



MIT SMR CONNECTIONS

MANAGER'S GUIDE

Migration to Innovation:

Developing a Technology Plan to Execute Strategic Priorities

ON BEHALF OF:



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OVERVIEW: ENABLING INNOVATION AND GROWTH THROUGH TECHNOLOGY STRATEGY

Competing in today's tech-powered global economy requires an unswerving focus on customers; the creativity to meet their needs with innovative solutions; the agility to execute quickly; and a focus on constantly improving operational efficiency. The winners are those who can leverage a modern tech infrastructure to fuel that innovation, agility, and efficiency.

While the pace of technology innovation means there is a continual stream of exciting new tools to experiment with, CIOs considering platform and infrastructure strategy must maintain focus on the business outcomes they can deliver. That means developing a plan to deliver on those outcomes in partnership with business leaders. This guide suggests four key steps to take in charting your course.

Step 1: Define your strategic priorities. These are the handful of actions that will have the greatest impact on your business over the next few years. What is changing around you that requires a response? What will drive key results: product and service innovations? More focus on customers? Revenue growth? Cost controls?

Step 2: Find your engines of innovation. Technology and business leaders need to work together to identify the new tools and services that help make it possible to achieve the organization's top goals. Today, leaders looking to innovate to improve the customer experience are turning to two categories of technologies: those that analyze data to enable decisions (including personalizing customer offers) and those that enable agility (such as microservice architectures for the rapid development of new digital offerings).

Step 3: Understand your technology platform needs. Once you have identified the key technologies that can help the enterprise meet its goals, decide what characteristics you need most from your platforms and infrastructures. Will you be using technologies like artificial intelligence that put demands on data storage and computing as the enterprise collects and analyzes vast amounts of data? Do your platforms and infrastructures provide developers with the latest and best tools, and will they flex with fluctuating business cycles or rapid growth? Do you need to consider infrastructure that can support multiple geographies? These and other considerations, such as security, compliance, and cost, will factor into your technology choices.

Step 4: Manage changes to technology and the organization. Adopting the new technology and platforms that help the enterprise achieve its strategic objectives requires top leadership to commit to managing change. Migrating systems to the cloud means change — to the IT organization in particular, but also to the organization overall. Effective change management is essential to unlocking the value of technology investment — and completing the cycle to achieve business goals.



STEP 1: DEFINE YOUR STRATEGIC PRIORITIES



Technology has changed the game for business leaders, as it enables new competitors and makes it easier to enter new markets. The pressure is on companies to delight customers and find innovative ways to grow, move quickly to seize opportunities, and fend off new competitive threats. To do that, each business must identify its strategic priorities — the handful of actions that will have the most impact over the next few years, as Donald Sull of the MIT Sloan School of Management has written.¹

What outcomes is your business most focused on? What changing conditions must it respond to? What key results will it focus on: cost efficiencies, better productivity, product innovation, revenue growth, a more customer-centric focus?

In today's business climate, most companies' strategic priorities emphasize delivering unique customer experiences to differentiate themselves from competitors, says Rudy Puryear, partner and director at Bain & Company.

Take the case of a bank. "Increasingly, the winners and losers are defined by the customer experience," such as ease-of-use of mobile applications or the ability to do remote banking, Puryear says. "Things like security, transaction speed ... all of that is extremely important, but before long, every major financial institution will have it. Differentiation is the way in which you can connect and engage with your customers, deliver value-added services and products, and create stickiness with that relationship."

At the heart of ADP's strategy to become more digital — by moving its payroll and other HR services to cloud-based offerings — is meeting customer demand, says Roberto Masiero, senior vice president of ADP Innovation Labs. "There is an expectation now of people being able to do their business in a more autonomous way," Masiero says. "ADP historically has been a service company in the way we deliver our value and business. The way we're changing is to become more of a technology company where we serve products to our clients that allow them to be more self-sufficient."

How does he know it's working? Customer retention levels are growing, Masiero says, as are Net Promoter Scores. ADP has also seen gains in new business from existing customers.

For Cynthia Stoddard, senior vice president and CIO at Adobe, a top priority for the organization is building a growing platform of personalized customer experiences. "We focus on both our external customer experience and also our employees," Stoddard says.

It's this kind of focus on priorities, practitioners and experts say, that enables a company to then identify the technologies that will help leaders execute their strategies.

¹ D. Sull, S. Turconi, C. Sull, et al., "Turning Strategy Into Results," MIT Sloan Management Review, spring 2018.



STEP 2: FIND YOUR ENGINES OF INNOVATION

Leaders driving an innovative business culture today understand that how organizations use technology is critical to maintaining a competitive edge. CIOs and CTOs in particular play a key role in keeping top management and the board updated on which new tools and services can help the company achieve its strategic priorities.

The quest for deeper customer relationships informs leaders' technology choices, according to Martin Mocker, coauthor of *Designed for Digital: How to Architect Your Business for Sustained Success* and a research affiliate at the MIT Sloan Center for Information Systems Research (CISR). That drive prompts companies to rethink the way people work — the processes and technologies and data they use — to create new digital experiences for customers.

In service of these goals, companies are adopting two broad categories of technologies, says Bain's Puryear: data-driven technologies that enable the right decisions, from supply chain actions to personalized customer offers, and technology that enables agility.

"The ability to move quickly in the marketplace, to respond quickly either to customer requests or to competitor actions, is increasingly important," Puryear says. By turning to microservice architectures for software development, and linking software components via APIs, it becomes faster and easier to rapidly create new digital offerings. Mocker calls this approach developing a digital platform, and considers it a key building block for transformation.

Masiero at ADP says such a platform is a key enabler for his company's strategy to offer cloud-based services. "Making all of your services available through APIs ... makes it very easy to leverage and match different parts of your technology stack to create these products, to resolve what the clients are requesting from you," he says.

At the same time, data-driven technologies, particularly advanced business analytics, AI, and machine learning, are essential to fulfilling the customer-centric mandate by understanding and anticipating needs, and delivering highly customized experiences, says Puryear.

ADP is likewise focused on the power of data-driven technologies to fuel innovation and growth. "We have a lot of data, and data creates a lot of opportunities nowadays," Masiero says. "With the advent of machine learning, it increases the amount of opportunities for us to leverage that data."

The choice to take advantage of new development architectures and advanced data-driven technologies naturally drives requirements for the technology platform and infrastructure to support these activities. But as we'll see in the next section, those requirements are driven by multiple other considerations as well.



STEP 3:

UNDERSTAND YOUR TECHNOLOGY PLATFORM NEEDS

When an organization has identified the strategic technologies that will enable its business goals, it's straightforward for leaders to define their requirements for a modern technology platform. These key criteria typically drive decisions about platforms and infrastructure:

1. Fast access to new technologies and ways to use them. Companies seeking to adopt the latest technologies are often finding that using a cloud computing platform makes this faster and easier. For Adobe, this idea extends to evaluating new technologies, says Stoddard. She cites the company's experimentation with robotic process automation (RPA). If she were running such a system in-house, she would have to arrange for the required computing resources and infrastructure just to try it out.

"With cloud, I can look at a few different RPA solutions and just try it out. So I can get it up and running, see if it works and meets our goals. And then, if it does, move forward with it," Stoddard says. After some tests, the company implemented an RPA-enabled contract creation system, which has decreased the human effort in this area of procurement by 80%.

For other companies piloting AI technologies such as machine learning, services available via cloud providers also provide a way to access tools to accelerate the process.

2. The business need for flexibility and agility. Tech leaders are looking for platforms and infrastructures that empower developers to rapidly build, scale, and change IT services as needed, while staying within the IT budget constraints. This is the kind of flexibility that businesses need today, says Deepak Mohan, a research director at IDC's Enterprise Infrastructure practice.

"The flexibility of the cloud allows infrastructure to be provisioned and changed on demand to meet evolving business needs. Enterprises can quickly build a proof-of-concept product or service without major investment overheads. They can also choose to rapidly expand or reduce the infrastructure footprint as needed," Mohan says.

3. The requirements of data-driven technologies. Innovation accelerators like AI, machine learning, and the internet of things require collecting and analyzing large volumes of dispersed data — as well as robust computing resources that cloud computing makes available, says Frank Della Rosa, research director for IDC's SaaS and Cloud practice. "These technologies require the cloud to tap into their full innovation potential. An AI strategy is really a data strategy. It's virtually impossible for most enterprises to be able to scale their own infrastructure to be able to address that. And most companies lack the necessary internal skills," Della Rosa says.

4. Geographic reach. A key consideration for companies with a large or growing footprint is to have a technology platform that the business can manage in a consistent way across multiple geographies and gives end users the experience of using a local service. The cloud meets these requirements, according to Mohan. “You can have one code base, one application platform, and one set of processes that you need to manage as far as the end customer experience is concerned,” he says. “This can be replicated to new geographic regions as needed, to deliver services close to a growing global customer base.”

5. Security and regulatory compliance. Over the past two years, security has become a driver for enterprises moving their business-critical workloads to the cloud, Della Rosa says, because most companies have realized that the major cloud service providers can offer more security and compliance vigilance than they can manage in their own data centers.

Both experts and practitioners cite the need to assess regulatory compliance in conjunction with conducting a security assessment of the cloud move.

Masiero calls security “table stakes” for any cloud provider. That said, regulatory requirements can make keeping systems on a company’s premises the wise choice, he adds. Some countries mandate that companies keep data about their citizens within the country, for example. These data sovereignty rules mean companies like ADP will host some of their own systems as regulations specify.

6. Increasing cost efficiency. Because cloud-based computing resources can be easily scaled up or down, businesses with cyclical demands can better manage costs. Instead of maintaining computing resources that may sit idle for long periods so that spikes in demand can be accommodated, they can add capacity as needed and then release it when it’s not required.

At the same time, those computing costs are shifted from capital expenses to operating expenses. And because the increased resource demand typically occurs when sales are spiking in cyclical businesses such as retail, companies can better align costs with revenue.



STEP 4:

MANAGE CHANGES TO TECHNOLOGY AND THE ORGANIZATION

Adopting the new technology and platforms that help the enterprise achieve its strategic objectives requires top-down accountability from the CEO and other C-suite leaders to manage changes in how people work, including new processes, new tools, and sometimes, new roles.

The human factor. Cloud migrations require good two-way communication with all stakeholders about the process and impacts, along with providing training and support. At Adobe, Stoddard guided the IT department to becoming cloud-centric by focusing people around a new identity aligned with the company's overarching objective to unleash creativity in employees and customers to enable good experiences.

"Our rallying cry around strategy is, let's have cloud-like characteristics in our DNA," she says. "So think about self-service, think about easy to use, think about taking yourself out of the equation."

In addition to canvassing the IT organization and the business for input, Adobe also ran a workshop where individuals at all levels of the organization offered ideas about the changes needed to the operating model and what issues needed to be addressed.

New ways of working. Moving to cloud platforms can change culture. The ability to move fast, experiment, and collaborate with customers allows product teams to be more autonomous, says Mocker of MIT CISR. This results in big changes to how companies work, he says.

Within the technology function, managing the change to cloud means thoughtfully managing changes to people's jobs, and in many cases redeploying those workers freed from legacy operational tasks. ADP's Masiero says that at his company, a number of IT operations staffers have shifted to new IT-centric roles in research and development, or to supporting a product line, for example.

"I think part of your gains on agility, on speed to market, on competitiveness, and even on reduced cost in some cases, you've got to reinvest in your people," Masiero says.

Migrating to the cloud can also help enable adaptability in the enterprise over the long term, says Puryear of Bain. Many legacy systems and applications have essentially hard-coded the organizational structures that were in place when the technology was adopted, he explains. Moving to cloud provides an opportunity to implement an architecture that is flexible and can accommodate business reorganization. That promises to make the job of change management easier in the long run.



ACTION CHECKLIST FOR YOUR MIGRATION TO INNOVATION

1

[Step 1]

- ☐ Business and technology leadership review strategic objectives.
- ☐ Prioritize objectives, choose three to five most important. Read “Turning Strategy into Results” for guidance.
- ☐ Identify key metrics to assess progress on priority objectives.

2

[Step 2]

- ☐ Technology leadership review and assess current capabilities, particularly those that enable agility/flexibility and those that leverage data assets.
- ☐ Identify technologies now in-house that will enable progress on meeting business objectives.
- ☐ Identify emerging technologies that are promising for experimentation/piloting.

3

[Step 3]

- ☐ Define infrastructure and platform requirements.
 - ✓Data storage needs
 - ✓Compute power needs
 - ✓Geographies to be served
 - ✓Compliance requirements
 - ✓Data security standards
- ☐ Identify key technologies and tools desirable to source via cloud providers.

4

[Step 4]

- ☐ Identify processes, people, and systems impacted by migration.
- ☐ Develop communication plan to reach and gain input from all stakeholders.
- ☐ Identify new skills required by migration and develop training plan.

Acknowledgments

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