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The acceleration of mining transformation

How the pandemic is accelerating
mining's workforce transformation

For organizations around the world, 2020 has been an unprecedented year.

Hundreds of thousands of employees have been forced into self-isolation and remote work due to COVID-19, fundamentally changing the workplace. The mining industry is no exception. Sweeping transformation was already underway prior to the pandemic, with digitalization and automation being harnessed to create a safer, more efficient workplace.

However, COVID-19 has had an indelible impact on the pace and nature of that transformation in two key ways:

01 COVID-19 has reinforced and accelerated mining's digital agenda

Before the pandemic, drones were already carrying out pit surveillance and autonomous trucks were hauling ore. COVID-19 has been pushing companies to take digital transformation further by devising new ways to gain efficiencies at a time when fewer workers can be on-site. For example, new remote operation centers now enable staff to oversee more functions from a distance.

02 Social distancing has necessitated long-term remote-working strategies

New strategies must ensure that workers are not simply safe but thriving. The pandemic demonstrated that although remote work can reduce costs and increase efficiencies, workers' well-being, mental health and overall satisfaction may be at risk. Companies therefore need a concerted, considered effort to understand the needs of the workforce and shift to strategies that empower employees, wherever they are working.

The pandemic has created vast challenges. However, it's clear that it has also unlocked new opportunities and moved up the timeline for existing transformation efforts. Chief Human Resources Officers (CHROs) must reimagine their strategy for the post-pandemic era and explore new ways to re-organize and redesign their workforce, with employee experience and new digital tools at the heart of that transformation. The good news is that mining CHROs have a head start. A recent study by the World Economic Forum (WEF) on the Future of Jobs found that about 95 percent of surveyed mining companies are adopting strategies that create more remote working opportunities.[1] There is evidence that 85 percent of mining workers are ready to embrace these changes to their environment.[2] In contrast, only about 80 percent of firms in comparable industries are planning such shifts.

CHROs have a rare opportunity to build on that progress with targeted policies that tap into the full potential of remote working and digitalization. For example, they can expand their efforts from acquiring and retaining a workforce with digital skills to enabling and empowering a largely remote workforce. That deep digital transformation and cultural shift will help attract new talent vital to the future of mining, ultimately helping to insulate the industry from cyclical skills shortages.

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How are mining companies responding to work disruption caused by COVID-19?

Mining has two distinct workforce clusters—
one that works on-site, often at remote locations
(the majority of workers), and another that is
office-based and covers business, operational
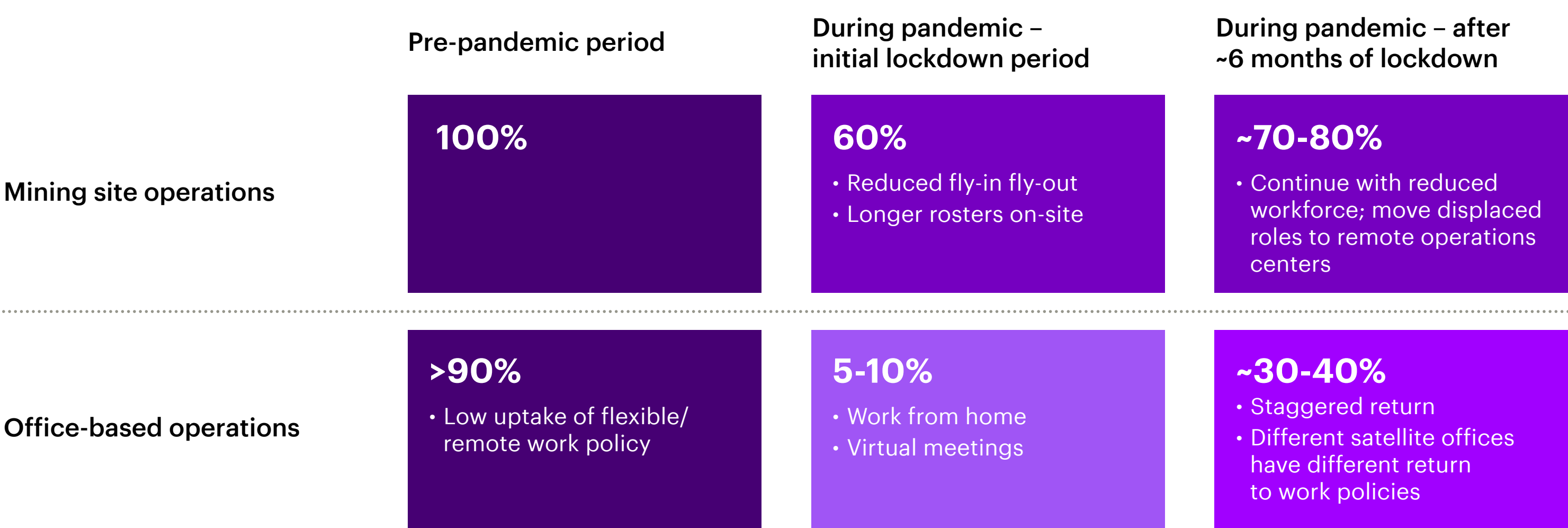planning and analytics functions.

Mining companies had already been planning a gradual relocation of workers from sites to offices and from offices to homes in an effort to create a safer, more inclusive workplace. COVID-19 has been a catalyst for an urgent recalibration of those strategies (Figure 1).

Accenture recently interviewed CHROs of major mining companies around the world to understand their response to the disruptions caused by COVID-19. The research revealed that mining companies had to move from 10 percent of their office workforce operating remotely pre-pandemic to about 90 percent at the onset of the pandemic. The change to remote for the on-site workforce was less dramatic.

For example, one CHRO said that their company had to maintain about 60 percent of its operations workforce on-site for business continuity, even during lockdown. This was achieved by resorting to longer shift cycles instead of the traditional fly-in fly-out roster. However, with increased digitalization and automation of on-site operational tasks, the share of on-site workforce working remotely is set to increase.

After about six months of hard lockdown, the CHROs we interviewed suggested that there was a gradual return-to-work plan implemented. For example, some CHROs we interviewed suggested that the workforce for on-site operations increased by 70 to 80 percent, while office-based workforce operated at around 30 to 40 percent of pre-pandemic capacity. What was clear is that all CHROs expect not to see the pre-pandemic workforce numbers working from the office or at on-site locations, anytime soon.

Figure 1: **Pandemic has disrupted mining workforce dramatically**

	Pre-pandemic period	During pandemic – initial lockdown period	During pandemic – after ~6 months of lockdown
Mining site operations	**100%**	**60%** • Reduced fly-in fly-out • Longer rosters on-site	**~70-80%** • Continue with reduced workforce; move displaced roles to remote operations centers
Office-based operations	**>90%** • Low uptake of flexible/ remote work policy	**5-10%** • Work from home • Virtual meetings	**~30-40%** • Staggered return • Different satellite offices have different return to work policies

Workforce distribution across mining-site and office-based operations
% workforce working on site or at office

Source: Qualitative evidence from CHROs interviewed in this study

Workforce redesign

With a large proportion of employees set to work from home for the foreseeable future, and with the increasing diversity in the type of jobs that will be performed remotely, CHROs see an opportunity to revisit standard assumptions about workplace designs.

There is a sense of urgency around determining which jobs are best suited for remote working. At the same time, however, it is not possible to have one single strategy for the entire workforce, since mining work is split between being on-site and being in the office.

The CHROs we interviewed are therefore responding with workforce strategies based on three key factors:
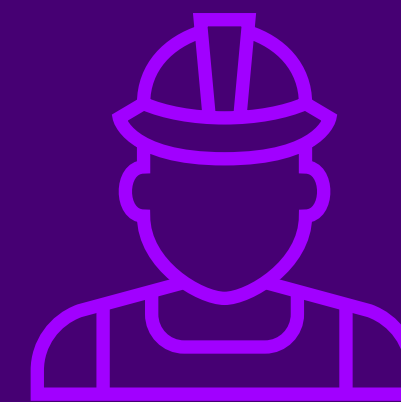
The need for physical presence on-site

Growing advocacy for flexible working
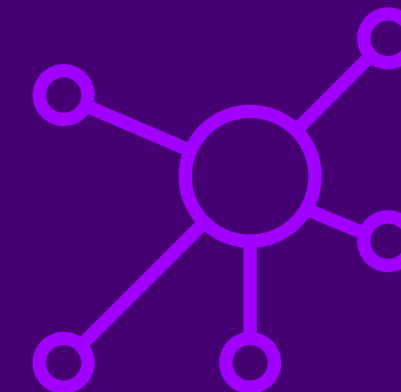
De-centralization of the workforce
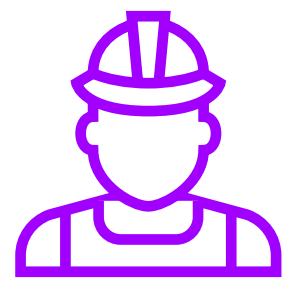
The need for physical presence on-site

With social distancing set to be a norm for some time, CHROs are analyzing roles and identifying which ones don't need to be located at the site. Questions around who needs to be physically present and what roles can support the business virtually are top of mind for executives, as is identifying any peripheral activities that could be discontinued. For example, many CHROs we interviewed said that non-site operations roles, such those in HR, planning and finance, were immediately transformed into remote work when the pandemic started. Essentially, CHROs are now acknowledging that "where" work is done has become as important as "how" it is done. A global mining company CHRO explained:

"With COVID, we had a lot of restrictions and protocols to implement to maintain the safety, health and well-being of our people. So, for example, at the camp we used to host two people per bedroom, and we built protocols and decided to host only one per bedroom. That forced us to conduct an audit to identify who needs to be physically present and who doesn't. This audit dramatically reduced the number of people at the camp."

Global mining company CHRO
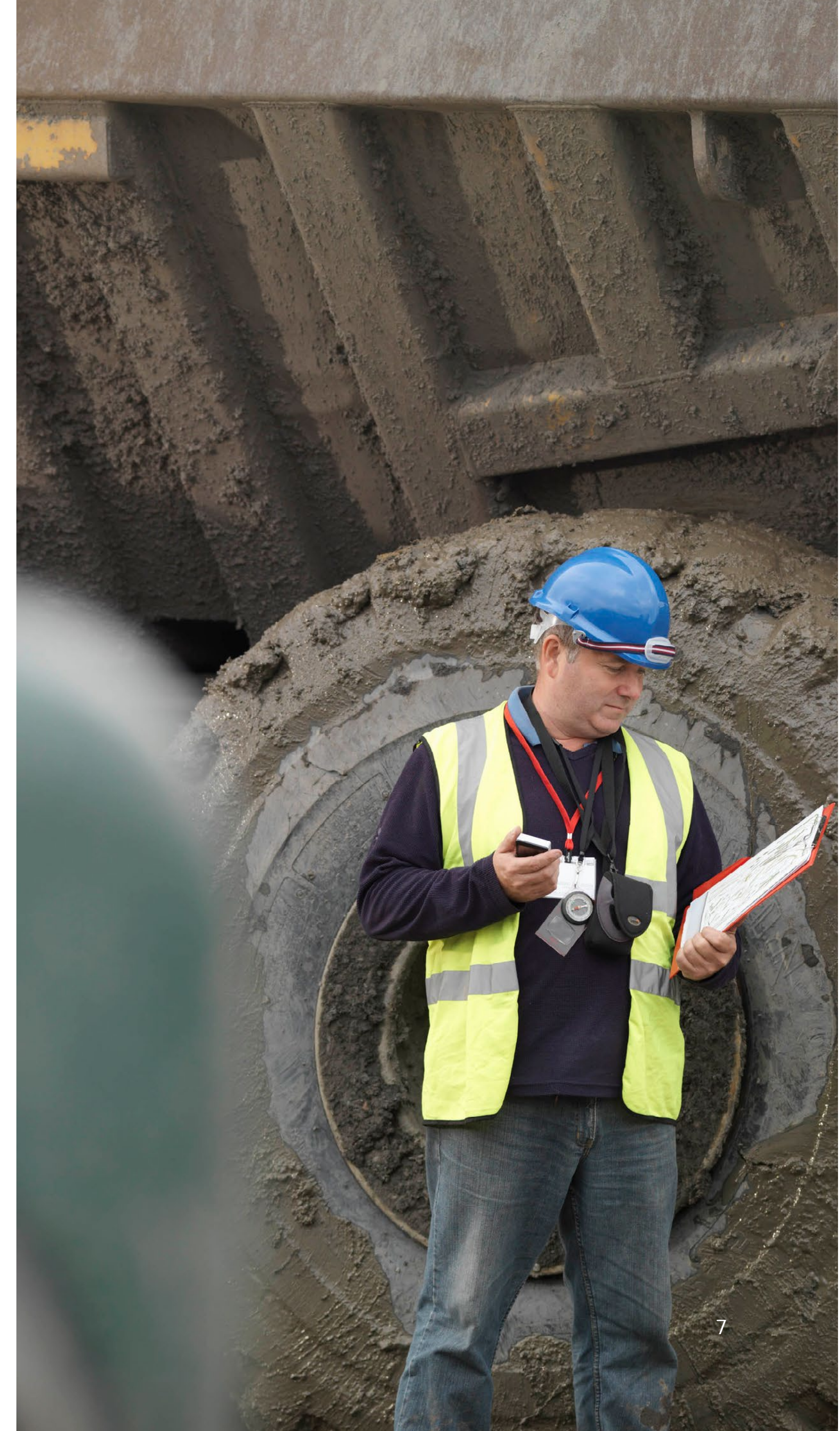
Growing advocacy for flexible working

Pre-pandemic, few employees took up their employer's flexible work policy, and few leaders actively promoted it. Figure 2 shows the gap in perception between what leaders and employees traditionally thought about the uptake of their organization's flexible working policy. While about two-thirds of the mining, metals and energy companies that took part in the survey suggested that flexible working is critical for their employees to thrive in the workplace, less than a third of the employees surveyed thought the same.

However, as the pandemic forced many office-based workers in the mining industry to work from home, flexible working has found renewed advocacy. Many leaders working with remote teams quickly realized that there was no loss of productivity when compared to working in the office. In fact, in some cases they saw increased productivity. As one of the interviewed CHROs noted:

Figure 2: Flexible work policy gap: Employers' provision of a flexible work policy is falling short of employees' expectations

Employers who think employee flexibility over where and when they work is critical for them to thrive in the workplace

68%

+38%

Employees who think organizations provide them the flexibility over where and when they can work

30%

Sample of natural resources companies surveyed: n= 66 (Senior executives)
Sample of employees of natural resources surveyed: n= 754 (Below senior executives)

Source: Getting to Equal Survey, 2019

"What we learned is that our leaders have become less skeptical about flexible working, as they have seen in many cases productivity was certainly the same as it was before and in some instances higher, so that was an interesting life lesson for some of our leaders who were not there yet."
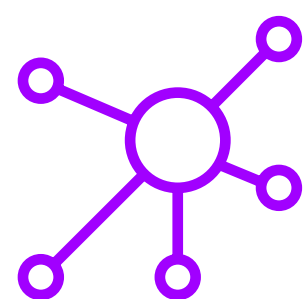
CHRO of a major mining company

De-centralization of the workforce

Although many CHROs believe remote and flexible work will be the future workplace norm, they also acknowledge the need for a return-to-work policy that serves as a blueprint for the right split between remote and office work. This will become increasingly important in 2021 as COVID-19 vaccines are distributed in communities across the globe and companies can safely enact return-to-work policies. As mines become increasingly digitalized, enabling more remote control of machinery, a tiered working structure will emerge. Fewer people will be on-site and headquarters will potentially be smaller than pre-pandemic as more people will be working from home. Future offices, many CHROs we interviewed suggest, will be used primarily for tasks that require collaboration for continuous innovation. Describing one company's workforce location strategy, a CHRO said:

"There are three places where we see our future workforce working from—operational sites that will become lean hubs near sites that will drive remote-center operations, and the "anywhere office" that will have enough intelligence and attractive infrastructure."

CHRO of a multinational mining company

What are the consequences of a redesigned workforce?

The transformation of the mining industry is resulting in the need for a fundamentally different operating model. We have identified three trends that the mining sector will need to address in order to seamlessly transition their workforce into a post-pandemic world.

01 **Shift in skills from mechanical to analytical**

02 **Social-emotional skills are vital for management**

03 **Mental and physical well-being of employees is a top leadership priority**

01 Shift in skills from mechanical to analytical

The majority of on-site roles in the mining sector are traditionally mechanical in nature—maintenance workers, machine operators and engineers handling heavy mining machinery and vehicles.

For example, these roles involve tasks that are highly specialized and repetitive in nature, making them candidates for eventual automation. The WEF 2020 jobs report found that 67 percent of repetitive and manual tasks, such as information and data processing, and about 60 percent of tasks involving physical labor will be automated.[3] On the other hand, the report said that the top-two emerging roles that will be critical for the future of the mining industry are artificial intelligence and machine learning (AI/ML) specialists and process-automation specialists.

Therefore, when it comes to skills mix, mining companies are preparing for a shift from mechanical roles to roles that are primarily planning and analytical in nature. For example, a mechanic will need to work with AI/ML technology to predict machinery failure and perform preventative repairs; a mining vehicle operator will need to remotely oversee multiple pieces of autonomous machinery; and mining engineers will need to use technology to plan and design drill sites.

> The WEF 2020 jobs report found that 67 percent of repetitive and manual tasks, such as information and data processing, and about 60 percent of tasks involving physical labor will be automated.[3]

# 02 Social-emotional skills are vital for management

Digital and analytical skills were already highly sought-after pre-pandemic. With an increased reliance on remote and virtual work, CHROs are now emphasizing the need for softer, social-emotional skills, as well.

The WEF 2020 jobs report confirms this, listing leadership and social influence as one of the top attributes that mining companies' reskilling or upskilling programs are focused on. This is important, because the pandemic has led to an increase in mental health issues as employees respond to the isolation and pressures of remote work, requiring leaders to demonstrate greater empathy. As managers move from managing manual workers to analyzing data and managing remote teams, they will also require superior communication skills and project and change management experience.

Current skills in focus of existing reskilling/upskilling programs[4]

Analytical thinking and innovation
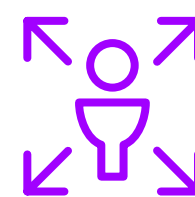
Leadership and social influence

Technology use, monitoring and control

Quality control and safety awareness

Critical thinking and analysis

"There is an immediate need for social-emotional skills that focus on empathy, collaboration, and communication linked to conducting business virtually."

CHRO of a multinational mining company

03 Mental and physical well-being of employees is a top leadership priority

Early on in lockdown, CHROs reported similar if not greater productivity levels among workers operating remotely or at a leaner capacity on-site.

However, they also observed that over time, the novelty of remote work was starting to wear off, leading to a sense of fatigue. Employees were working longer hours, sleeping less and feeling burned out leading CHROs we interviewed to conclude that "permanent remote work" could not be a sustainable solution. One CHRO described this shifting mood:

"With remote working, we went from being enthralled to surprised as people initially continued their productivity only to end up working longer hours and being fatigued. Virtual work had no set rules of engagement or boundaries as people skipped lunches, stopped taking breaks or setting lunch hours."

CHRO of a major mining company

Another CHRO who conducted an employee survey on remote work early in the lockdown found that 70 percent of the workforce did not want to return to the office. When the survey was repeated a few months later, only 50 percent did not want to return. CHROs we interviewed reported that remote work exacerbates feelings of loneliness and isolation, and when this combines with the fatigue caused by the characteristics of remote work, it could lead to mental health issues.

The cost of not addressing mental health issues is projected to be about US$16 trillion by 2030—and this was a pre-pandemic estimate.[5] Managers dealing with a remote team must be more vigilant and put in extra effort to check on each individual member. There is an upside to this. For example, nearly double the workers (85 percent) who have managers championing their well-being and equality put significantly more effort into their work compared to those who don't (47 percent).[2] And yet Accenture's research (Figure 3) suggests that leaders of companies in the mining, metals and energy sector have been falling short in helping workers feel safe when raising concerns about mental health issues. Companies must change that perception fast. As we move into a post-COVID world and employees return to a "hybrid" work model, dividing their time between working at home and in an office, new rules of interaction and engagement could further exacerbate mental health issues. Companies must continue to provide ongoing support for employees' physical and mental well-being.

Figure 3: Perception gap for mental health support: Employers' perception of their mental health support policy effectiveness does not align with employees' perception

Employers who think employees feel safe to raise concerns about their mental health
82%

+20%

Employees who think they feel safe to raise concerns about their mental health
62%
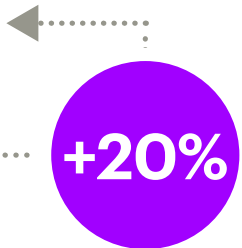
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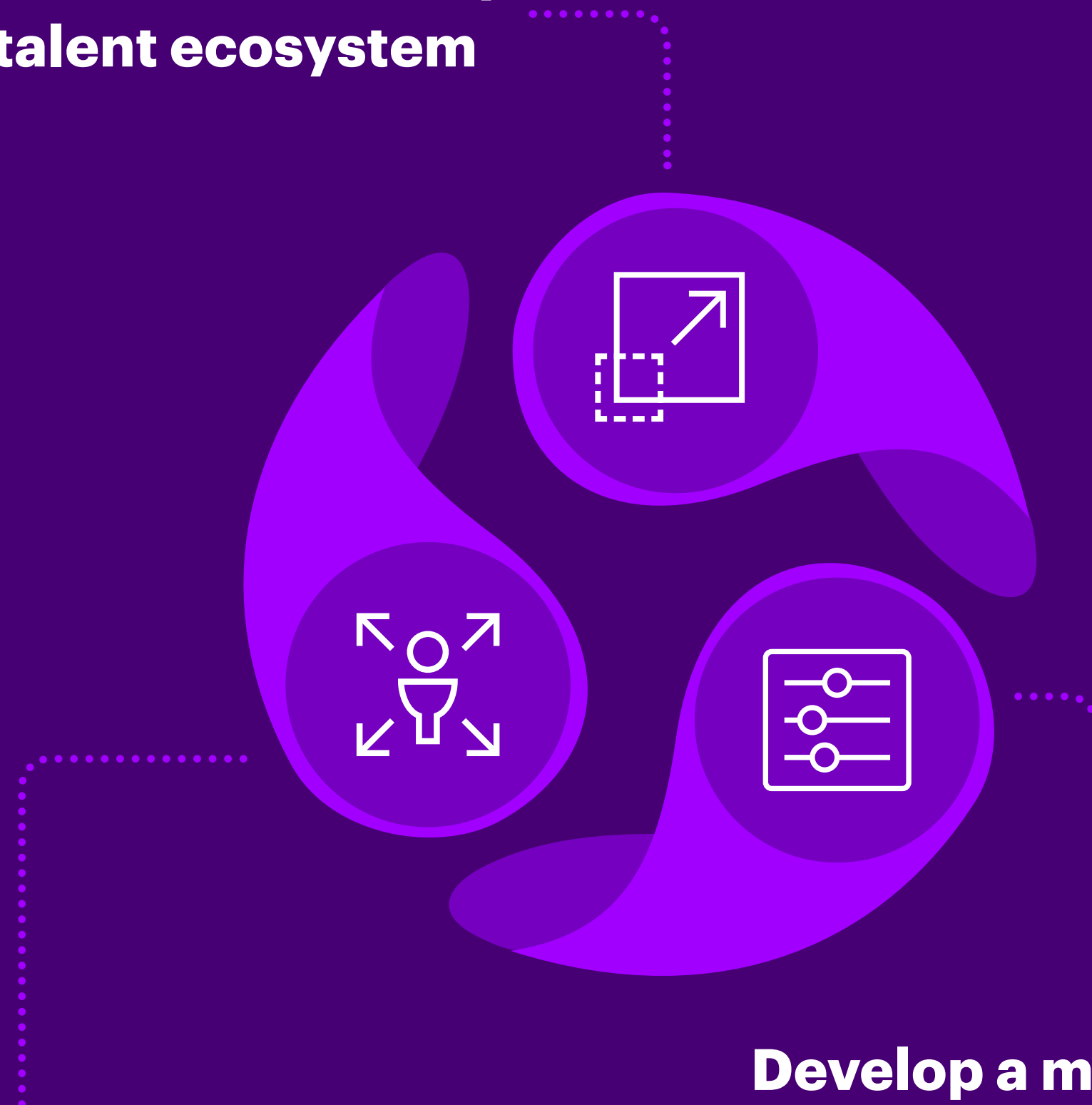
Source: Getting to Equal Survey, 2019

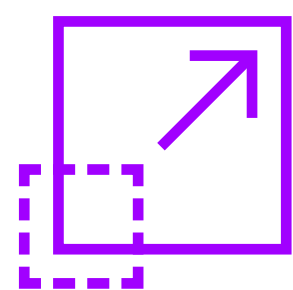# A future-ready workforce strategy for mining

Taking these factors into account, mining companies should pivot their strategies to build a future-ready workforce by taking several key steps.

Broaden and diversify the talent ecosystem

Develop a multipronged approach to skilling

**Reconnect with the full individual**

Broaden and diversify the talent ecosystem

Pre-pandemic, CHROs were scouting for technical talent that had experience in high-capital industrial settings— and that has not changed. Now, environmental, social and governance (ESG) goals are compelling CHROs to also look at completely new types of talent, such as climate scientists, and talent that can help build strategies to help mining to thrive in a VUCA world—one that is Volatile, Uncertain, Complex and/ or Ambiguous.[6] There is an opportunity to attract a new wave of employees from adjacent industries who are used to working in an agile, fast-moving and tech-focused world. Working cultures need to evolve to attract this new talent. With that in mind, mining companies must create an environment that is not only flexible, but open, sustainability-focused, community-centric, and transparent. Companies should demonstrate that a new working culture is not just for the pandemic era; it's here to stay.

All the CHROs we interviewed agreed that the pandemic has helped advance the much-needed diversification of the workforce. Accenture research suggests that employees who work for leaders that create dedicated I&D metrics have more positive experiences than employees who work for leaders who do not set such metrics.[2] They hope flexible and remote work policies will attract more women employees, a group that has historically been under-represented in the industry. People with families, poor health, or other responsibilities and restrictions will also have a greater incentive to join the newly flexible mining industry workforce. However, the WEF 2020 jobs report points out that in the absence of proactive efforts, inequality will likely be exacerbated by the impact of the pandemic. Women were disproportionately impacted by job losses in 2020, and there is much work to be done to rebalance the damage the pandemic appears to have done to the fight for equality.[7] It is incumbent on CHROs to put in the effort, and ensure diversification is embedded in the new working culture.
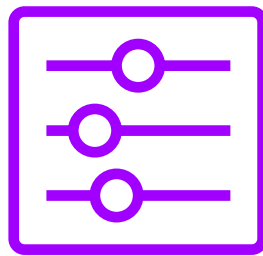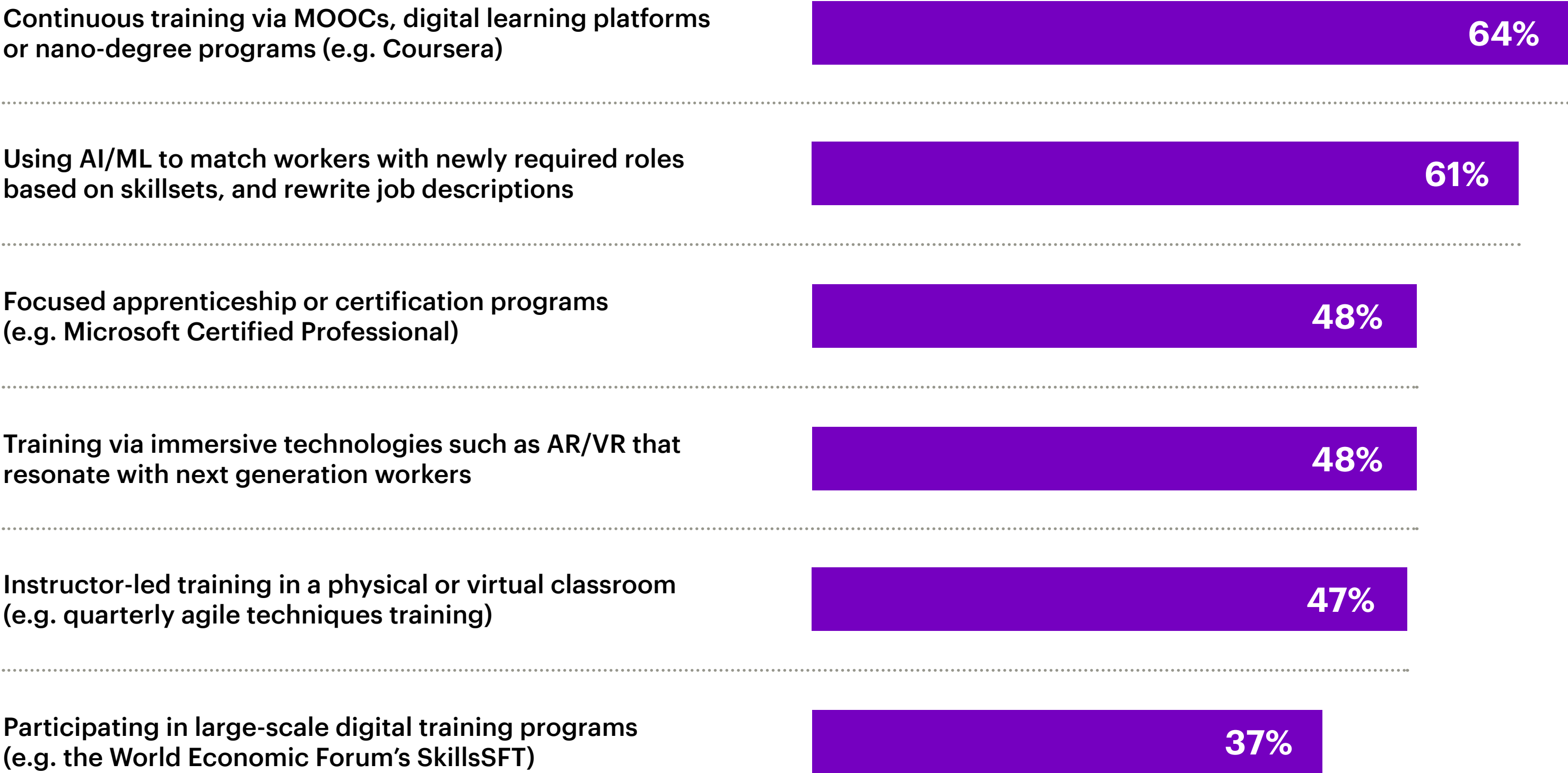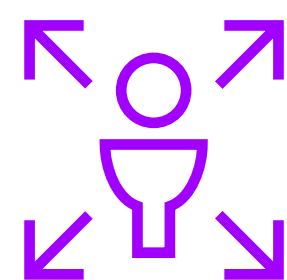
Develop a multipronged approach to skilling

Companies need multiple routes to reskilling the workforce with the vital attributes identified by CHROs, including digital literacy, empathy and innovation. Data from another 2019 Accenture study,[8] detailed in Figure 4, found that about two-thirds of surveyed mining companies focus on reactive, individual-focused, continuous training that gives employees access to online courses (such as Massive Open Online Courses, or MOOCs), rather than employing a more proactive, strategic and large-scale digital training program. Companies should provide both types of training and find the optimal balance between proactive and reactive learning, creating as many productive upskilling opportunities as possible in the process. Mentoring and reverse-mentoring schemes should also be a vital component of reskilling efforts. Mining companies can enhance long-tenured workers' digital knowledge by pairing them with young colleagues. Similarly, young colleagues can gain industry knowledge from the long-tenured workers they are paired with. Such schemes can help mitigate the potentially negative impact of virtual learning and remote working on mental health by connecting employees in a constructive way.

Figure 4: Reskilling strategy

Continuous training via MOOCs, digital learning platforms or nano-degree programs (e.g. Coursera) — **64%**

Using AI/ML to match workers with newly required roles based on skillsets, and rewrite job descriptions — **61%**

Focused apprenticeship or certification programs (e.g. Microsoft Certified Professional) — **48%**

Training via immersive technologies such as AR/VR that resonate with next generation workers — **48%**

Instructor-led training in a physical or virtual classroom (e.g. quarterly agile techniques training) — **47%**

Participating in large-scale digital training programs (e.g. the World Economic Forum's SkillsSFT) — **37%**

Sample of mining companies surveyed: n=350

Source: Accenture Future Systems Survey, 2019.

Reconnect with the full individual

Mining companies need a new organizational construct that operates with a completely different belief system. The pandemic has reminded us that employers and CHROs tend to see just one dimension of an employee's "full" self at work. CHROs need to look at every dimension of every worker—the personal and the professional, the individual, and the individual's role as part of the collective whole. Acknowledging and adapting to this reality can help organizations operate with greater understanding and empathy, ultimately transforming their workplace—and the workforce—in the process.

Accenture's research has found that companies that unlock their workforce's full potential perform better than companies that do not. Companies thrive when they address the full range of the workforce's fundamental needs, leaving them Net Better Off.[2] Specifically, it is imperative to ensure the financial, emotional, mental and physical well-being of the workforce—as well as enhance their sense of belonging and inclusion, and their quest for finding purpose in their work. Finally, companies will need to help their workforce enhance their employability by providing new opportunities to grow their skills.

CHROs need to look at every dimension of every worker as part of the collective whole.

Conclusion

The nature of mining work has been evolving for many years. The pandemic has simply forced CHROs to move that evolution ahead far more quickly, with strategic workforce pivots dominating today's agenda. It's clear that although the challenges presented by the pandemic have been vast, they have also acted as a catalyst for much-needed change. COVID-19 has reinforced the need for a full digital transformation in mining and increased opportunities to diversify the workforce to better prepare the sector for cyclical skills shortages.

With today's momentum to find new approaches and the clear opportunities on the horizon, now is the time for change.

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