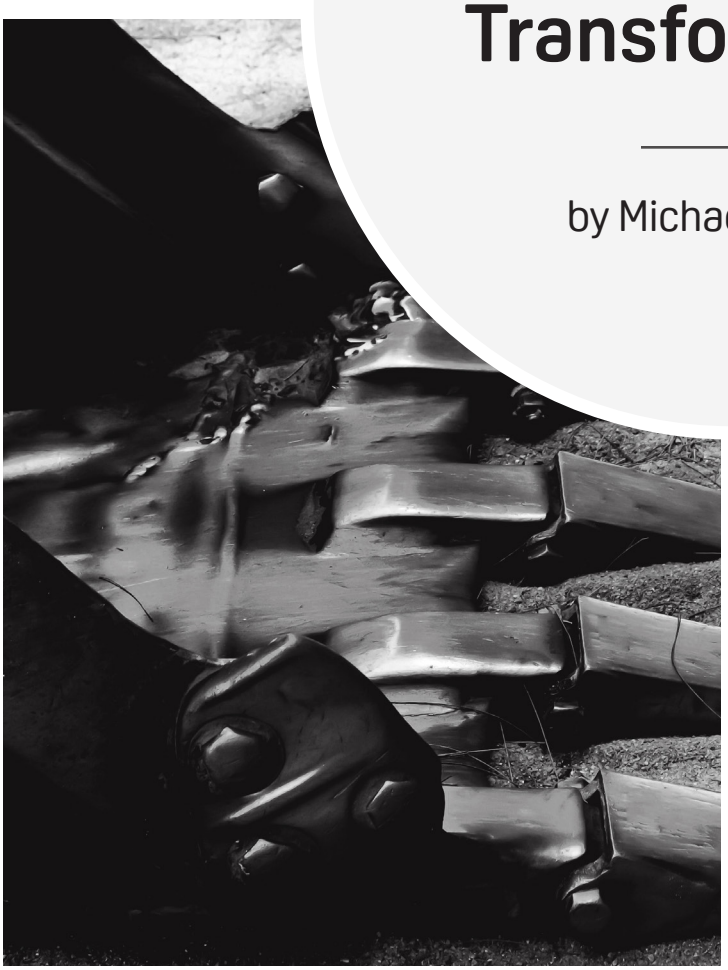
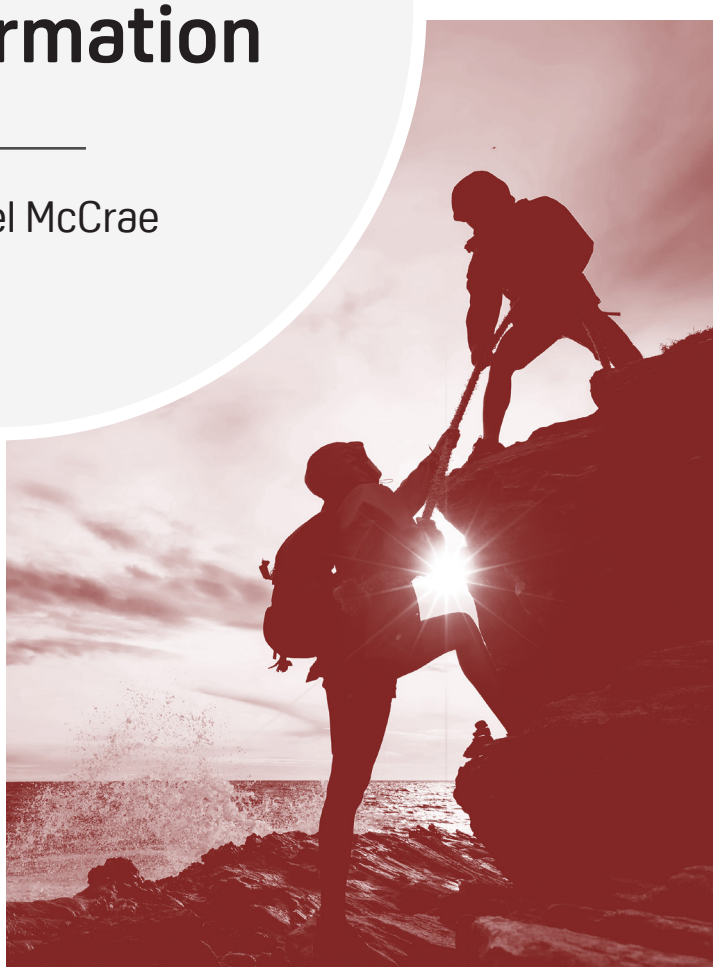
Q&A
Leading Digital Transformation

by Michael McCrae





Q&A

Q&A with McKinsey's Richard Sellschop: Leading Digital Transformation

A mining company that wants to transform its operations through digital adoption has to stop equating the work with past capital acquisitions, says Richard Sellschop, partner at McKinsey.

He warns that digital work should be looked at as a holistic transformation as it's not just about the technical implementation.

"If you're building a new pump station, you can put that on a Gantt chart and understand exactly what needs to be done: how much concrete needs to be poured and what day," says Sellschop, who was interviewed at PDAC 2018 in March.

"It's a bit different in digital because you're figuring out user requirements as you go. You are developing more of an embedded solution within the organization. There's a bit more of a journey of discovery."

McKinsey is a consultant to the mining sector. Its MineLens service benchmarks miner productivity against industry peers.

Interview is edited for clarity.

Q: What is the state of digital transformation in the mining sector?

A: There's a lot being said about digital in the mining space of late. There's a number of buzz words being used. When we talk about digital, we're really talking about the full range of innovations: technology, advanced analytics, digital, and another half-dozen other words I can mention—techniques that can really be used to drive improvements in productivity. So, it's bringing this collection of technologies and opportunities to bear in our industries.

Q: When a company acquires a new piece of software or hardware, how do you drive adoption?

A: Bringing in a new piece of software and hardware is only part of the challenge. We've learned over the last decades what it takes to actually transform performance in an operation, and it's much more than a technical solution. This is why we talk about transformations, not just a technical implementation. You've also got to think about what processes need to change. How does the organization structure need to change? What capabilities do we need? We like to think about it as a holistic transformation and not just the installation.

Q: Can you describe some of the steps that an organization needs for a successful digital transformation?

A: There are a few things I would stress in terms of bringing the organization along on a digital transformation. One is that you really do need senior team alignment at whatever level that is within the organization. It could be mid-level. It could be at a corporate-wide level. You still need senior team alignment. The CFO has got to be on board as much as the CEO and the rest of the leadership team. That's one.

Second is understanding where to focus. Where is the value? Digital transformation is not generally done for altruistic purposes. It is done because it's going to help drive productivity, costs, and safety improvements. We see a lot of our clients doing a good job on the heat mapping where the value is. How do we meet the objective? What is the logical path?

Third is really understanding how we are going to set up the organization to do this successfully. A lot of people don't like ideas when they feel like they were invented by somebody else. There's a "not invented here" syndrome in mining. How do you get around that?

And finally, I would say, how do you make the funding work? Many digital projects are different than capital projects. If you're building a new pump station, you can put that on a Gantt chart and understand exactly what needs to be done: how much concrete needs to be poured and what day. It's a bit different in digital because you're figuring out user requirements as you go. You are developing more of an embedded solution within the organization. There's a bit more of a journey of discovery.

Q: Can you group the types of digital transformations? What tools are companies implementing?

A: A wide range. What works in Western Australia is not necessarily going to work in mines in Peru or Canada. What are the relative cost drivers? What are the social pressures? In some places automation of haul trucks makes perfect sense. In other places it's the last thing you're going to do.

We're seeing a lot of people experimenting with things like how do we use more automation, or how do we reduce variability in our process by actually bringing automation into drilling a production drill hole or an LHD truck. We've seen people start to think about how we use consumer electronic devices to actually bring mobile into the professional workplace so that you're not burdened with paperwork orders.

You're starting to see AI being used in some quite interesting ways within processing. What's really exciting is a controller-type operation within concentration plants to drive up yield. That's a very exciting and high-value area. We're also seeing a lot of digital transformation in maintenance as well: how do we predict failures better?

Q: Is there any part of the mining sector that is leading the charge? Are large-cap miners further ahead than mid-cap or juniors?

A: It's a little bit of all of the above. Some large mining houses, such as Rio Tinto and BHP, are pushing hard in a very constructive direction. They are inspirational examples of what can be done. We are also seeing some mid-caps doing some very interesting work. Codelco in Chile is doing some fascinating work on the remote operating centers. We see Barrick Gold being quite bold in their vision of what's the pace and scale to move at. Generally, it's on the mid-cap or larger company size where there's enough bandwidth to think about a bold vision. There's also enough of a balance sheet to make investments with and enough bandwidth to think about whom do we partner with and how do we get this done.

Q: If companies are embarking on a digital transformation, I assume people are worried about their jobs. How do companies cope with these concerns?

A: The nature of work will be changing. Some jobs will no longer be as prolific as they are now and some new jobs will emerge. It's hard to know exactly how it's going to play out, and the best analogy I can think of is if you were to jump back 140 years to rural England and think about being a farrier. There's not going to be a long-term career path putting shoes on horses. New jobs emerge.

As we stand here in 2018, I don't think it's possible to fully understand what all the new job categories are, but for sure we know that there'll be more data scientists in mining. There'll be more software developers in mining and there'll be more data architects in mining.

I'm also hopeful about what happens in terms of the overall growth of the industry because we look at other meta trends and these affect mining too. What's going to happen with electrical vehicles? What's going to happen with copper? I hope that mining jobs will have very good opportunities for the career progression of individuals who are doing them.

Q: How does mining rank compared to other industries in terms of how far ahead it is with digital transformation—the adoption and digital tools?

A: Compared to other industries, mining is certainly making some good strides, but other industries—especially more consumer facing industries—have been leading the way in terms of this broader topic of digital. How does mobile get used? How do you interface with customers? How do you use AI? There's some real inspiration in the area of consumer technology where cost is dropping all the time and performance is improving all the time. Using those technologies in an industrial environment, even a harsh environment like underground mining, is one that we'll see take place.