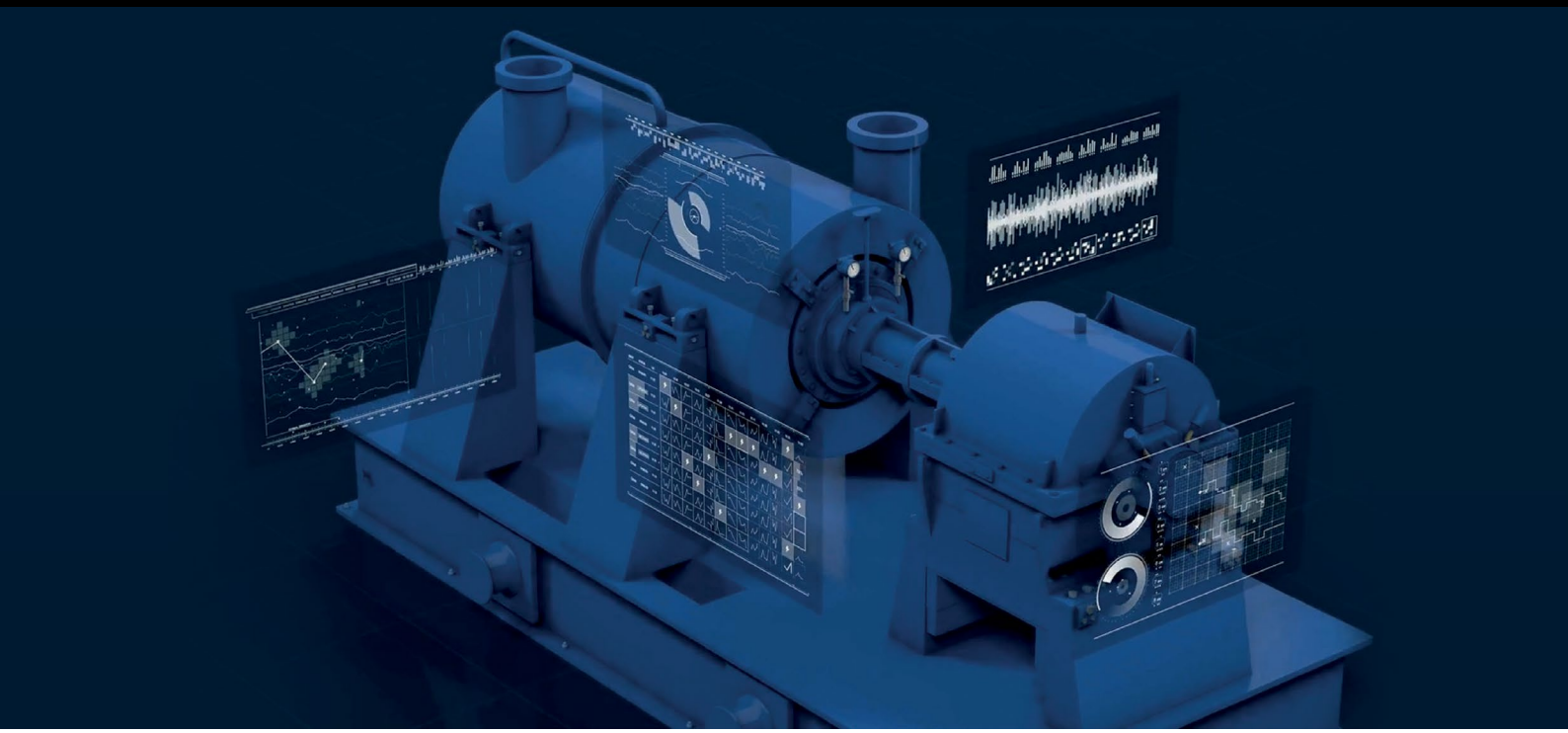
AspenTech's agents of change

Australian gold miner, Evolution Mining revealed in August that it had deployed Aspen Technology's Aspen Mtell plant monitoring software at its Mungari Gold Operations in Western Australia



The software mines historical and real-time operational and maintenance data to discover the precise failure signatures that precede asset degradation and breakdowns, predict future failures, and prescribe detailed actions to mitigate or solve problems via predictive and prescriptive maintenance.

Evolution Mining tested the Aspen Mtell software on multiple pieces of equipment at two of its key assets prior to the decision to deploy it, said Aspen Technology. It aims to prevent unplanned downtime and optimise operations at the Mungari plant.

Mining Magazine caught up with Jeannette McGill, Vice President and General Manager, Metals and Mining, Aspen Technology, to find out more about the solution and the evolution of asset management in mining.

Q Great result with Evolution Mining, what were the key requirements of that project and how did Aspen Mtell meet them?

Thank you. For us, it's really exciting to see the value of predictive maintenance coming through and the opportunity to have a variety of assets that we can execute on. Our approach is to run with pilots first so that the customer can feel comfortable with the software deployment and how the data answers a particular customer problem.

But speaking more broadly than just Evolution now, what we've found is gains in bringing hundreds or thousands of alerts down to three or four dozen coming through on various asset classes. The sheer capability of the software has really supported customers like Evolution.

Q How do you characterise the benefits of systems like these and pitch it at point for customers that it makes it compelling for them?

I'd start off by using the tagline that we use for Mtell. It's truly 'creating a world that doesn't break down'. Technology adoption always involves change, and what we're doing here is focusing on solving real-world maintenance and reliability issues that impact operations, as well as safety.

It is real world problems that we're dealing with on these mine sites. We do a pilot, the preproduction deployment, and this allows the customer a chance to see the benefits of Mtell before further commitment is required.

They get a chance to 'taste test' the impact. We worked with one mine that moved from calendar-based maintenance scheduling to prescriptive maintenance with Aspen Mtell and they were able to achieve a cost avoidance of US$2.1 million.

The results really speak for themselves in terms of cost benefits. But at the end of the day, it's about creating the world that doesn't break down and supporting real-world solutions.

Q What are key technologies that have helped predictive and prescriptive maintenance advance to the point now where we are today – past the conceptual stages?

Mining has been on a progression, an organic pathway. First, we were focused on detection of problems and constraints, then the next stage was around diagnosis and understanding what the problems were. Now, prescriptive maintenance is very much around prognosis capability. It's about bringing in data from existing pieces of equipment.

For this, we can use AspenTech's InfoPlus.21 to support that ability to bring in historical data. The other enablement is around networking technologies that have come of age and existing IoT infrastructure, as well as things like cloud capacity and edge computing. But at the end of the day, it's definitely been this maturity pathway, where we really started from a detection capability, then diagnosis, and now we've got the compute power to focus on prognosis.

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AspenTech CEO, Jeanette McGill

Q How would you say your area of asset management in mining has changed over the past five years?

For me, the process has become far more systemic. Originally, the technology was applied on either an isolated or case-by-case base. The mining sector didn't know where we could apply what and how. The maturity of the software technology has allowed for a systemic approach, being able to investigate and understand the full value chain and being able to tweak the value chain process accordingly with this emergence of data.

These asset management technologies now apply right across the mine value chain. And it's also enabled far more mining companies to move from being reactive to predictive, and to the prescriptive approaches for their assets because they can have visibility of the entire system.

Q Would you say asset management is an important area of nexus between mining and technology?

Absolutely, the metals and mining sector has always been very asset intensive. Now the 'sensorisation' of the assets allows for significant data to be produced.

Asset management is now essentially the glue that binds the production and technology together. It is a highly important nexus of mining and technology. Then, the opportunity to invest in remote operating centres and to relook at the work characterisation of operations is all being enabled by asset management.

Q How do you see the role of asset performance management evolving in the creation of the intelligent mine?

Asset optimisation becomes one of the key elements to the intelligent mine. Previously it eluded automation as it required continuous manual judgment and effort. But now what we're seeing is through the deployment of these APM technologies, we can enable intelligent autonomy.

So, the deployment of asset performance software definitely creates this technological step change, which will allow the mining sector to prosper down the line.

Q Where do you feel the mining industry is in its journey to asset management 4.0, and what are the barriers holding companies back from reaching it?

I think the global metals and mining sector is definitely on a progression path and a maturation cycle. Previously many of the new and revolutionary tools were what could be called technical novelties.

Now the technology ecosystem has evolved to become a fully intelligent decision support system. These optimised processes are trusted pathways towards autonomy. And those trusted pathways are actually what underpins successful digital 4.0.

We recently heard from an Mtell customer, during our OPTIMIZE 21 conference, that this software solution has been a change management driver resulting in a positive impact on business. Therefore, we see that it's not necessarily just about the technology at the end of the day, it' s that important tri-factor of technology and people as well as process. And we therefore see that through the adoption of asset management 4.0 is allowing mining companies to look at their entire operations differently.

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Q What are the ESG benefits of better asset performance management?

There's a dual challenge impacting the metals and mining operators globally. This dual challenge considers both the continued demand for raw materials to support a decarbonised future as well as the need for miners to meet the demand within a sustainable context.

APM supports the efficient and sustainable ways of utilising the fixed and moveable assets on the mine. Therefore, asset management definitely allows companies to service their ESG goals. What we're seeing is that APM driven data supports improvement in safety, it supports efficiencies resulting in the cleaner use of assets.

For us at AspenTech, we can also leverage some of the other capabilities that we have around engineering processes, such as de-carbonisation elements. All in all, AspenTech has both process and asset optimisation software that support companies to achieve the dual challenge of resource demand versus sustainability.