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## **Managing the Downturn - tough times are *the* time for excellence in your operation**

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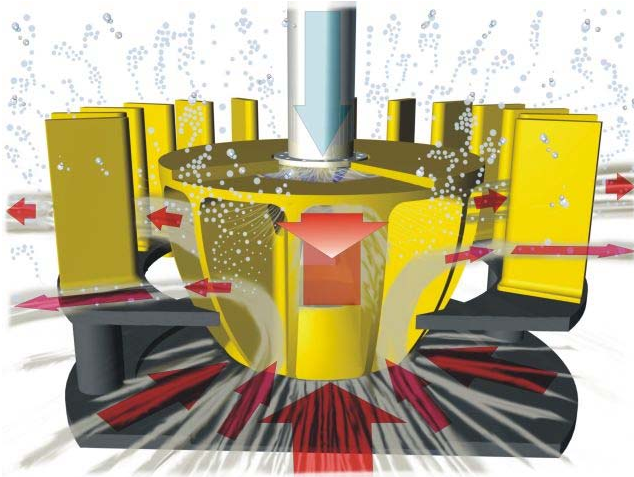
The markets have certainly changed quickly, not three months ago we were all worrying how to expand our production and the inherent challenge of employing and retaining good people. Now we find ourselves wondering if we can keep our operations afloat. In many cases, a major portion of our workforce has known only large operating margins and constant capital investment. Increasing the capacity of operations almost at any cost to capture those margins was the order of the day.

Nowadays, with all the current market uncertainties and talk of doom and gloom, some operators will be battening down the hatches, cutting costs wherever they can and waiting for the financial hurricane to subside. And now, more than ever, is time to start checking, controlling and analysing the full supply chain, both up- and downstream, thereby optimising productivity and minimising unnecessary costs. To do this effectively and efficiently, some investments may need to be made. If this is done properly, the savings generated will far outweigh the initial outlay. As always, in good times and bad, throughput is king, but it is now particularly important to look at the impact of process efficiencies on the bottom line. So, this article will review some of the techniques used to keep tonnes up, whilst minimising investments.

### **Strategy 1 - Ensure your wear items use the latest technology**

Most OEMs are constantly improving their technology and one of the many areas where effort is expended is wear parts. Extending the life of wear parts is a key goal of OEMs. Whilst some cynics might suggest the faster items wear, the more spare parts will be sold, the reality is that fast-wearing spare parts are a key driver for the use of pirate parts. So it is in the vested interest of OEMs to ensure they offer the industry the most economic, high performance wear items. Pirate parts cost OEMs tens of millions of dollars per year and the best way to prevent them is continuous improvement. Apart from that, the performance and, in some instances, safety, of pirate parts can be an issue – a discovery only made when failure occurs.

Apart from improving wear life, some OEMs also strive for efficiencies in components such as power consumption savings or metallurgical recovery improvements. Examples that come to mind are flotation cell mechanisms, grinding mill liners, screens, pump liners and the like. With FloatForce®, for example, Outotec's new flotation mixing mechanism, it is designed for better wear life and easier maintenance. It also offers potential power savings up to 20% and optimised metallurgical



*Diagram of optimised airflow of FloatForce® - a new mixing mechanism installed in new operations and also retrofits*

performance. In many cases, upgrading to the latest design when you change out wear items can provide improvements in operating costs far beyond the cost of the component.

Thus, it is savvy business sense to always ask your OEM about technology improvements before replacing wear items.

### **Strategy 2 - Review your concentrator set-up for present ore type & throughput**

In many cases, such a sudden change in commodity prices will lead to a change in mining strategy. Perhaps fewer tonnes at the same grade or at a higher grade, or even more tonnes at the same grade may be appropriate. Such changes are driven by mine economics but what about the concentrator? In most cases any significant change in throughput or grade will require modification of the plant set-up. Some areas to examine include:

- Crusher setting if throughput or ore type changes
- Target p80 if grades change
- Grinding ball size if throughput changes
- Number of flotation cleaner stages with feed grade amends
- Froth crowder modifications in flotation cells at lower tonnes and/or grade
- Size of flotation cell slurry control valves
- Modified thickener feed rates may require optimisation of thickener settings.
- Are all the pumps still suitable?

In many cases, the best people to advise on changes to your technology set-up are the original designers. If you face a significant change in plant throughput or ore grade, then it is always prudent to generate a new mass balance and compare it to the original design criteria. There is nothing worse than changing a mining strategy to survive in a downturn, only to see the concentrator efficiency lose the planned gains when a few relatively inexpensive changes could have made all the difference.

### **Strategy 3 – Training, is it up to date?**

With far less staff turnover than during the boom, and job cuts on the horizon, your reduced workforce needs to be operating at its best possible. Now is the best time to ensure that operators and maintenance staff are well trained on the technology used in your concentrator. The effectiveness of your staff is never more apparent than in tight times, when it is particularly essential to have a competent and skilled workforce. Correctly operating your plant will improve throughput and

recovery and minimise maintenance. Many OEMs offer training programs, with content targeted specifically to a particular site's technologies and needs - either on-site or off.

#### **Strategy 4 - Spare parts management**

During the boom times many operations suffered from very large staff turnover. One of the many downsides is the potential for confusion in the spare parts area. In a downturn it is important to know exactly what parts are on site, what they are for, and where to source replacements in a timely manner. It is never desirable to be airfreighting parts for a shutdown, but this is particularly so when margins are thin. Equally, it is important to know what parts are imported and thus impacted by the falling Australian dollar. Your OEM spares manager is a good source of support in managing these issues. In many cases, they may have better records of items such as part numbers, how often parts need to be replaced and their lead times. So, now is the time to ensure your spare parts list is up-to-date.

#### **Strategy 5 - Talk, talk, talk to your technology partners**

Tap into the expertise and knowledge of those whose core competencies are key deliverables on site. After all, these are the very people who should have best practises and advice on how to, say, audit and optimise the operation of your thickening circuit or manage construction planning, on-site management or even installation and commissioning. This leaves your (probably reduced) workforce to the job in hand. Your needs could even be something as simple as questioning how to protect the integrity of the bubbles in your flotation cell in a high wind area (the answer could be a simple and inexpensive one - ie install a wind guard). Some may question the use of external companies in times like these, but, provided you don't panic, know whom to contact, then this is time and money which could not be better spent.

#### **Strategy 6 - Don't panic**

Which brings us to the last pointer. Sudden changes can lead to decisions being made in a hurry without necessarily consulting all sources of available information. It is important to remember that the fabric of our industry and its proven record of innovation has not disappeared simply because commodity prices have fallen. Talk to your workforce, industry contacts, suppliers, technology partners - look for ideas on efficiency improvements in your operations and we will all get through this together

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