BLASTING EXPERT A TITLE-HOLDER IN THE EXPORTS HALL OF FAME

BLAST MOVEMENT TECHNOLOGIES HAS DEVELOPED A BLAST-PROOF SENSOR THAT CAN ACCURATELY MEASURE THE IMPACT OF A BLAST MOVEMENT. ***AUSTRALIAN MINING*** SPEAKS WITH CHIEF EXECUTIVE JACQUES JANSE ABOUT THE TECHNOLOGY.

BMT USES A UNIQUE ALGORITHM THAT DETECTS THE POSITION OF THE OREBODY BEFORE AND AFTER A BLAST.

The minimisation of ore dilution and maximisation of fragmentation in a blasting operation are two of the keys to unlocking value in a gold mine.

When a company has the right intel around a mine blast, it can ultimately and easily yield millions of dollars in value.

When the largest open cut mine in South Africa deployed a monitoring solution from Blast Movement Technologies (BMT) – a Hexagon group company – it generated $US2 million ($2.7 million) in value for the mining company.

Another open cut copper mine in Peru produced the highest yield (i.e. $US2.8 million) it had ever seen in a blast thanks to the BMT solution.

Altogether BMT has generated $US5.5 billion in value for mining companies around the world, working across commodities such as gold, copper, nickel, silver, zinc, platinum and lithium.

This monitoring system had a humble beginning, being developed out of a research project in the University of Queensland (UQ) in 2005.

The project was commissioned by Placer Dome (before it was acquired by Barrick Gold) to develop software that could model blast movement.

"In a narrow vein gold mine, for instance, an ore deposit could be two metres wide and it is normally hosted in very hard rock. But once you create a situation where you move the whole ore mass 10 metres away – as is the case with blasting – you wouldn't know where the deposit had gone to and you could lose it all," Blast Movement Technologies chief executive Jacques Janse says.

But after a few months of study, the UQ team came back with nothing. Janse says there's no formula in any textbook that can measure blast movement.

"Every blast is so variable, taking into account so many factors. One blast isn't going to be exactly the same as the next. There is no model that would be accurate enough to measure this," Janse says.

The persistence of the problem led to the idea of using technology that's capable of measuring the blast movement itself.

Today, the BMT blast movement monitor takes the size of a soft ball that can go 20 metres deep in an open cut mine. It is placed on the waste ore boundaries and has the ability to survive a blast.

"We use a unique algorithm to take its position before the blast and use the detector to move across the pile and get a coordinate of where the orebody has moved to," Janse says.

"We export that data to the software, helping mining companies unearth the orebody in the right spot and minimise ore dilution and loss."

Today, BMT has developed version six of that sensor, which delivers great results in terms of discoverability and detectability, as high as around 90 per cent.

In the iron ore space, the BMT solution has been useful to help miners avoid ore grade misclassification from a blast.

Janse says mining companies selling a type of iron ore blend consisting of a specific grade cannot afford making the mistake of putting the high-grade ore in the medium grade stockpile.

"In an iron ore mine, everywhere you dig is ore. But the same deposit can contain both high value and low value iron ore. This is where the BMT solution comes in," Janse says.

BMT's technology caught the attention of a mining technology company, Hexagon Mining, which acquired the drill and blast specialist in January.

The unique value blast chain fits right in Hexagon's blast planning and grade control software.

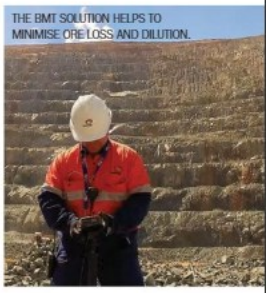
These software and hardware solutions together create a feedback loop that helps miners understand how to best design a blast and how it affects ore loss, dilution and fragmentation.

"Measuring is knowing. Modelling is guessing. In an environment as chaotic as a blasting operation, do you really want to guess where your orebody has moved?" Janse asks, rhetorically.

The solution has today become the standard across open cut gold mines, taking BMT to the Australian export hall of fame in November 2018, and helping deliver year-on-year revenue growth of 40 per cent.

Still, the company has continued to reinvest around 15 per cent of its revenue over the past three years to research and develop more robust and accurate detectors.

"We've got 130 customers in 42 countries, and we have a very close relationship with our customer base. We continually ask them to give feedback to us – we only develop and design things that they want and find useful," Janse concludes.



THE BMT SOLUTION HELPS TO MINIMISE ORE LOSS AND DILUTION.