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Developing a Digital Mindset

How to lead your organization into the age of data, algorithms, and AI

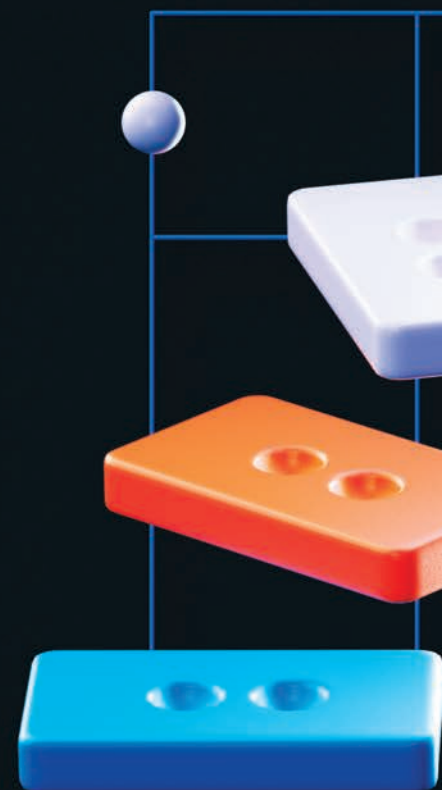
→ by TSEDAL NEELEY and PAUL LEONARDI

WHEN THIERRY BRETON took over as CEO of the French IT services company Atos, in 2008, he knew that a massive and immediate digital transformation was necessary. Annual revenue had increased nearly 6% during the Great Recession, to \$6.2 billion, but Atos wasn't growing as fast as its competitors were. The company suffered from siloed business and functional groups, had limited pooling of global resources, and needed more innovation throughout the company. Digital transformation was the only way forward.

But what would that look like for an IT giant? Breton began by scaling

and globalizing the company, which provides online transactional services, systems integration, cybersecurity, and more. He doubled the size of the workforce to 100,000 people, hoping to fend off the competitors all around him, including digital-born start-ups from Silicon Valley, India, and China. Breton also laid out a plan to integrate AI and other data-driven technology into company processes and upskill the expanding workforce.

The three-year digital-transformation plan depended on creating a culture of continuous learning and required that employees develop what we call a *digital*







mindset. Breton and his team debated options for how to approach those goals. Some believed a robust training program was the only way forward; others were convinced that people learn best on the job. They eventually created the Digital Transformation Factory upskilling certification program. The initial goal was to train 35,000 technical and nontechnical employees in digital technologies and artificial intelligence.

Notably, the upskilling program was voluntary. Breton's team launched an internal marketing campaign to encourage people to learn and get certified. It also instituted a peer and management nomination system to entice employees to join the program and offered rewards for achieving benchmarks in certification. The reasoning was that if employees got certified voluntarily, they would be more likely to internalize the new digital skills and modify their work behaviors accordingly. The learning programs accommodated everyone from data scientists and highly skilled engineers to people in traditionally nontechnical functions, such as sales and marketing.

The results exceeded expectations. Within three years, more than 70,000 people completed their digital certification, in large part because employees understood that growth at the company required digital fluency. Atos was clearly on the right track. Its revenue had reached close to \$13 billion by the time Breton left the company, in 2019, to become France's European Commissioner.

What Is a Digital Mindset?

Learning new technological skills is essential for digital transformation. But

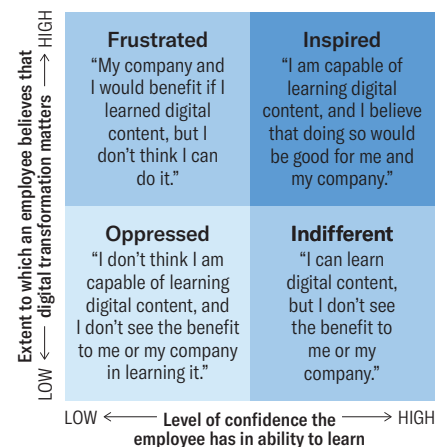
it is not enough. Employees must be motivated to use their skills to create new opportunities. They need a digital mindset. Psychologists describe mindset as a way of thinking and orienting to the world that shapes how we perceive, feel, and act. A digital mindset is a set of attitudes and behaviors that enable people and organizations to see how data, algorithms, and AI open up new possibilities and to chart a path for success in a business landscape increasingly dominated by data-intensive and intelligent technologies.

Developing a digital mindset takes work, but it's worth the effort. Our experience shows that employees who do so are more successful in their jobs and have higher satisfaction at work, they are more likely to get promoted, and they develop useful skills that are portable should they decide to change jobs. Leaders who have a digital mindset are better able to set their organizations up for success and to build a resilient workforce. And companies that have one react faster to shifts in the market and are well positioned to take advantage of new business opportunities.

Like any other change initiative, digital transformation often encounters resistance, and early missteps are inevitable. In our experience, companies do best when they focus on two critical areas: (1) preparing people for a new digital organizational culture and (2) designing and aligning systems and processes. In this article, we lay out the basic principles of this enormous undertaking, drawing lessons from Philips, Moderna, and Unilever. These companies offer a road map for developing digital mindsets in exist-

The Adoption Matrix

Digital transformation sparks a range of responses in employees.



ing talent pools and aligning systems and processes to capitalize on digital proficiency.

Building a Continuous-Learning Culture

The health services company Philips recently transitioned its core competency from supplying health products to providing digital solutions. To bring employees along, it needed to create a continuous-learning environment. Philips partnered with Cornerstone OnDemand, a cloud-based learning and HR software provider, to build an AI-powered infrastructure that adapts to learners' specific needs and pace. Employees can share "playlists" of tailored lessons with colleagues, just as they share playlists on music-streaming services. The platform's social media

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function facilitates connection between new employees and more-experienced members who can serve as mentors, fostering more-organic peer-mentor relationships than formal matching programs do.

Philips's leaders, who serve as the continuous-learning program's teachers, have emphasized the need for not only new knowledge but a cultural shift. They assume responsibility for their team members' futures, not just for managing work tasks, and they share their expertise, knowledge, and passion during training sessions. The company collects data on how employees are using the platform, measures the correlation between continuous learning and performance, and examines how various tools help employees learn, in expected or unexpected ways.

The ability to develop a digital mindset depends on the extent to which employees internalize the undertaking. Thinking about how they will interact with and use new tools and how those tools will help them attain superior performance is essential to a successful digital transformation.

Accelerating Adoption

Digital change is often radical, and it involves shifting shared values, norms, attitudes, and behaviors. That's a tall order, so it is helpful to kick things off with a bold stroke: an act that commands attention and prompts everyone in the company to understand that a new direction is required. (See "What Inexperienced Leaders Get Wrong [Hint: Management]" on HBR.org.) Examples include doing a major reorg,

making an acquisition, reallocating resources, hiring a digital transformation czar who reports to the CEO, and announcing that a legacy system is being phased out.

While signaling the new order creates momentum, it isn't enough. A bold stroke must be followed by a long march, one that begins with assessing how employees feel about the plans for digital transformation. Some may be apprehensive about the unknown; others may worry about their own capacity to learn and apply the new technology and skills to their jobs. These anxieties will affect technical and nontechnical roles. Employees may also be dubious about whether the digital transformation matters—to the company and to their jobs.

When implementing radical change, managers must carefully weigh these two key dimensions: buy-in (the degree to which people believe that the change will produce benefits for them and the organization) and capacity to learn (the extent to which people are confident that they can gain sufficient literacy to pass muster). The highest levels of adoption occur when employees are motivated to develop competence because they fully buy into the transformation strategy and feel capable of helping make it a reality.

In a digital transformation, the two dimensions combine to produce the four quadrants of a matrix of responses: oppressed, frustrated, indifferent, and inspired. (See "The Adoption Matrix.") In the best-case scenario, people will be in the top right quadrant, inspired by the change and believing that they have the capacity



Idea in Brief

THE PROBLEM

Although vital, simply learning new technological skills is not enough to sustain the digital transformation companies need to stay competitive in the age of data, algorithms, and AI. Employees and organizations need to have a *digital mindset*.

HOW TO DO IT

Organizations must focus on preparing employees for a new digital organizational culture by fostering a continuous-learning culture and accelerating adoption of shifting norms. They can do this by promoting employee buy-in and boosting team members' confidence—particularly through employee-training programs. They must also prioritize the design and alignment of systems and processes.

BEING ADAPTIVE

Leaders who have a digital mindset set their organizations up for success and build a resilient workforce. Companies can react faster to market shifts and can take advantage of new business opportunities presented by a dynamic digital environment.

■ Hiring enough digital talent to meet demand is nearly impossible. Recruitment must be supplemented with an expansive effort to upskill existing talent.





to learn digital content. Managers should assess which quadrant each of their team members falls into and then work to move individuals from one to another as needed.

Promoting buy-in. To help engage people who don't see the value in gaining digital competencies (those in the bottom quadrants), leaders must increase messaging that stresses digital transformation as a critical frontier for the company. They should launch an internal marketing campaign to help employees imagine the potential of a company powered by digital technology. Managers should encourage their team members to view themselves as important contributors to the digital organization.

Promoting confidence. After establishing buy-in, managers should focus on boosting the confidence of team members in the two left quadrants. We have found that the more experience people have with digital technologies—whether through education or employment—the more confidence they gain. Sharing stories also helps: People can build confidence vicariously, by learning about the experiences of peers, managers, and others. With encouragement and reinforcement from company leaders and direct managers, employees can begin to believe in their own capabilities. (See the sidebar “The Elements of a Successful Employee-Training Program.”)

It may seem that it would be more efficient to simply hire people who already have the technical skills needed to bring a workforce into the digital age.

But as most companies know, the war for talent is fierce: Hiring enough digital talent to meet demand is nearly impossible in the current market. As a result, recruitment must be supplemented with an expansive effort to upskill existing talent.

Leaders should identify influencers in their ranks who have a digital mindset and recruit them to champion the transformation and become role models for those who are reluctant. Influencers can also be very helpful in identifying areas of concern among employees and ideas for improvements. They are likely to understand what kind of messaging will resonate with employees. Holding training sessions about the digital transformation and communicating new targets is also important.

Aligning Digital Systems

It is critical that organizational leaders understand how employees will deploy digital tools so that they can build technology ecosystems and processes that foster a digital mindset and accelerate digital transformation.

Research by Harvard Business School professors Marco Iansiti and Karim Lakhani and colleagues identifies three of the main components of Moderna, the digital-born biotech and pharmaceutical company. The first, foundational layer is enormous access to data, which is the source of the company's value in developing vaccines and other therapeutics. The second is its reliance on cloud computing—a not only cheaper but faster and more agile solution than in-house servers. The third is its capacity for

building AI algorithms to perform R&D processes with an accuracy and speed that is impossible to achieve manually. As Moderna's cofounder and CEO Stéphane Bancel told the scholars, Moderna is a “tech company that happens to do biology.”

Historically, large pharmaceutical companies have operated in globally distributed, siloed units, but Moderna has a fully integrated structure in which data flows freely so that different teams can work together in real time. As Juan Andres, the company's chief technical operations and quality officer, has pointed out, “What's more important than having sophisticated digital tools or algorithms is integration at all levels. The way things come together is what matters about technology, not the technology itself.”

In January 2020, when Moderna faced the urgent task of developing a vaccine for Covid-19, it was able to accelerate the process because integration at all levels was already in place. Bancel had hired Marcello Damiani five years earlier to oversee digital and operational excellence, and Bancel was careful not to separate the two roles. “Enabling Marcello to design the processes was key,” he explains. “Digitization only makes sense once the processes are done. If you have crappy analog processes, you'll get crappy digital processes.” Fully integrated systems and processes allowed Moderna employees to deploy existing digital solutions for the vaccine and build many others in-house, either designing algorithms from scratch or tweaking existing ones to perform deeper and more-specialized analyses. Only a few

■ **A leader's task is not simply to adapt; it is to be adaptive. Digital transformation is not a goal that one achieves; it is the means to achieve one's goals.**

months after the Covid-19 outbreak, Moderna had developed some 20 algorithms for vaccine and therapeutic development and was working on many others.

Unilever, the consumer goods giant, has also adapted its sprawling global business for the digital age. For this manufacturer and retailer of household staples—more than 400 brands sold in 190 countries—success is a delicate balancing act between the specificities of local markets and the broad scale of global operations. The solution was agile teams, which could focus on customizing products to the “last mile” while simultaneously aligning their work across multiple countries using the company’s digital capacities. Rahul Welde, Unilever’s executive vice president for digital transformation and a 30-year veteran of the company, designed an agile-team structure that allowed members to remain globally distributed while making strategic use of data for tailored initiatives within rapidly changing local markets.

Under Welde’s leadership, Unilever formed 300 10-person agile teams that were remote and global and could operate at scale. According to Welde, the strategy had three parts. The first was using enabling technology and tools, which could reduce global-local divides. With digital platforms, brands could engage directly with customers in local markets on a vastly larger scale. The second was redesigning existing processes to adapt to new technology and tools. The third was about making sure that people had access to the technology and both the skills and the motivation to use it.

The Elements of a Successful Employee-Training Program

Continuous learning marks a new paradigm for education and career growth:

The days when employees had one job and a fixed skill set for a whole career are gone. Companies that successfully upskill their workforce follow six practices.

1. Set a companywide goal for training.
2. Design learning opportunities that include all functional roles.
3. Prioritize virtual delivery, making learning scalable and accessible to everyone.
4. Motivate people to learn through campaigns, awards, and incentives.
5. Make sure managers understand the offerings so that they can effectively guide and inspire employees.
6. Encourage employees to participate in projects with digital components and hands-on learning opportunities.

Who Selects Digital Tools?

Managers and business leaders must be heavily involved in selecting and implementing digital tools. To do that, they must understand what IT departments today can and cannot do. Historically technology groups have been well equipped to handle large, enterprisewide implementations of software and to make sure that the software undergirding a company’s operations is maintained and works the way it should. That remains a key function of IT for implementations of bespoke tools or ERP systems. However, most of the technologies that companies adopt to enable digital transformation are cloud-based (SaaS). Teams can simply buy licenses, download the software, and get started without ever looping in IT.

Whereas IT is accustomed to managing support applications, business leaders are best suited to the task of defining new roles and routines—and effectively reshaping organizational culture and goals. They should begin by identifying which local activities will most effec-

tively drive larger organizational goals, as this will inform the choice of digital tools and the direction of the transformation. As technology-driven process changes lead to new roles and responsibilities, new collaborative networks will open within the organization. These networks are the real positive drivers for the organization.

The company must continually gather data to monitor the transformation effort and assess whether employee behaviors are helping or hindering what we call the *work digitization process*. Leaders should study how information flows within the organization and remove institutional obstacles that might prevent employees from adopting the new process.

Change as a Constant

According to change management theory, organizations move from a current state to a transitional state and then on to a future state. The transitional state is typically considered to be a fixed period of time in which an organization shifts



from familiar structures, processes, and cultural norms to new ones. People understandably experience strong emotions during the transition, because it requires them to make sense of new perspectives and ways of behaving. During this temporary state of ambiguity, everyone's task is to negotiate between the organization's past and its future.

In a digitally driven world, however, there is no end point to the transitional phase: Digital tools change constantly and rapidly, as do the knowledge and skills necessary to use them. Organizational structures must be continually tuned to make use of new data insights, and leaders must keep working to bring employees along as the organization evolves.

Reconceiving of change as a constant process of transitioning rather than an activity that occurs between states helped Thierry Breton lead a successful digital transformation at Atos. It may be surprising that an IT company needed help with its own digital transformation, but that just underscores our point about how essential it is to cultivate a digital mindset. Just because employees have mastered one technology doesn't mean they are ready to adapt to the next one. Leaders need to view digital change as a state of constant transition that requires everyone to embrace the dynamism and uncertainty of permanent instability.

DIGITAL TECHNOLOGY AND its impact on organizational structures, job roles, people's competencies, and customer needs is ever changing. A leader's task is not simply to adapt; it is to be adaptive. Digital transformation is not

a goal that one achieves; it is the means to achieve one's unique goals. With a digital mindset, employees across the organization are equipped to seize the opportunities our dynamic world presents. ☺

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