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Overcoming the core-technology transformation stalemate

Successful transformations demand a disciplined approach, a top-team mindset that fuses technology and business goals, and execution tailored to core-technology complexity.

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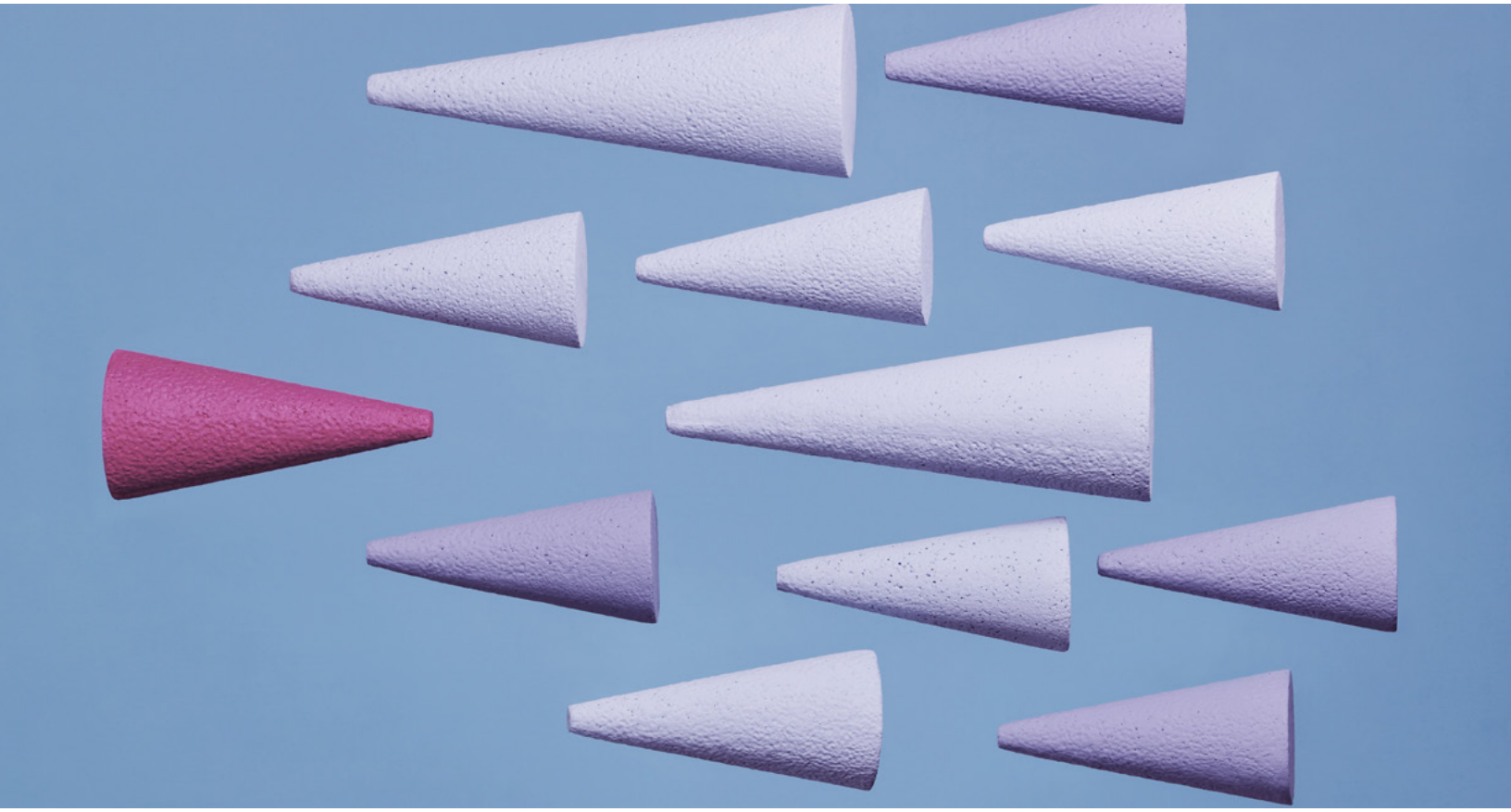

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Across almost all sectors, large companies face an unprecedented wave of technology demand requiring significant transformation—often while grappling with rising costs and shrinking margins.

Facing strong market pressures that demand compelling action to transform, many executives struggle with where or how to pivot, how to prioritize, and where to invest. This struggle is due to the heavy investments needed to repair aging systems, the need to pay off "technical debt" (the extra investment required today to fix yesterday's tactical decisions and suboptimal technical solutions), and a growing shortage of talent. The demands from regulators for greater risk controls, especially in service industries such as banking and telecommunications, is also putting immense pressure on technology departments.

At the same time, fast-rising customer expectations require new functionality that must be developed without breaking current functionality or reducing performance. This has become even more relevant in the wake of COVID-19, when remote delivery of products and services has increased dramatically. In the United States, for example, the percentage of online retail sales grew as much in the first ten weeks of the pandemic as in the preceding ten years.[1]

At the core of these very real pressures is a set of common fears and misconceptions about technology transformations, often heightened by biases born of past experience (see sidebar "Three fears and misconceptions that stymie technology transformations") that add to the indecision.

[1] Bank of America, US Department of Commerce, ShawSpring Research.

Three fears and misconceptions that stymie technology transformations

Finding the institutional will to take on a technology transformation requires executives to set aside fears and misconceptions that prevent them from taking action. Common myths include the following:

- *Technology transformations are doomed to fail.* The business world has a long history of poorly managed core-technology transformations. Every executive has heard the "horror stories" (true, or not) of IT projects that cost fortunes and run years over schedule without delivering tangible value. This is consistent with the fact that only one in five technology transformations delivers sustained impact.
- *Overhauling the technology stack is only a CIO problem.* Too many companies fail to grapple with their technology issues, preferring to push them off to the side in the IT department, making it a "CIO problem." This tendency is exacerbated by the lack of true understanding of technology at the top table. Given the importance of technology and the size of the investment required, a technology transformation cannot succeed without a true partnership between technology and the business.[1]
- *The investment is too significant to address now.* Many leaders assume a technology transformation requires an enormous outlay to replace core systems. In fact, experience shows that some targeted intermediate steps can make a big difference. More important, however, is preventing short-term pressure to reduce costs or increase revenues from overwhelming the long-term need to invest in technology. Studies show that companies that persistently invest in technology generate total return to shareholders 2.6 times greater than their peers.[2]

[1] McKinsey Transformational Change Survey, 2012, 2014, 2016, 2018.
[2] McKinsey Digital Quotient data set; Capital IQ.

Yet leaders must overcome these barriers, because the payoffs for successful transformations are substantial. We have seen organizations increase run and change productivity by 20 percent, double the speed of delivery, and decrease risk and resilience issues by a third. While core-technology transformations are complex, they are also critical to remaining competitive in a rapidly digitizing world.

How, then, can companies address these challenges? Based on work with dozens of companies on their technology transformations, we believe three key elements matter most: being intentional about the approach, adopting a top-team-led mindset, and proceeding with rigorous and transparent execution tailored to the realities of modern technology systems.

1. Making a considered decision when choosing a transformation approach

There are three major archetypes for approaching core-technology transformations: "repaint," by making the minimum investment required to maintain existing operations and digital channels; "renovate" through gradual but persistent upgrades of the core and more substantial improvements when necessary; and "rebuild and replace," by building or buying a completely new IT stack (or large portions of it) and migrating the existing business to it (exhibit). As companies progress on their transformation journey, they may switch from one archetype to another.

Which approach or archetype is right for a company depends on its particular circumstances. Companies under significant financial pressure may need to repaint, with targeted investment to maintain the technology stack and preserve the ability to play in the future. Companies too often default to a repaint approach simply "to do something," because it is far easier to put off a strategic decision on technology spend for another budget cycle. This approach, however, has the effect of treading water, which leads to falling further behind the competition and ultimately increasing investment costs when tactical improvements must be replaced by more holistic solutions.

At the other end of the spectrum, companies that have significant levels of technology complexity and technology debt and sufficient financial resources or capabilities on hand can choose a greenfield rebuild approach. This allows incumbent companies to free themselves from legacy technology constraints and compete with digital natives that have substantially lower operating costs. This approach is particularly attractive where speed to market is critical for capturing value, or delivering a new offering requires a significant departure from the current operating model. The difficulty with this approach is that it requires considerable capital outlay; a depth of technical knowledge to build the new stack, migrate applications to it, and

Exhibit

There are three possible archetypes to drive technology transformations.

When it applies	**Repaint**	**Renovate**	**Rebuild and replace**
	Constrained investment envelope and limited management and execution capacity or capability	Some investment capacity and execution capability, with time available for gradual renovation focusing on pressing areas	Available investment capacity, unbearable tech debt in one or more areas, and pressing need to "leapfrog"

decommission the old; and a cultural shift in the organization to ensure the new IT capabilities are leveraged in the most effective way. These need to be planned and executed carefully, as, unfortunately, many of these transformations have ended up with high levels of spend and questionable returns.

In our experience, most large companies tend to be best served with a renovation approach. To be successful, leaders need to define a reference end state. They can then outline a detailed plan for achieving it over time that balances available funding, flexibility to adapt to changing circumstances, and front-loading return on investment (ROI). In most cases, renovation also requires changes in team structure, operations, and dynamics—for example, leveraging next-generation infrastructure services, driving agile ways of working at scale, or building engineering excellence.

One global pharmaceutical company used a renovation approach to radically transform its technology. It set a desired end state of migrating 85 percent of applications to the cloud, accelerating time to market by a factor of three, and decommissioning 25 percent of applications. Over the course of its transformation, the company worked systematically across the key pillars of its approach: sharpening the company's technology vision, increasing the level of business and IT collaboration, launching new capabilities, increasing agility, and turbocharging the technology core. Notably, as part of this journey, the company ring-fenced an engineering team to develop a repeatable method for migrating applications to the cloud (the digital-factory model) that allowed teams to ramp up and streamline the cloud journey at pace. A continuous process of test, learn, and improve helped the company achieve its stated goals within five years.

2. A mindset that fuses the business with technology

Core-technology transformations are successful only when company leaders truly believe in the need to change and become fluent in the language of technology. Transformations are about more than just adding new technologies. They are driven by the needs of customers and employees as well as the imperatives of shareholders and regulators.

The more holistic understanding of technology's role requires an entirely new mindset that enables the business and technology organizations to work as one (see sidebar "A technology transformation must be holistic"). That means effectively replacing all the barriers to partnership with the processes and incentives to make it work. As one banking executive put it, "As we entered the digital era, there was a stark realization that from a customer perspective, we're one organization. So we decided we would fuse the DNA of the business with IT, with one group of people in each case responsible for envisioning, designing, building, and deploying technology to customers." Putting this into practice, the company fundamentally shifted its operating model by grouping its technology assets, processes, and people around platforms aligned to business journeys. Each business platform had "two in a box" leaders, one from business and one from technology, jointly responsible for delivering successful outcomes.

To build the new business/IT fusion mindset across the organization, top companies embed targets throughout the business plan along with a clear end-state vision and transparent key performance indicators (KPIs) shared jointly between business and technology. CEOs demonstrate their own commitment in their communications with employees and other stakeholders. In a recent example, the CEO of a large global bank publicly stated an ambitious goal of migrating 95 percent of applications to the cloud while simultaneously ratcheting up efforts to speed execution, manage risk, and reduce operating costs. This commitment was then cascaded to all business and IT executives in the form of a specific scorecard, to ensure motivation and clear discipline in moving toward the end goal.

Long-term transformations of any kind succeed only by building alignment within the organization and ensuring that senior executives have the confidence and patience to see the process through. For a core-technology transformation, this means building the belief that an investment in IT is an investment in the business.

A technology transformation must be holistic

Technology transformations are often implemented as a set of disjointed initiatives across IT. That leads many promising developments to stall or underdeliver without sufficient transparency as to why. We have found that a technology transformation must be holistic to deliver full business value. This reality requires businesses to be clear about the scope of the transformation itself and the dependencies that underpin its successful execution. Successful technology transformations happen across three vectors, each of which has specific "plays":

- reimagining the role of technology in the organization as a partnership in designing a technology-forward business strategy
- reinventing technology delivery to change how IT functions by embracing agile next-generation capabilities, building small teams around top engineers, and developing flexible technology partnerships
- future-proofing the foundation through flexible architecture supported by modular platforms, enabling data ubiquity and advanced cybersecurity

Exhibit

Technology transformation relies on three vectors.

Reimagine role of technology

1. **Tech-forward business strategy** (new tech-enabled business models or customer-facing products)
2. **Integrated business and technology management** (no silos, product/platform orientation) with strategic spend allocation
3. **Steward of digital user experience** (design thinking, user-centricity, seamless integration with analog)

Reinvent technology delivery

4. **Agile@scale** software delivery
5. **Next-generation infrastructure services** (cloud, end-to-end automation/NoOps, platform as a service)
6. **Engineering excellence** with top talent (both internal and external); do more with less
7. **Flexible technology partnerships** (capability-focused, outcome-based)

Future-proof the foundation

8. **Flexible, business-backed architecture** rehaul delivered iteratively (open architecture, microservices, application programming interfaces)
9. **Data ubiquity and advanced analytics** enablement
10. **Defenses that preempt evolving threats** (cyber, data privacy)

3. Rigorous and transparent execution that is tailored to the complexity of core technology

Long-term transformations succeed only when the objectives are woven into the fabric of the organization. Core-technology transformations offer their own unique challenges, which need to be reflected in deep culture changes that can be developed in three stages:

Establish common technology understanding to size the prize

The transformation journey should start with a shared understanding by both business and technology of the full aspiration for the transformation. This becomes the North Star against which results can be measured. Because technologies are often complex, however, there is generally a large communication gap in the C-suite, which can derail transformations quickly. Leaders need to address this issue by creating a basic level of technology fluency. That plays out, for example, in aligning the CFO and CIO around the shareholder value that technology creates or working closely with the chief human resources officer (CHRO) to determine specific technology talent needs for the future. Investing this time is critical so that executives can follow the transformation journey and contribute to shaping it.

Detail the end-state technology and organization design before building the transition plan from the bottom up

After setting the aspiration, the transformation team must detail the desired end-state technology system and the set of initiatives and guidelines to create it in concert with the actual teams that will own the initiatives and be responsible for implementing them. Input from engineers and architects with firsthand understanding of applications and systems can provide important guidance at this stage. While the symptoms of core-technology challenges may be evident, their root causes may be something more obscure that only engineers or architects can pinpoint.

Once reference guidelines and a comprehensive path to action are established, implementation teams can be given the freedom to implement complex initiatives, such as shifting to next-generation infrastructure; implementing an agile, at-scale software-delivery model; or increasing engineering excellence. Reference guidelines should also define the expected value capture and the methods for tracking progress toward that value.

Initiatives at this stage need to be prioritized and sequenced to ensure that the first steps of the transformation can be implemented quickly and that all investment funds are spent wisely. Ideally, teams start with quick-win initiatives in the very first months to generate momentum for the transformation, such as changes to technology sourcing or the operating model that can be speedily executed. Plans should also account for switching off the legacy technology stack (the "money step") to avoid multiple stacks and extra cost. The deliverables from this stage include a road map toward the end state and a detailed profile of the expected benefits to cost, risk, and delivery speed.

Execute methodically but adaptively, with success measures jointly embedded across business and technology

Following the planning phase, teams begin implementing the initiatives and delivering benefits. Delivery of the changes can be approached with a factory model, where dedicated teams (using external technology partners as needed) make technology improvements to defined journeys and then roll them into the business, much like a production line. Each factory should have reportable technology and business outcomes for which business and IT sponsors are jointly accountable.

An example could be a factory set up to migrate applications to the cloud. In this case, the cloud provider and technology partner work hand in hand with the company's technology/business team to set up and run a "production line" that identifies applications to be migrated, migrates them, and ensures they run smoothly and in an automated way. Also critical at this stage is having

the right talent bench. When starting the journey, companies should look to external technology partners for global experience and relevant expertise. In the longer term, companies can attract and retain technology talent by fostering a strong engineering culture.

Each of these three stages should be supported by the enabling capabilities to ensure and sustain the impact. These include rigorous transformational governance with a single source of truth about the transformation progress, publicly available dashboards, and an engaged CXO-level steering committee; comprehensive change-management and capability-building programs to ensure that employees' hearts as well as minds are won during the transformation process; and use of off-the-shelf digital tools that can often be provided by technology partners. External technology partners and providers, in fact, can provide significant leverage for traditional companies in these transformations. The winners now are those able to curate knowledge and integrate partners.

Realizing the promise of a technology transformation requires a fundamental shift in mindset, from thinking of IT as a function to understanding technology as fundamental to all aspects of the business. This mindset shift is the primary responsibility of all leadership, especially the CEO, who must demonstrate unflagging commitment to the effort. From there, companies can manage the steps outlined in this article: picking an approach that matches the company context, ensuring a united leadership able to fuse business and technology outcomes, and taking a systematic, technology-tailored approach to execution.

There is no doubt that a core-technology transformation takes time, effort, and investment. These costs, however, are more than offset by the resulting gains in the efficiency, quality, and speed to market of customer-focused solutions.

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