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# Introduction



At a time when the greatest end-to-end impact on operations is the rate of technological disruption and change, a key question for executives is: who will be running your mine in the future? Resources are significantly more difficult to find and extract, and successful companies are increasingly those that embrace disruption, transform practices and invest in technology—all while being swift about it. But while these forms of innovation build business resilience and overall organizational capacity for adapting to rapid change, a key gap in the mining sector remains the impact of these changes on talent attraction, development and retention.

In this second report in the Deloitte-NORCAT series on key trends in the mining industry, the focus shifts to the people equation. It examines where investments in innovation and technology are having an impact on the work, workers and the mining workplace, for both front-line employees and management. More importantly, it provides an approach to talent acquisition and retention that organizations can use right away to identify and address these impacts.

Indeed, the Future of Work in the mining industry is here and continually evolving, and in ways where traditional methods of managing cycles, disruption and change no longer suffice—including waiting out markets until prices go back up, and finding ways to defer investment in technology. Drawing on recent research, this report has earned the view that in two to three years, significant changes already will have happened, and the Talent Approach outlined will help executives and senior management tomorrow by pointing to key areas of strategizing they can begin executing today.

*“The difficulty lies not so much in developing new ideas as in escaping from old ones.”*

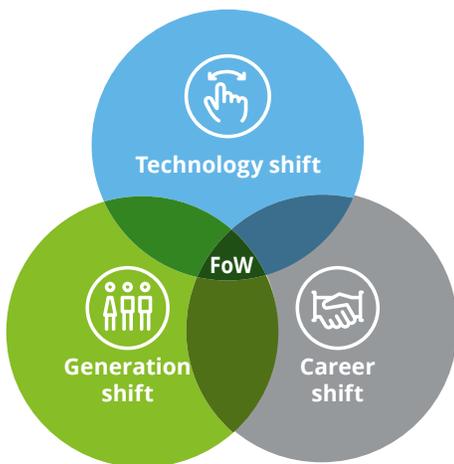
**John Maynard Keynes**

# The Future of Work in mining

“Everything written and developed on the Future of Work is very theoretical. What businesses want and need is: ‘What do we do about it now to prepare our business and leaders?’”

**Heather Stockton,**  
Partner and Global Future of Work  
Leader, Deloitte.<sup>1</sup>

## Drivers shaping the Future of Work



As the Future of Work (FoW) continues to emerge as a dominant focus across the sectors, noise to signal ratios remain high and the concept can seem ill-defined at best. In the mining industry factors contributing to the shift in the mining work, workforce and workplace can be summarized across three drivers:

**Technology shift**—Technology has never been so extensive, interconnected and inexpensive, helping to lower operating costs and making some work less dangerous—in the use of remotely operated equipment in underground blasting, for example, or in just decreasing overall equipment downtime since workers can continue to operate machines remotely and from a safe distance.

Big Data is also increasing the amount of information available for real time decision making, allowing mining companies to successfully adopt and adapt to technological change.

At the same time, however, investment in technology is not simply about acquiring the latest apps and/or recruiting more people from the gaming or “joystick” generation—technology shift is ultimately about making digital tools core to an operation’s mindset and integrating them in the overall flow of the work and workplace.

Furthermore, generic training and development programs that provide fundamental knowledge of how this technology works, the skills to operate equipment, trouble-shoot technology and install equipment in an underground mining environment simply don’t exist. To make incremental real-time decisions in their roles, a new generation of workers will need to be trained—beyond the sales and implementation content from the OEM’s.

**Generation shift**—For an industry that has historically been perceived as very traditional and structured, mining companies now must also appeal to a dynamic generation. In Canada, the mining industry is on the verge of undergoing a human capital transformation unlike at any time in the industry’s history.

At the same time, an ageing workforce, pending labour shortages, continued development in rural/vulnerable communities, as well as significant investments in emerging and innovative technologies, are driving the need for new and innovative training and development programs to educate miners on the “new world of work.”

Here, the industry will need to continue building new kinds of partnerships, including with educational institutions and other stakeholders such as NORCAT to ensure new and existing workers are up to speed on the efficient, productive, and safe use of new technologies.

**Career shift** —The very nature of careers is changing, with job and career-hopping the new normal, and the half-life of skills pegged at roughly 5 years. This will continue to have an impact on lower skilled workers who need upskilling. It will also complicate the recruiting of “gig economy” workers who arrive with virtual reality and AI-related skills and who perceive company “loyalty” as measured in months, not years.

For the mining industry, a key challenge will be helping frontline employees become “protean” workers—where they too shift to self-directed careers and embrace upskilling, and where companies will be challenged to find a balance between managing their resources internally as well as closing the skills shortages through outsourcing.

# Drilling down: further impacts on the mining organization



Research suggests that upwards of half of all current jobs for frontline workers will be lost to automation and other forms of technological advance, putting even more pressure on organizations to ensure they remain competitive. In many ways, however, the concern is not so much about frontline workers being able to adapt and keep pace with disruption and changes to work, but around the organization's ability to adapt along with them.

Ongoing and deeper awareness of the shifts described above—and how they are redefining the Future of Work itself—can be seen as having four key implications across the demands of work, workers and the workplace:

**Technological proficiency will be preferred over transactional work**—transactional work is highly repetitive, has defined rules and dependencies and requires minimum cognitive effort from the worker. Automation means simple decision making involving these tasks will be progressively replaced by robotic process automation and cognitive assistants, creating

a more responsive, safer and collaborative work in everything from accounts receivable to manning particle-mapping drones at the rock face. At the same time, proficiency will no longer be negotiable, and the days where a mechanic is unable to complete a repair or do maintenance due to unfamiliarity with the equipment and/or its software are increasingly numbered.

**Open talent economy will increase access and competition**—the open talent economy means increased access to talent pools that are transparent, collaborative, rapid-response and borderless. Or, as put in a recent Deloitte report on the open talent economy: "What the open source model did for software, the open talent economy is doing for work."<sup>2</sup> However, for an industry already struggling to attract people entering the workforce, mining companies will remain challenged by increased competition for contract and full-time employees.

**Diversity as a "check the box" initiative owned by HR is over**—fairness, equity, and inclusion are now CEO level issues where it's not simply about having diverse members

on a team but ensuring there is diversity of thought around the table. It's about bringing the right people together to solve a problem, ensuring transparency in the process, and allowing everyone to have their voice heard—particularly when mining suffers a glaring lack of gender diversity from entry-level to corporate and board positions.

**The workplace will become an increasingly fluid concept**—increasingly, places of employment will be tempered and textured with altered work flows and interfaces, particularly where tasks are completed virtually or where the work itself is virtual in its entirety (e.g. remote/telework). Such streamlining, however, also means on-demand access to information—such as constant requests for time and labour-intensive operational and financial reports—while organizational structures, culture and technology implementations in general will be even more critical to a company's ability to respond to ongoing shifts in the overall business and operational contexts.

“Through the eyes of a young worker, having a job where I can make enough money to take the money discussion ‘off the table’, improve mine safety and productivity, work with technology that embodies ‘game controller’ fundamentals, and work in an urban setting close to a good coffee shop...yeah, I want to work for that company because they ‘get it!’”

**Don Duval, CEO, NORCAT**



To ensure competitive advantage, organizations need to understand and reflect not only the changing nature of work itself and the values of their emerging workforce, but to tailor their workplaces accordingly—starting with radical shifts in talent acquisition, where attracting workers to remote mine sites will shift from a reliance on bonuses and travel perks and instead become more about competing for workers looking to live in urban environments where flexibility is a top priority. Increasingly, then, management’s role will be to help prepare employees by upskilling them not for repetitive work but more complex tasks where skills are transferrable across

tasks and roles—such as remotely operating machinery as well as a system’s real-time efficiency metrics.

Put another way, management requires something of a mindset shift that turns, for example, not on mere awareness that learning at work is the number one reason millennials choose the company they work for, but on the company’s ability to provide these opportunities in order to attract and retain their top performers in the first place. It means managers need to future proof the work, their workers and workplaces by reviewing talent approach strategies with all of the forces and factors described above in mind.

## Industry perspectives

**Deloitte and NORCAT recently connected with leaders in the mining industry who are living and creating the change unfolding today; this was to complement Deloitte and NORCAT’s internal research and perspectives with external industry leaders across a variety of stakeholder groups.**

**Here’s an overview of these leaders’ comments and concerns regarding the Future of Work in mining:**

Mining leaders were remarkably consistent around a number of key themes and issues—including the safety, efficiency and engagement of workers as a top priority, and where attracting people with the right skills for the future of mining will be paramount, requiring different employment offerings and experiences than are currently in place.

The leaders were also consistent on anticipating the challenges around needing fewer workers on-site but then needing to compete for talent living in large urban centres. This only underscores the need for workers with broad foundational skills as well as deep technical expertise as technology becomes more advanced and interdependent.

Where leaders’ views diverged, this resulted in raising important questions for mining, such as the organizational structures and cultures required for success in any change process, and the extent to which existing workers can even be upskilled for job profiles of the future. Questions were also raised on how to address the shifts in values that new generations bring. Organizations will need to prepare for skill sets not yet defined and identify what they will need to create as well as manage through an ever-changing, ever-expanding portfolio of roles within the organization. These key challenges vary further depending on situation, geography and the overall regulatory and competitive environments.

# Redefining the talent approach

Framing one's thinking around an overall talent strategy is a critical factor in determining an organization's success in addressing the Future of Work.

When it fires on all cylinders, a talent strategy will drive better focus and alignment across the organization, leading

to better engagement and performance while encouraging and rewarding strong leadership commitment and capacity.

The approach proposed below is designed to help leaders as they conceptualize the work, engage their frontline workers and think through the overall workplace experience.

Consistency and comprehensiveness are key, requiring that leaders be as inclusive of people as possible and ultimately iterative in their approach, as new insights are discovered, thinking is tested and adjustments to approaches made.

The process is broken down into a set of five questions to be answered in each of the contexts of the work, worker and the workplace:



**Key questions that should be considered are...**

	What are our goals and aspirations?	Where will we focus?	How will we succeed?	What capabilities must be in place for us to succeed?	How do we measure ongoing success?
<b>Work</b> 	<ul style="list-style-type: none"> <li>• What are the business goals and aspirations, and what role should talent strategy play to deliver on them?</li> </ul>	<ul style="list-style-type: none"> <li>• Which employee stakeholder groups are needed to achieve this vision and how will they be engaged?</li> </ul>	<ul style="list-style-type: none"> <li>• What is our value proposition for each employee stakeholder group? What is our key point of differentiation?</li> <li>• What does the business strategy require of our people that is different?</li> <li>• How should we prioritize our talent strategy initiatives?</li> </ul>	<ul style="list-style-type: none"> <li>• Which talent and organizational capabilities are required to enable our culture and the future direction of the business?</li> </ul>	<ul style="list-style-type: none"> <li>• How do we govern and manage as the organization's skills requirement changes?</li> <li>• What are the critical success factors and KPIs we will measure against?</li> </ul>
<b>Worker</b> 	<ul style="list-style-type: none"> <li>• What does the future employee experience look like?</li> <li>• How ambitious do we want our employee experience to be?</li> </ul>	<ul style="list-style-type: none"> <li>• How are employee needs changing? What are the unmet needs?</li> </ul>	<ul style="list-style-type: none"> <li>• How will we attract and retain top talent?</li> <li>• What is the role of innovation in achieving the future employee experience?</li> </ul>	<ul style="list-style-type: none"> <li>• What partnerships and ecosystems will be required? Who will manage and lead them?</li> </ul>	<ul style="list-style-type: none"> <li>• How do we engage and communicate with an increasingly diverse group of employees during this change?</li> </ul>
<b>Workplace</b> 	<ul style="list-style-type: none"> <li>• How will employees interact with each other and conduct their work?</li> </ul>	<ul style="list-style-type: none"> <li>• What is the level of technology needed by our employees to achieve the organization's strategy?</li> </ul>	<ul style="list-style-type: none"> <li>• How can digital technologies be leveraged to improve business outcomes and connectivity?</li> </ul>	<ul style="list-style-type: none"> <li>• How do we prioritize and sequence the implementation of initiatives into the workplace?</li> </ul>	<ul style="list-style-type: none"> <li>• How do we iterate our approach to easily adopt new technology and scale initiatives?</li> </ul>

Leaders working with this iterative approach, increase their chances of developing talent strategies that allow for ideation, design, refinement, and ultimately socialization. And just as frontline workers are impacted by and need to adjust to the Future of Work, the role of leadership likewise is seen as requiring an expansion of key skill sets and expertise, including:

**Thinking differently**—in the face of flattened and changing hierarchies, leaders need to effectively handle ever-increasing cognitive complexity, and being comfortable failing early, failing fast, and learning faster, and thinking divergently about new ways of doing things.

**Collaborating differently**—in embracing the changing nature and typology of work, where collaborating with ease across many different teams heightens the need to value the contributions of new work partners and different interest groups.

**Reacting differently**—in that leaders will need to be brave in challenging how things are done, and because of the constant disruption, show resilience in the face of constant change.

**Executing at a higher level**—ensure their organizations do not lag behind in the digital transformation, by intentionally and courageously developing different talent strategies that enable business strategy and attract, develop, and retain the best talent.

**Team building and leading**—in order to keep people connected and engaged, these skills become increasingly important when leading different types of workers (contingent, crowd, full-time) as traditional job models are further disrupted.

In other words, as the mining industry continues to be beset on all sides by not just change but rates of disruption and

change, it faces the need for higher levels of understanding and overall management preparedness for future proofing work, workers and workplaces.

Fortunately, in Canada, mining managers and executives are not alone. Industry clusters and government support have and will continue to play key roles in helping accelerate innovation and creating access to new ideas and ways of thinking about and operating the business.

Developing a Talent Approach that plans for the Future of Work in consistent and comprehensive ways, is a crucial step in getting in front of many of the challenges facing organizations—around the attraction, retention, development and overall wellness of both frontline workers and industry leaders, and in taking advantage of an overall mining ecosystem that is rapidly evolving in order to keep pace.



# Using a talent approach to adapt to the change

As found in Deloitte's 2017 survey of over 10,000 business and HR executives, *rapid and disruptive* is indeed the new normal, with leaders overwhelmingly highlighting the organization of the future, careers and learning, and talent acquisition as the top three trends by importance.<sup>3</sup> At the same time, business productivity has not kept pace with technological advances, and in the face of AI, mobile platforms, sensors and social collaboration systems that continue to revolutionize lives and workplaces, research shows that employees and organizations are more overwhelmed than ever.<sup>4</sup>

This report is in agreement with that larger study, in that the problem is seen as coming down to talent approach strategies. For the mining industry, already burdened with a perception problem among young people considering career choices, the need for new and robust ways of redefining the work, workers and the mining workplace has never been higher or more urgent.

However, if fortune truly does favour the bold, mining executives who adopt new approaches in their talent acquisition and development strategies are not just preparing for the Future of Work but—perhaps even more importantly—helping to invent it.

In other words, leaders are well aware of the opportunities and challenges for mining. Now more than ever, leaders need effective approaches to mitigate the impacts of the Future of Work.

The question, then, of who will be running your mine in the future is less a matter of guessing which trends will prevail and more a matter of who you are attracting and developing today.

## Contact Information

### Andrew Swart

Consulting, Deloitte Canada  
Global Mining Consulting Leader  
aswart@deloitte.ca

### Don Duval

NORCAT  
CEO  
dduval@norcat.org

### Kathy Woods

Consulting, Deloitte Canada  
National Talent Service Line Leader  
kawoods@deloitte.ca

# Endnotes

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