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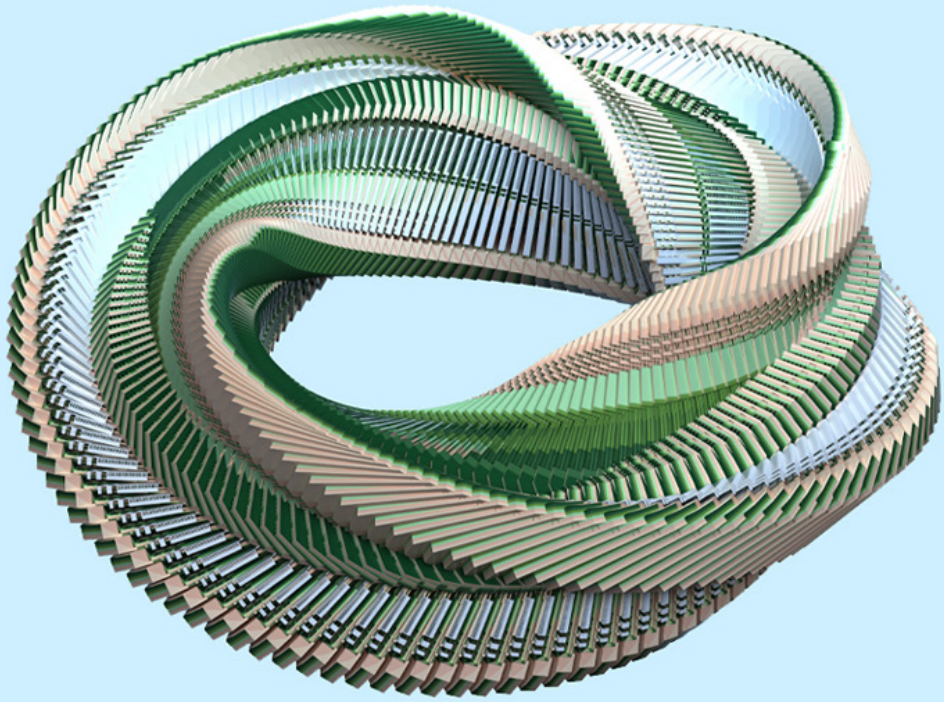
McKinsey Explainers

What is digital transformation?

Digital transformation is the rewiring of an organization, with the goal of creating value by continuously deploying tech at scale. A clear digital transformation strategy focused on specific domains and enabled by a set of specific capabilities is critical for organizations to not only compete but survive. Digital transformations are not a one-and-done project; most executives will be on this journey for the rest of their careers.



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Digital transformation is the fundamental rewiring of how an organization operates. The goal of a digital transformation, as outlined in the new McKinsey book *Rewired: A McKinsey Guide to Outcompeting in the Age of Digital and AI* (Wiley, June 20, 2023), should be to build a competitive advantage by continuously deploying tech at scale to improve customer experience and lower costs.

Like any commonly used phrase, "digital transformation" has devolved into a catchall term that means different things to different people. That's a problem. Digital transformation strategy is critical for organizations to not only compete but survive. If leaders can't be clear about what a digital transformation is—and align their organization around a specific program—they can't expect to be successful.

Digital transformations are different from regular business transformations, in both small and big ways. For one thing, business transformations usually end once a new behavior has been achieved. Digital transformations, on the other hand, are long-term efforts (like, really long term; most executives will be on this journey for the rest of their careers) to rewire how an organization continuously improves and changes. That's because technology, which is constantly evolving, is becoming further integrated in business. For example, given the growing importance of AI in generating business insights and enabling decision-making logic, any digital transformation should also be an AI transformation.

Executives are paying attention. An estimated 90 percent of all organizations are currently undergoing some kind of digital transformation, according to McKinsey research. "It is 'show me the money' time for digital transformations," says McKinsey senior partner Rodney Zemmel. "To succeed in a digital transformation, it needs to be a CEO agenda item."

As we'll show, successful digital transformations hinge less on how companies *use* digital and more on how they *become* digital.

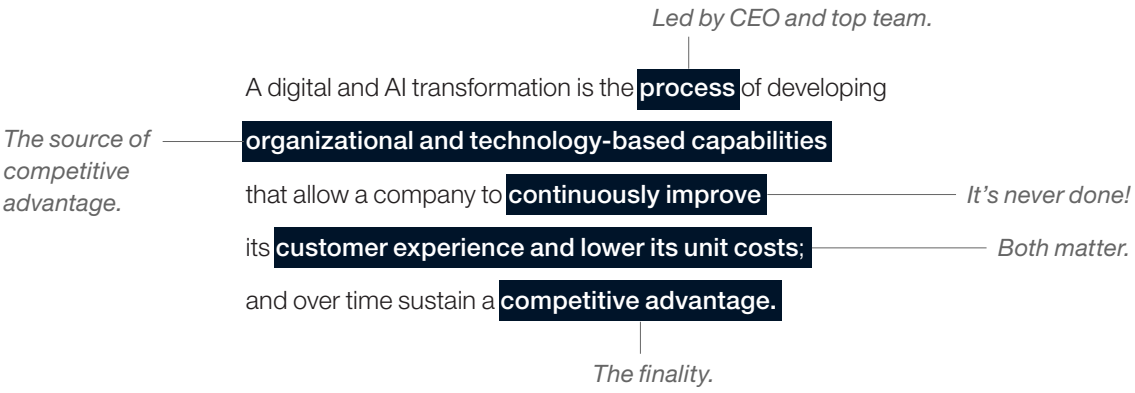
Learn more about McKinsey Digital.

What capabilities are needed to succeed in a digital transformation?

Successful digital transformation strategy requires a variety of coordinated actions. *Rewired* lays out six capabilities critical for successful digital transformation:

— ***The ability to craft a clear strategy focused on business value.*** Companies should focus their transformations on specific domains (customer

What we mean by digital and AI transformation



journeys, processes, or functions) that generate significant value for the business. The transformation should be guided by a road map that details the solutions and resources needed to deliver change to prioritized domains.

— *A strong talent bench with in-house engineers.* No company can outsource its way to digital excellence. Being digital means having your own bench of digital talent working side by side with your business colleagues. The best digital talent programs go way beyond hiring: they should include employee value propositions that attract and retain the best talent; agile and digital HR processes to find, manage, and train talent; and a healthy environment where the best talent thrives.

— *An operating model that can scale.* Digital transformations depend on cross-functional teams that bring together people from across the company. Most companies already have a handful of these teams, but scaling to support hundreds or thousands of them requires a new operating model. There are three primary operating models to consider: the digital factory, the product and platform model, and the enterprise-wide agility model.

— *Distributed technology that allows teams to innovate independently.* Technology in an organization should make it easier for teams to continually develop and release digital innovations to users. To make this happen, organizations should foster a distributed technology environment where every team can access the data, applications, and software development tools they need. Recent technology advances can help create this distributed environment—these include the thoughtful use of APIs to disengage applications, the availability of developer tooling, the selective migration of high-value workloads to the cloud, and the automation of infrastructure provisioning.

— *Access to data that teams can use as needed.* Reliable, current data are crucial to successful digital transformations. Data architecture should produce data that are easily accessible by teams across an organization and should be continually assessed and updated. Strong governance is required to enable this capability. The core element is the data product, which structures various pieces of data into a coherent unit that can be easily consumed by a range of teams and applications.

— *Strong adoption and change management.* In the past, the technology adoption cycle was a linear process of gathering requirements, developing solutions, testing, and then training the end user. This process often resulted in low adoption rates and ultimately low business value. Digital transformations follow a far more iterative process of designing, prototyping, collecting feedback, and improving the solution so it can capture the full value potential. As a rule of thumb, for every dollar you spend on developing a digital solution, plan to spend at least another dollar on implementing process changes, user training, and change-management initiatives. Companies should think about adoption and scaling at the beginning of their transformation so they can build in the resources needed to deliver the change.

No digital transformation can be successful without coordinated action across all these areas.

What is a digital transformation domain and why does it matter?

Digital transformations have a much improved probability for success when teams focus on changing entire domains (for example, a customer journey, process, or functional area) rather than only on use cases (a single step within the domain, such as answering a customer-service call). A focus on domains is conducive to effective change because it encompasses all related activities to

deliver a complete solution. So instead of focusing on just one step of a process—such as creating the process for a customer to open a bank account through an app—the domain would also include all the other activities (account setup, verification, workflow automation, etcetera) required to open the account. Reckoning with all those other activities is what allows a solution to deliver its value. A domain should be large enough to be valuable and noticeable to the company but small enough to be transformed without relying too much on other parts of the business. Managing the interconnectivity of use cases and solutions within a domain is one of the keys to transformation success.

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What role can AI play in a digital transformation?

AI, and particularly generative AI (gen AI), is upending how companies operate and build value, presenting huge opportunities for value creation. But it can be easy to get distracted by shiny new toys. Digital and AI transformations, says McKinsey senior partner Eric Lamarre, "should always start with the business problem you want to solve." The lessons of past technology innovations still apply: value comes from having a clear understanding of business goals and how technology can help meet them. It's important to experiment and learn rapidly, but it's also critical to resist the temptation to develop use cases with exciting new technology that don't scale and create value for the business. Lamarre continues: "The conversations [around gen AI] right now make it feel like a technology in search of a problem."

Building value with gen AI requires the same strong competencies needed for a successful digital transformation, including a clear strategy, an in-house digital-talent pool, and a responsive and scalable operating model. And it's not just a "one and done": companies that wish to incorporate gen AI into their value propositions will need to continually revisit their digital transformation road maps and review prioritized solutions to determine how new iterations of gen AI models can support their goals.

What are the key leadership roles in a digital transformation?

A successful digital transformation touches a broad range of an organization's functions so they can work together in new ways. This requires large-scale and coordinated investments. The only person who can make that level of sustained change happen is the CEO. One of the CEO's crucial jobs is to ensure alignment, commitment, and accountability among the leadership team. Without any of these, progress on digital transformations can rapidly stall.

Leaders at the C-suite and business unit level have crucial tasks as well. When it comes to tech, the chief information officer typically focuses on improving the inner workings of the company with technology. The chief technology officer usually works on improving customer offerings with technology. Chief digital officers, in many cases, act as coleaders of the transformation and typically work with digital and AI technologies to create new digital experiences for users. The chief human resources officer plays a crucial role early in the transformation to secure digital talent and to put in place the talent management practices that will develop and retain digital talent, while the CFO oversees the transformation business case and the tracking of the value realization. Finally, the chief risk officer needs to direct the integration of risk checks into the development process and understand how to respond to new risks, such as data privacy and cybersecurity, that a digital and AI transformation may generate.

Learn more about McKinsey Digital.

How do you know if a digital transformation is working?

It can be surprisingly difficult to know how a digital transformation is going. Without properly tracking and measuring outcomes, leaders will struggle to manage performance and ensure that the changes happening are creating value.

Knowing what to measure is half the battle. In digital transformations, key performance indicators (KPIs) usually fall into three categories:

— *Value creation.* Digital solutions typically target one or a few operational KPIs that can usually be translated into financial benefits.

— *Team health.* Many digital transformations progress more slowly than initially planned, because their teams are understaffed, they did not adopt modern ways of working such as agile, or they lack critical capabilities such as product management and user-experience design. In our experience, high-performing teams can be five times more productive than low-performing teams.

— *Change-management progress.* These metrics measure the progress in building new capabilities and the health of the transformation itself. Are we mobilizing teams as planned? Are people engaged? Are we building capabilities and talent? Are people seamlessly using the technology, tools, and products being developed? In our experience, the perfect is the enemy of good when managing change.

Examples of companies doing digital transformation well

To be digital, every company needs to rewire how it works. Once upon a time, Amazon was just another start-up: it had to invest in its technology, data, performance management, and talent practices over years to become an industry leader. The good news is that successful digital transformations aren't just the purview of the tech titans.

Established companies of all kinds can be successful on their digital transformation journeys. Here are three examples:

— The copper-mining giant Freeport-McMoRan unlocked next-level performance by building and deploying an AI model at an ore-concentrating mill in Bagdad, Arizona. Leadership set the aspiration to increase the site's copper output without a massive injection of capital. The company pulled together cross-functional teams to build, test, and iterate on the AI model, shifting the culture to focus on rapid iterations and continuous improvement. Freeport-McMoRan put a senior product manager in charge to help coordinate teams and improve allocations across working teams, assigned a finance director to manage impact tracking and reporting, and instituted a quarterly planning system (similar to quarterly business reviews) in which top leaders from the company came together to set objectives and key results and to focus resources on high-priority areas.

— Vistra, one of the largest power producers in the United States, built a multilayered neural network model to improve overall efficiency, improve reliability, and reduce emissions. The model combed through two years' worth of data at the plant and learned which combination of factors would optimize a plant's efficiency at any given time, converting them into an AI-powered engine that generates recommendations every 30 minutes for operators to improve the plant's heat-rate efficiency while extending asset life. Key to the success of this approach was building a capability to scale the solutions (for example, a machine-learning-operations infrastructure to standardize and maintain models) so they could be easily applied and tailored to each of the stations in Vistra's network. A cross-functional team including plant operators, data scientists, analytics translators, and power process experts ensured rapid development, high-quality models, and adoption of the models.

— An AI bot helped Emirates Team New Zealand win its fourth America's Cup in 2021. Using deep reinforcement learning, the bot learned how to become a professional sailor. This happened by bringing together sailors and data scientists to develop and train the bots so that they could learn dynamically and gain greater accuracy through continuous feedback. The team put extensive time into figuring out the right learning models, how best to coach the bot, and the right guardrails to put into place. To enable the scale of computation required, the team hosted many of the bots and applications on the cloud.

Learn more about McKinsey Digital, and learn about digital transformation–related job opportunities if you're interested in working at McKinsey.

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This article was updated in August 2024; it was originally published in June 2023.

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