

SKILLS



Maintaining a resilient workforce

In recent years, shortage of talent was one of the greatest threats facing the oil and petrochemicals sector. The job market looks bleak in the face of the current global pandemic, and this lingering talent crunch is likely to get worse, not better. However, there are strategies to mitigate this risk, writes IBM's Sonia Van Ballaert.

Long before COVID-19, hiring cycles in the oil and petrochemicals sector have typically followed industry cycles of oil prices. In 1986, 1998, 2008 and 2014, graduate recruitment and apprenticeships nearly disappeared, while in 2014 the industry cut over 440,000 jobs due to low oil prices. As a result, the labour pool has steadily declined over the last few decades.

Meanwhile, as the industry was experiencing a crew change due to a wave of retirements, a massive skills shift was also occurring. Thanks to the rapid evolution of technology, the convergence of physical and digital operations became a reality. In the connected 'Industry 4.0' world, data and digital competences have become as important as core engineering skills – and both are in high demand. Compounding the skills gaps already caused by the great crew change and increased digitalisation, another important shift is occurring – the transition to a more sustainable, lower carbon world. This systemic industry shift will require companies to revisit not only their portfolio and

practices, but also the very domain skills needed to operate.

Yet the fossil fuels industry has fallen out of favour precisely with the young talent needed to progress the transition to an increasingly inter-generational, inherently digital and ultimately low carbon world. With different career expectations than those traditionally offered by large enterprises, attracted by digital giants, start-ups and non-linear work-life journeys, and very concerned with the climate emergency, the workforce that the oil and petrochemicals industry wants may not be the one it gets.

Time pressures

If it is difficult to hire new talent, what about teaching the talent already there? The half-life of professional skills was once estimated to be 10 to 15 years. Today, the half-life of a learned skill is estimated to be five years, and even shorter for technical skills. This suggests that a skill learned today will be about half as valuable in just five years or less.

IBM's historical data reveals another alarming trend – it

is taking longer to close skills gaps using traditional training approaches such as classroom and virtual learning. In 2014, the median time it took to close a capability gap through training in the oil and petrochemicals industry was four days. In 2018, the median was an astonishing 35 days. In just four years, the time to close a skills gap has increased by more than a factor of eight.

One of the reasons that skills have become harder to acquire is that some that are required are behavioural – such as teamwork, communication, creativity and empathy. According to the World Economic Forum in its *Future of Jobs* report (bit.ly/WEFFutureofJobs), the top three skills identified as critical in the fourth industrial revolution are actually soft skills such as complex problem solving, critical thinking and creativity. These skills are best developed through real-world experience rather than structured learning programmes, and that takes time.

Other new skills take more time to acquire because they are highly technical, such as data science capabilities. Many of

Workplace resilience means being ready to take a big leap into the unknown for new skills and training

Photo: Getty Images

these skills are rapidly changing due to the swift evolution of digital technologies, making it hard to keep pace with the latest paradigms and tools. Yet digital technologies will have a tremendous impact on oil and petrochemicals workers. According to IBM's 2018 *Global Country Survey*, executives estimated that over the next three years, 4.5% of the workforce would need to be retrained or reskilled as a result of intelligent automation alone.

Many organisations have not kept up with the demand for skilled workers – not only in existing operations, but also in three critical new areas:

- Connected operations, requiring high levels of data and digital literacy.
- Hybrid, low carbon solutions requiring an influx of new domain expertise.
- Agile, adaptive organisational cultures that are resilient in a period of systemic change.

As a result, enterprise vitality shrinks. Without skilled workers, organisations struggle to innovate, deliver value to customers, grow their businesses and create new jobs.

Skills tool kit

Workers in the oil, gas and petrochemicals industry are now expected to have a combination of digital, technical and soft skills

in their tool kit (see **Figure 1**). Digital skills consist of software engineering, data management and analytical capabilities to measure operations in real time. Technical skills include instrumentation technology expertise as sensors are applied to more field equipment and machinery. Soft skills comprise creative problem solving and the ability to manage change to analyse data in real time in the field, make course corrections and innovate.

Facing such deep, varied and changing skills requirements at industry-scale means that traditional hiring and training are not sustainable solutions to the talent crisis. Successfully navigating this new environment where change and innovation are constant requires reshaping how organisations manage skills, talent and culture. Based on insights from multiple IBM Institute for Business Value (IBV) research initiatives as well as performance benchmarking, three strategies stand out to build a resilient workforce – personalisation at scale, skills transparency and learning in ecosystems.

Personalisation at scale

Employees want career, skills and learning uniquely tailored to their experiences, goals, interests and, where possible, connected to individual purpose and meaning. For younger generations, helping tackle the climate challenge

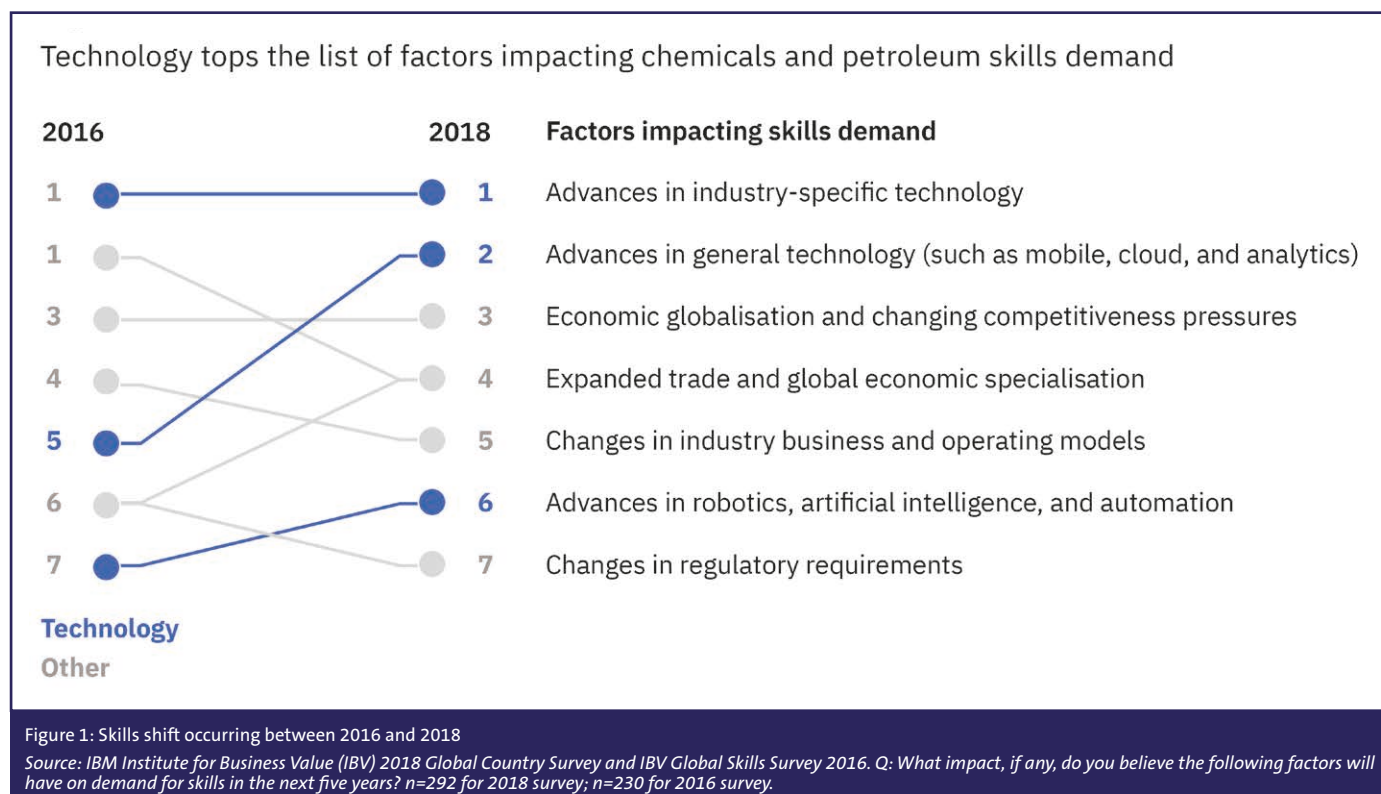
offers a compelling reason to keep their skills current. Hence the importance to them of participation in initiatives and personal development that support the energy transition.

Companies must therefore learn to personalise their employees' growth 'at scale'. This means going further than segmenting employees in the same job roles, or the same business units. It means understanding the current skills of every employee, knowing where the company and the individual want or need to progress, and personalising an interesting and dynamic path. Artificial intelligence (AI) can help enable this level of personalisation and bring meaningful employee experiences to life by tailoring employee notifications, learning paths and content to fit both business and individual needs.

Increased skills transparency

Companies should transparently inform employees about the roles and skills that are growing in market demand. From there, they can provide employees with engaging, meaningful ways to develop their skills in critical areas, demonstrate their skills proficiency and be recognised for doing so. This new level of transparency provides employees with information to self-direct their learning and career choices, which is crucial to staying ahead of the shrinking half-life of skills.

Conversely, at the enterprise



level, organisations will need to apply agile analytics to predict and infer skills supply and demand, even as circumstances and strategies continue to change. This means applying scenarios and alternate skills building strategies and to work at speed to keep up with changing economic realities and technology futures.

Learning in ecosystems

Organisations must now find solutions to the skills challenge through broader internal and external ecosystems. Cultural shifts are required to welcome third parties as part of the team, embrace partners to manage specific internal functions, and prepare for integration of data across the enterprise and ecosystem. Inside the organisation, companies need to build agile teams with heterogeneous skill sets to enable experiential, peer-to-peer innovation and create a culture where learning becomes viral.

Creating opportunities for job sharing and internal mobility and moving skilled talent across organisational boundaries can enhance skills development. Across the external ecosystem, organisations can engage with a coalition of partners to continually explore and pilot innovative

skills-gap closure strategies. Investing in new and emerging skill-building technologies can also be a highly effective strategy. Organisations can harness the power of initiatives such as massive open online courses, code schools and industry expertise networks. Applying AI can source and harmonise the most relevant educational assets for employees.

Are you ready?

To assess whether your organisation is ready to implement these innovative strategies to build a resilient workforce, you may ask:

- How engaged and coordinated are your ecosystem partners in joint learning?
- Are you able to constantly evaluate skills currency and find tactics to address new gaps?
- Do you use opportunities to leverage experienced-based learning or real-world learning?
- How are you using new technologies to craft highly personalised learning journeys?
- Do you look outside the industry for key skills of the future?

- What strategies do you have to scale learning to different populations quickly?

By answering these questions, your business can develop an adaptive organisational culture that will be resilient in a period of systemic change and able to face new challenges head on. ●

Download IBM's report *The chemicals and petroleum industry guide to closing the skills gap* at <https://www.ibm.com/thought-leadership/institute-business-value/report/chemicals-petroleum-skills-gap>



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