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DIGITAL TRANSFORMATION

Embracing Reinvention: How Companies Are Transforming in the Digital Age

The competitive rewards of digital technology are allowing companies to break free from their pasts — and soar.

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7 Key Principles to Govern Digital Initiatives

Nikolaus Obwegeser, Tomoko Yokoi, Michael Wade, and Tom Voskes

Research and survey data provide insights for how leaders can govern digital initiatives for maximum impact.



As digital disruption has become a major force across industries, organizations have responded with significant investments in digital transformation.¹ Unfortunately, recent research suggests that most of these efforts fail to meet or exceed expectations.²

Why?

The reality for many organizations is that digital transformation consists of an ungainly confederacy of digital initiatives revolving around new technologies, a few Skunk Works projects, and random acts of digital enablement.

In other words, they suffer from poor governance. Indeed, research we conducted in 2019 suggests that governance-related concerns are a high priority for the people leading digital transformation efforts in companies. (See “Top Digital Transformation Challenges for Organizations.”) The data reflects feedback from 1,030 digital executives and

shows that companies falter in many areas when it comes to providing structure and governance to digital transformation projects, from finding alignment between business processes to assigning ownership for change efforts.

A well-governed digital program must satisfy different stakeholders across an organization and be flexible enough to accommodate multiple types of initiatives, while ensuring enough rigidity to achieve strategic alignment and efficiency. Unfortunately, most organizations rely on traditional governance approaches that prioritize compliance and risk mitigation. Thus, executives need to rethink their governance approach for digital transformation in a way that prioritizes *active enablement* over *control*. As Andy Weir, CIO of Bankwest, points out, in digital governance, “The executive’s role is to remove ‘blockers.’ They must help teams by demonstrating rapid decision-making and removing impediments to progress.”

Based on our experience working with more than 100 companies on digital challenges as well as interviews with 55 digital executives, we’ve distilled seven key governing principles that are linked to successful digital business transformation.

Digital Governance Principle 1: Centralize information about digital initiatives rather than the initiatives themselves.

Surprisingly few digital leaders have a complete or transparent picture of their organization's portfolio of digital initiatives. Indeed, executives frequently confront a fragmented digital landscape, with varying levels of ownership and responsibility. This situation is especially common in companies with a culture of decentralization, where the locus of power resides in business units or country organizations.

Consequently, an important starting point is to take an inventory of digital initiatives. This may sound like a straightforward task, but it is often quite challenging. People are reluctant to share information for fear they may lose control over their initiatives. Thus, it is helpful to stress that the inventory phase is about the centralization of *information* about digital initiatives, not *control* over them.

Fred Herren, senior vice president, digital and innovation at SGS, the world's largest provider of inspection, testing, and certification services, understood that applying a top-down approach to rules rarely works in decentralized cultures. He noted, "I think it's necessary to walk the talk rather than give instructions. I've managed to get a lot of information because I'm not telling employees to stop [their activities]. I walk around and ask people what's new and I always react positively."

Adopting a collaborative approach — one that focuses on building trust and a culture of information sharing — provides a good foundation for your next key governance actions.

Digital Governance Principle 2: Move from centralized to decentralized governance of digital initiatives as digital maturity grows.

Organizations are divided on where digital initiatives should be situated. According to our research, 84% of organizations have established a dedicated or centralized digital group.

Centralization was the preferred structure of Energie Baden-Württemberg (EnBW), a regional German energy company, when the company launched its digital transformation in 2016. Two years into the transformation, however, the digital team began to observe redundancies and overlap among different units. To minimize them, they created communities to manage common initiatives that didn't require direct intervention from the head office.

Although there is widespread agreement that a central unit or team should initiate a digital transformation journey, many companies recognize the need to eventually decentralize digital initiatives and empower local business units.

"I think the end goal is that everybody in the company is a CDO," said Mark Klein, chief digital officer of Germany's Ergo Group. "As soon as everybody is acknowledging the value of digital transformation, embracing it, and making it happen, I'm not needed anymore."

Digital Governance Principle 3: Decentralize ideation, but centralize idea evaluation and prioritization.

Organizations use different processes to identify and evaluate innovative ideas. Companies that get it right often find that while ideation may be decentralized, the evaluation and prioritization process should be centrally driven.

For example, food giant Nestlé launched the “InGenius” program in 2014 to leverage the creativity of its approximately 300,000 employees worldwide. Employees can pitch their ideas on a software ideation platform and get feedback and votes from other Nestlé employees. Eberhard Ruess, former head of Nestlé’s CIO office, explained that the basic goal for the program was “to reduce the distance between the person who has an idea and the ones who can make it happen, and bring the innovation process closer to more employees.”

Once an idea passes a certain threshold, most companies create a centralized decision-making authority or digital innovation committee to evaluate new ideas against strategic priorities. This committee is typically led by the CDO or other senior executive and includes members from across the different business units of a corporation. Bart Leurs, chief digital transformation officer of Rabobank elaborates: “We set up an innovation board led by the global head of innovation. Every business line has an innovation lead that is also part of this board. Together, they manage the innovation funnel ... creating the same chance for projects to succeed, fail, or to be stopped quickly.”

To leverage the creative power of the whole organization, companies need a systematic approach to funnel ideas into an efficient and transparent pipeline for evaluation and prioritization.

Digital Governance Principle 4: Make sure that KPIs measure the real impact you want to achieve with each initiative.

Establishing appropriate [key performance indicators \(KPIs\)](#) is a critical exercise, particularly for digital initiatives that are highly dependent on strategic priorities related to the company’s future vision, success, and implementation objectives. However, when we asked leaders how they measure the performance of digital initiatives, most of them answered in one of two ways: either “we don’t” or “it depends.”

It became clear that many companies relied on generic success measures, such as adoption rates of new digital tools, but failed to assess if any real impact was generated. According to Edouard Zuber, former CDO of AXA Hong Kong, leaders can struggle to determine business impact of new initiatives, saying, “One of the drawbacks of transformation is that if you are not watching carefully enough, after a couple of years, you’ve spent a couple million dollars and you are not completely sure about the return.”

Our research shows that digital initiatives are usually undertaken to create impact in a specific dimension. Common dimensions include revenue growth, new market creation, or increased customer satisfaction. To produce real results, we encourage digital leaders to clearly identify the desired impact of each initiative and to closely monitor appropriate KPIs. For example, for an impact dimension like workplace happiness, leaders might use employee turnover rate, satisfaction scores from pulse surveys, or competitive benchmarking as KPIs. For impact with customer satisfaction, companies can turn to [metrics like retention rate and net promoter score](#).

Digital Governance Principle 5: Avoid siloed solutions by ensuring data compatibility, technical consistency, and continuous integration of new initiatives with existing systems.

One important — but often underestimated — principle of digital governance involves ensuring new digital initiatives are integrated within a company’s existing IT rules, systems, and capabilities. Digital transformation is an end-to-end process — one closely intertwined with back-end business processes and systems. The successful cases of transformation we identified were often built around a standardized approach to infrastructure, rather than by working on top of a [patchwork of not well-integrated or siloed legacy systems](#).

For example, Ikea realized it could achieve digital innovation at scale only by standardizing data rules across the company. Ikea’s CDO Barbara Martin Coppola told us, “Through data standardization, we can see that if something has worked well in Italy, [and] leverage it for the good of Ikea globally. That allows for transparency, visibility, and accountability.” This approach to data gives Ikea the ability to see what products and processes are working globally, and which are not.

Similarly, Nestlé engaged in a multiyear project aimed at systematically assessing and consolidating the different IT systems used across the company. Without this common infrastructure, it would have been impossible to roll out a suite of enterprisewide digital tools.

Digital Governance Principle 6: Implement a “fit-for-purpose” mapping system that recognizes value potential and degree of feasibility for each initiative.

With a list of digital initiatives and a governance structure in place, organizations need to map the initiatives onto relevant categories. Our research suggests that this mapping process can be conducted by assessing each initiative along two dimensions.

The first dimension is *value potential*, which refers to the value at stake, as well as the opportunity cost of failing to pursue the initiative. Executives should think through their transformation objectives and determine how much value each project contributes to that goal. The second dimension is *degree of feasibility*, which refers to the (perceived) ability of an organization to successfully execute an initiative based on ease of implementation, current context, capabilities, and organizational structure.

Assessing initiatives along these dimensions leads to four different types of digital initiatives (see “Four Types of Digital Initiatives”):

- Quadrant 1 is referred to as *Quick Wins*. These are high-feasibility initiatives that have relatively low value — for example, applying a simple digital tool to a known business challenge in a specific area of the business. These initiatives bring immediate gains but rarely make a lasting impact.
- Quadrant 2 comprises initiatives that are difficult to implement and have low value potential. They are in the *Kill Zone*. Despite their low attractiveness, we unfortunately see many initiatives that fit this description.

- Quadrant 3 includes initiatives that have low feasibility but high value potential. These are *Moonshots*. Initiatives of this type seek to explore radically new, trending, and potentially disruptive innovations and technologies.
- Quadrant 4, the most attractive quadrant, comprises initiatives that have both high feasibility and high value potential. We have divided this quadrant into two parts based on how they are implemented. The first part is referred to as *Enterprise Anchors*. These initiatives seek to create change to the current business at scale. An example might be a new digital platform to transform B2B customer service and sales. These initiatives typically require significant cross-enterprise collaboration. The second part of Quadrant 4 is *Ventures*. The goal of this initiative type is to leverage digital technologies or business models outside the existing organization. Ventures often use new channels and partners, and rarely function well within the current structure of the organization.

By mapping different digital initiatives with corresponding governance choices, executives can avoid the common misconception that a single governance structure can cover all initiatives. In the following table, we propose a “fit for purpose” digital governance framework that recognizes that initiative characteristics influence governance choices.

Heineken, an independent global brewer with presence in over 180 countries, illustrates how a company can manage multiple governance structures for different digital projects.

For initiatives focused on digitizing their routes to market, Heineken first developed a centralized transformation approach and road map. Next, the company launched pilot tests in selected markets and empowered local teams to identify key customer needs. The initial pilots were scaled to additional markets only *after* a local minimum viable product solution had been validated. In parallel, Heineken built centralized capabilities to roll out the digital solutions globally. This is an example of how Heineken built a digital initiative into an Enterprise Anchor.

But Heineken took a very different approach for Beerwulf,

its direct-to-consumer e-commerce platform for craft beers. Hans Böhm, managing director of Beerwulf, realized that “designing a new direct-to-consumer business model would require a fundamentally different approach.” For Beerwulf, it didn’t make sense to run the initiative in a centralized, corporate way. Instead, Böhm noted, adopting an agile mindset, the company used customer feedback to refine its proposition, and was willing to “test, learn, and fail” as it determined what worked and what didn’t.

Therefore, Heineken elected to launch Beerwulf as a separate startup venture, outside of the regular business structure. This approach released Beerwulf from constraints on reporting and resource-allocation processes that would have applied if they were merely a project inside the regular business. As a result, the fledgling venture was also able to set up a separate but compatible IT architecture, which was key to achieving the flexibility and speed it required.

Digital Governance Principle 7: Evaluate different scenarios to proactively steward digital initiatives toward full-scale impact.

Digital initiative types are not static. A Moonshot designed to evaluate a radical new idea could eventually become an Enterprise Anchor. What’s critical is that these transitions are managed in a way that is consistent with organizational strategy while providing each initiative with enough resources to maximize its potential.

A disciplined approach is also required in the Kill Zone, either by stopping unsuccessful initiatives or embedding them into existing business operations. Formulating these pathways helps the company take control of the transformation instead of allowing ad hoc governance processes to determine direction.

Enabling for Scale

During our research, interviewees highlighted two important enablers for successful scaling of initiatives. First, digital leaders should proactively work to *remove potential obstacles*; that is, make sure there are no organizational or technological barriers that could limit an initiative's growth.

Diego de Coen, former CDO of JTI, stressed the importance of parallel work for scaling digital initiatives. He explained that at JTI, once the value of a new initiative is clear, the parallel processes for execution begin across such teams as IT, security, legal, and other key stakeholders. Relying on this parallel work avoids any bottlenecks along the critical path that may prevent the speedy scaling of initiatives.

Second, instead of trying hard to push new initiatives out into the organization, digital leaders should focus on *creating a pull effect* from the organization. Experts we talked to, including Chetan Tolia, head of digital business transformation of the Swiss bank UBS, stressed the importance for companies here: "If you scale an initiative by pushing it out [into the company], you will always need to do so, preventing organic growth." Sven Meier, director of digital transformation at EnBW, describes how he worked closely with only a small number of business units to create such a pull effect, focusing on generating first results and demonstrating the value of the initiative: "Real results were generated. From that moment on, word spread quickly, and

we had a hard time responding to the pull from the rest of the firm."

In a constantly evolving digital landscape, executives must dynamically design and govern their portfolio of digital initiatives. There is no single governance structure that works across all situations. By following the governance principles described in this article, digital leaders can increase the likelihood of successful outcomes.

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Top Digital Transformation Challenges for Organizations

This graph reflects feedback from 1,030 digital executives on the top digital transformation challenges in their organizations, with challenges related to digital governance highlighted in blue.



Global Center for Digital Business Transformation, 2019

Four Types of Digital Initiatives

This matrix maps the digital initiatives companies most often take into relevant categories across dimensions of value potential and degree of feasibility.



Fit-for-Purpose Digital Governance Framework

| | Quick Wins | Moonshots | Enterprise Anchors | Ventures |
|---------------------------------|---------------------------------------|---|--|---|
| Organizational Anchoring | BU / function | Internal, but separated digital / innovation unit led | Centralized TMT led | External unit |
| Decision Rights | BU / function head | CDO or equivalent | Centralized CDO or equivalent | Originates centrally from parent company. Operational scope lies within venture entity. |
| Control Mechanisms | BU / function | Dedicated innovation fund anchored at CDO or equivalent | Centralized transversal committee. | |
| Technology Architecture | Consistent with existing architecture | Initially unconstrained by existing architecture, but integration must be anticipated | Expands / renews existing architecture | Initially unconstrained by existing architecture, but integration must be anticipated |

Key:

CTO = Chief Transformation Officer

BU = Business Unit

TMT = Top Management Team

CDO = Chief Digital Officer

CIO = Chief Innovation Officer

Table title: Fit-for-Purpose Digital Governance Framework

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How Leading Organizations Are Getting the Most Value From IT

Paul R. Daugherty, H. James Wilson, Bhaskar Ghosh, and Prashant Shukla

No matter the industry or business model, leading organizations are finding that the most challenging path for systems evolution is also the most rewarding.



Many of the most consequential investment decisions facing CEOs today are technology-related. That wasn't the case a few years ago. But now every company is in effect a [technology company](#), and every CEO a [tech CEO](#). With every major technology choice representing a vital business decision, “good enough” decisions are anything but.

That's what we are finding as we continue to analyze the technology decisions of more than 8,300 companies across 20 industries in 20 countries, in what we believe is the largest study to date of enterprise systems. This work also includes responses from nearly 900 CEOs across the globe.

Our [initial comparisons](#) found that the top 10% of these

companies in terms of their levels of technology adoption, technology penetration, and organizational change are achieving levels of revenue growth that are double those of the bottom 25%, which constitute the technology laggards. These leaders also grow revenues more than 50% faster than the middle 20% of the companies we studied.

Further in-depth analysis of the data, the [full results of which we released](#) at the 50th World Economic Forum annual meeting earlier this week, indicates why: At critical stages of systems evolution, the 10% of companies that lead the way boldly choose the most challenging, but most rewarding, of the technology options typically available. In contrast, laggards fail to achieve full value from their investments in new technology because they make defensible but suboptimal decisions that inhibit their ability to share and scale technology-driven innovation across business units and processes.

Tempting Solutions Yield Mediocre Returns

Innovating at scale is difficult. Consider a decades-old media giant that operates across three continents. Rapid changes in its competitive landscape, consumer demands, and

regulation have forced the company to quickly adopt new technology throughout the enterprise. Often, these technology decisions have been relegated to business unit, product, or geography heads.

This approach seems reasonable. Allowing different parts of the organization to customize and develop their own systems speeds up decision-making. Individual decisions about technology are made carefully and appear defensible. But this results in highly customized systems that are deployed in isolated pockets of the organization.

In an era of platforms that connect people with technologies and systems, this sort of approach is no longer tenable. Over time, updating and modifying such systems becomes increasingly difficult, precisely because of how customized they have become. More important, however, individually customized systems often cannot work with one another. This adds up to a large difference between potential and realized value as companies find themselves unable to scale tech innovations across their businesses.

Leaders Scale Innovation Across More Processes

In general, revenue growth increases as more processes are transformed. On average, leader companies transform 10 processes. Companies in the middle of the spectrum transform five. Laggards transform three or fewer, leading to 1.5 times lower revenue growth compared with leaders.

Meanwhile, new technologies, such as AI and cloud, have opened up new possibilities for transforming business processes of all kinds and all degrees of complexity. Laggards, however, generally choose to use new technologies on a few easily augmented processes — typically those that are customer-facing, like marketing and sales. For example, a major U.S. bank with nearly \$200 billion in assets has experimented with AI chatbots in customer service but has yet to achieve any return on the investment. Similarly, a multinational enterprise software company developed a chatbot for the company's IT help desk and customer service but nothing else.

Somewhat more ambitious companies build innovation

centers and hubs to transform multiple processes. For example, one of the oldest banking and financial services companies in the world has created more than a dozen innovation centers to engage with startups and attract tech talent. Companies that build such hubs enjoy higher revenue growth than companies that don't. But when companies build innovation centers as silos, without transforming their actual processes with technology, they lose out on 20% to 30% of the revenue that would have resulted from added synergies.

Leaders, in contrast, reimagine multiple business processes so that they can scale the same innovative technology across all of them. They not only transform IT and customer experience processes but also new product and service development, including discovery and innovation, as well as business operations and change management.

A large European airline, for instance, is using AI to predict operations, optimize sales channels, and provide automated assistance to customers. VMware, a provider of cloud computing and virtualization software and services, is using AI to improve sales and operations, in addition to using AI bots to automate more services in HR, finance, and other functions.

Leaders Sequence Technology Adoption for Paradigm Change

In our survey, we asked about the adoption of 28 different technologies. Even if we assume that a company is conservatively considering the adoption of only 10 technologies out of all new technologies available, the number of possible combinations can still run into the millions. This presents a maddening number of possibilities for sequencing adoption.

As with decisions about how many processes to target for transformation, too many companies rely on “good enough” options in the face of such unprecedented uncertainty. We found that most laggards experiment with new technologies but aren't timing and sequencing them correctly. Middlers engage in experimentation and also double down on

industry-specific, customized tech. Both options are suboptimal. Failing to sequence tech adoption in the core decreases returns from technology investments. Doubling down on industry-specific tech locks companies in, inhibiting their ability to pivot or combine technologies in the future.

Leaders invest in paradigm change and do so early. Consider the adoption of AI. Not only have more leaders adopted AI — 98% of leaders versus 42% of laggards — but they also deployed it up to three years ago, whereas most laggards deployed it only a year ago. And leaders created the systems to capitalize on AI before scaling it, first putting in place event hubs, containers, and event-driven architectures.

Or consider the timing of the decision to invest in cloud-based software as a service (SaaS). While companies on the lower end of the spectrum took a wait-and-see approach, leaders acted. Twenty percent leaped into SaaS more than five years ago, compared with 9% of middlers and 8% of laggards.

How do leader companies position themselves for success? They carefully consider the landscape of emerging technologies and identify the foundational and complementary technologies to adopt, and then they sequentially create systems that provide strategic agility and scale.

CVS Health, for example, has unified its data and [technology initiatives around customer experience](#), building its system progressively through the cloud, application programming interfaces (APIs), and now AI and blockchain. It used an API management platform, API backbone, and global identity to connect internal systems and software with its health care partners.

To counter the challenge of conflicting data from multiple parties in the ecosystem, the company deployed blockchain technology to identify the most likely source of truth for any given point by preserving the chain of the data, the source, and the context. CVS also employs filtering technology based on AI and machine learning in order to identify and prioritize meaningful events for patients and other stakeholders.

Make the Difficult, More Rewarding Choices

CEOs are necessarily playing a much more involved role in their companies' technology strategies. However, while 80% of the chief executives in our study said their company has the right systems in place to innovate at scale, only about 9% of those companies were actually in the leader group. To move from average to exceptional, CEOs and their IT executives will need to sort through their technology investments and identify the places where they have succumbed to the siren call of seemingly good-enough solutions, elevate their ambition, and match their actions to it.

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YOU'RE GOING DIGITAL — NOW WHAT?

ENOUGH WITH THE TOP-DOWN STRATEGIZING. UNDERSTAND HOW CHANGE REALLY HAPPENS ON THE GROUND — AND PLAN FOR IT ACCORDINGLY.

BY PAUL LEONARDI

A

t the 30,000-foot level of the corporate suite, plotting digital change is heady, exciting stuff. Business leaders can almost smell the gains in efficiency and speed and the data-driven increase in customer satisfaction when they think about all the new tools at their disposal and how they might restructure their organizations. As one senior executive at a large telecommunications company recently told me, “Mapping out a new approach to compete in the digital era has been so cool!”

But here's the decidedly less cool, more mundane truth that I've learned after 16 years of working on such transformations with more than two dozen companies across eight industries: Success depends less on strategic inspiration than on the way people on the front lines implement new digital tools, and most leaders aren't laying a foundation for those employees to succeed. In large part, that's because senior managers don't have any idea what really happens at the ground level. So they're caught by surprise when tools don't get used the way they're supposed to be (or even at all), data-driven insights prove unremarkable, and anticipated gains fail to materialize. Their digital transformations become digital flops.

To avoid that fate, leaders must understand how digital tools come to be used widely and effectively so that they can create an environment that provides optimal conditions. They can't hand that work off to IT and hope for the best.

In this article, using an automotive company’s effort as an archetypal example, I’ll describe how digital transformations tend to be experienced and processed by those on the ground and then show how reverse planning — working backward from that reality, phase by phase, to set broad corporate goals — leads to change that sticks. Plenty of articles offer theories about and strategies for digital transformation. This one will help you anticipate and manage the gnarly, often-ignored details that destroy many a well-intentioned plan.

THE PHASES OF DIGITAL ADOPTION

Most digital transformation efforts are launched with extensive rollout plans that outline activities such as financing the transformation, reorganizing the company to make it agile enough to get the most out of digital tools, developing data-driven insights that allow the company to deliver more customized products, and reducing time to market.

All of that is critical. But so is another process, one that doesn’t get mapped out with similar rigor. I like to refer to it as the Work Digitization Process, or WDP for short. (See “How to Plan Your Company’s Transformation.”) This is a set of six interlinked phases of ground-level change that must happen for a digital transformation to take off. More often than not, these phases build upon one another, so early wins presage later successes, while early failures make each ensuing phase more difficult. To see how the process unfolds, and to clearly understand the impact of management action (or inaction), let’s look at how things played out at one major international automotive design company that we’ll call Autoworks.

PHASE 1: Leaders sell the digital transformation. Without widespread buy-in from employees, any major change initiative will wither and die. Digital transformations are no different. That’s why the first step in a successful effort is to explain the benefits of digital change to the workforce, which may or may not be receptive to altering standard operating procedures.

The leaders of Autoworks understood this. Like many companies in the automotive industry, Autoworks had embarked upon a digital transformation in the mid-2000s. One goal was to accelerate product development while cutting costs in

resource-intensive areas. To launch a single new model, for example, Autoworks would crash-test at least 30 preproduction vehicles. Each test cost roughly \$750,000. New digital design tools, however, could cut that figure drastically by allowing engineers to build and test virtual cars on their computers. Even better, those simulations would allow the engineers to collect more data, further optimizing their ability to design better, safer, cheaper cars. Eager to get started, Autoworks’ senior leaders beefed up the company’s supercomputing center and licensed a slew of digital design applications. The CEO declared, “We’re going to be a digital company.”

Senior leaders were vocal and clear about the change they wanted. Moving performance testing onto digital applications meant that product development could get done faster and cheaper. Directors heard “faster and cheaper” in their staff meetings, managers heard “faster and cheaper” in their division meetings, and engineers heard “faster and cheaper” over and over from managers, directors, and executives in training sessions, at conferences, during all-hands meetings, and in everyday work. “Faster

HOW TO PLAN YOUR COMPANY’S TRANSFORMATION

By understanding how change naturally rolls out, you can start your planning with where you want to end up — identifying the gains in performance you can achieve with new digital tools — and work back from there to set company goals that employees will embrace.



and cheaper” became the mantra of the digital transformation.

Studies show that employees listen when senior leaders broadcast goals and announce bold initiatives for achieving them.¹ Early on, such pronouncements create frames of reference that people use to understand the technology they’re being asked to implement. If you asked employees at Autoworks how they would know whether new tools could transform the organization, they would (and often did) answer, “I’ll know if they help me build simulation models faster and cheaper.”

PHASE 2: Employees decide whether to use the new technology. Once leaders have brought digital tools to the company, touted the anticipated benefits, and adequately funded training, they fully expect that employees will shift their work to the new applications. There’s no guarantee that will happen, though. My research has shown that roughly 40% of potential users decided *not* to use the technology, even when it was mandated by their direct supervisors.

That’s a big number — big enough, in fact, to derail a digital transformation. So it’s important for leaders to understand why so many employees might make that choice. I’ve found that it’s typically not because the technology is inadequate (it’s usually pretty good) and not because training is poor (ditto). Rather, employees consider whether the technology enables *them*, as individuals, to carry out the goals announced by the company’s leaders. At Autoworks, that meant that the engineers asked themselves, “Will this software help *me* develop new car designs faster and cheaper?”

As it turned out, not everyone thought it would, so “faster and cheaper” was more complicated rhetoric than Autoworks’ leaders had imagined. The phrase inadvertently encouraged people to compare the new tools with the old ones they knew inside out and could already use quite efficiently. Some of the company’s top engineers, who served as early adopters, did just that — and decided that it was in their company’s best interest for them to stick with the tools they were already using, because the new software actually slowed their work down. Although they could see that it had other distinct advantages for the organization, they rejected it for failing, in their experience, to create the gains that company leaders had deemed most important.

Making matters worse, other engineers decided that if a colleague they respected had rejected the new software, they didn’t even have to give it a try. The early experimenters thus became negative influencers in the network of company engineers, although their comfort with the old tools may have tainted their perception of the new ones.

Of course, senior leaders had intended that “faster and cheaper” would be seen as the broad goal of the transformation effort. They hadn’t considered how those words might scan at various levels and influence granular decision-making. That’s why senior leaders must take great care in crafting their rhetoric. If it doesn’t match up with the reality of how work gets done, their prized new technology won’t get implemented in the way they hope.

PHASE 3: Employees decide how they will use the new technology. Even if the new technology encounters a band of naysayers, the many employees who do make the switch will come to a second critical decision: *how* to use it. This, too, is a complicated choice with significant long-term ramifications.

Almost any digital technology, whether for businesses or for individual consumers, can be adopted in many different ways. (Think of Microsoft Excel, for instance, with its hundreds of features and possible uses.) But in a digital transformation, the features people choose to apply are deeply consequential, because they determine what kind of data will be recorded, produced, or analyzed, and how that data will be used.

Autoworks’ leaders believed that data was a key benefit of moving design processes into a digital environment. The use of simulation tools would make it possible for engineers to run hundreds or thousands of iterations of crash tests or noise and vibration tests. By comparing all those results, engineers would be able to optimize a vehicle’s design with far more sophistication than when the company ran a few dozen wrecks with crash test dummies. At least, that was the theory.

For one year, I tracked two departments that used the same digital tool for automating simulation designs. In one department, engineers engaged with the tool in widely varying ways, according to individual preference. In the other, every engineer used the same features in the same order. By the end of that year, the vehicles designed by the latter group were outperforming those created by the former by



Senior leaders must take great care in crafting their rhetoric. If it doesn't match up with the reality of how work gets done, their prized new technology won't get implemented in the way they hope.

a 2-1 margin. Why? Because the data produced by the engineers who had followed the same path with the same features had a uniform foundation and could be analyzed for patterns of effectiveness. The engineers who had followed their own paths produced just as much data, but the information arose from varying assumptions and choices. These kinds of differences around the company made it difficult to create a set of best practices for the new digital tools. If a central value of digital technologies is the creation of data that can be mined for efficiencies and other valuable learning, shaping consistent usage patterns is essential.

PHASE 4: New kinds of data change the way employees behave. In its pre-digital days, Autoworks had developed a handoff approach for moving data across the company. In the case of vehicle design testing, the standard operating procedure went like this: Engineers conducted crashes and various other tests, collected the data, and passed it along to the data analysis group, where analysts tried to glean universal principles for good vehicle design. There were engineers; there were data analysts. The difference between the two groups was clear.

Remember those engineers who used the new digital simulation tools in consistent ways to produce comparable data? They're the ones who started to change the status quo. They could see the results of their own tests, of course, and could examine results in the aggregate. But they went a step further and started talking to one another about their results and thinking about them together. As one engineer commented, "Now that we've gone digital, our roles as design engineers are changing." Instead of being siloed away from one another while they ceded analysis to an equally siloed data analysis department, the design engineers had become a collaborative team of data analysts.

Some "by the book" managers tried to curtail this empowerment by insisting on keeping analysts' and engineers' responsibilities separate. But this

process — of more and better data changing tasks, resulting in changed roles and relationships — is an inevitable byproduct of digital transformations. At their core, relationships between people in different roles are based on data. When employees start performing new roles because they have new data and information, they necessarily start interacting with different people. The result is the formation of new and initially invisible social networks. According to some research, these powerful new networks may be the most important ingredient in driving digital transformations.²

PHASE 5: Performance improves locally. There's often a dichotomy between the targets business leaders impose for their digital transformations and the benefits employees experience at a local level.

Once they were effectively using the new digital tools and comparing results with others in their emerging social network, Autoworks' engineers started to see concrete gains that they could appreciate. For instance, they found that it was becoming easier for them to optimize designs to improve such key variables as crashworthiness and fuel economy.

The process of moving from testing to final design solutions improved significantly as well. In fact, according to my analysis, engineers who changed their roles to incorporate data analytics and shifted their social networks to interact with other engineers solidified the design of their vehicles 23% faster and with 31% fewer laboratory tests than engineers whose roles didn't change. In other words, engineers were working faster and cheaper, after all.

That sounds like the kind of success Autoworks' leaders had been hoping for. It is, but with two important caveats. The first, of course, is that 40% of engineers had initially rejected the software because they hadn't found it obviously faster and cheaper. The second is that those engineers who did achieve faster and cheaper gains arrived at them via metrics that mattered to them in their roles, like design quality improvements. If senior executives had customized

their rhetoric early on to resonate with engineers' own experience of their work, they might have motivated more engineers to adopt the new digital tools sooner and secured even more significant gains.

PHASE 6: Local performance aligns with company goals. A digital transformation gets traction when it meets key corporate goals by employing technologies that improve local processes and results.

One reason Autoworks chose to focus intently on vehicle design is that 20 years of robust statistical analysis had identified that process — along with supply chain, regulatory compliance, and manufacturing efficiency — as critical to reducing the time it took to get cars from concept to dealer. Better time to market would accelerate top-line growth.

Needless to say, the company was happy that the technologies led to faster and cheaper designs. Rather than sit on its laurels, however, Autoworks conducted a deep analysis of how the gains had been achieved. That's how it discovered the remarkable value of the social network that had been unleashed by the new design software: Engineers who spent three times more hours discussing vehicle design with one another than they spent instrumenting simulation models dramatically reduced the amount of rework that needed to be done in later stages of development. Sure, new software helped engineers speed the delivery of a final, optimized vehicle design, but the dialogue spurred by the software accelerated things even more. By digging into its success, Autoworks uncovered knowledge that could fuel further improvements in the years ahead.

PLANNING IN REVERSE

The six phases I've just described illustrate the way change develops internally during a digital transformation. Now let's turn to how understanding this process should shape planning for your own company's transformation. As I mentioned earlier, the best way to plan is in reverse: Start by assessing what company goals you can achieve locally with new digital tools, and build from there. In my experience, business leaders can kick-start this process effectively by answering three questions.

1. Which local activities have the most potential to transform your company? Many corporate leaders know where they'd like their company to go,

but few have a clear sense of how to get there. Identifying the local activities with the highest potential to transform will affect which digital tools you bring in, inform how you lay the groundwork for implementation, and buttress your efforts to rally the company behind the changes you seek.

First, you'll need to assemble and analyze your company's data about what kinds of local outcomes best drive big organizational goals. For instance, I once worked with a large children's hospital that received many emergency transfers from community hospitals and had identified an urgent need to improve survival rates for these vulnerable patients. Digging deep into its data, the children's hospital discovered an undeniable link between transfer patients' survival and the quality of the initial diagnosis before they arrived. Seeing this link allowed the hospital to target a specific solution: a digital platform

BUSTING MYTHS ABOUT DIGITAL CHANGE

Implementing transformation often belies the hype.

THE PERFORMANCE MYTH: New technologies have immediate and direct effects on performance.

REALITY CHECK: New technologies usually have, at best, an indirect effect on organizational performance. They change the way employees perform their tasks, which alters people's roles, which alters the networks of people who work together on tasks. Ultimately, these changes in roles and social networks are what drive improvement in key performance metrics.

THE NOT-MY-JOB MYTH: Implementing new technologies is the IT department's job.

REALITY CHECK: Implementation is a job for business leaders. Most IT departments are accustomed to managing support applications, like Microsoft Office and CRM software. But today's powerful digital tools allow users to manipulate and analyze data in ways that can reinvent an organization. Rolling them out requires keen business insight and management skills. Senior leaders are most equipped to sort out where to deploy them and to understand how the tools might reshape the culture. They're the ones who know which influencers can accelerate adoption and which bureaucratic obstacles must be cleared. They're in the best position to ensure that employees actually use the technology so that they can meet the company's objectives.

THE FAILURE MYTH: Most digital transformation efforts fail because the technology didn't work.

REALITY CHECK: Most digital transformation efforts fail because employees didn't use the new technology. There are two main reasons for this. First, when people are not sufficiently trained, they can't apply new tools effectively, so they stop using them and find alternatives. Second, when leaders promise certain outcomes that don't quickly materialize — like an increase in customer satisfaction or swifter time to market — employees will make a principled decision that it's in the best interest of the company for them to find other methods to secure those outcomes.

that allowed community hospital physicians with little expertise in pediatric emergency care to record details about a child's physical condition that could be easily read by the expert nurses and physicians at the children's hospital, making it easier to appropriately triage transfer patients.

After you identify local activities that can drive success, it's important to measure the impact of your digital efforts in order to improve them. Sometimes those metrics are clear: The hospital knew it was succeeding, for example, when survival rates for transfer patients increased significantly. When the metrics aren't so obvious, it helps to break down whatever process you're trying to improve into discrete steps.

For instance, one large financial services company I worked with was intent on increasing knowledge sharing. That's a pretty multifaceted process, so we broke it down into several steps, like helping employees accurately identify experts and communicate with those experts. Then we launched surveys to gauge how accurately employees assessed one another's expertise and what volume of communication between people best facilitated knowledge transfer. With those baseline scores in hand, the company implemented an enterprise social networking technology that allowed employees to see what other people were working on. By tracking changes in the two measures every six months, we were able to monitor the progress of the knowledge-sharing initiative. That kind of local data is essential for any digital transformation. It's the only way to know whether behaviors deep within the company are enabling or hindering your change effort.

2. How can you foster information flow and behavioral change in your organization? Business leaders must create an environment that encourages and allows their people to achieve the local performance gains that will drive transformation. To make the most of powerful new data and analytics, employees need to be able to change tasks, roles, and social networks fluidly. Leaders can free them up to do so by understanding information flow and removing institutional obstacles to the positive social change that follows an injection of powerful new data.

How does a diagnosis of information flow help? Consider the example of a large public utility I worked with. The company saw great potential for a

new digital technology that allowed for remote monitoring of utility consumption. By constantly measuring usage and sending repair crews out preemptively, the utility could avoid disastrous failures of transmission equipment. But how could the information flow within the company ensure that this preventive maintenance actually took place? The billing department, which already monitored usage on a monthly basis, would have to coordinate with the maintenance department, which was accustomed to increasing and decreasing the number of workers on the clock according to peaks or valleys in demand. This meant that some employees in billing would have to shift from being mere data aggregators and bill producers to being analysts (much like the engineers at Autoworks). Recognizing this, company leaders set up training sessions, established new targets for employees who made the transition, and hired new employees who already had these skills. In the wake of this effort, a new social network arose consisting of employees devoted to preventive maintenance, and the digital transformation proved a great success. This kind of diagnostic work is often called *organizational network analysis*; it's one of the most useful and unheralded tools for digital change.³

As the example makes clear, it's not enough for business leaders to know who will be employing the new technologies. They also have to know how groups of employees currently interact, so they can support the new social networks that are so critical to success. One of the reasons employees don't end up collaborating with the right people during a digital transformation is that their formal roles are misaligned with their emerging roles. If you don't enable a formal role transition for your employees and codify the changes by altering job descriptions and how you evaluate people's performance, they will be unmotivated to develop the skills to be good collaborators with their new social network partners.

3. Who are your key influencers, and how can they help your culture become digitally ready? Remember those key influencers at Autoworks? Most helped drive adoption of the new digital tools, but a sizable minority became naysayers who led colleagues to avoid the new digital tools altogether. By identifying influencers before the launch of a digital transformation, you can enlist them in your efforts to

broadcast the promise of the coming digital change.

I once worked with the leaders of a large medical device manufacturer that was about to embark on a digital transformation entailing the introduction of new technologies and a significant structural reorganization. They had a big problem: A faction of midlevel executives opposed the effort. The leaders worried that if these naysayers dragged their feet, they might sink the transformation in a bureaucratic mire.

Based on the Work Digitization Process, I knew that the best way to counter this opposition was to recruit the company's key influencers. Influencers aren't necessarily the most popular people or those highest on the food chain. More often than not, they're central players in the informal advice-seeking networks of the company. To identify them, I conducted an organizational network analysis by asking employees two simple questions: "Whom do you go to for advice about technical issues?" and "Whom do you go to for advice about strategic issues?" That helped identify the 10 key influencers in each business unit.

It was then important to turn as many of them as possible into proponents of the new changes. I started by interviewing each one and learning about their initial reactions to the change. Some liked both the new digital tools and the reorg; others thought both were terrible; and a third group was mixed — they liked the reorg but not the technology, or vice versa. I then developed an internal marketing plan for each group. Working with the company, I provided hard data that supported the first group's inclination, giving them something concrete to point to when evangelizing. Company leaders and I then met with the second group to show how the changes could amplify the positive aspects of their current work patterns and discuss ways that things they didn't like could be improved. We provided the third group with examples of how the reorg and the new technologies could build on each other to drive significant change. That solidified support and won over quite a few skeptics. We deepened the influencers' involvement by asking them to help us generate the messaging that would convey the benefits to the bulk of the workforce.

We didn't win everyone over. But taking the influencers seriously paid big dividends. In the business units where we worked with influencers,

the company saw a more than 75% adoption rate for the new digital tools; in the few business units that we didn't work with, less than 25% of employees got on board.

BEHIND THE GLIMMERING PROMISE of becoming a digital company lies a stark reality: Implementing digital technologies to create meaningful change is hard work. To make a digital transformation take off, business leaders have to first understand the internal chain of events that is set off by the introduction of new technologies. Only then can they lay the groundwork for success, working from the end of that chain (those places where local improvements can drive big corporate goals) to the beginning (where business leaders exhort the workforce to support a massive digital disruption of the status quo). Success doesn't automatically arise from sparkling rhetoric and bold promises. Instead, it depends on decisions made by employees on the front lines. The reverse planning outlined in this article will help them make the right choices.

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