



Innovation: the long game

BY BIANCA BARTUCCIOTTO

The point at which it became clear the mining boom was over for this decade was the same point at which Prime Minister Malcolm Turnbull turned his attention to the allusive term 'innovation'.

Mr Turnbull said Australia needed to spur on an "ideas boom" to take over from the resources boom.

What the rhetoric failed to recognise is that innovation, in and of itself, is merely a buzzword. If there is nothing to innovate, it is a meaningless term.

The application of the innovation agenda however, when applied to the mining industry, could pay off in spades.

In the past 10 years, the mining industry has contributed \$121.1 billion to the Australian economy and despite a dramatic fall in price, mining will continue to play a part in the future of the economy.

In the face of weakening demand, Australia will continue to export billions of dollars of minerals every year.

Whilst the current boom phase has ended, there are hundreds of economies in the world yet to go through the economic boom that China has experienced over the past few decades.

The future of the mining industry is bright, but innovation should still be on the agenda for Australian mining companies.

Companies are being encouraged to take this current trough as a time to find efficiencies and drive productivity so the next phase of the mining industry can be the most successful in Australia's history.

Change needed more than ever

Improving productivity is now the main concern of major mining companies, rather than cutting costs, according to CRC Mining Chief Operating Officer Kevin Greenwood.

He said as prices dropped, companies needed to initially cut costs to make themselves viable, but they were now changing the focus to increasing productivity.

"When the cycle dropped, the companies stopped spending money for a little bit and that lasted for a small period but then they really became creative about changing the way they did things," he said.

"If you don't change what you're doing then from a mining company perspective the cost of doing business will be too high and then at some point they will not be in business.

"Mining companies had to do cost cutting in the short term but that's not a long-term fix; in the long term it's about improving productivity on a sustainable basis.

"I think the majority of mining companies now are looking at how they can change their processes and improve productivity."

Mr Greenwood used the example of the coal industry as one sector that had suffered from low prices for a while. He said companies that had failed to drive down costs and increase productivity would now, more than likely, be out of business.

CRC Mining is a research centre that works on a membership basis with large mining and equipment players.

The organisation's research is member driven and allows the organisation to prioritise its work based on the needs of the company.

Mr Greenwood said innovation was a big part of the resources sector.

"Innovation is always important in the mining industry because we are consuming more and more commodities over time," he said.

"We have to constantly innovate to reduce the cost of providing those raw materials to the people using them.

"In the current climate we need innovation more than ever because we've had a long period of increased consumption based on China's fairly rapid growth."

Mr Greenwood said there was more interest coming from mid-sized companies.

"Because we are going to have an extended period of low prices, we will see [innovation in] a number of different areas," he said.



For the full interview with Kevin Greenwood, listen to episode one of the *National Mining Chronicle* podcast available at www.nationalminingchronicle.com.au.

Fostering collaboration

According to Australian Mines and Metals Association Senior Industry Policy Adviser Tristan Menalda, collaborations such as CRC Mining are a great example of what is needed in the industry.

"There is an increased focus on collaboration between industry, government and research organisations as all parties realise the challenges facing the research industry cannot be tackled by the resources industry alone," he said.

"Just one example is mining explosive and blasting systems provider Orica's research partnership with the CSIRO.

"For more than six years Orica and the CSIRO have engaged on technology development to improve productivity and performance in the mining industry, and importantly, progress these innovations towards commercialisation.

"The government has also demonstrated a commitment to fostering innovation in the resources industry, with the launch of a Mining, Equipment, Technology and Services (METS) Growth Centre in Queensland.

"The centre will focus on improving collaboration between researchers, investors, mine operators and the mining technology and service sectors to bring new innovations to the market.

"By increasing our focus on these collaborations now, the Australian resources industry will bolster its already



Kevin Greenwood.

favourable reputation as a destination for excellence in mining innovation into the future."

Mr Menalda said there were two key events forcing mining companies to look at their processes.

"Firstly, the mining industry is coming off a period of insatiably high commodity prices combined with strong global demand," he said.

"Today, mining profitability has transitioned towards a volume-centric approach, where all eyes and ears are focused on extraction, production and export levels. Innovation is key to driving this change.

"Secondly, as existing mines get older, operators are exploring new, innovative ways of mining the deposits.

We'll see an increasing demand for data analytics and computer-based skills in the resources industry.

"As a result, mining organisations are now placing increased emphasis on innovation throughout their entire life-of-mine model, from exploration through to decommissioning and closure and even through to how they finance and service their operations.

"Innovative techniques are being pursued to assist miners in extracting more high-grade deposits, more efficiently and cost effectively."

Mr Menalda said an example was the advancement in tunnel boring machines being utilised to more efficiently transition deep, open-cut operations to underground operations to get better value from the deposits.

"We're also seeing a greater shift towards remote operations and monitoring centres along with advancements in

robotics and mechatronics which will increase the use of autonomous and remote-controlled equipment such as trucks, bulldozers, drills and shovels," he said.

"Drone technology is also being explored, and like other forms of unmanned equipment, carries significant benefits in areas such as aerial surveying, but also in safety through the removal of employees from hazardous situations."

Mr Menalda said while new technology was being adopted this did not mean there would be no jobs in the future.

"The greater uptake in automation and remote operating, however, doesn't mean the 'human' side of the resources industry will be lost," he said.

"Securing the skills to develop and operate this evolving technology will be just as important as the technology itself, and we'll see an increasing demand for data analysis and computer-based skills in the resources industry.

"While it's typically linked to technology, innovation can be applied to drive productivity in many other ways.

"Resources employers are looking at every part of their businesses to identify better ways to work.

"This could be as simple as changing roster or shift patterns, or taking stock of the skills among their workforces to ensure the capabilities of employees are being utilised in the best way.

"Leadership also has an important role in driving innovation and productivity by effectively communicating the organisation's mission and direction during times of transition, and driving a culture that encourages and rewards innovative thinking."

In this issue of *National Mining Chronicle*, you can read more about innovation in the mining industry with our story on the Internet of Things and its application in the mining industry (pg 30).

Read about a new filter for recovering diamonds (pg 30), deep sea mining innovation (pg 26) and a new welding technology set to revolutionise the resources industry (pg 22). **NMC**