

2015: THE YEAR FOR INNOVATION

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Legal Briefings - By **Rebekah Gay, Partner**

2015 may be the year for innovation in the mining industry. With a challenging outlook, this traditionally conservative industry will need to recognise the value of innovation in securing a sustainable future.

In a recent Deloitte report, innovation was included the top 10 issues facing mining companies in the coming year, and identifies **innovation** as being central to the future success and sustainability of the mining industry.

As Andrew Shook, General Manager of Surface Mining & Automation – Technology & Innovation at Rio Tinto explained 'technological risk is something that the mining industry takes on very cautiously ...because it has got so much risk already in the ground and in the market'.¹ With a strong focus on production volume and safety the industry has been habitually reluctant to move away from 'tried-and true processes' particularly where mines are demonstrating and maintaining high profitability.²

However the mining sector has faced headwinds for several years, and the increasingly challenging conditions warrant a shift in strategy. Volatile commodity prices, geopolitical turmoil, declining ore grades, poor shareholder support and rising labour and maintenance costs continue to put pressure on leading mining companies to increase profitability. The well documented iron ore price decreases, down 40% in 2014 to its lowest level since 2009, underscores the challenges faced by the industry and the reasons why new approaches are seen as essential for future success.³

Heather Endie, Managing Director of Global Mining Standards and Guidelines group identified the industry's past reluctance to embrace innovation, commenting that instead "*every time the prices drop, companies cut back, usually starting with the technology and innovation department*".⁴ This may in part explain the fact that the mining sector has historically spent 80% less on technology innovation compared to the oil and gas sector.⁵ However, many voices in the industry, now recognise that in order for mining companies to return to a stronger position, investing in innovation, rather than scaling back such investment, is crucial. In fact, given the wider pressures on the sector, it is being said that this change needs to occur in 'radical leaps rather than incremental shifts'.⁶

An important step for the industry is to reconsider the ways in which innovation can be targeted to the diversified challenges it faces. For example, while the investment by some in the industry in research and development on automation and driver-less machinery over the past decade has been impressive and foreshadows a step-change in the industry's approach to innovation,⁷ companies could expand their focus on innovation to include systems for reducing energy intensity, increasing the use of information technology and embracing data analytics. Effective innovation can be more than merely enhancing operational performance through improving and developing new technologies. Mining companies should perceive innovation as having the potential to optimize business models in a holistic way. "*Innovation can reduce capital intensity, people and energy intensity and increase mining intensity*".⁸

In particular, innovative ways to collect, communicate and translate information is underpinning the rapid developments in mining – and as a result can increase productivity, improve predictive maintenance, safety standards and mitigate risk. As BHP Billiton's group head technology, geoscience, and engineering, Bryan Quinn recently emphasised, innovative use of technology can improve often underappreciated business areas, such as new resource discovery: "we can give our geos more time to carry out analysis on site, cutting lab times and giving us more time to access the data".⁹

Rio Tinto has implemented its 'Mine of the Future' program, in which mine automation systems collect information from all sources within a mine operation, which is then accessed and controlled from a central Excellence Centre. In this way, emerging technologies can utilise real-time data to monitor conditions at different locations, compare productivity, create models and facilitate faster decision-making.

While traditionally, the mining industry has also been reluctant to adopt technologies from other industries,¹⁰ Mark Cutifani, CEO of Anglo American, has emphasised that mining companies need to look to other successful industries such as petroleum, aviation and manufacturing for solutions to existing problems as successful innovation can involve adapting existing technologies to their particular needs.

Aside from the obvious business advantages flowing from an increase in innovation, the intellectual property that inevitably stems from innovation is also a valuable asset that can be used strategically to generate significant benefits for mining companies, in ways mine operators have traditionally left to technology suppliers. Ensuring new innovations are adequately protected enables companies to maximise the benefit of those innovations, including by harnessing the potential for income generation through licensing, by preventing others from procuring the competitive advantage the technology provides, and by gaining access to other technologies through favourable cross-licensing arrangements.

ENDNOTES

1. [Driving innovation with confidence.](#)
2. As Dr. Joerg Benndorf, Assistant Professor of Resource Engineering at Delft University of Technology in the Netherlands - [Mining & Metals + Internet of Things: Industry opportunities and innovation.](#)
3. [BHP Plows Ahead on Iron-Ore Production.](#)
4. [Mining & Metals + Internet of Things: Industry opportunities and innovation.](#)
5. Mark Cutifani, Anglo American - [Mining & Metals + Internet of Things: Industry opportunities and innovation.](#)
6. Deloitte article 12.
7. Rio Tinto 'The Mine of the Future' program.
8. Deloitte Tracking the Trends 2015.
9. Australian Mining, 'BHP's five stream focus: The push for innovation and automation', 13 February, 2015.
10. Deloitte, 9.

MORE INFORMATION

For information regarding possible implications for your business, contact [Rebekah Gay](#).

KEY CONTACTS

If you have any questions, or would like to know how this might affect your business, phone, or email these key contacts.



REBEKAH GAY
PARTNER AND JOINT
GLOBAL HEAD OF
INTELLECTUAL
PROPERTY, SYDNEY
+61 2 9225 5242
Rebekah.Gay@hsf.com

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