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Operations Practice

Building the vital skills for the future of work in operations

Operationally intensive companies have entered a new wave of automation and digitization. That will have a big impact on the skills they need to remain competitive.

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Technological progress is enabling machines to complete many of the tasks that once required human beings. That new automation revolution will have a major effect on employment in the coming years. Nearly every job will change, many quite profoundly, and the overwhelming majority of today's employees will need to develop new skills. Preparing for the future of work is one of the defining business problems of our time—yet it is one that most organizations are not ready to address.

The transition to the automation revolution has been accelerated by the COVID-19 pandemic. Companies are emerging from the crisis into a world of workplace physical distancing and major changes in customer behaviors and preferences. Recovery is forcing organizations to reimagine their operations for the next normal. Manufacturing companies are reconfiguring their supply chains and their production lines. Service organizations are adapting to emphasize digital-first customer journeys and contactless operations. Those changes will have significant effects on the requirements for workforce skills and capabilities, from a dramatic increase in home-based and remote working to a need for shop-floor personnel to master new tools and newly urgent health and safety requirements.

The future of work will require two types of changes across the workforce: upskilling, in which staff gain new skills to help in their current roles, and reskilling, in which staff need the capabilities to take on different or entirely new roles. Our research suggests that the reskilling challenge will be particularly acute in operationally intensive sectors, such as manufacturing, transportation, and retail, and operations-aligned occupations, such as maintenance, claim processing, and warehouse order picking.[1] Those sectors and occupations will experience a magnitude of change greater than the global average because they often employ large numbers of people and because the predictable and repetitive nature of many operational tasks makes them particularly suitable for automation or digitization.

Our analysis suggests that 39 to 58 percent of the worldwide work activities in operationally intensive sectors could be automated using currently demonstrated technologies. That is 1.3 times the automation potential of activities in other sectors (Exhibit 1).

Beyond the scale of the coming changes in workplace roles and activities, what matters most is the nature of those changes. Increasing automation will significantly shift the skill profiles of tomorrow's jobs. That has implications for employers and employees alike. Companies will need people with the right skills to develop, manage, and maintain their automated equipment and digital processes and to do the jobs that machines cannot. Workers will need the skills that enable them to access employment.

In Europe and the United States, for example, demand for physical and manual skills in repeatable and predictable tasks is expected to decline by nearly 30 percent over the next decade, while demand for basic literacy and numeracy skills would fall by almost 20 percent. In contrast, the demand for technological skills (both coding and especially interacting with technology) is expected to rise by more than 50 percent, and the need for complex cognitive skills is set to increase by one-third. Demand for high-level social and emotional skills, such as initiative taking, leadership, and entrepreneurship, is also expected to rise by more than 30 percent (Exhibit 2).

Leaders are unprepared

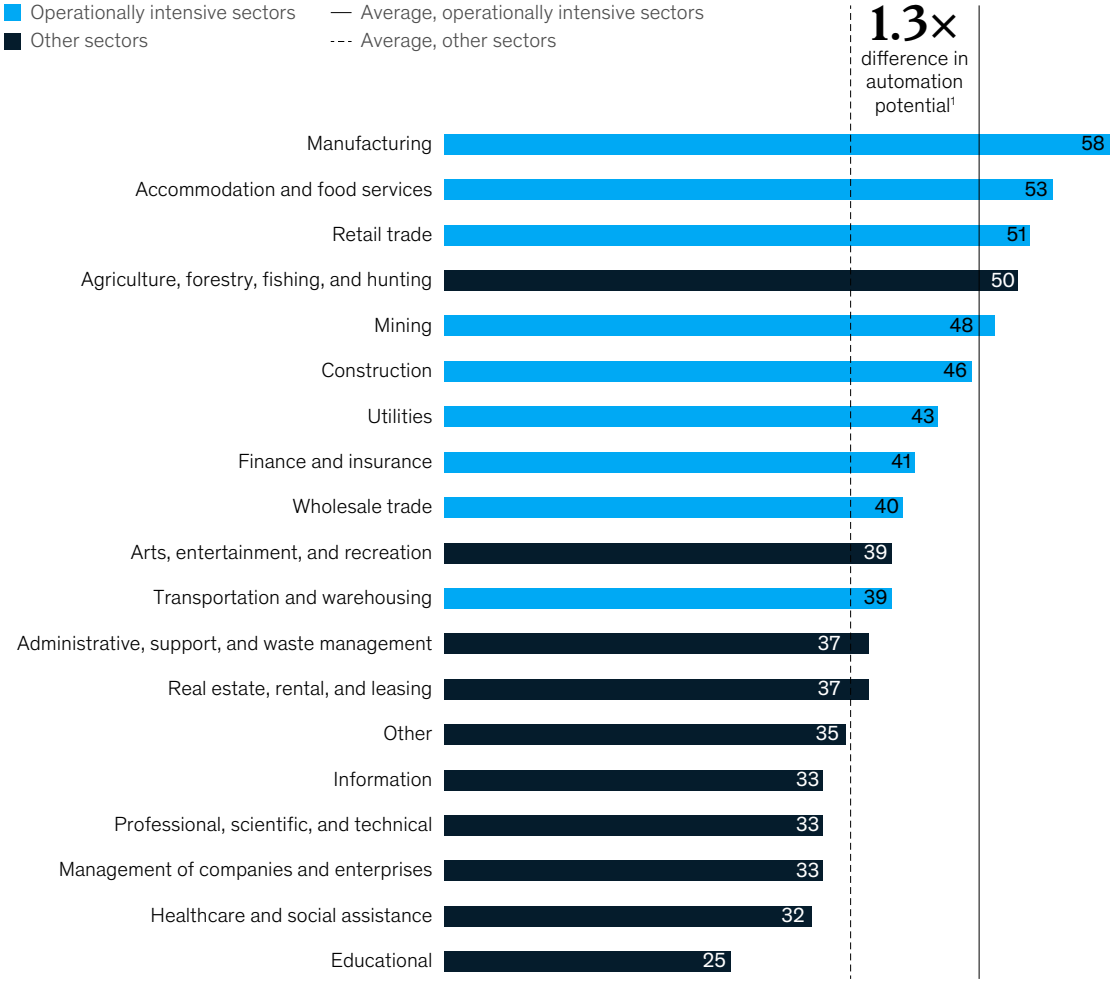
In operationally intensive sectors, leaders recognize that automation and digitization will likely create significant skill gaps, but most report feeling

[1] To investigate the impact of automation on operationally intensive activities, we looked at specific sectors and occupations. Operationally intensive sectors include construction, finance and insurance, food service and accommodation, manufacturing, mining, oil and gas, retail, transportation, utilities, and wholesale trade. Operations-aligned occupations include facilities management, frontline customer service and sales, frontline equipment repair and installation, frontline production, frontline trade work, logistics transportation and warehousing, order and claim processing, procurement, and skilled operations work.

Exhibit 1

Operations-intensive sectors have 1.3 times the automation potential of other sectors.

Technologically automatable activities by sector, % of total activities



[1]We define automation potential by the work activities that can be automated by adapting currently demonstrated technology.
Source: McKinsey Global Institute analysis

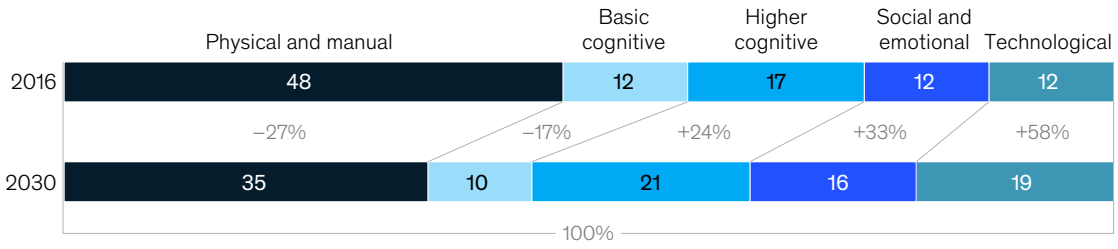
unprepared for the challenge. In a 2017 McKinsey survey of 116 executives at large organizations, nearly two-thirds of respondents said skills were a top ten issue for their companies. Only 7 percent of respondents thought that their companies were fully prepared to address the skill gaps that they expected over the subsequent five years.

When we asked executives in the survey why their organizations were not yet ready to tackle the skill issue, they cited three main barriers. More than one in four respondents said they lacked a clear understanding of the impact that future automation and digitization would have on skill requirements. Nearly one in four said they lacked the tools or the

Exhibit 2

Automation will have a significant impact on skill requirements.

Skill shift in US and Western Europe by category, % of time spent



Note: Figures may not sum to 100%, because of rounding.
Source: McKinsey Global Institute analysis

knowledge to quantify the business case for efforts to reskill their workforces. And almost one-third thought that their current HR infrastructure would not be able to execute a new strategy designed to address emerging skill gaps (Exhibit 3). Across industries, our latest survey data indicate that these problems persist today.

The central role of reskilling

Companies can use several different approaches to address skill gaps. They can look outside the organization, hiring new staff with the right skills. They can build skills internally, retraining their existing workforces to prepare people for new roles. Or they can take a hybrid approach, including using a skilled contract workforce to fulfil short-term needs while developing the necessary skills internally.

Most organizations are likely to adopt a mix of those models. They may look to the external market to fill certain specialized, highly technical roles such as data scientists, while aiming to fill new frontline roles, such as robot controllers and production-exception handlers, from their existing workforces. We believe that ongoing shifts in societal attitudes will increase the expectation that companies do more to retain and retrain their current workers wherever possible.

Executives in our survey are broadly united in the view that their organizations have a significant role to play in the skill transition. Two-thirds of respondents think that corporations should take the lead in the development of the new skills required for the digital era, and 80 percent say at least half of all new roles should be filled by reskilling existing workers. That question reveals some important geographical differences, however. Among European respondents, 94 percent think that the balance between hiring and reskilling would be either equal or tipped in favor of reskilling, but the equivalent figure is only 62 percent among US executives. That may reflect differences in local employment cultures and legal provisions.

To make good on their large-scale reskilling aspirations, most organizations will need to significantly ramp up their employee training and capability-building efforts. A number of large organizations have already begun to do so. Global retailer Walmart, for example, is investing $4 billion over four years to help staff in frontline and back-office jobs transition to new customer-service-oriented roles. E-commerce giant Amazon has pledged to spend $700 million on technology training by 2025 to help employees move to higher-skill jobs. Professional-services company

Exhibit 3

Large-scale reskilling efforts must overcome significant barriers.

Reported barriers to reskilling by sector type,
% of respondents[1]

[1]Private-sector organizations with >$100 million in annual revenue that view the skill gap as a top 10 priority.
Source: McKinsey survey, November 2017; McKinsey analysis

ManpowerGroup has entered a partnership with education company Pearson and others to upskill 130,000 workers over the next five years.

It may take several years for these global reskilling programs to pay back, but they are visible and important investments. Some companies are already reaping returns from smaller-scale reskilling efforts. Tata Steel's plant in Ijmuiden, the Netherlands, for example, established an advanced-analytics academy to train and certify hundreds of engineers on the application of new analytical approaches to manufacturing-process improvement. Using the new techniques helped the plant to boost its earnings before interest, taxes, depreciation, and amortization by more than 15 percent, despite significant cost pressures across the global steel sector.

Preparing for the future of work

Our analysis of companies that have embarked on large-scale, systematic efforts to address future skill requirements suggests that the most successful programs share certain core elements. Above all, they are integral parts of their organizations' overall digital strategies. In fact, senior executives cite talent as the biggest barrier to achieving their digital strategies—those two factors must be deeply connected for success in both. Many companies have learned the hard way that a digital transformation has many moving parts, with multiple elements that must be addressed together to ensure that new approaches deliver real value, are accepted by the wider organization, and can be implemented and sustained at scale.

In our work with the World Economic Forum's Global Lighthouse Network of advanced manufacturing companies, for example, we found that while such companies make extensive use of smart technologies in their operations, they pay equal attention to their business processes, their management systems, and their people.

Second, the programs address every level of the organization. Successful companies approach automation and digitization as a comprehensive

transformation program, driven by top management and involving the majority of the organizations' managerial workforces.

Third, most successful companies tailor and customize their training to match both the organizations' goals and the needs of individual learners, from CEOs to frontline operators. Training content is made as specific as possible, covering the technologies, tools, and business scenarios that individuals will face in their new or changing roles.

Finally, content is delivered using adult-learning principles via a combination of classroom or online learning and real, on-the-job experience. In addition to making use of technical content, successful reskilling programs are designed to help learners alter their mindsets: they teach employees about new ways of working and emphasize the personal- and professional-growth opportunities available to them.

Scout, shape, and shift

In the coming years, almost every operations-intensive organization will need a systematic approach to the challenge of shifting skill requirements. Designing, building, and executing such an approach requires three broad steps: scout, shape, and shift (Exhibit 4).

The first step is workforce planning. Companies must scout their future skill needs, analyzing the skills required to deliver on their strategic ambitions. As we noted previously, skill demands are determined by an organization's wider technology strategy, so understanding the potential impact of automation and digitization across an organization and developing a robust strategy to capture those opportunities is a necessary precursor to any "rightskilling" program.

Once an organization understands the combination of skills it requires for future roles, it can match those requirements against the skills available in its current workforce to plan how staff can be redeployed over time and identify the gaps that must be filled to meet the needs of both existing and new roles (Exhibit 5). During the planning phase, companies should also assess the underlying factors that can make or break a reskilling program. Those include the capabilities of an organization's existing HR and training infrastructure, as well as the willingness of its workforce to embrace change.

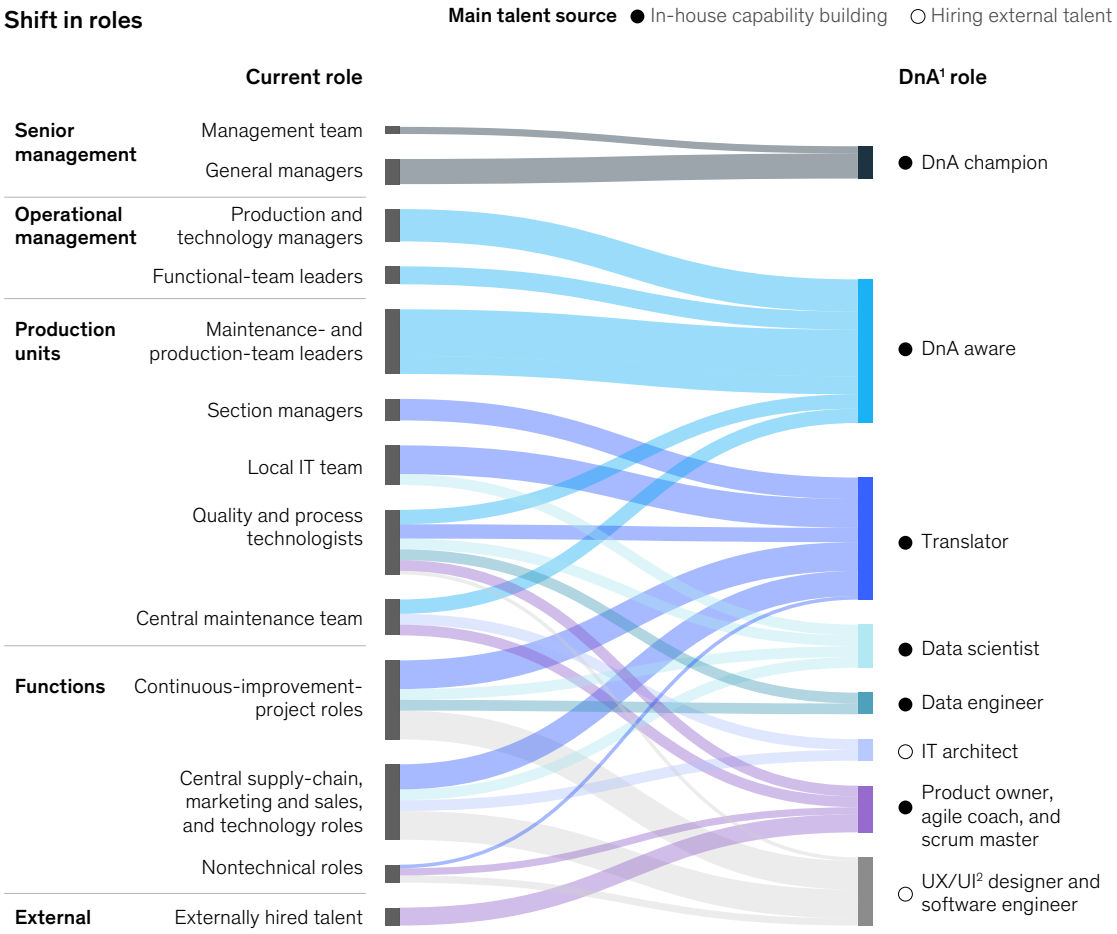
Next, an organization should prioritize the skills that affect the largest number of employees and the roles that require the largest skill shifts and develop content and delivery mechanisms for each of its priority cohorts. JPMorgan Chase has introduced several schemes to develop the digital skills of current and future workers as part of its five-year, $350 million commitment to skill building. They include a ten- to 14-week immersive coding academy for high-performing technology staff and a degree apprenticeship that allows people to earn a degree while working within the company's technology business. A large integrated energy company uses a gamification approach to train

Exhibit 4

An end-to-end skill transformation follows a three-phase approach.

Exhibit 5

Creating the right talent pool for a digital and analytics transformation combines in-house capability building and hiring for specific roles.



[1]Digital and analytics.
[2]User experience and/or user interface.

operational staff in new, digitally enabled working methods. Staff are given access to a library of online apps in which they complete progressively more challenging tasks. Their results are recorded in an individual training account, and high performers receive both public recognition and financial reward.

At the center of a skill-shaping effort should be a talent-transition hub and a corporate academy that oversee the delivery of reskilling programs, allocate employees to learning journeys, and provide reskilled staff to the parts of the business that need them most. The hub will also be responsible for ensuring that an organization's reskilling system grows and adapts to suit the needs of the business, tracking the performance and impact of the program and using agile techniques to test, adapt, and refine curricula and learning systems.

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a business's offer to its staff. Companies need to develop clear and compelling value propositions for employees to ensure that their existing staffs see the benefits of developing new skills—and so the organizations can attract external talent to fill the specialized roles for which there are insufficient internal candidates.

Finally, companies need to shift the skill profiles of their entire organizations by developing and deploying the infrastructure and capabilities necessary to reskill at scale. While all employees may need to upskill themselves in broad topics, such as the business value and applications of digital and analytics, some may need much deeper and targeted reskilling for particular new roles.

Preparing for the future of work is set to become an integral part of every organization's digital and automation strategy. The imperative for action in operationally intensive companies and sectors is particularly strong, as technology profoundly alters the way their work is done. Is your organization ready to respond?

- How will your digital transformation ensure that your people are equipped to meet future skill demands?
- Is your reskilling program evolving to make effective use of new technologies and approaches to learning?
- What is your organization offering existing and potential employees to ensure that it can attract and retain the talent it needs?

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