Talent management

# Reskilling in the Age of AI

Five new paradigms for leaders—and employees

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Summary.

In the coming decades, as the pace of technological change continues to increase, millions of workers may need to be not just upskilled but reskilled—a profoundly complex societal challenge that will sometimes require workers to both acquire new skills and change occupations entirely. Companies have a critical role to play in addressing this challenge, but to date few have taken it seriously. To learn more about what their role will entail, the authors—members of a collaboration between the Digital Data Design Institute at Harvard’s Digital Reskilling Lab and the Boston Consulting Group’s Henderson Institute—interviewed leaders at some 40 organizations around the world that are investing in large-scale reskilling programs. In synthesizing what they learned, they became aware of five paradigm shifts that are emerging in reskilling: (1) Reskilling is a strategic imperative. (2) It is the responsibility of every leader and manager. (3) It is a change-management initiative. (4) Employees want to reskill—when it makes sense. (5) It takes a village. The authors argue that companies will need to understand and embrace these shifts if they hope to succeed in adapting dynamically to the rapidly evolving new era of automation and AI.

#### Idea in Brief

##### The Situation

New technologies can not only handle a growing number of repetitive and manual tasks but also perform sophisticated kinds of knowledge-based work—such as research, coding, and writing—that have long been considered safe from disruption.

##### The Challenge

To cope, many organizations are investing heavily in upskilling their workforces, but those efforts alone won’t be enough. In the coming decades millions of workers may need to be entirely reskilled—a profoundly complex societal challenge.

##### The Path Forward

Some companies have recently launched successful reskilling efforts. Five important paradigm shifts have emerged from their efforts that other companies will need to embrace if they hope to adapt to the new era of automation and AI.

Back in 2019 the Organisation for Economic Co-operation and Development made a bold forecast. Within 15 to 20 years, it predicted, new automation technologies were likely to eliminate 14% of the world’s jobs and radically transform another 32%. Those were sobering numbers, involving more than 1 billion people globally—and they didn’t even factor in ChatGPT and the new wave of generative AI that has recently taken the market by storm.

Today advances in technology are changing the demand for skills at an accelerated pace. New technologies can not only handle a growing number of repetitive and manual tasks but also perform increasingly sophisticated kinds of knowledge-based work—such as research, coding, and writing—that have long been considered safe from disruption. The average half-life of skills is now less than five years, and in some tech fields it’s as low as two and a half years. Not all knowledge workers will lose their jobs in the years ahead, of course, but as they carry out their daily tasks, many of them may well discover that AI and other new technologies have so significantly altered the nature of what they do that in effect they’re working in completely new fields.

To cope with these disruptions, a number of organizations are already investing heavily in upskilling their workforces. One recent [BCG study](https://www.bcg.com/publications/2023/your-strategy-is-only-as-good-as-your-skills) suggests that such investments represent as much as 1.5% of those organizations’ total budgets. But upskilling alone won’t be enough. If the OECD estimates are correct, in the coming decades millions of workers may need to be entirely reskilled—a fundamental and profoundly complex societal challenge that will require workers not only to acquire new skills but to use them to change occupations.

Companies have a critical role to play in addressing this challenge, and it’s in their best interests to get going on it in a serious way right now. Among those that have embraced the reskilling challenge, only a handful have done so effectively, and even their efforts have often been subscale and of limited impact, which leads to a question: Now that the need for a reskilling revolution is apparent, what must companies do to make it happen?

In our work at the Digital Data Design Institute at Harvard’s Digital Reskilling Lab and the BCG Henderson Institute we have been studying this question in depth, and as part of that effort we interviewed leaders at almost 40 organizations around the world that are investing in large-scale reskilling programs. During those interviews we discussed common challenges, heard stories of early success, and discovered that many of those companies are thinking in important new ways about why, when, and how to reskill. In synthesizing what we’ve learned, we’ve become aware of five paradigm shifts that are emerging in reskilling—shifts that companies will need to understand and embrace if they hope to succeed in adapting dynamically to the rapidly evolving era of automation and AI.

In this article we’ll explore those shifts. We’ll show how some companies are implementing them, and we’ll review the unexpected challenges they’ve encountered and the promising wins they’ve achieved.

[ 1 ]

Reskilling Is a Strategic Imperative

During times of disruption, when many jobs are threatened, companies have often turned to reskilling to soften the blow of layoffs, assuage feelings of guilt about social responsibility, and create a positive PR narrative. But most of the companies we spoke with have moved beyond that narrow approach and now recognize reskilling as a strategic imperative. That shift reflects profound changes in the labor market, which is increasingly constrained by the aging of the working population, the emergence of new occupations, and an increasing need for employees to develop skills that are company-specific. Against this backdrop effective reskilling initiatives are critical, because they allow companies to build competitive advantage quickly by developing talent that is not readily available in the market and filling skills gaps that are instrumental to achieving their strategic objectives—before and better than their competitors do.

In recent years several major companies have embraced this approach. Infosys, for example, has reskilled more than 2,000 cybersecurity experts with various adjacent competencies and capability levels. Vodafone aims to draw from internal talent to fill 40% of its software developer needs. And Amazon, through its Machine Learning University, has enabled thousands of employees who initially had little experience in machine learning to become experts in the field.

The average half-life of skills is now less than five years, and in some tech fields it’s as low as two and a half years. For millions of workers, upskilling alone won’t be enough.

Some companies now consider reskilling a core part of their employee value proposition and a strategic means of balancing workforce supply and demand. At those companies employees are encouraged to reskill for roles that appeal to them. Mahindra & Mahindra, Wipro, and Ericsson have policies, tools, and IT platforms that promote reskilling resources and available jobs—as does McDonald’s, where restaurant employees have access to an app called Archways to Opportunity that maps skills learned on the job to career paths within the company and in other industries.

Finally, some companies are using reskilling to tap into broader talent pools and attract candidates who wouldn’t otherwise be considered for open positions. ICICI Bank—headquartered in Mumbai and employing more than 130,000 people—runs an intense, academy-like reskilling program that prepares graduates, often from diverse backgrounds, for frontline managerial jobs. The program reskills some 2,500 to 4,000 employees each year. CVS used a similar approach during the Covid-19 pandemic to hire, train, and onboard people (some of them laid-off hospitality workers) to create capacity for its critical vaccine and testing services.

## [ 2 ]

Reskilling Is the Responsibility of Every Leader and Manager

Traditionally, reskilling is considered part of the overall corporate-learning function. When that’s the case, responsibility for the design and implementation of the program is often siloed within HR, and its failure or success is measured very narrowly—in terms of the number of trainings delivered, the cost per learner, and similar training-specific metrics. According to a recent BCG report, only 24% of polled companies make a clear connection between corporate strategy and reskilling efforts. Reskilling investments need a profound commitment from HR leaders, of course, but unless the rest of the organization understands the strategic relevance of those investments, it’s very hard to obtain the relentless and distributed effort that such initiatives require to succeed.

At most of the organizations where we interviewed, reskilling initiatives are visibly championed by senior leaders, often CEOs and chief operating officers. They work hard to articulate for the rest of the company the connection between reskilling and strategy and to ensure that leadership and management teams understand their shared responsibility for implementing these programs. For example, as part of its ongoing digital transformation, Ericsson has developed a multiyear strategy devoted to upskilling and reskilling. The effort involves systematically defining critical skills connected to strategy, which correspond to a variety of accelerator programs, skill journeys, and skill-shifting targets—most of them dedicated to transforming telecommunications experts into AI and data-science experts. The company considers this a high-priority, high-investment project and has made it part of the objectives and key results that executives review quarterly. In just three years Ericsson has upskilled more than 15,000 employees in AI and automation.



In his project Transitions the artist Noma Bar plays with perspectives to reimagine his daughter’s old childhood toys.

Similarly, the executive team at CVS has made training and reskilling an integral part of the company’s business strategies. Each individual business leader is now responsible for designing and delivering workforce-reskilling plans to help the company reach its goals, and the ability to do so is factored in to performance assessments. Amazon, too, has famously committed to reskilling as a core strategic objective and now mentions it prominently in its leadership manifesto for managers. The visibility of this commitment contributes to Amazon’s ability to achieve scale in reskilling programs.

## [ 3 ]

Reskilling Is a Change-Management Initiative

To design and implement ambitious reskilling programs, companies must do a lot more than just train employees: They must create an organizational context conducive to success. To do that they need to ensure the right mindset and behaviors among employees and managers alike. From this perspective, reskilling is akin to a change-management initiative, because it requires a focus on many different tasks simultaneously.

Let’s consider several of the most important.

### Understanding supply and demand.

To create a successful reskilling program, companies need a sophisticated understanding of supply (skills available internally and externally) and demand (skills needed to beat the competition). A useful way to develop this understanding is with a “skill taxonomy”—a detailed description of the capabilities needed for each occupation at a company. Employers used to put a lot of effort into creating such taxonomies from scratch, but many leading companies now rely on external providers for the bulk of the work. HSBC, for example, has adopted the taxonomy published by the World Economic Forum and customized it slightly to add skills specific to parts of its business. Similarly, SAP, which used to maintain an in-house taxonomy of 7,000 skills, has recently started working with Lightcast, which keeps a continually updated skill database. But developing a skill taxonomy is only the first step. Next comes the difficult job of deciding which skills get mapped to which jobs. Managers from different divisions may disagree about this. Such disagreement is often symptomatic of a deeper misalignment, and companies will need to resolve that before they undertake any major reskilling initiative.

Reskilling programs require participants to make a major investment of time. So it’s important to try to reduce the risk, cost, and effort involved.

Leaders must also determine what skills they will need in the future—a dynamic process that’s critical for strategic reskilling programs. To do that well, they should focus on figuring out what skills the current strategy demands. Here they’ll need to develop a rigorous strategic workforce-planning methodology. The European insurance company Allianz has done interesting work on this front: It regularly translates forecasted business growth into talent demand, focusing on the number of people needed in various jobs and the skills they’ll require. The model, which is updated as part of the annual planning process, involves economic scenario planning and takes into account the possible effects of digitalization on the workforce.

### Recruiting and evaluating.

Traditionally, candidates are recruited for training opportunities or internal roles on the basis of their degrees or relevant work experience, but that obviously doesn’t work for reskilled workers. A well-developed skill taxonomy can help here, by allowing organizations to think about enrollment policies in light of skill adjacencies, which can facilitate the transition from one skill set to another. Novartis has implemented an AI-powered internal talent marketplace that predicts, matches, and offers roles and projects related to employees’ skills and goals. In our research we’ve also found that if reskilling programs are to succeed, companies must develop a clear set of enrollment criteria for employees, not all of whom will have the right combination of motivation and personality traits to be a good fit for reskilling.

### Shaping the mindset of middle managers.

Middle managers are often resistant to the idea of reskilling, for two main reasons: They worry (1) that their reports won’t be able to keep up with their regular responsibilities while being reskilled, and (2) that once their reports are reskilled, they’ll move to other parts of the organization. In both cases this can lead to “talent hoarding,” in which managers try to hold on to their favorite reports by denying them the ability to participate in reskilling. Several of the companies we spoke with have addressed this problem by making talent development an explicit managerial responsibility. Wipro evaluates managers according to their teams’ participation in training offers, and Amazon promotes leaders on the basis of a performance assessment that includes the question “How have you developed your team?” Middle managers may also resist the idea of hiring reskilled employees, believing that they’re not as desirable as traditionally skilled workers. This problem can be addressed by involving managers in the design and delivery of reskilling programs and by providing sensitivity and unconscious-bias training. No matter what form the resistance takes, senior leaders’ role modeling in support of reskilling is vital to overcoming it.

### Building skills in the flow of work.

It can be costly and logistically challenging to take employees away from their day jobs to participate in training. And adults tend not to like or learn well in classroom-style situations. In a 2021 BCG [survey](https://www.bcg.com/publications/2021/decoding-global-trends-reskilling-career-paths) 65% of the 209,000 participating workers said they prefer to learn on the job. As a result, the best approach for reskilling is to do as much training as possible by means of shadowing assignments, internal apprenticeships, and trial periods. The reskilling program at ICICI Bank, for example, consists of a four-month vocational residency, during which employees take part in simulation-style trainings for the managerial role they hope to get, and an eight-month deployment in the field that involves a structured internship in a bank branch and closely shadowing a current manager.



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### Matching and integrating reskilled employees.

Employees need to be matched with new jobs. Our interview data shows that if destination roles are clearly described in advance, employees become more interested in reskilling because new career trajectories become apparent to them, and the reskilling itself becomes more effective because it’s more position-specific. Once in their new jobs, reskilled employees need several kinds of support to integrate successfully: help with learning new work norms and culture, building networks, and developing soft skills. Here coaching and mentoring can be particularly effective tools. Amazon has demonstrated leadership in this area: It runs a variety of mentoring programs for reskilled employees, among them a buddy system, part of its Grow Our Own Talent program, that connects previous and current program participants. The company also provides career coaching for employees who are making particularly difficult transitions, such as from warehouse worker to software developer.

## [ 4 ]

Employees Want to Reskill—When It Makes Sense

Many of the companies we spoke with mentioned that one of their biggest challenges was simply persuading employees to embark on reskilling programs. That’s understandable: Reskilling requires a lot of effort and can set a major life change in motion, and the outcome isn’t guaranteed. The [OECD reports](https://www.oecd-ilibrary.org/employment/training-in-enterprises_7d63d210-en) that only a very small fraction of workers typically take part in standard training programs, and those who do are often the ones who need them the least.

But workers may be more willing to engage in reskilling than prior data suggests. [BCG data shows](https://web-assets.bcg.com/93/b6/11ba136841189e51cc50486f1340/bcg-decoding-global-reskilling-and-career-paths-apr-2021.pdf), for example, that 68% of workers are aware of coming disruptions in their fields and are willing to reskill to remain competitively employed. The key to success in this domain, our interviews suggest, is to treat workers respectfully and make the benefits of their participation in reskilling initiatives clear. As one of our interviewees explains, “The secret to scaling up reskilling programs is to design a product your employees actually like.”

So how can organizations do that? We have several suggestions.

### Treat employees as partners.

Because reskilling programs are often associated with organizational disruption and job loss—or at least job change—leaders often avoid talking openly about the rationale for the programs and the opportunities they present. But employees are more likely to participate if they understand why the programs are being implemented and have had a role in creating them. Aware of this, several of the companies we spoke with made a point of being honest and clear about why they were creating reskilling programs and involving workers early. One large auto manufacturer, for example, told its diesel engineers that because of changes in the automobile industry, it had less and less need for their skills; it presented its program as a way of ensuring that they would have new jobs and job security in the years ahead. The companies also told us that in designing and implementing reskilling programs, it’s critical to align with worker councils and unions early on and to involve them in advocating for the programs.

### Design programs from the employee point of view.

Reskilling programs require participants to make a major investment of time. So it’s important to try to reduce the risk, cost, and effort involved and to provide (almost) guaranteed outcomes. Amazon allows employees in its Career Choice program to pursue everything from bachelor’s degrees to certificates—and covers all costs in advance. That has proved to be a key factor in scaling up the program, which has already had more than 130,000 participants. CVS, for its part, uses an effective “train in place” model for new employees.

### Dedicate adequate time and attention to the task.

Because reskilling involves occupational change, it usually requires intensive learning, which is possible only if employees have the time and mental space they need to succeed. To that end, four times a year Vodafone dedicates days during which employees may devote themselves entirely to learning and personal development. Bosch goes even further: To help traditional engineers at the company earn degrees and get training in emerging fields, its Mission to Move program covers the cost of tuition and time spent learning for as much as two days a week for a whole year. It even gives participants days off before exams to prepare.



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Naturally, providing employees the time and space for skilling can be harder in industries where most workers are hourly or shift-based. Iberdrola, a renewable energy company, faced this challenge as it digitized. Because it was embracing new technologies, the company realized it would need to reskill 3,300 employees in various hourly roles. Its leaders got the job done by working closely with frontline managers to ensure that operations weren’t disrupted by workers’ taking time off for training. The company considered all training hours to be work hours and paid employees for them accordingly.

## [ 5 ]

Reskilling Takes a Village

Companies have tended to think of reskilling as an organization-level challenge, believing that they have to do the job by and for themselves. But many of the companies where we interviewed have recognized that reskilling takes place in an ecosystem in which a number of actors have roles to play. Governments can incentivize reskilling investments by means of funds, policies, and public programs; industry can team up with academia to develop new skill-building techniques; and NGOs can play a role in connecting corporate talent needs with disadvantaged and marginalized talent groups. Coalitions of companies may be more effective at the reskilling challenge than single organizations are.

When designing reskilling programs for the rapidly evolving era of AI and automation, companies need to harness the potential of this wider ecosystem. We’ve identified several ways in which they can do so.

### Consider industry partnerships.

Instead of thinking of themselves as competitors for a limited talent pool, companies can team up to conduct joint training efforts, which may significantly attenuate some of the challenges outlined above. For example, industry-wide skill taxonomies would provide a useful infrastructure and could in some cases help companies pool the knowledge and resources needed to invest in certain types of capabilities, such as cutting-edge AI skills, which are so new that individual organizations may not yet have the knowledge or the capacity to develop solutions on their own. Industry coalitions could also reassure participants that their investments in learning might open up broader future opportunities.

The Technology in Finance Immersion Programme, offered by the Institute of Banking and Finance Singapore, a nonprofit industry association, is a case in point. The program aims to build up an industry pipeline of capabilities in key technology areas, with participation from all major banks, insurance players, and asset managers in the country, to meet the talent needs of the financial services sector. Similarly, within the European Union a variety of stakeholders have formed the Automotive Skills Alliance, which is dedicated to the “re-skilling and up-skilling of workers in the automotive sector.”

### Partner with nonprofits to reach diverse talent.

Many reskilling nonprofits work with populations that are underrepresented in the workforce. By teaming up with these nonprofits, companies can significantly expand access to talent and employment opportunities in ways that benefit both parties, often at low cost. Some of the ongoing reskilling efforts we learned of in our research involve corporate partnerships with such innovative entities as OneTen (which helps Black workers in the United States), Year Up (which helps disadvantaged youths in the United States), Joblinge (which helps disadvantaged youths in Germany), and RISE 2.0 (a BCG program that helps workers in Singapore without a digital background move into digital roles). Year Up stands out among these initiatives for its careful use of statistical techniques to study the impact of its training on participants. Since 2011 the program has placed more than 40,000 young people in corporate roles and internships that would have been inaccessible to them without the reskilling support and network it provided. The program has an 80% placement rate at more than 250 participating companies.

### Partner with local colleges and training providers.

Companies have a lot to gain by teaming up with educational institutions in their reskilling efforts. Examples of such partnerships include the UK-government-funded Institutes of Technology, which bring together colleges and major employers to provide practical technical training for workers without tech backgrounds, in ways that allow companies to quickly react to new technologies and meet rapidly evolving skills needs; and BMW’s collaboration with the German Federal Employment Agency and the Association of German Chambers of Industry and Commerce, which supports the transition to electric vehicles with reskilling programs aimed at industrial electricians.

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Many companies have an intuitive understanding of the need to embrace the reskilling paradigm shifts discussed in this article, and some, admirably, have already made tremendous commitments to doing so. But their efforts are hampered by two important limitations: a lack of rigor when it comes to the measurement and evaluation of what actually works, and a lack of information about how to generalize and scale up the demonstrably successful features of reskilling programs. To adapt in the years ahead to the rapidly accelerating pace of technological change, companies will have to develop ways to learn—in a systematic, rigorous, experimental, and long-term way—from the many reskilling investments that are being made today. Only then will the reskilling revolution really take off.

A version of this article appeared in the [September–October 2023](https://hbr.org/archive-toc/BR2305) issue of Harvard Business Review.