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Pharma operations: Creating the workforce of the future

Reskilling employees to address talent gaps can help a company retain the bulk of its operations workers and empower them to take advantage of a new world.

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In a world experiencing unprecedented technological change, have pharma operations been left behind or are they participating in the radical advances? Some might argue that the industry has been stagnant, with little transformative change over the past 50-plus years: a tablet-compression machine today looks a lot like one from the 1950s, microbiologists and chemists run many lab tests in the same old ways, and the industry continues to face challenges in using data to draw meaningful insights. However, we believe there is ample evidence that it is changing dramatically.

The unprecedented pace and scale of technological disruption brought on by the fourth industrial revolution is affecting the operations function across all industries. Manufacturers are introducing advanced technologies, automating and digitizing processes, and applying advanced analytics to data. Pharma is also facing its own disruptions—for example, new business models (such as direct-to-customer sales and personalized medicine) and new product modalities (for instance, cell and gene therapy).

These macro trends are generating major shifts in the skills the operations workforce must have and forcing companies and their employees to accept new ways of working. Occupational profiles are changing too: some jobs are disappearing as a result of automation while entirely new jobs are emerging. Even now, an estimated 50 percent of existing work activities in the pharmaceutical- and medical-manufacturing industry could be automated. In ten years, more than 90,000 jobs could disappear, while a different set of 90,000 to 120,000 jobs may be created.[1] Over the next decade, pharma executives expect an annual increase of 27 percent in the percentage of roles affected.

Such changes, which affect not only the supply and demand of labor but also job profiles, often lead to public tensions. Yet they could have a positive impact on patients, employees, and manufacturers. Across industries, technological shifts promise more efficient and effective operations; for example, labor markets can use digital talent platforms to match workers with jobs. Technology also creates new jobs and income possibilities—although demand for manual and physical labor is decreasing, demand for socioemotional and technological skills is growing. In pharma specifically, the new industry models aim to improve the patient experience and outcomes.

Pharma companies have been slow to address talent gaps

The most significant disruptors in pharma operations have been and will continue to be new product modalities (such as cell and gene therapy), digitization, and advanced analytics. These disruptors have already created a skill mismatch in more than 80 percent of pharma-manufacturing companies. Executives perceive only a fraction—10 percent—of the impact of disruption that frontline employees say they are experiencing firsthand (see sidebar "About the study").

About the study

The International Society for Pharmaceutical Engineering (ISPE) and McKinsey collaborated to understand the major trends shaping the workforce of the future in pharma operations. McKinsey did the primary research by surveying executives and frontline personnel at 17 pharmaceutical manufacturers and pharmaceutical-engineering companies. More than 3,700 respondents from 28 countries completed the surveys, which focused on several key questions:

- What impact from these trends will frontline personnel feel (by role) and when?
- How do executives and frontline personnel perceive these workforce changes?
- What specific roles and skills will be required in the future?
- What are the best practices to fill skill gaps?

[1] *Jobs lost, jobs gained: What the future of work will mean for jobs, skills, and wages*, November 2017, McKinsey Global Institute, McKinsey.com.

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In fact, more than half of all frontline workers already feel the impact of this disruption on their roles, and an additional 25 percent expect their roles to be affected within five years. But few executives anticipate such an extensive impact.

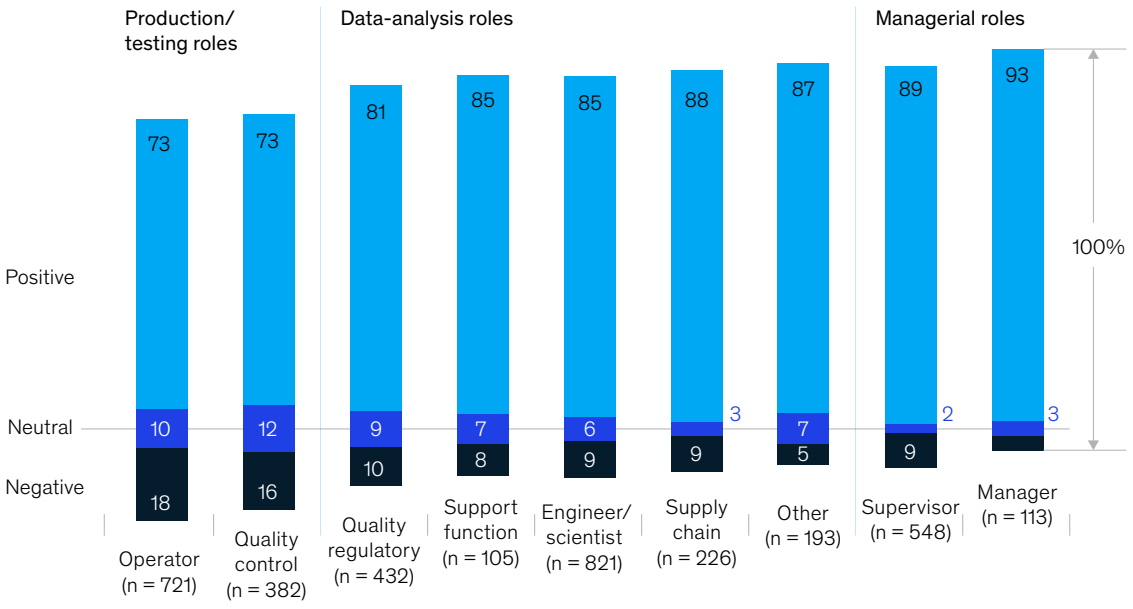
Digitization is already reducing the amount of manual data entry, a change that improves both the data and fact-based decision making. This development has been especially beneficial for managers and people in expert roles, such as engineers and scientists, though the benefits have not yet cascaded down to shop-floor employees. Even so, the job satisfaction of frontline workers remains high, and more than 70 percent have positive expectations about the changes to come (Exhibit 1).

Pharma companies struggle to predict where they will see the talent gaps these disruptions create, though a majority monitor key trends and track talent needs. Only a minority of companies (40 percent) believe that they really know which skills are needed now, let alone in ten years (less than 25 percent). Although demand for social and emotional skills is projected to increase by one-third in the next ten years,[2] pharma operations executives do not yet see these skills as a priority. Frontline workers, on the other hand, do rank social and emotional skills (for instance, comfort with change and continuous learning) as critical for success. Other skills frontline employees consistently cite as important are advanced data analysis, critical thinking, and decision making (Exhibit 2). The good news is that these are relatively coachable skills, and

Exhibit 1

Frontline employees feel optimistic about the future.

Employee feelings about the future,[1] by role, %



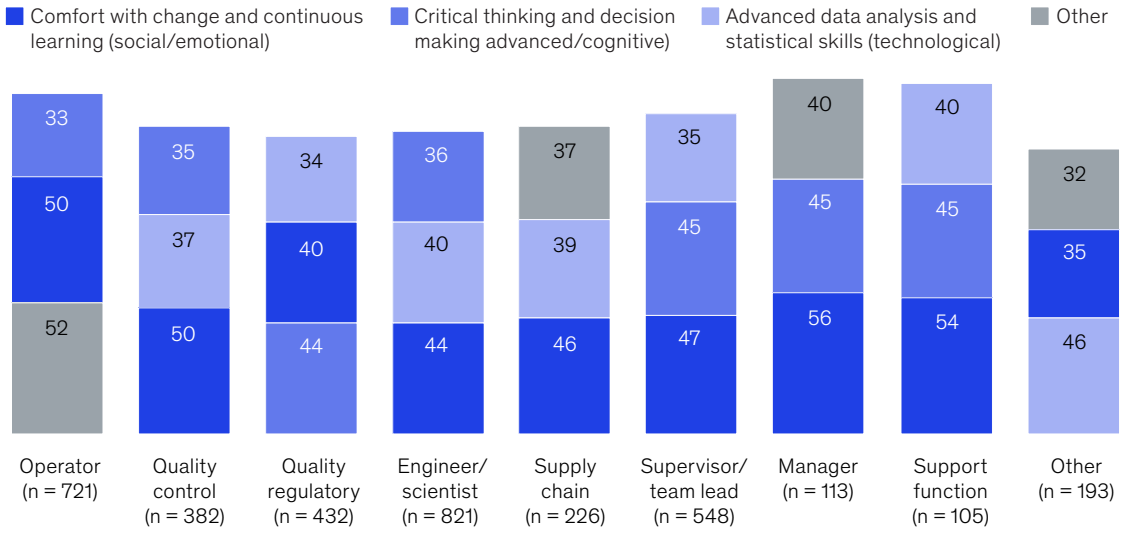
Note: Results are statistically significant across all roles, except support functions; some totals don't sum to 100%, because of rounding.
[1]Question: How do you feel about the changes you expect in the future?

[2] *Skill shift: Automation and the future of the workforce*, McKinsey Global Institute, May 2018.

Exhibit 2

Frontline employees identify the most critical skill they need in the social/emotional group.

Frontline personnel by company who selected the top skill,[1] %



[1] Question: Going forward, what new skills are important to learn for your role or for your colleagues? (Up to three skills selected per person).

companies could address them through targeted reskilling programs.

While almost all companies have or are developing strategies to deal with industry disruptions, less than 40 percent have scaled-up solutions; the majority are stalled in "pilot purgatory." Pharma is not alone in experiencing the challenges of scaling up; other operations-intensive industries report a similar degree of difficulty shifting from pilots to broad adoption. In a focus group, executives also indicated that early-stage strategies typically emphasize enabling technologies and use cases, not the talent or people aspects required to support such strategies.

Although all companies regard the talent gaps as a priority, current efforts at most of them may be missing the mark. To transform how work is done, a company must go beyond status-quo training programs by implementing innovative approaches to managing its workers' transition to new skills. Early leaders in addressing talent gaps have created tailored, cross-functional centers of excellence to reskill workers.

Companies are turning primarily to traditional methods, such as hiring or partnering, to fill the gaps. However, while pharma has historically appealed to new talent, the industry now faces more competition from tech companies and start-ups. Demand for data analysts, data scientists, and data engineers is expected to be four times higher than supply, so hiring is a less effective strategy.

Still, only one-third of the companies surveyed have launched reskilling efforts. Even these companies have covered fewer than 10 percent of the workforce and invested less than $5 million each. These levels are far below those of companies like Amazon and AT&T, which have invested $5,000 to $30,000 per reskilled employee.[3]

Multiple challenges face reskilling programs, such as balancing their demands with those of the rest of the business (cited by half of the respondents), scaling up, and uncertainty about which skills are needed. Furthermore, focus groups with executives confirmed that new-product launches often take priority (in attention and investment) over operational

[3] "Towards a reskilling revolution: Industry-led action for the future of work," World Economic Forum, January 2019, weforum.org; "AT&T invests $1 billion in employee reskilling," Aspen Institute, March 2018, aspeninstitute.org; Chip Cutter, "Amazon to retrain a third of its U.S. workforce," *Wall Street Journal*, July 11 2019, wsj.com.

improvements. That of course adds to the challenge of making the necessary investments in reskilling.

Challenges aside, it is important for pharma executives to be aware that their frontline workers are eager to learn new skills but need organizational and management support to do so. Further, these employees are motivated more by intrinsic factors (such as doing the job well or self-improvement) than by extrinsic ones (for instance, better job security or additional employment opportunities). That is useful information for designers of reskilling programs.

Reskilling programs need a boost to move forward

Research by the World Economic Forum Lighthouses project indicates that organizations must prepare the workforce for this transition, retool their educational systems, and invest in training and lifelong learning to create a mobile workforce that can benefit from the opportunities the fourth industrial revolution has been creating. That will help not only workers but also companies, since a shortage of skills is the most frequent barrier that prevents the scaling up of technologies.[4]

Early technology adopters (within the first five to seven years) have a significant advantage over laggards, so a properly skilled workforce is even more critical to ensure that companies can achieve these large-scale advantages.[5]

Companies can use a three-phased approach to address the skills gap: scout, shape, and shift.

— *Scouting* means determining the skills required to achieve the future vision and identifying the gaps between demand and supply. Most pharma companies report being in this phase—a critical step before scaling up.

— *Shaping* is designing the program architecture to close the demand–supply gap.

— *Shifting* refers to scaling up and rolling out the infrastructure to hire, reskill, or upskill people across the organization.

Exhibit 3 highlights the ten key steps of the scout–shape–shift approach, which organizations should take to design and deploy reskilling and upskilling programs.

Exhibit 3

A three-phase approach can identify and fill skill gaps.

Phases for employers in identifying skills gaps

Scout Assess value at stake and readiness to capture it	Develop strategy and business case
	Determine critical roles, gap in talent, and how to address it
	Assess readiness of enterprise to deliver
Shape Develop future work, roles, and central team	Design future roles and ways of working for highest-value job functions
	Design talent-transition hub
	Build and launch reskilling program
	Develop and deploy change management
Shift Implement, enable, and sustain changes	Establish talent-transition hub
	Track effectiveness of talent-transition-hub operations
	Continue expanding reskilling program

[4] *Fourth industrial revolution: Beacons of technology and innovation in manufacturing*, World Economic Forum in collaboration with McKinsey, January 2019, www3.weforum.org.
[5] Enno de Boer, Helena Leurent, and Adrian Widmer, "'Lighthouse' manufacturers lead the way—can the rest of the world keep up?," January 2019, McKinsey.com.

Early leaders in addressing talent gaps have created tailored, cross-functional centers of excellence to reskill workers.

Reskilling in other industries

Several companies in other industries have already implemented reskilling programs. For example:

— AT&T has invested in reskilling 100,000 employees through an open-architecture approach enabled by key educational partnerships. Since 2013, the company has spent more than $250 million a year on talent development and learning. Early results are promising: in 2016, AT&T filled more than 40 percent of its 40,000 job openings with internal candidates. Retrained employees filled 50 percent of all technology-management jobs and received 47 percent of promotions in the technology organization.[1]

— JPMorgan Chase has announced a five-year, $350 million commitment to develop and pilot innovative training. The programs, which build on the company's New Skills at Work initiative, focus on high-demand technical skills and target both employees and the external community.[2]

[1] "Retraining in the digital age: Agam Berry, quantified commerce," *Economic Times*, May 15, 2019, economictimes.indiatimes.com.
[2] JPMorgan website.

1. Scout
In this initial phase, the predominant activities are identifying roles that will generate the most value, evaluating the gaps between the demand for and the supply of talent, and deciding how to fill those gaps. A survey showed that manufacturing and quality roles warrant the initial focus in pharma operations. The priority skills and mind-sets identified include advanced data analysis; comfort with change, adaptability, and continuous learning; and critical thinking and decision making.

2. Shape
Instead of conducting reskilling programs in a vacuum, companies should tie them to their overall business and digital strategies. There is already evidence that companies are reskilling the workforce, and the pace of these efforts is increasing (see sidebar "Reskilling in other industries"). Historically, the global reskilling rate has been approximately 1.4 percent of employees a year. In the future, it is expected nearly to double, to 2.7 percent.[6] Within pharma, executives expect to increase the number of workers reskilled by two or three times, rapidly scaling up the initial efforts.

3. Shift
Companies have found creative ways to deploy a workforce in transition. One good practice to follow is establishing a central unit (such as a talent-transition hub) to manage the workforce transformation. This central group has three primary management responsibilities:

— *project-based deployment:* facilitating the deployment of underutilized employees in time-bound assignments to apply existing and new skill sets

[6] *Digitally-enabled automation and artificial intelligence: Shaping the future of work in Europe's digital front-runners,* October 2017, McKinsey.com.

— *role transitions:* matching displaced talent with open skill-adjacent positions and transferring talent with skills in high demand to unfilled critical positions in the organization

— *skill development:* identifying the highest-priority critical skills for the future and closing organizational skill gaps by matching people with formal learning journeys and on-the-job training

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To remain competitive, it is critical for pharma companies to address their workforce skill gaps by ensuring that their employees have the skills required to operate and benefit from digital technologies and increased automation. This imperative is also driven by corporate social responsibility. If the degree of automation in pharma operations reaches projected levels, some roles of the current workforce could become obsolete. Addressing the gaps by reskilling employees can make it possible to retain most of them and empower them to take advantage of the new digital world. Companies that succeed will be rewarded with a win–win outcome: maintaining their business advantage while also fulfilling their obligations to current and future employees.

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