



Two-pronged approach to frontline innovation

A recent Innovation State of Play report surveyed companies across the global mining industry and found leading companies were twice as likely to believe safety innovation would deliver high value. The report further found that even within fast-follower companies, frontline leaders were eight times more likely to believe safety innovation would deliver value and were investing 10 per cent of their energy to pursue it.

Safety technology company rerisk said the report confirmed miners were increasingly discovering the extraordinary value buried on their frontlines and opening a new frontier of safety innovation to capture it.

Until recently, safety innovation focused on the technologies used by corporate oversight personnel, including the databases and analytical platforms required to store and report safety data.

But the combined introduction of cloud computing, smartphones and remote connectivity provides miners with an opportunity to better support their frontline workers in the safety process. rerisk Chief Executive Officer Jaqueline Outram said this new frontier would deliver the richest rewards.

"It's simple maths - if you're going to implement a system that reduces risks and costs, do you want that system to serve your handful of oversight people or your thousands of frontline workers?" she said.

Automation and robotics should drive a step change in frontline safety by removing people from harm's way. But when, and the extent to which, a company forecasts this step change will occur impacts both the urgency and longevity of frontline safety technologies.

"We're not trying to stop the bots," Ms Outram said.

"But even the most optimistic scientists think it'll be 10 years before people are removed from operational norms and 20 years before they're removed from operational breakdowns and exceptions. No business can wait that long, so in the meantime we need to give the frontline the technologies they need to reduce risks and maximise efficiencies."

As with any new frontier, the pioneers must navigate some new terrains, including choosing the right technology for their frontline workers. Ms Outram claimed the journey was smoother for companies that followed two key principles.

Solve the problem

Most frontline safety technologies make it easier for oversight personnel to create and issue digital templates for front line workers to complete. But Ms Outram said that was not the problem. The problem was the difficulties

frontline workers encountered when completing the templates.

"Frontline workers navigate infinite combinations of tasks, risks and controls every day," she said.

"You can't predict every combination in advance, so you need to focus on enabling them in real-time. The rerisk back-end uses enterprise hierarchies and sophisticated logic to automatically inform and guide the frontline just when they need it."

Most frontline safety technologies are also compliance centric, perhaps because digital checklists are relatively easy to develop. Ms Outram said while compliance inspections would remain necessary, companies should first seek to enable frontline workers.

"If we've concluded our compliance inspectors need memory prompts, doesn't it make sense our frontline workers could use them too?" she said.

"Why not make the memory prompts inherent in their existing templates instead of making them complete another standalone template?"

The rerisk technology includes searchable and expandable hazard maps to prompt frontline workers when completing their pre-work risk assessments and permits.

Standardise

Many companies believe safety templates include valuable intellectual property, but Ms Outram said bespoke templates and technologies increased risks and costs.

"At the end of the day, all safety templates are developed from the same standards, so it's unlikely the value of intellectual property outweighs the full costs of a bespoke system," she said.

"The biggest cost arises from the need to induct suppliers with how to use the bespoke system or worse, inhibiting supplier competition."

Although rerisk offers companies an option to share templates and technologies, Ms Outram said this thinking didn't extend to integration efforts or cloud infrastructure.

"We can deliver turnkey solutions, but we also encourage clients to leverage their in-house capabilities," she said.

Regardless of the potential terrain, it's incumbent on the mining industry to solve the challenges frontline workers are encountering when preparing to work safely.

"In the least, our frontline workers will be safer and our shareholders will be simultaneously rewarded" Ms Outram said. **NMC**

Greater variability and security

Enerpac's new sliding reaction arm enhances the safety, flexibility and efficiency of its electric torque wrench, which already won Australian Industrial Product of the Year in the Manufacturing Monthly 2017 Endeavour Awards.

The reaction arm - which fits the nationally distributed models ETW1000, 2000 and 3000 in one model and the ETW6000 in a second - is suited to applications such as the replacement of mill liners on mining and bulk handling sites; track, road and rail undercarriage, wheel and shovel maintenance; turbine bolts, tower segments and turbine casings and pipe flanges, valves, manway covers and pressure vessels.

Enerpac Territory Manager Western Australia Bert Heinrich said the new sliding reaction arm was designed for applications where the distance to an adjacent reaction point or bolt centre was widely spaced and uneven, making it difficult to utilise standard reaction arms.

"The new sliding reaction arm is ideal for using to react the tool of a neighbouring bolt or nut head, especially where the centres vary," he said.

"The black handle locks the socket position with a simple clockwise quarter turn of the hand. To unlock and slide again, simply quarter turn anticlockwise.

Above all other qualities, one major benefit for operators is the element of safety.

The two sockets mounted on the sliding reaction arm engage with the bolt or nut heads, meaning there is no pinch point injury possible between the operator's hand and the tool or work piece.

"The other main benefit is its infinite variability," Mr Heinrich said.

"It can be customised to suit different bolt centre lengths and centres, making the tool safer and more efficient in a huge range of applications."

The electric torque wrench includes a high-speed continuous rotation, which allows it to perform the job faster than manual methods and it is built with a low friction planetary gearbox to minimise wear and extend uptime.

Enerpac National Bolting Manager Andrew Marsh said the operator could input a nominal torque value followed by a specific angle of rotation, allowing for functionality, efficiency and ease-of-use.

"Each tool is performance tested and shipped with a factory calibration certificate to optimise torque accuracy and repeatability and to facilitate traceability and safety compliance," he said. **NMC**



Enerpac's electric torque wrench with sliding reaction arm.