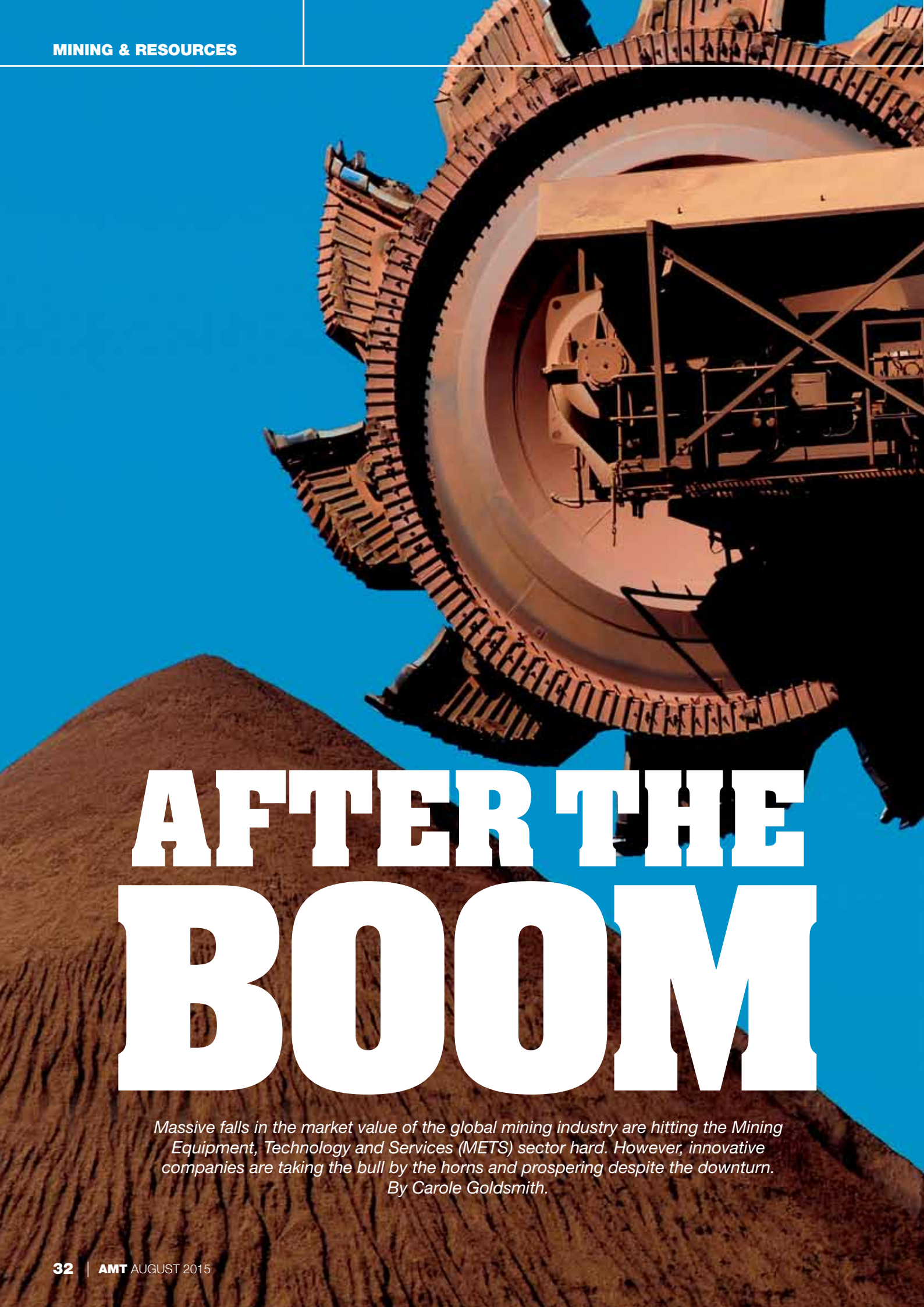

AFTER THE BOOM

Massive falls in the market value of the global mining industry are hitting the Mining Equipment, Technology and Services (METS) sector hard. However, innovative companies are taking the bull by the horns and prospering despite the downturn. By Carole Goldsmith.

Released in June, PwC's 12th annual global report, *Mine 2015: The Gloves Are Off*, painted a gloomy picture for the global mining industry. The overall market values of the world's 40 largest mining companies plummeted by US$156bn last year, a 16% fall, while net profit was down by 9%. The financial results were driven by continued pressure on commodity prices, with iron ore, coal and copper prices falling 50%, 26% and 11% respectively throughout 2014. The slide has continued into 2015, with a 12% drop in the price of iron ore in the first third of the year, and a 5% and 6% drop for coal and copper.

How is this downturn affecting the METS industry in Australia? According to Christine Gibbs Stewart, CEO of Austmine, the fall is having a highly detrimental impact. Throughout April, May and early June, Austmine, Australia's peak body for the METS industry, surveyed 432 businesses in the sector.

"Our survey asks the question, what impacts has the mining downturn had on your company?" says Gibbs Stewart. "Responses reveal that in the past 12 months, 79% have had a decrease in revenue, 61% a decrease in profitability, 59% have lost customers and projects, and 52% said they had decreased employee numbers. In terms of diversification, 54% are also supplying the oil and gas industry as well as the mining sector, and some are moving into other areas such as agriculture, defence and infrastructure."

For smaller METS companies, ongoing cash flow is a major issue affecting their business. Gibbs Stewart explains that mining companies are traditionally slow payers: "Financing growth is a key challenge for the small-to-medium METS businesses. Survey responses show that for 22%, finance is a challenge and 20% said that lack of finance is delaying or preventing their export growth."

The Austmine study also revealed that 66% of the respondent companies are exporting, with some 49% of companies supplying to Indonesia, and 40% to New Zealand. Gibbs Stewart says that the Australian mining sector is very developed and conservative in nature. "With new mines being developed in Central and South-East Asia, as well as South America, there are increasing opportunities for METS companies to export their products, services and technology there."

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Austmine CEO Christine Gibbs Stewart.


The Python is an award-winning, environmentally conscious mining plant solution.


Gekko's InLine Leach Reactor uses fast reaction kinetics to treat a diverse range of ore concentrates.

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In this regard, Gibbs Stewart reports that the feeling is very positive regarding Australia's recently signed free-trade agreement with China: "China has huge export opportunities for our industry and so has India. But the Indian market for Australian METS companies has proven to be much more difficult, because of its strict regulations on market entry."

A strong focus on collaboration is Austmine's strategy moving forward. It already works closely with mining companies and Austmine conducts many events at which mining speakers talk about their project and their supplier requirements to member companies. Future collaboration will apply to working relationships with miners, other METS businesses, R&D organisations and government. Gibbs Stewart believes the forthcoming Industry Growth Centre for the METS sector, part of the Federal Government's Industry Innovation and Competitiveness Agenda, will be a positive step in bolstering collaboration.

"The METS Industry Growth Centre currently being developed will provide a key platform for companies all across the mining value chain to collaborate," she says. "We all need to work together to develop a sustainable and productive mining industry for the future."

Austmine's Chairperson, Elizabeth Lewis-Gray, has been appointed to chair the METS Growth Centre. In her day job Lewis-Gray is the Co-Founder, Chairperson and Managing Director of Gekko Systems, one of a number of Australian companies that are forging ahead by supplying innovative advanced equipment, technology and services to the mining industry.

Gekko Systems – Modular mineral processing

Headquartered in Ballarat, in regional Victoria, Gekko is a world leader in gold, silver and mineral processing and low-energy mining solutions. Lewis-Gray, a stockbroker by profession, founded the business in 1996 with her husband Sandy Gray, who as Technical Director is responsible for the company's technology innovations. Since its establishment, Gekko has grown very quickly, with offices now in Perth, Johannesburg and Vancouver, as well as agents for its products in Peru, Ghana, Argentina and Brazil. It employs 120 people, 95 of which are based in Australia, designing and manufacturing modular mineral processing plant for the global mining industry.

"At our Ballarat manufacturing site, we build entire processing plants for our clients, and our core Python processing units sell for between $10m and $20m," says Lewis-Gray. "It's our innovative low-height modular design that sets us apart from other companies and makes our product very attractive to the mining industry."

Traditional mineral processing plants can be up to seven stories high, often resulting in complex and costly maintenance and health and safety issues. Gekko's low-height, skid-based system is ideal for companies that wish to operate processing plants underground or in remote locations, or to pre-concentrate satellite deposits. Increasingly miners are also considering the benefits of numerous smaller plants operating close to the mine face rather than the traditional single large processing plant.

"Currently we are building a plant to go into Canada's Arctic Circle for a gold mining company," Lewis-Gray adds. "It is required to operate in a small footprint, with a shed, and will have minimal environmental footprint on the location."

Gekko was initially founded to market its first product, the InLine Pressure Jig (IPJ). The IPJ rapidly and efficiently pre-concentrates high-value ore particles using gravity separation, mechanics and fluid dynamics to separate the lighter gold and other mineral particles.

Growing demand for energy efficient devices spurred the company to modify the product and advance traditional processing equipment. Reducing the carbon footprint of processing equipment is also high on Gekko's business strategy.

"One of the advanced products that we've developed is the InLine Leach Reactor," Lewis Gray adds. "That treats the gold, silver and sulphide concentrates we produce from the IPJ and other concentration devices, and leaches it chemically into a liquid. Then, using electrowinning, it converts it into a gold bar."


A wear plate being cut at Davies WPS' Esperance manufacturing facility

Gekko largely sources its components and other supplies from within Australia, with electronics and electrical components often imported. Among its mining clients are global giants such as Gold Fields, BHP, Barrick and Newcrest Mining. Gekko exports a lot of what it manufactures into West Africa, in particular Ghana, and also into South America where mining sites are in abundance. All its exports are shipped out of the Port of Melbourne, Australia's busiest container port.

When asked about the decline in the global mining industry affecting Gekko's sales, Lewis-Gray answers: "We certainly work in a sector where we have highs and lows. This year is okay, but last year was difficult, and next year will be strong. When times are tough, you need to develop a business strategy that provides the platform for the next stage of growth."

In her role as Austmine Chair, Lewis-Gray is in contact with many other METS companies. She says that the industry is facing very difficult conditions, particularly with the decline in the coal and iron

ore mining industry. “Wages were very high at the peak of the mining boom. Now businesses are downsizing with cost reductions across the board, which together with the declining Australian dollar is essential to remain competitive.”

As Chair of the forthcoming METS Growth Centre, Lewis-Gray advises that the Government has identified the industry as one of five key growth sectors. “The METS Growth Centre, which will be operating from the end of August, will develop a strategy for the Australian METS sector and examine how its research will be prioritised.”

Davies WPS – Improving safety and lowering costs

Davies Wear Plate Systems (Davies WPS) CEO Rod Houston describes the company as: “An innovative supplier of unique wear management products. These enable faster, safer and lower costs of installation and removal of wear plates across the mining industry.”

Speaking from the company’s Perth headquarters, Houston explains that Davies WPS has been delivering customised wear plate solutions for many years. Establish over 20 years ago as Davies Engineering, the company was founded by Brian Davies, now its Technical Director.

“Brian has always been the key innovator of the business and he has developed many customised solutions for the mining industry across Western Australia,” says Houston.

The company’s manufacturing and product development site is at the beautiful WA coastal town of Esperance, around 700km south-west of Perth and 400km south of Kalgoorlie, where a number of mining sites are located. The business employs 16 people including a full-time R&D team who work on developing new ways to design, construct and maintain wear management systems for mining operations.

Davies WPS is able to access a national network of approved steel wear plate suppliers along with Davies’ internal manufacture of attachment systems, enabling supply to clients in Australia and globally. Although its export market is quite small right now, Davies WPS plans to increase its export market opportunities in the future.

Houston’s appointment as the company’s inaugural CEO just over six months ago is part of a drive to take Davies WPS’ innovative products to a larger national and global market. He has over 27 years of experience as an engineer and business leader in the commercialisation of innovative products and processes in the automotive and resources industry.

He explains how wear plate systems are used in the mining industry: “At iron ore mining sites, large mined rocks containing the iron ore are picked up by trucks and tipped into the ore processing fixed plant. All the ore fixed plant equipment, where the iron ore is sliding over, utilises sacrificial wear plate surfaces. With the constant movement of iron ore rocks on these surfaces, the wear plates wear out and need to be changed-out at varying intervals. The downtime and labour costs from the wear plate change-out can be reduced by up to 80% using the Davies WPS single-sided wear plate attachment system.”

With the constant wear from the various ores, wear surfaces need replacing as quickly as three months or can last up to three years. At that time operators need to shut down the fixed plant to do repairs and replace the wear plates. That is where Davies technology comes in.

“Using the Davies wear plate system, the removal and installation of the wear plates is a much faster and safer process with all the work carried out from the wear side only,” Houston explains. “No more struggling to remove the standard attachment systems which can require external scaffolding and oxy torches to remove.”

Over the past ten years, Brian Davies has developed an innovative new bolting system to change over plates in a much more efficient way than they traditionally have been replaced in the industry. Houston says the Davies WPS EzyLock System enables quick single-sided installation and removal of wear plates, minimises maintenance costs and increases mining operations efficiency and safety procedures. This is resulting in a 50% reduction in labour costs and 80% less

Davies WPS’ EzyLock and Taper-T single-sided attachment products.

downtime. The EzyLock System, as well the company’s range of other patented bolting and locking wear solution products for their wear plate systems, are all manufactured at the Esperance manufacturing site.

The mining wear plate business is a $300m industry in Australia, according to Houston. Davies WPS is progressively winning part of this business by supplying its wear plate systems to an ever increasing number of leading mining companies, including the big four – Fortescue Metals Group (FMG), Rio Tinto, BHP and Roy Hill.

“They have all seen our technology and the benefits of changing wear plates quickly, so reducing costs and providing a safe work place is of great interest to mining companies,” says Houston.

Among the many projects it is involved in, Davies WPS is providing over 400 tons of wear plates and 20,000 EzyLock Systems to the massive Roy Hill iron ore mining project currently being built in the Pilbara region in northern WA. It has also provided FMG’s $US3.5bn Solomon iron ore project, also in the Pilbara, with the EzyLock solution for five stockpile hoppers, and a single-sided wear plate that enables optimised design of feed chutes with no need to access outside walls. According to FMG’s website the Solomon site has three crushing hubs, a 125MW power station, its own airstrip and three camps to house 3,000 people.

When asked what the challenges are for small-to-medium companies supplying to large mining giants, Houston responds: “One of the biggest challenges is to keep the cash flow moving. Although initial deposits are paid for the products, the bulk of the money is not paid until we have supplied the entire wear plate systems. You need your working capital carefully up front.”

What should the Federal Government be doing to assist the METS sector? Houston suggests, “The government needs to be encouraging innovation. Australia is not a low-cost country, but we are a smart nation. By developing innovative technology for the mining industry, the METS industry can continue to be competitive globally.”

www.austmine.com.au www.gekkos.com www.davieswps.com www.business.gov.au/IndustryGrowthCentres

Close-up of installation of EzyLock from the wear side