

Getting the most out of your maintenance dollars

Myrtle Consulting Group's John Pocock lists five keys to cutting maintenance costs



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As the assets within the mining industry increase in value and reliance on optimal operability is key to successful production, it is more important than ever to ensure a proper maintenance and reliability programme that will maximise operating efficiency and effectiveness.

The next challenge becomes how to trim down these maintenance costs in order to sustain that optimal production level without decreasing profits.

Here are a few methods for minimising maintenance costs by working strategically to avoid negative effects on production.

1. Integrated planning and scheduling

Many environments perform some level of planning and scheduling. Often these terms are used interchangeably, which lessens their impact. Planning without scheduling puts the plan at risk, as the tools, personnel, equipment and other assets are not available when the plan is put into action. Scheduling without planning ensures the equipment is available, but does not ensure that the scope of work, tool lists, required drawings, components and personnel necessary to complete the task are readily available. Properly combining these two activities will ensure that downtime is minimised and allow the organisation to optimise uptime by properly maintaining these assets at opportune times.

Focusing on maintenance and operational planning quality with activity-based work scopes improves the efficiency of execution. High-quality planning occurs when the workforce has readily accessible information, including tool lists, locations of material and work, drawings or relevant technical data to complete the work, as well as standard work scopes that have been previously completed. Execution efficiency and effectiveness can occur with the ability to measure/monitor the effects

of the work. Ensuring work scopes are built in a level of detail to provide shift/daily deliverables improves progress measurement and provides a sense of accomplishment for workers for each shift.

The element of 'time' is better known as scheduling. Good scheduling practices include performing the work with the correct level of detail, concurrent activities, material and supplies scheduling aligned to the work schedule, resources loaded (both labour and equipment) for the work to be performed, and the efficient use of resources. Aligning operational schedules task by task within the multiple departments displays the risks, constraints, and coordination efforts required for all teams to execute upon their activity schedule. A top reason for lost compliance is found in coordination of impacts that were not previously known. This can be improved through integrating job plans and schedules to reduce delay and labor efficiency losses, ultimately resulting in lowered maintenance costs and higher availability of assets.

2. Management system encompassing the use of Pareto trends for cost and asset bad actors

Do you measure the total cost of maintenance as a total of dollars spent? Or perhaps cost per operating hour for an asset? Or maybe cost per widget produced? Variance management may appear to be a simple activity, but with the complex environment and mass amounts of data within the industry, the use of simple tools to extract and analyse that data has become more complex. Effective variance management can only occur with a common definition of the variance that, when managed, directly impacts total profits and data that contains the correct attributes applied for 'categories' or 'grouping' information together into a Pareto analysis. Continuing efforts to manage the weekly 'bad actor categories' to highlight those areas performing below expectations utilising previous trend data, improvements initiated and current business impacts remains an excellent opportunity for lowering maintenance cost drivers.

To obtain traction in investigating and developing solutions to these cost impacts, the need for an effective management operating system and a culture driven for improvement are required. Reports alone will not do the trick; effective meeting discussions and solution brainstorming sessions using collaboration across different perspectives, roles and departments can generate the greatest improvements for cost-reduction exercises. The additional benefit of having each department understand how its business decisions are impacting the overall costs of asset performance can often improve costs without engineering changes, benefitting daily operational decision-making and minimising escalation requirements.



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3. Holistic asset strategy management

Managing all elements of asset strategies is a daunting task to say the least. Many organisations do well at managing the mechanical and electrical maintenance components of their asset lifecycle strategies, where the remainder of the elements to make the strategy work can be overlooked or pushed aside for other priorities,

sacrificing necessary reviews and improvements. Operating parameters, SMED (single-minute exchange of dies) activities, run rate losses, and spare parts/BOMs (bill of materials) are a few key areas encompassing the overall asset strategy effectiveness. To reduce maintenance costs, a holistic approach to improving asset strategy elements collaboratively with maintenance and production can create significant impact. Taking advantage of meter-based tracking, combined with predictive program inputs, will create the correct data set to manage asset strategy effectiveness.

The Pareto method outlined within the above management system will identify the key sources of loss, making it possible to then manage the components of an asset strategy. Operating conditions often play the biggest role in maintenance costs. However, since they are not immediately known as the cause, these areas can have less focus. Aligning all departments to the common goal of overall equipment effectiveness (OEE) can create the synergies and focus required to collaboratively reduce maintenance costs through asset strategy management.

4. Activity-based schedules for labour resources

What is measured can be managed. Costs can often be lost into the large buckets of weekly or monthly scopes. Organisations that focus their efforts on developing activity lists for production activities, field engineering, routine maintenance, shutdown/rebuild maintenance and the like all benefit from an environment where costs can be monitored, controlled and efficiency improved.

Activity-based schedules enable coordination between departments and allow an organisation to see where the 'wasted' time can be occurring. Focusing on parts of a work scope by task or activity can provide improvements in concurrent work to reduce downtime, enable greater compliance to short- and long-range plans to reduce variability, and provide execution leadership with the visibility and tools they require to effectively manage their day. Gantt charts are a powerful tool when utilised correctly with the aid of visual boards and short interval controls to monitor and improve activity progress.

5. Optimising organisational effectiveness (OE) and leadership development

The decision-makers for activities impacting maintenance costs are determined by the frontline leadership. Developing these resources with core competencies of leadership and decision-making can have a significant impact on overall costs. Skills such as leading by example, accountability, learning agility, performance coaching and collaboration can be accompanied with role-specific, leader standard work models to

create a stronger leadership culture. Strong leadership leads to positive work environments, effective decision-making and, ultimately, increased productivity and focus on the right things at the right time.

Creating a frontline leadership culture to support greater operational outcomes requires common sense driven by your strategic plan. Behaviours are driven by beliefs, and having a shared value system along with identified and defined leadership competencies are essential to influencing and driving the tactical implementation of your strategy and operational outcomes. When common beliefs are created and cultivated within your frontline leadership team, it provides stronger support for your leaders to intentionally share common sense agreements. Common sense includes common thinking, common goals and common priorities to produce common practices, actions and behaviours.

This process can be enhanced through the creation of cross-functional frontline leadership teams, which further advance your integration strategy by purposefully creating interdependent leadership teams. Working together, these teams can increase productivity through more effective critical thinking, problem-solving and decision-making, helping to minimise risks by reducing interdepartmental constraints and conflicts. A proper leadership approach creates direction, alignment and commitment (DAC), increasing the availability, reliability and sustainability of your assets, and therefore reducing maintenance costs and increasing profitability.

Sometimes previous experiences blind us to the best possible opportunities, because we do not yet know what good 'looks like', even when we think we do. Deciding where to get the most out of your maintenance dollars is not a set equation. It is a delicate balance of components that generate the best strategy for your organisation, your mines and mills, and that combination can be either magical or horrifying. Using the right data sets, best practices and holistic and integrated solutions can lead to a tremendous cost savings without sacrificing quality and operational effectiveness.

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