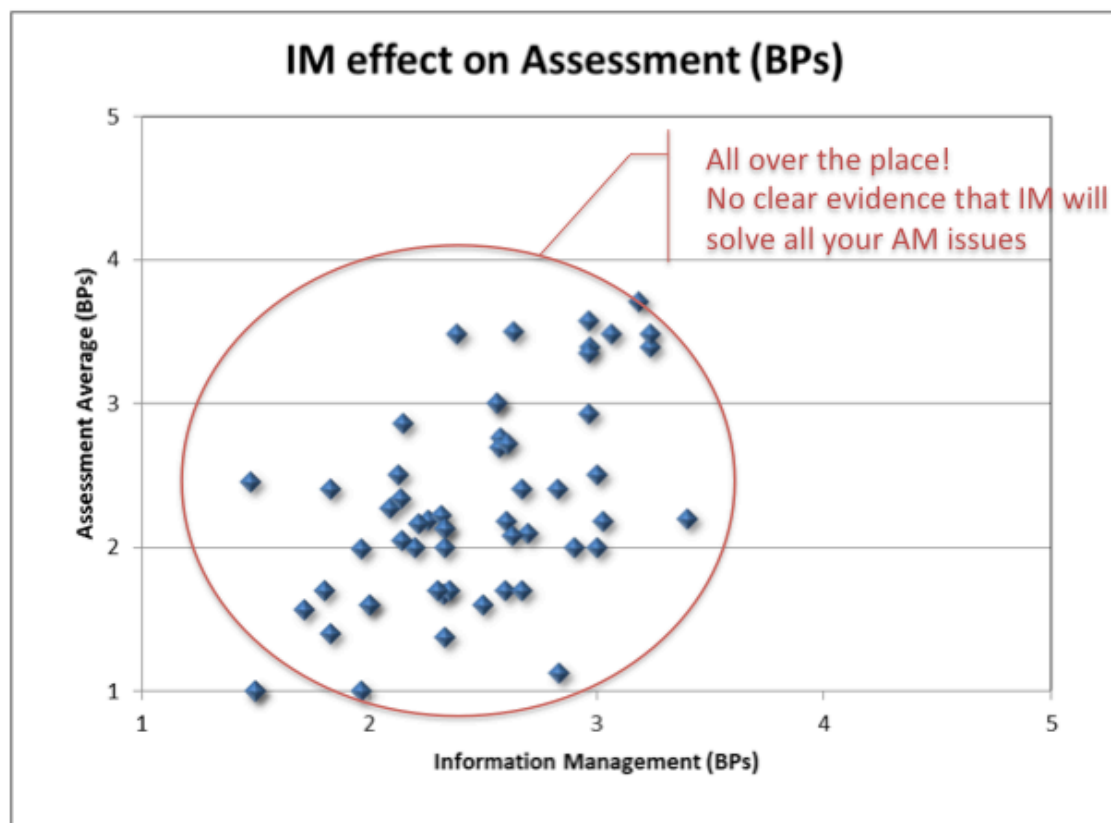


Figure 2 Illustrating the poor correlation between information management and asset performance

What is the data telling us?

Asset management maturity and the resulting yield in asset performance have been surveyed at 57 mines across the globe. Analysis was focused on 17 key performance areas, as illustrated in Figure 1.

The results show a strong correlation between increased investment in improved process capability and performance in 5 key enabling processes.

These are:

1. Strategy Management
2. Asset care plan development (development optimised maintenance tactics, including condition monitoring)
3. Work Planning and Control
4. Operator Asset Care
5. Focused Improvement

These are illustrated in Figure 2, and immediately show they lag behind in terms of general asset management maturity.

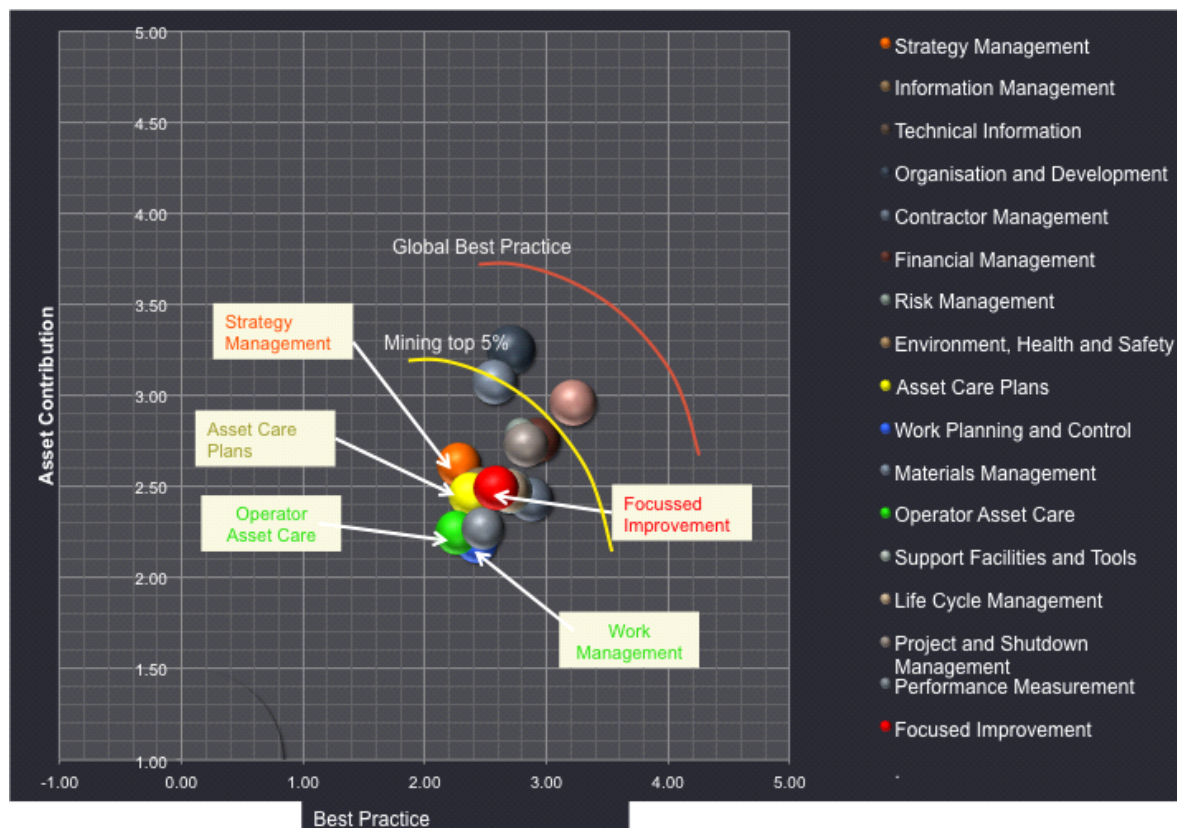


Figure 3 The key enabling processes

Why Hasn't The Mining Industry Mastered Asset Management ?

The last 20 years of experience in the mining industry have provided clear and unambiguous evidence of the value contribution of good asset management. Within industry there is clear evidence that asset management makes contributions to:

- Improved capital productivity
- Improved recovery rates
- Improved decision making
- Optimised life cycle costs
- Better managed asset related risk
- Create High levels of predictability
- Reduced energy use
- Improved Safety & environment
- Improved labour productivity
- Greater shareholder value

Yet this set of results, which is representative of the mining industry, shows the low level of maturity of asset management in the mining industry.

Compounding the problem if we review where the key enabling processes plot on Fig 1 we see that these are performed at a particularly low level of maturity,

On top of this, leading voices within the mining industry often advocate the value of good asset management. There is an obvious disconnect which deserves further analysis. We conclude that this disconnect (*from the obvious to what is in place*) is due to an overemphasis on the operational activities where such a bias pushes the role of asset management and other operational excellence activities away from any central management theme.

As such Asset Management is made the responsibility of a disempowered function buried low within the hierarchy of operations, which hasn't the budget, influence, authority or elevation to create anything but marginal influence.

Consequently we observe the symptoms of a partially managed function at play. These include:

- Significant year on year cost increases (well above inflation)
- High asset related risk exposure, leading to cost deviations and safety incidents.
- Poor asset performance not being dealt with at the source, instead buying solutions with high cost, capital replacement strategies.
- Operational managers are more comfortable dealing with the discomfort of the issues surrounding poor performance than addressing the problems.
- Having an organisational focus, which is maintenance centric based on repair, rather than that of asset performance in alignment with organisational business requirements through the life of the asset.
- Having organisational designs, which are biased towards repair rather than a systemic approach to asset performance.
- Creating responsibility for asset performance from a disempowered position within the organisation, which does not have sufficient authority to create cross functional coordination.
- Low accountability and inaccurate measurements for KPI's which reflect asset performance.
- A low literacy and knowledge base within the operational context of the individual mines of the role function and benefit from investing in asset management.
- The lack of a clear model of how to create an accountable road to benefits which has high credibility.
- A readiness to invest in further IT system enhancements in the thought that better information control will create an accountability to creating improved asset performance.

Ultimately at an investor level this leads to a proportion of the investment community to conclude that this is not a well managed business endeavor. This is indicated by an investment pattern where in good times values rollick, while during times when the commodity cycle is soft, there is a flight of investment from the mining industry (despite record distributions). This is clearly illustrated by Figure 3, which illustrates the underperformance of mining compared to global indices despite record distributions.

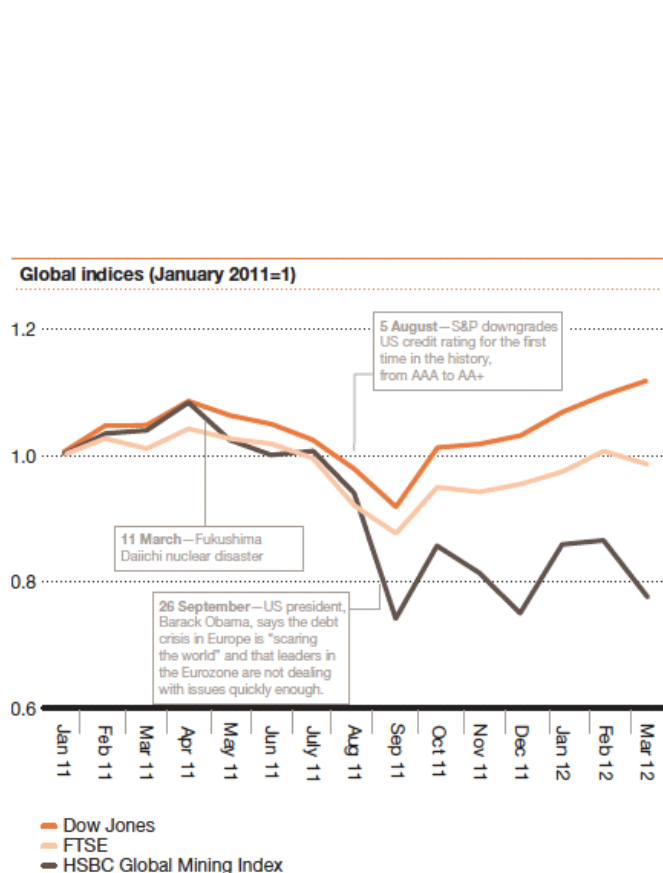


Figure 4 Illustrating the recent underperformance of the mining sector.

The Threat of Regulation

In a high risk, often-politicised operating environment regulation is always a first response of authorities. In our experience regulation is the false friend of performance. Essentially it is a clinch much like boxers get into when they can't go forward. In boxing terms a clinch means to hold your opponent's body and arms in order to prevent or hinder punches. Regulation of safety and environmental issues may be necessary, but being subjected to regulation of a core business process such as asset management will significantly affect an area, which is ripe for performance optimisation.

This will result in the clinch of a conformance mind set. Regulators would have won a battle of cheap moralisation but undermined the opportunities surrounding a significant performance frontier. Regulation will become a real issue in the next decade as specifications such as the new ISO 55000 (ISO Standard for Asset Management) become more prominent, and management will lose yet another freedom to choose what path they wish to follow.

Creating Clarity for Driving Asset Performance

This study clearly indicates that asset performance can be driven by creating high levels of process maturity in the areas of strategy management, asset care plan development, work management, operator asset care and focused improvement. We refer to these as the key enabling performance drivers.

Taking the lead from Kaplan and Norton's balanced scorecard approach to strategy, we put forward a structure for the mining industry, which drives performance in a programmatic manner in the following manner, as shown in Figure 4.

Creating a Balanced Structure Towards Asset Performance in the Mining Industry

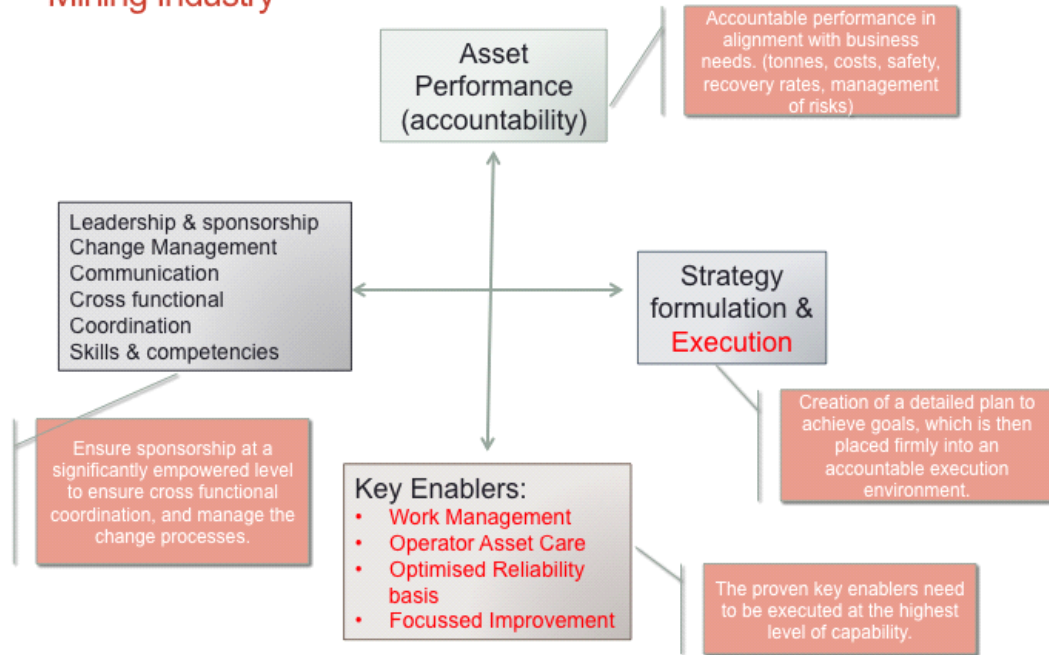


Figure 5 Proposed Execution Structure

Within this structure we suggest an execution framework, which has four domains.

The first domain has the fundamental goal of driving through life asset performance (in alignment with organisational goals). By positioning this as the primary imperative, we orientate all supporting activities towards a measurable and organisationally central outcome.

Supporting this preeminent anchoring commitment, is the development of a supporting strategy and strategy execution plan. Which is clearly aligned and supported by the key enabling performance criteria of work management, operator asset care, the development of an optimised reliability basis (created from supporting tactics) together with focused improvement.

These are the powerful enablers that this study indicates create asset performance.

As any experienced asset manager will testify, the vital contribution of organisational change, sponsorship, governance, and skills and competencies are supported within the forth domain.

Created within this structure is a clear line of sight between organisational objectives and how to create the supportive asset performance.

We conclude the key proven asset performance enablers if executed (in place and in use) will not only drive asset performance, but additionally create the basis for enhanced asset related risk management.

Furthermore this will comply with the basis of ISO 55000 and form a platform for establishing an asset management system that will comply with ISO 55000.

References:

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