Implementing Uptime

Large diamond mining company

In this case study the customer is one of the world's largest diamond producers by volume and value. Production output is roughly 30% of the world's supply of uncut stones, approximately 24 million carats. Annual production value is approximately $US 4 billion.

Situation

The customer operates 2 large and 2 smaller diamond mines in the southern African continent. Although profitable maintenance practices at the various operations were known to be quite rudimentary. If improved, production volumes could be increased and revenues improved by over $1 billion. The Managing Director was changing and with the new MD came an opportunity for substantial change. Given his strong operational background, the MD saw the opportunities and quickly identified maintenance and reliability as a problem area, among others. He quickly moved to begin changes in training, management, supervisory and leadership behaviors, meeting discipline, and several other areas. We were initially asked to perform a quick assessment at the two large mines to determine what could be done to improve the situation.

Solution

In the first visit to each of the mines, a one week long assessment of maintenance maturity was carried out against the "Uptime Pyramid of Excellence" as described in the book, "Uptime – Strategies for Excellence in Maintenance Management". As expected, the assessment revealed low levels of maturity in all ten areas of the Uptime model. Indeed there was a lot that could be done to improve. The reports (one for each mine and a combined report) identified a large number of possible improvements. Some of those were fairly easily implemented by site resources and some would require outside help.

While the sites began working on some of those improvements, we were asked for a proposal help the company with a dedicated implementation effort. Considering the range of other initiatives that were in progress, we had to "blend in" with the overall suite of initiatives. The proposal covered achievement of all aspects of the recommendations over a 3 year period, utilizing a team of highly experienced consultants. Two consultants took up residence at the two larger mines and a team of 10 other consultants rotated in and out monthly, some with highly specialized skills and knowledge.

The proposal contained a high level strategic plan of action. Among the first activities were the writing of a program charter and leadership of site level planning sessions. Using the initial reports' findings we facilitated development of plans for action on all recommendations and additional ideas that were raised by the mines' personnel. The overall strategic plan resourcing and timings were amended to fit the mines' detailed plans and implementation began.

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The charter described our organizational approach, program approach, high level goals, objectives and specific measurable "key performance indicators" that would be used to mark both progress and results. Each site had an improvement team, divided into area teams. The MD was program sponsor and the Mine General Managers were part of both the corporate steering committee and the site steering committees. Key managers and project team members from the sites participated in site steering committee meetings, initially to set up the program then later to sustain it, dealing with any issues arising so they were resolved quickly.

The consultants were primarily from North America and rotated on a monthly basis with staggered and overlapping schedules to ensure continuity of support coverage. They provided training, coaching, facilitation and support to the site leadership and area teams as needed. Their focus was to keep the client on focus.

As the maturity level was quite low to begin with, there were a variety of reliability problems as well as basic process problems (e.g.: poor work management practices, very little schedule discipline and no compliance to proactive maintenance programs). Management systems used for maintenance had been poorly implemented, and were being used by people with very little or even no training in how to use them.

In parallel with the site level planning effort we carried out root cause analysis on major known problems. Those analyses were successful at identifying problems that kept re-occurring, causing a lot of downtime and draining maintenance resources from other work. That did help to get the atmosphere out of "complete chaos" and into some semblance of control. The confidence built by those early successes helped propel the program.

Another early program activity was the delivery of a number of "Uptime" courses at the sites. Shorter management focused courses were used to build awareness of the program, what it could achieve, how we could do it and what their roles needed to be. Longer courses with our simulation game were used with those who would be implementing the changes – mostly maintainers and operators and stores personnel. The simulation game was very useful in driving home the concepts being taught. The whole framework that the Uptime Pyramid provides was a new perspective to many. Previously they hadn't seen how the group of activities works together in a coordinated whole to achieve results. A lot of learning was taking place and with it, a growing sense that they could really do a lot and make a big difference was also growing.

Motivation was not really a problem – everyone seemed to know and accept that they had been underperforming and they genuinely wanted to improve. Follow through on what actions were decided was the big problem however. That took a great deal of change leadership effort on the part of our resident consultants to maintain both focus and momentum.

Within the first year we had achieved improvements in a number of key areas improving reliability of the worst actors, defining work management processes and instilling some discipline into its execution. With initial Reliability Centered Maintenance efforts we were able to refine maintenance programs and the knowledge that was gained in the RCM training was instrumental at encouraging compliance to the programs they were now defining for themselves. The chaotic highly reactive environment was gradually shifting towards being more proactive, planned and controlled. With the planning came an

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increased ability to inform supply chain about needed parts and materials so the problems with stores, hidden stores and continual hot-shot of supplies gradually was being eroded.

We had also identified a need for a more effective work management support system. A new system was acquired and implemented. The larger of the two mines had a relatively trouble free start up and took advantage of the need for data loading to review all PMs. By then they had the RCM training and knew what to look for and optimize. The other mine opted for an automated data load and suffered a great deal due to data clashes and other technical problems. By then they also had a new maintenance manager who was not as receptive to the Uptime approach. Progress there noticeably lagged the other mine, but there was still a great deal of progress.

Work continued like that for roughly three years. In that time significant change took place. The mines moved from reactive to largely proactive. Costs for materials and labor both dropped. Contracting levels dropped. More importantly however, revenue climbed with production volumes. After the first year roughly $600 million in improvements had been estimated.

Results

As noted, in the first year there was an estimated benefit, mostly from production and revenue gains of $600 million. The improvements from then onwards were slower paced, reaching a total of approximately $1 billion. Most of that is revenues from production enabled due to more reliable equipment and systems. Staffing levels remains fairly constant for the first two years but gains in efficiency of work execution and work management then allowed a bit of labor savings through attrition. No one was laid off, hiring and training of trades had to continue throughout the engagement, even though numbers overall did drop.

The new maintenance management system continued to work well at the one mine but eventually a corporate decision was made to replace with an upgraded enterprise accounting system. The proactive programs developed using PM optimization and RCM continue to produce reliable operating equipment and the level of understanding and cooperation between maintainers and operators remains high.

Although diamond markets have softened somewhat, the operations remain highly profitable with many years of operation ahead.

To learn more

We blend training, with full support in the field to help our clients achieve improved results. Our focus is on what is best for the business, not just blindly what's best for maintenance. Our model and its application works at single sites and multiple sites, even across multiple continents. We've done a number of these large scale transformations. You want big changes – talk to us, we have that experience and knowledge.

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