

The New IT Operating Model for Digital

Introduction

Two-thirds of business leaders believe their companies will lose competitiveness if they don't become significantly more digitized. The current wave of digitization is more broad than past efforts; companies are applying capabilities such as big data, the Internet of Things, machine learning, and social and mobile technologies to enhance and transform products, channels,

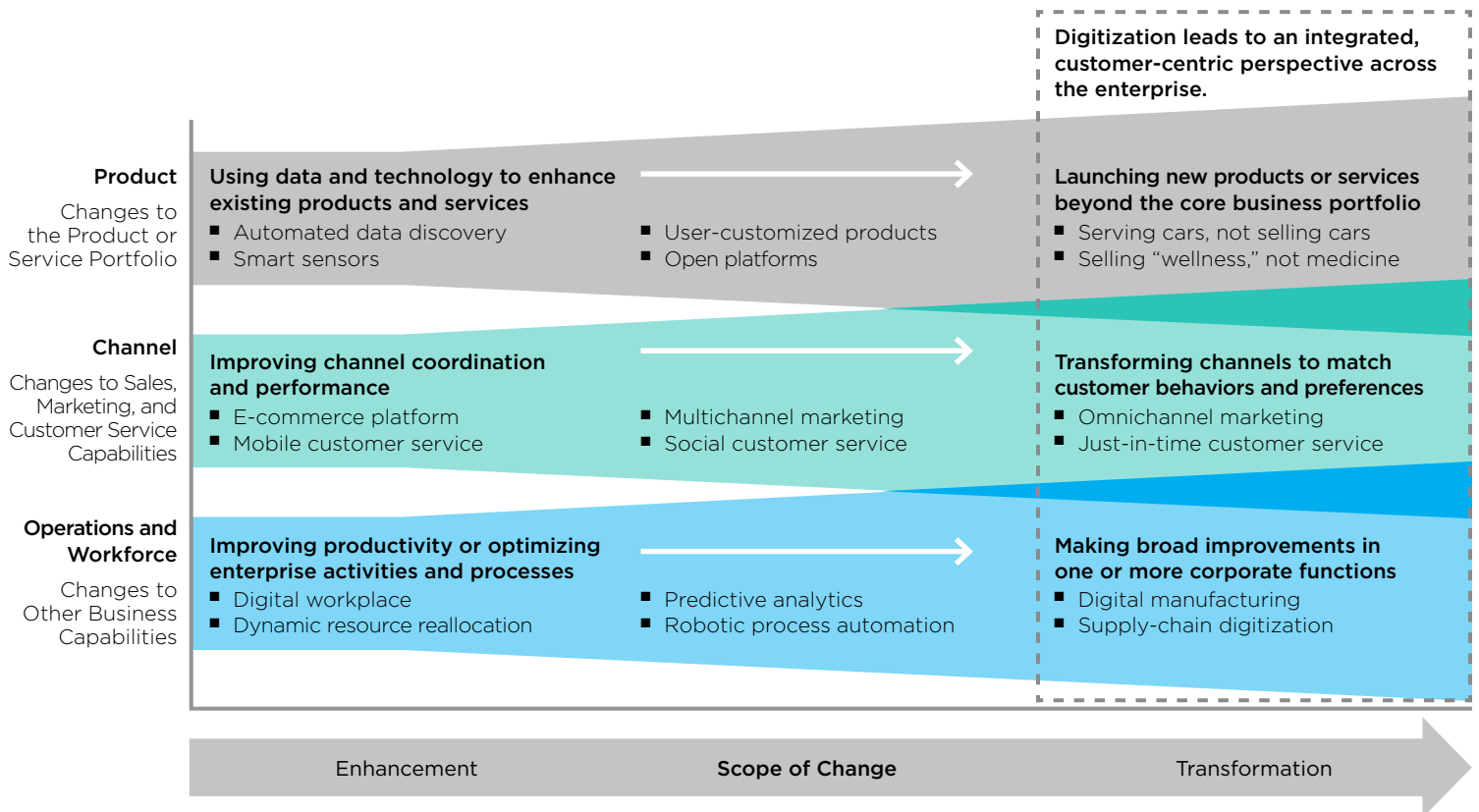
and operations. As digitization progresses, the boundaries of these three areas blur, creating a more integrated, customer-centric perspective across the enterprise.

Digitization offers IT teams unprecedented opportunities to create value by becoming digital change agents for the enterprise. But first,

IT leaders must respond to a number of trends that reshape how their companies manage and exploit technology:

- **Faster Clock Speed**—Sixty-three percent of business leaders believe their organization is too slow to exploit technology opportunities. The pace of change driven by digitization

Digitization Opportunities for the Incumbent Enterprise



Source: CEB analysis.

will only increase as new generations of fast-moving competitors emerge and customers come to expect ever more rapid updates to products and services enabled by technology.

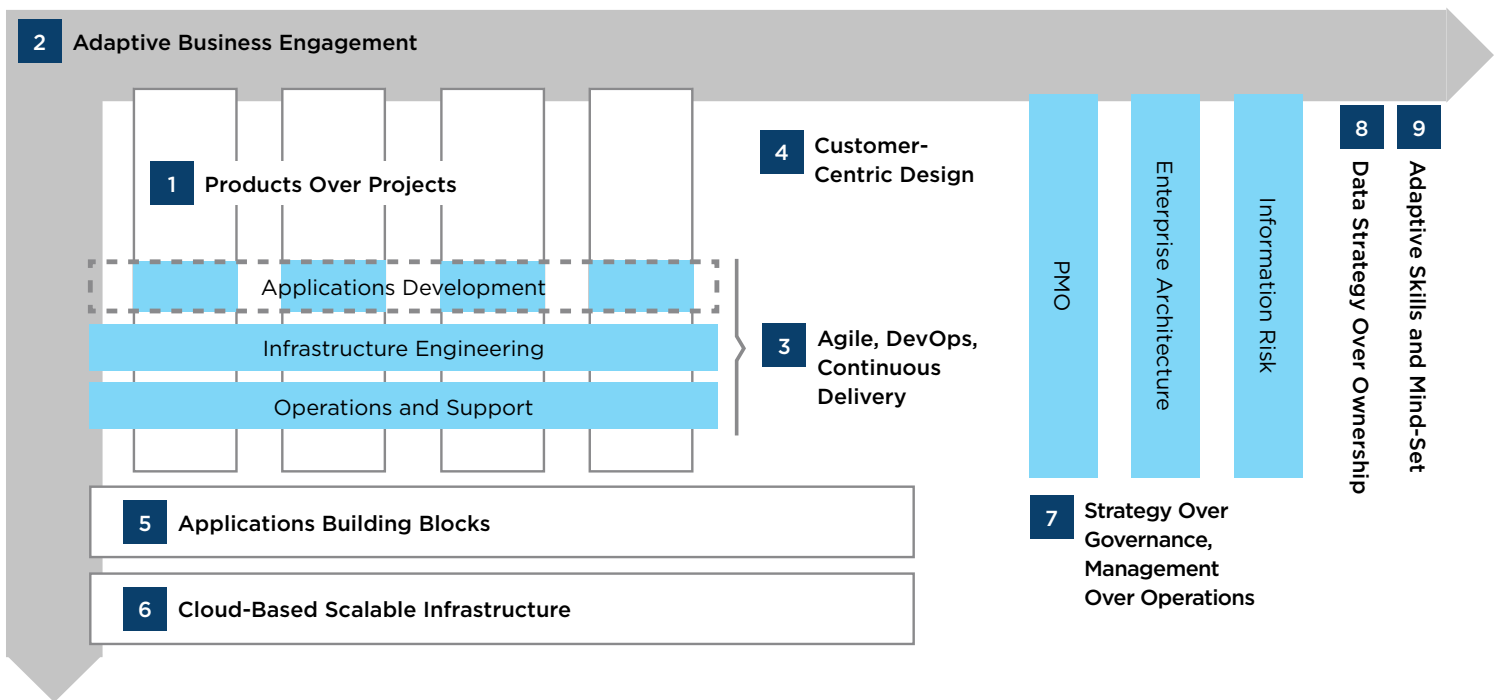
business projects become technology projects. As a result, business strategy and IT strategy are becoming synonymous, and business leaders are more willing and able to move forward with digital initiatives by themselves.

- **Heightened Volatility**—Digitization opportunities quickly rise and fall, so business plans are constantly in flux. Companies are switching from multiyear technology planning and road-mapping to relying on the concepts of “test and learn” and minimum viable product.
- **Blurred Technology Responsibility**—IT leaders used to insist there were no technology projects, only business projects. Today the opposite is becoming true as almost all

To meet these challenges head on, progressive IT leaders are making IT more adaptive. An adaptive IT organization accelerates the rest of the business rather than hindering it, changes direction as demands change, and flexes between different modes of business collaboration based on context.

The best way to become adaptive is to change IT’s operating model. We have identified nine features of the new operating model that will position IT teams for digital success.

Key Features of the IT Operating Model for Digital



1 Products Over Projects: Priorities and budgets are set for business capabilities and products, not projects.

2 Adaptive Business Engagement: Business engagement approach flexes based on business context.

3 Agile, DevOps, Continuous Delivery: Integrated delivery, engineering, and support boost responsiveness and output.

4 Customer-Centric Design: Customer-journey mapping is used to guide design.

5 Applications Building Blocks: APIs, platforms, data, and reusable services reduce effort and accelerate delivery.

6 Cloud-Based Scalable Infrastructure: IT automation and cloud platforms cuts time to scale.

7 Strategy Over Governance, Management Over Operations: Central groups refocus on facilitating strategy, innovation, change, and enterprise data.

8 Data Strategy Over Ownership: Coherent strategy and guidelines around data allow for rapid exploitation by distributed teams.

9 Adaptive Skills and Mind-Set: Staff become technically versatile, collaborative, and open to innovation.

Source: CEB analysis.

1. Products Over Projects

What Is It?

Traditionally, IT investment is structured as a pool of ongoing “run the business” costs and a separate portfolio of discrete capital projects that have a clearly defined beginning and end. But organizations are now beginning to align funding, development resources, and ongoing management support around a set of enduring product lines. These product lines—also referred to as “end-to-end IT services,” “platforms,” “experiences,” or “value streams”—are aligned to the organization’s most important business capabilities, which are the core activities business partners need to accomplish their objectives.

In the new approach, a dedicated product line or service manager works with all relevant business stakeholders to create a strategic capability and investment roadmap for each product

line. They also oversee the product line’s full lifecycle, from launch to ongoing performance management to retirement.

This shift in IT funding structure doesn’t mean, as many have suggested, that the concept of discrete projects is dead; projects and programs will still support product lines in the digital future. However, it does mean that product lines become the primary focus in setting spending priorities and allocating IT capital while projects and programs are simply the way in which the work gets done.

Business Capabilities Defined:
A structured way of expressing the activities the enterprise performs to achieve its desired business outcomes

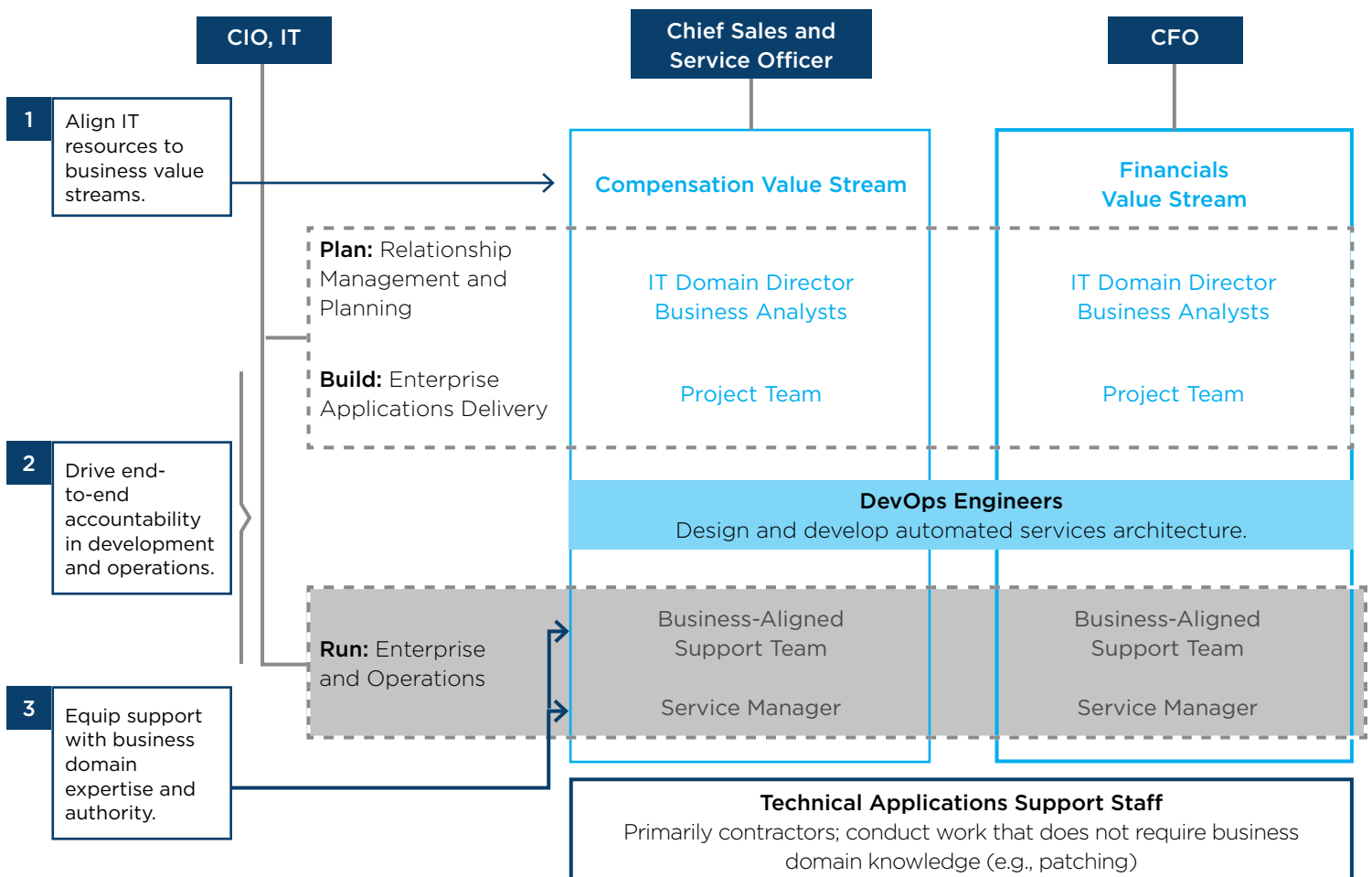
How Does It Fit with the Rest of the Operating Model?

“Products over projects” is at the heart of the operating model for digital. Product-line managers play an important role in making business engagement more flexible and adaptive, using their knowledge of business capabilities and stakeholders at multiple levels to translate business need into customer-centric designs. They also prioritize both new development and enhancements to product lines delivered through Agile and DevOps approaches, using applications building blocks and cloud-based infrastructure.

Why Are IT Organizations Doing This?

Organizations typically allocate IT budgets and resources after carefully considering a long line of competing project proposals. However, the resulting investment portfolio frequently doesn’t reflect the organization’s priorities as

How Autodesk Aligns IT Resources to Core Business Capabilities



Source: Autodesk, Inc.; CEB analysis.

scarce funding is spread relatively evenly across requestors. This approach also fractionalizes money and staff, leaving them captive to individual projects, and slows the organization's response as priorities change or new demand emerges.

By shifting their focus from projects to product lines, organizations achieve the following:

- Initial funding and resource allocation that is better aligned to the organization's most significant sources of value: organizations with product-aligned funding see an increase of up to 50% in the proportion of their IT budget focused on key business priorities.
- A role (e.g., product-line manager) that continuously improves the product offering through a deep understanding of business needs and a close relationship to the product's users: this contrasts with traditional service manager roles that operated services but weren't responsible for service innovation.
- Greater flexibility when business needs change: product-line managers can shift money and resources nearly 90% faster by avoiding extensive negotiation with peers and better framing trade-offs between speed, cost, and adoption.
- Reduced cost for delivering the work in the portfolio: elevating decisions and activities—such as business case creation or the evaluation of scope-change requests—above the project level can reduce the effort required from IT and business partners and save up to \$4 million annually.
- The foundation for a continuous delivery model: these changes allow for dedicated, product-line-based delivery teams and the funding flexibility necessary to conduct Agile at scale.

Lessons from Practitioners

Leading practitioners use the following strategies to make product-line-based allocation work:

- **Define a handful of product lines that align to the organization's most critical business capabilities.** To identify these capabilities, IT leaders can use enterprise and business-unit strategic plans, senior executives' performance goals, and business partner interviews. Business capabilities remain fairly stable year over year, but their relative importance may change. Not all business capabilities need to be defined at once, and many organizations start with a handful of product lines rather than attempting a much riskier all-at-once rollout.

- **Determine the relative importance of product lines, and allocate funding proportionally.** Weigh the importance of the product lines annually by guiding senior business partners through a structured trade-off exercise, such as a pair-wise comparison. Then use those weightings to guide initial capital allocation.
- **Empower the product-line manager.** Rather than tying reprioritization and reallocation decisions to an annual or quarterly enterprise-level process, give product-line managers the autonomy to shift funding and resources when their product line's strategy and investment roadmap change.
- **Create visibility across product lines.** Establish regular coordination among product-line managers to spot cross-product-line opportunities to replicate innovation, avoid duplicative effort, manage interdependencies, and reallocate unused funds.

Take Action

- Allocate IT investment by capability-based product lines. | [Brocade's Strategic Pillar Investment Targets \(CEB CIO\)](#)
- Align delivery resources to product lines. | [Autodesk's Changing the Applications Delivery and Support Model \(CEB Applications\)](#)
- Design an empowered product-line manager role. | [Service Manager Responsibilities and Skills \(CEB CIO\)](#)
- Identify and visualize interdependencies. | [Nationwide's Agile Metrics for Coordinated Delivery \(CEB Applications\)](#)
- Reallocate funding across product lines. | [State Farm's Trigger-Based Program Budget Scraping \(CEB PMO\)](#)
- Put product lines at the heart of your planning process. | [CEB IT Roadmap Builder™ \(CEB\)](#)

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2. Adaptive Business Engagement

What Is It?

In the digital enterprise, business partners have a wider range of IT needs than is typically accommodated through traditional business engagement channels (e.g., IT-business relationship managers) and processes (e.g., requirements development and documentation). Seventy to eighty percent of business partners want strategic advice on digital opportunities and risks as well as technical advice and support on digital capabilities—and the ability to access the expertise they need at multiple levels.

Adaptive business engagement flexes based on business context and need. In this approach, the IT organization shifts between five activities—evangelizing and educating, consulting, brokering, coaching, and delivering—based on business partners’ digital ambition and ability.

How Does It Fit with the Rest of the Operating Model?

Because no single function or individual can own or master all five of the activities IT must cover in this approach, business engagement becomes a part of everyone’s job and skill set. Many of the groups emerging or evolving in the new operating model—including product-line managers, Agile and DevOps teams, teams shifting from operations to management, and teams shifting from governance to strategy—therefore work directly with business partners through one or more of the activities. Adaptive business engagement requires an adaptive mind-set and

skills; as a result, talent gaps often slow the transition to this new engagement approach.

Why Are IT Organizations Doing This?

IT-business collaboration has to evolve to support an enterprise-wide digital strategy. Digitization has increased the diversity and digital maturity of business stakeholders who work with IT, and this diversity has led to a wider range of activities required from corporate IT departments. It has also increased the importance of the time spent advising and consulting business stakeholders trying to work their way through a digital project or strategy.

Given the range of business capabilities that can “go digital,” it’s too much for a central team or a function like the IT-business relationship manager to provide meaningful expertise and support. Our survey findings support this conviction; only 21% of business partners feel that IT provides effective advice.

Lessons from Practitioners

- **Flex IT’s engagement role.** IT’s role in business engagement is context-based, not preordained. Understand your business stakeholders’ digital ambition and technical ability to determine the engagement activities IT should support (e.g., coaching or consulting as opposed to delivering).
- **Organize around business capabilities.** Build business engagement channels around what business leaders are trying to get done rather than how the company is organized. This promotes the right collaboration among diverse business stakeholders supporting digital projects.

- **Accelerate access to technical expertise.** Give business partners access to a wider range of expertise in IT. Rather than channeling requests through a single point of contact such as an IT-business relationship manager, build on-demand teams that can provide the mix of knowledge and engagement activities business stakeholders require.
- **Build technical depth and engagement skills in parallel.** A more flexible, team-oriented model for business engagement can’t work unless traditional engagement roles (e.g., business analysts) develop stronger technical knowledge and delivery teams build relationship-management and influencing skills.

Case in Point: Intel Introduces an Adaptive Digital Engagement Model

At Intel, each IT service leader designs an IT-business interface team with a specific mix of business engagement skills and technical expertise. Their design is based on an assessment of the business capability needs supported by that service and the activities required at the interface.

For example, for a digital customer-experience service, where external parties do much of the delivery, the engagement activities needed are *consulting* on new technology investments and *coaching* on how best to exploit those investments. To ensure business leaders have immediate access to expertise in these areas, the service leader may assemble a collaborative team drawing from enterprise architects, project managers, business analysts, or risk managers—an engagement team custom-suited to the needs of business stakeholders.

Five Engagement Activities



1 Evangelizing

Keep abreast of emerging digital trends, and educate business partners on opportunities to create value from technology.



2 Consulting

Offer advice and frameworks to enable successful business leadership of technology investments.



3 Brokering

Provide the internal and external connections needed for business leadership of technology investments.



4 Coaching

Develop employee skills to help them make full use of the enterprise’s technology and information.



5 Delivering

Own the process of delivering technology functionality, or provide integration capabilities for business-led technology investments.

Flex between the five activities based on business partners’ digital ambition and ability, not their personality or ways of working.

Take Action

- Structure a business engagement model around business capabilities, access to technical expertise, and idea sharing. | [Intel’s Adaptive Digital Engagement Model \(CEB CIO\)](#)
- Understand changes in enterprise demand for technology skills. | [The Talent Implications of Digitization \(CEB CIO\)](#)
- Develop accelerated self-service tracks for business partner demands. | [DIRECTV’s Adaptive Delivery Paths \(CEB Applications\)](#)
- Assess the preparedness of your business analysts and project managers for an adaptive business engagement model. | [Business Analyst Effectiveness Diagnostic \(CEB Applications\)](#) and [Project Manager Effectiveness Diagnostic \(CEB PMO\)](#)

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3. Agile, DevOps, Continuous Delivery

What Is It?

To meet digital expectations for responsiveness, output, and “always on” products, corporate IT departments need to integrate delivery, engineering, and support teams. A continuous delivery approach enables a software delivery model in which releases occur as soon as a new functionality is ready in the smallest amount that will independently provide business value. Advanced IT automation allows teams to test as they go, so code is consistently production ready and can be released with minimal effort and zero downtime.

To achieve continuous delivery, organizations are marrying “Agile at scale” (i.e., iterative software development methods) with DevOps (i.e., team structures and workflows that take

advantage of automation and establish frequent collaboration between development, infrastructure engineering, and support teams).

How Does It Fit with the Rest of the Operating Model?

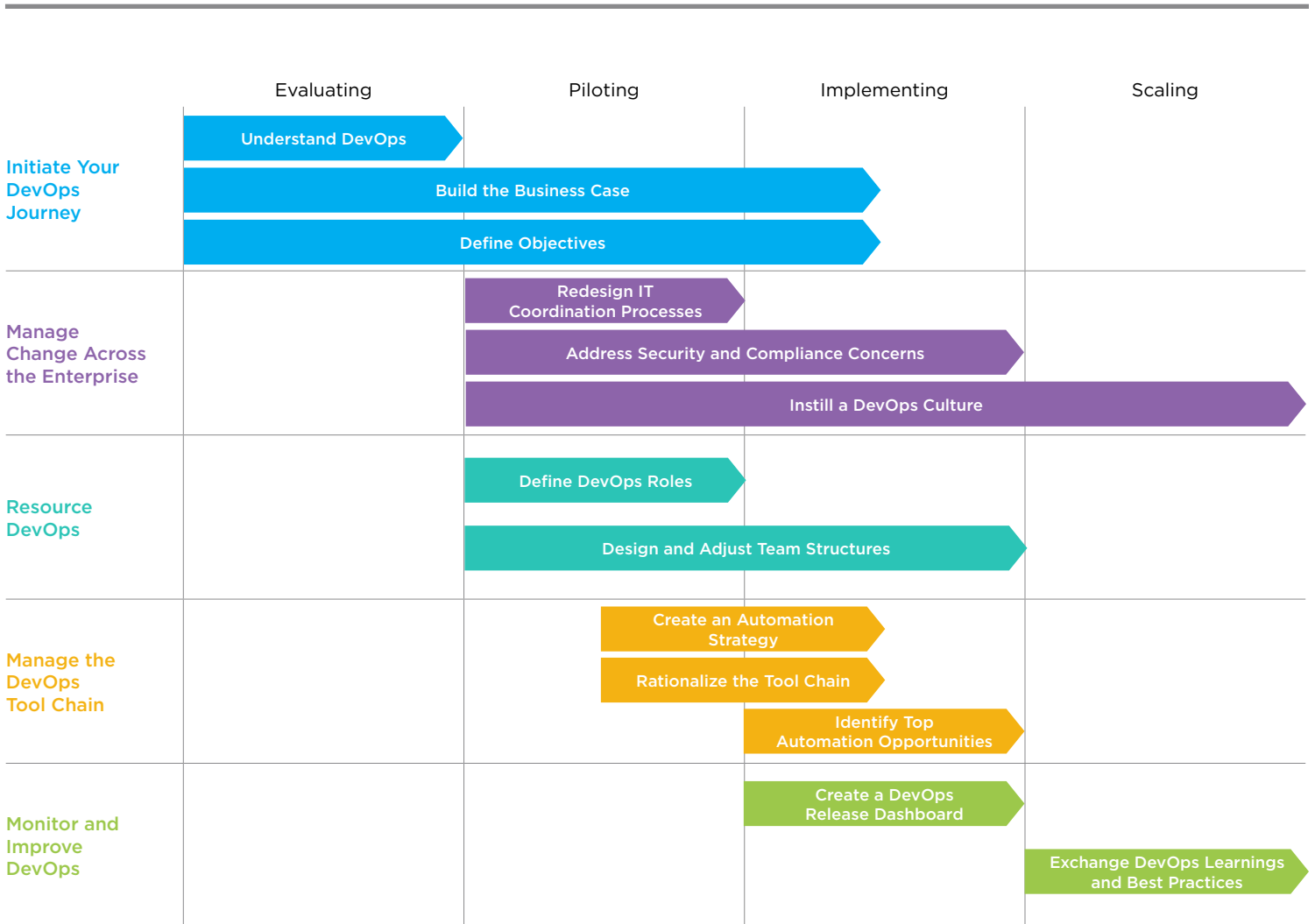
Agile and DevOps are essential to ensuring alignment across delivery and support functions as product lines work against a set of customer-centric business objectives. Moreover, a shift toward Agile and DevOps delivery models allows IT to take advantage of the speed and flexibility offered by applications building blocks and cloud-based infrastructure technologies.

Why Are IT Organizations Doing This?

Digital products and services are distinguished from conventional products or IT projects by three primary characteristics:

1. Their success is heavily dependent on speed to market because customers have low switching costs between products or services that can be rapidly replicated. In the digital market, business leaders cannot afford delays due to internal handoffs between the delivery, engineering, and support functions; all of these functions must have a unified view of customer outcomes to guide prioritization and effort.
2. Their success is dependent on scale across customer contexts and platforms. Development teams in the digital enterprise need to collaborate with engineering teams to code for infrastructure and ensure effective performance at scale.
3. Their success is more dependent on support because run-time failure in the product or service can lead to revenue and customer loss. Support requirements must therefore be integrated early in the design phase of development.

Roadmap for Identifying the Key Steps and Timeline in a DevOps Initiative Launch



Source: CEB analysis.

By integrating delivery and support functions, continuous delivery allows IT teams to meet expectations for faster speed to market and speed to scale and to provide seamless support for new functionality.

Lessons from Practitioners

- **Make coordination between Agile teams and the rest of IT a design principle, not an afterthought.** Too often, IT grows its Agile development efforts in “stealth mode” without coordination between engineering, support, and IT governance functions. As a result, it quickly loses speed-to-market advantages.
- **Build continuous delivery workflows and the product-aligned organization in parallel.** Continuous delivery models based on Agile and DevOps principles cannot scale without a structure that supports dynamic resource allocation.
- **Design the delivery model to fit business context, not methodology.** Corporate IT departments might define their approach to Agile and DevOps based on jargon-laden frameworks that raise change management risks and confuse business stakeholders. Smarter approaches start with a clear sense of business objectives and constraints and adopt a selective, incremental approach to the Agile and DevOps practices they implement.
- **Focus first on change management.** Movement toward a continuous delivery model challenges the ingrained culture of corporate development and infrastructure teams. Leaders should emphasize change management approaches that focus on experimentation, promote organic participation and feedback across IT, and emphasize the problems to be solved rather than the method.

Case in Point: Autodesk Changes the Applications and Delivery Support Model

At Autodesk, the shift from “boxed” software to subscription-based digital products and services has transformed the delivery and support model to focus on zero-downtime deployments, automated testing, and end-to-end accountability for product outcomes. DevOps at Autodesk emphasizes collaboration and communication between Agile development teams and operations while automating the software delivery process and infrastructure changes.

In this model, DevOps engineers and support managers focus on enabling teams to self-support and self-provision across development stages. Using DevOps, Autodesk’s IT team incorporates support expertise around nonfunctional requirements early in the design lifecycle and ensures that new releases (defined in terms of “minimum releasable units”) are assessed from perspectives of both development and operations quality.

Take Action

- Structure continuous delivery in a product-aligned organization. | [Autodesk’s Changing the Applications Delivery and Support Model](#) (*CEB Applications*)
- Plan the rollout of a DevOps model. | [DevOps Implementation Roadmap](#) (*CEB Applications*)
- Benchmark the effectiveness of your Agile teams. | [Agile Improvement Diagnostic](#) (*CEB Applications*)
- Develop a change-management program to support continuous delivery. | [Molina Healthcare’s Managing Change in Engineering Practices](#) (*CEB Infrastructure*)

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4. Customer-Centric Design

What Is It?

Customer-centric design ensures technology, processes, and information are structured to minimize customer effort in interacting with a company. Customer-centric design encompasses all the techniques needed to:

1. Understand customers' experiences,
2. Determine the root causes of unnecessary effort or friction in those experiences, and
3. Use that information to design a better, easier experience.

Importantly, these techniques are not necessarily limited to digital channels or technology-enabled products; they can be applied to any part of the customer experience.

How Does It Fit with the Rest of the Operating Model?

Customer-centric design is often used by product lines to ensure products meet user needs and the low-effort threshold required for effective adoption. Agile teams, with their focus on minimal viable product, typically emphasize development that satisfies "user stories" rather than the proliferation of unnecessary features and complexity. Customer-centric design is one of several strategic roles enterprise architects may take on as they shift their time away from lower-value governance activities.

The Difference Between User Experience and Customer Experience

User experience is a subset of customer experience that focuses on visual design, interaction design, and technology usability.

Customer experience encompasses customer service, the sales process, how a product is delivered, and how product problems are resolved, in addition to the user experience.

While IT functions have thought about user experience for years, thinking about the broader customer experience outside of the elements of user experience is a newer activity for many IT staff.

Why Are IT Organizations Doing This?

Our analysis of the customer experience shows that reduced customer effort is the single most important factor in determining whether a customer will spend money with a company again. Technology has become essential to creating a low-effort customer experience as more companies reach limits in their ability to improve the customer experience through changes to people or processes.

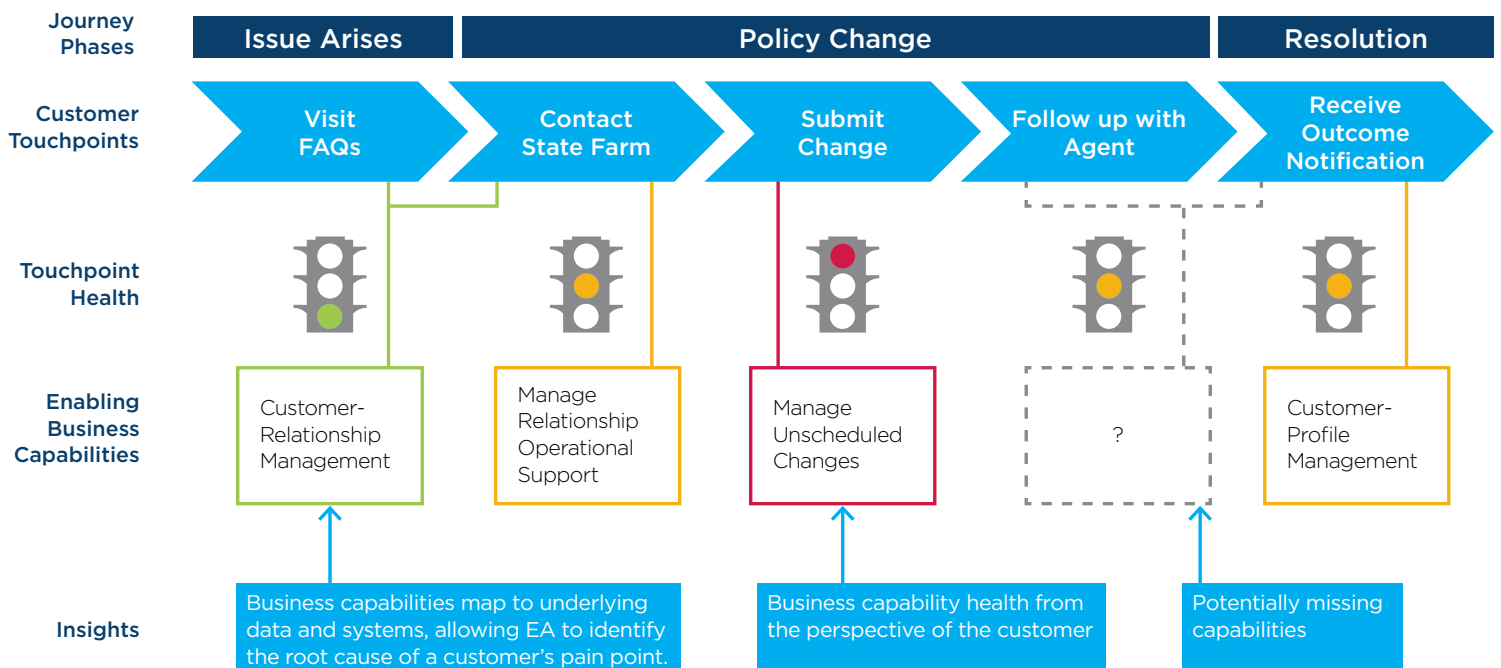
While many companies already have customer-experience teams, corporate IT teams (and particularly enterprise architects) have a number of capabilities to contribute to customer-experience improvements, including:

- Understanding of enterprise systems,
- Cross-enterprise perspective,
- Insight into the relationship between technology and business strategy, and
- The ability to manage near-term and long-term priorities in parallel.

Lessons from Practitioners

- **Identify where IT should get involved.** IT shouldn't try to get involved in every part of customer-experience improvement, even in organizations without a dedicated corporate customer-experience team. Instead, IT leaders should carefully triage their teams' involvement based on where their cross-enterprise perspective and familiarity with data and systems are most applicable.
- **Look at customer experience across business silos.** Many customer-experience problems arise at the handoff between a company's products, teams, or technology systems. Corporate IT can often see across these silos in ways other teams cannot.

Customer-Journey Map for Making Changes to a Policy



Source: State Farm; CEB analysis.

- **Tie technology plans to the customer journey.** Corporate IT is best positioned to connect each step of the customer journey to the supporting technologies. If IT investments are clearly tied to steps in a customer journey, prioritizing and securing funding will likely be easier.
- **Use real customers to change IT's thinking about customer experience.** Thinking about the customer experience in abstract rarely changes the way IT staff approach their work. Instead, embed discussions about real customers (or customer personas) into project reviews and other steps in the development process.

Case in Point: State Farm Applies a Customer-Experience Lens to IT Planning

State Farm, a large insurance company, knew that customers who owned many of its insurance products sometimes had trouble applying changes to all the products they owned. In response, the enterprise architecture (EA) team and corporate customer-experience team (which is not part of IT) cocreated four customer-journey maps. Each customer-journey map outlines all the steps a customer goes through to accomplish one of four common tasks (such as buying or changing a policy).

State Farm's EA team linked the customer-journey maps to its business-capability maps. Because the business-capability maps already

capture which processes, systems, technologies, and teams support each capability, State Farm EA could quickly diagnose the root cause of poor customer experience. By doing this, State Farm could quickly and accurately prioritize fixes to suboptimal customer experiences.

Take Action

- Map customer journey maps to business capabilities. | [State Farm's Applying a Customer-Experience Lens to IT Planning \(CEB Architecture\)](#)
- Use customer personas to change how IT staff think about customer experience. | [Consider the Customer Experience \(CEB Architecture\)](#)
- Learn about the importance of reducing customer effort. | [About the Effortless Experience \(CEB\)](#)
- Plan the rollout of a DevOps model. | [DevOps Implementation Roadmap \(CEB Applications\)](#)

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5. Applications Building Blocks

What Is It?

Advances in applications programming interfaces (APIs), microservices, containers, and other technologies are providing corporate application development teams with new tools and reuse capabilities to scale and speed development, especially in terms of integration.

How Does It Fit with the Rest of the Operating Model?

Agile and DevOps teams can use applications building blocks to speed delivery through either the extension of development to third parties or direct delivery to business lines via self-service. But companies' emphasis must shift from data ownership to data strategy before enterprises can fully benefit from using APIs and data platforms, making data more accessible to and reusable by internal and external parties. The exponential increase in the number of releases brought about by Agile and DevOps is one reason EA and Information Security are shifting from operational approaches (ensuring releases conform to enterprise standards) to management approaches that supply building blocks for critical functionality.

Why Are IT Organizations Doing This?

A customer-centric digital strategy will lead enterprises to cross internal and external system boundaries in moves such as marrying new products to legacy back-office systems or connecting enterprise data assets to external services and platforms. Corporate IT must find the means to both speed and scale this boundary crossing without creating unnecessary complexity, effort, or risk.

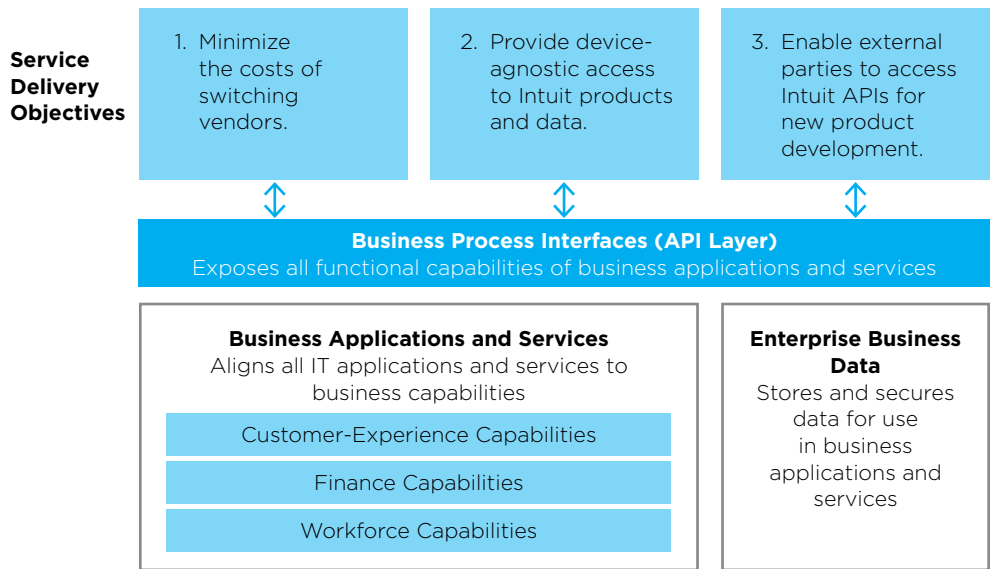
Lessons from Practitioners

- **Structure and prioritize building block development using business capabilities.** Mature business capability frameworks can provide a heat map to show where business needs for reuse and integration are greatest.
- **Empower functions beyond IT to create and use building blocks.** To scale and speed development, provide business partners with the tools (e.g., API development platforms, low-code environments, self-service tools) that provide both capability and governance. Move consumption of these building blocks as close to the point of value delivery as possible without creating excessive risk.

Case in Point: Intuit Scales Enterprise Development Through API Product Management

To support enterprise digital transformation, Intuit IT created an “API-first” strategy designed to enable interoperability among diverse

Intuit's API-First Digital Business Strategy



Source: Intuit; CEB analysis.

technologies and development across a broad network of business stakeholders, enterprise partners, and vendors. Instead of owning end-to-end delivery of applications, Intuit focuses on developing and managing APIs as its primary end product.

A business capabilities map identifies where APIs will provide the most value and helps determine how close to the point of value delivery Intuit can move API development and consumption without exposing the company to excessive risk. After building an initial set of foundational APIs, Intuit established an “API marketplace”—a single shared platform for API consumers to securely find, test, create, and share their own APIs and service assets without additional IT support.

Take Action

- Create an effective API-first strategy. | [Intuit's Scaling Enterprise Development Through API Product Management \(CEB Applications\)](#)
- Build architectures that optimize data provisioning and connect employee-developed applications to corporate data assets. | [Flexible Interfaces, Foundational Services \(CEB Applications and CEB Architecture\)](#)
- Define data-fetching services based on customer needs. | [Ameriprise Financial's Information-Centered Portfolio Modernization \(CEB Applications\)](#)

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6. Cloud-Based Scalable Infrastructure

What Is It?

The accelerating advance of automation, infrastructure as code, and cloud technologies enables corporate IT departments to scale capacity rapidly in response to digital demand. This reduces IT's reliance on fixed-cost, capital-intensive assets but requires new processes and skills for effective management.

How Does It Fit with the Rest of the Operating Model?

Agile and DevOps teams that used cloud-based infrastructure can often work faster and with

greater flexibility across workload demands. Similarly, product lines that use cloud infrastructure may be able to scale more rapidly while offering greater cost flexibility.

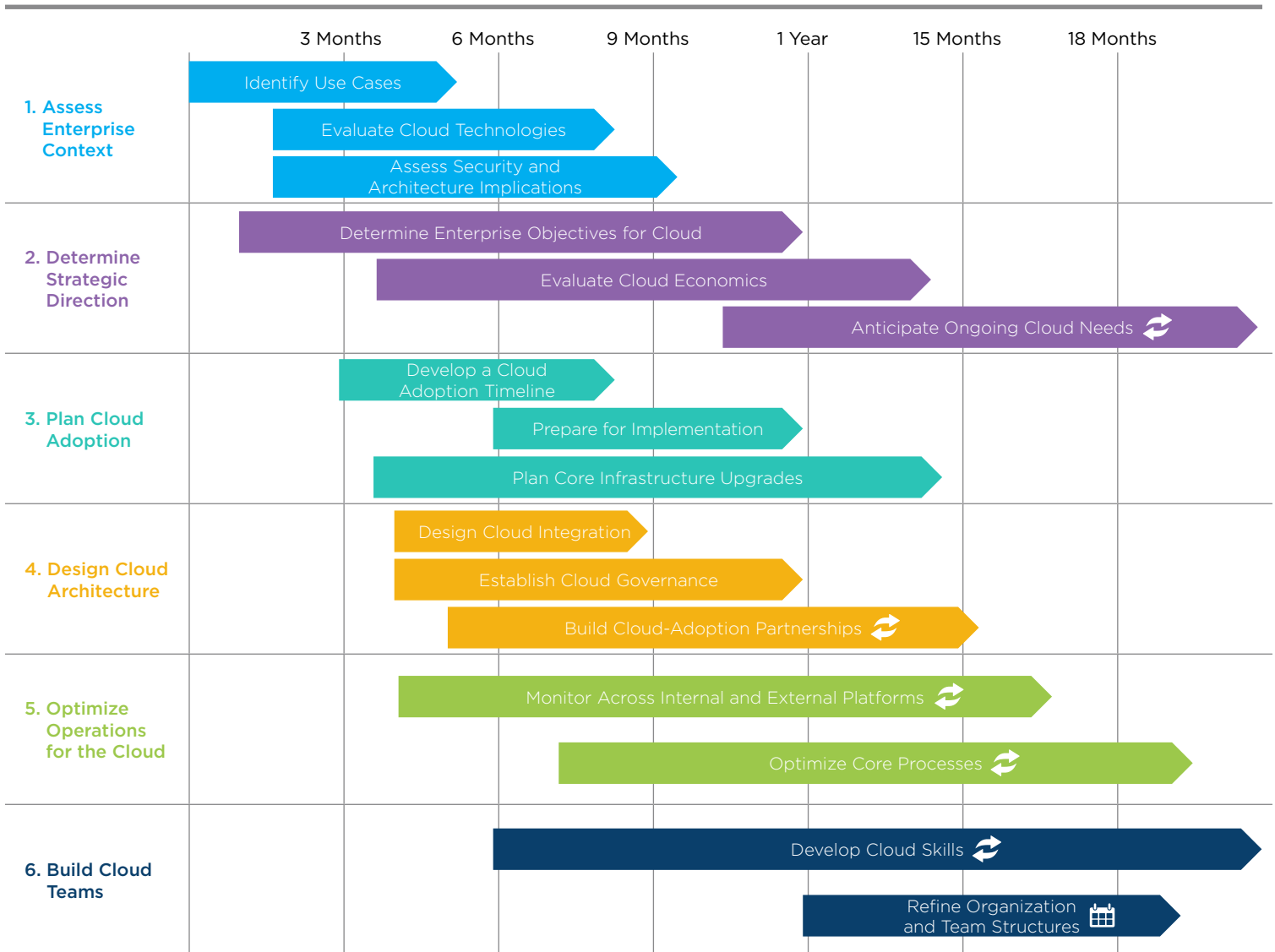
Why Are IT Organizations Doing This?

Near-term movement to the cloud stems from enterprise pressures for faster and easier IT capacity provisioning, especially in the face of volatile digital demands. Over time, the migration of capacity to external cloud services will be driven by the question of comparative advantage: For which use cases is the provisioning and management of infrastructure assets truly a differentiating capability, and can corporate IT really deliver this capability more effectively than cloud providers?

Lessons from Practitioners

- **Focus first on using cloud capabilities to enable digital products and services.** Cloud strategy should not be developed in isolation. It should instead start by asking about the role cloud should play in the company's larger digital strategy. It should also enable both rapid wins and lessons learned. Migrating legacy applications to the cloud can improve speed and scale, but the benefits take longer to realize than with new projects.
- **Movement to the cloud should be paired with movement to DevOps.** Corporate IT departments will struggle to realize speed-to-market gains from cloud without moving toward a DevOps model that helps

Roadmap for Identifying the Key Steps and Timeline in Building and Implementing a Cloud Strategy



Source: CEB analysis.

Should recur regularly. Review at least annually.

development teams code for cloud and reduces handoff delays in testing and release.

- **Build business engagement competencies in infrastructure.** Rapid advances in cloud technologies require IT infrastructure departments to take on business engagement responsibilities (e.g., educating business stakeholders on cloud opportunities and risks and providing strategic advice on how to use cloud to capture digital opportunities).

Case in Point: ThermoFisher Scientific Creates Cloud Champions

ThermoFisher Scientific appoints commercial product managers in each business unit to act as “cloud champions.” Cloud champions are responsible for teaching business leaders how they can use cloud capabilities in their products. They also connect business leaders with technical expertise in IT cloud-development teams to embed cloud solutions into commercial-product processes and offerings.

Take Action

- Develop the fundamentals needed for an effective cloud strategy. | [Cloud Strategy Roadmap and Checklist](#) (*CEB Infrastructure*)
- Analyze the cost impact of cloud on your application hosting and data center costs. | [Cloud Cost Modeling Tools Suite](#) (*CEB Infrastructure*)
- Benchmark your investments in cloud technologies. | [Emerging Technology Roadmap](#) (*CEB Infrastructure*)

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7. Strategy Over Governance, Management Over Operations

What Is It?

IT governance functions such as Information Security and EA increasingly play a direct role in setting business strategy as well as IT strategy. For example, 81% of boards of directors review information security matters in most or every meeting, and directors cite security as a bigger barrier to digitization than allocating budget or creating the digital strategy itself. Similarly, 86% of chief architects are reducing EA group time spent on traditional EA activities, and 94% are spending more time helping the rest of the company's business and IT leadership set strategy.

At the same time, governance functions that have typically taken an operational role in ensuring IT's delivery teams adhere to policies and standards are delegating these roles; the goal is to free time for more strategic activities and to accommodate continuous delivery. To manage the delegated work, the governance functions retain the following activities:

- Defining the processes by which the activity is performed
- Defining roles, responsibilities, and incentives for the work to be performed

- Training, consulting, and coaching those who perform the work
- Auditing the work to ensure it is done correctly

How Does It Fit with the Rest of the Operating Model?

Many of the strategic activities governance groups take on will require a more flexible and adaptive approach to business engagement (e.g., consulting), and shifting away from operational roles is often intended to smooth the way for continuous delivery. As the name suggests, the shift from data ownership to data strategy cannot occur without a more strategic outlook from architecture and risk teams.

Why Are IT Organizations Doing This?

In the past, IT leaders seeking to align IT strategy to business strategy said, "There are no IT projects, only business projects." This was to remind IT staff where their priorities came from. Today a better mantra is, "All business projects are technology projects." In the digital enterprise, IT strategy is inextricably linked to business strategy rather than cascading from it, and business leaders drive both.

While business leaders are increasingly willing—and able—to make technology decisions, their strategies' success relies on a detailed understanding of technology capabilities and

corporate IT's ability to deliver. Business leaders therefore increasingly seek help from experts in IT, varying their contact based on context. For example:

- For improvements to existing product capabilities, product managers are best positioned to help;
- For consulting that has a cross-product scope, EA has the relevant expertise; and
- If the business leader is concerned about risk, privacy, or compliance, they would likely involve Information Security.

The shift from operations to management often occurs in parallel with the shift to doing more strategy work. As IT adopts iterative development methods and continuous delivery, it becomes unacceptably slow for governance functions to participate directly in development efforts. For example, a typical \$20-billion digital company might have 100 Agile teams—each releasing code every two to four weeks—and only five security analysts who can review the code for adherence to policies, standards, and security coding practices.

Lessons from Practitioners

- **Find time for strategic work by reducing time spent on governance and operations.** Although governance is typically the official

EA's Shift from Governance to Strategic Activities



Source: CEB analysis.

mandate of the function, contributing to a company's digital transformation adds more value. Governance and operations activities should be delegated, automated, or eliminated to free up time for strategic activities.

- **Build staff skills for strategic work.** As the consulting business takes off, the head of the function won't be able to do all the strategy work. However, many governance functions lack staff with the business-results orientation and communication skills needed to consult on strategy with business partners.
- **Ensure the function focuses on the areas of its greatest comparative advantage.** The opportunity to do more strategic work holds great allure, but leaders of IT governance functions must objectively evaluate their competencies and their comparative advantages. For example, many CISOs who were eager to present to the board more often are now finding it has little upside and is time consuming and filled with personal career risk.
- **Reduce, reuse, recycle.** Many traditional activities, such as setting technology standards, provide little value in today's world of rapid technology flux. These activities can be reduced in volume. Other activities can be automated and/or delegated to those being governed.
- **Come to a common, explicit understanding of risk appetite.** Many operational activities

performed by governance functions seek to reduce risk. However these risks pale in comparison with the issues arising from slower speed to market or the imperative of the digital transformation itself.

Case in Point: HEINEKEN'S New Creative Agency in EA

Traditionally HEINEKEN worked with creative agencies to develop innovation ideas, but IT found itself increasingly disintermediated by these external agencies because they also delivered the technology needed for the new business innovations. HEINEKEN had a strategic target of gaining 6% of its net revenue from innovation, and innovation increasingly depended on technology, so it was vital that the IT strategy directly support this key strategic goal.

Rob Monk, the global EA director, set out to reposition IT as a critical, technology-enabled business-innovation partner for HEINEKEN. Monk assigned five members of the original EA team of 14, plus one new external hire, to be responsible for digital transformation and enterprise IT strategy. He also set up EA to serve as an internal creative and delivery agency.

Case in Point: BP's Risk Assessment Self-Service

BP's information security function frees developers from having to wait for an overwhelmed security team's lengthy reviews. A simple questionnaire identifies lower-risk projects

that can receive self-serve controls selection and implementation. An auditing process keeps developers honest, and a security help desk answers controls-implementation questions as they arise.

Take Action

- Learn how to rebalance the EA group from governance to strategy. | [Reinventing EA: A Guide to Redefining EA's Role for a Changing Business Environment](#) and [EA's Emerging Role in Setting a Digital Strategy](#) (CEB Architecture)
- Identify areas where EA can speed or delegate operational responsibilities. | [Architecting for Cost, Quality, and Speed](#) (CEB Architecture)
- Redesign Information Security's role from security operations to risk management. | [A Blueprint for a New Information Security Function](#) (CEB Information Risk)
- Rethink information risk-reward trade-offs to enable digital strategies. | [Maximizing the Business Value of Information](#) (CEB Information Risk)

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Shift to Management Activities Over Operational Activities

Selected Examples

From Operations	To Management	Principle
Information security function performs information risk assessments and provides controls recommendations.	The risk assessment process is designed into a GRC tool to enable project owner self-service and production of automated controls recommendations.	Automation
EA creates, maintains, and communicates RAs. ^a	EA defines the expectations for RAs and provides incentives for developers and vendors to create and maintain the RAs.	Delegation
EA and security staff review developers' work in periodic ARBs. ^b	The ARB process is standardized and delegated to deputized solutions architects.	Delegation
EA creates technology standards to lower acquisition and support costs.	Technology standards have decreasing value in a rapidly changing world, so activity is restricted to a few central technologies, such as ERP.	Reduction in activity

Source: CEB analysis.
^a Reference architectures.
^b Architecture review boards.

8. Data Strategy Over Ownership

What Is It?

Exponential growth in data volume and pervasiveness is already challenging traditional approaches to data ownership and presenting opportunities to build new-in-kind products and services. However, most enterprises lack a cohesive, enterprise-wide data strategy. Those that do have a strategy report problems with inconsistent execution approaches and burdensome governance. IT leaders cite an inability to get data strategy right as a key barrier to their company's digitization ambitions.

In response, organizations are attempting a variety of approaches to manage and take advantage of data. Most rely on a “corral and control” approach that calls for clear ownership of data and usage rules. Heightened interest in the chief data officer (CDO) role is a symptom of this trend, which simply applies higher-level authority and ownership over traditional—and increasingly less-effective—approaches. A strong data strategy instead starts with clear identification of the data needed by and generated to support product-line outcomes and an alignment of the resources required to harness, exploit, and improve this data.

How Does It Fit with the Rest of the Operating Model?

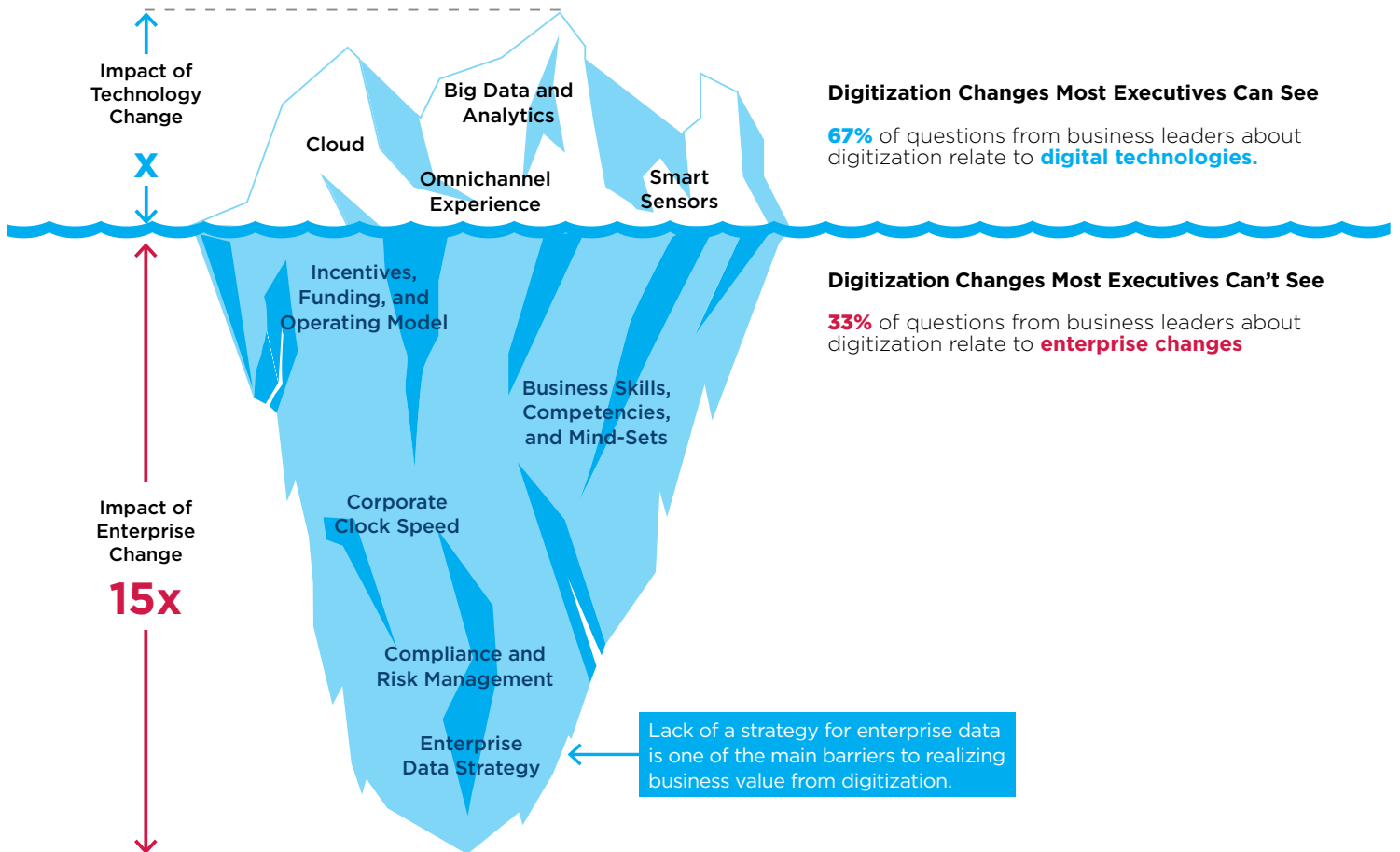
Companies require new and more effective approaches to data strategy to reap the benefits of data made available across the enterprise through APIs, data platforms, and other sources. Ideally, product lines should identify the data needed by and generated to support product-line outcomes.

Why Are IT Organizations Doing This?

While digital strategies vary across companies and industries, one common theme is exponential growth in the volume, variety, and velocity of data collected from new and existing internal

Missing Some Key Questions About Digitization

The Impact of Technology and Enterprise Change on the Likelihood of Success in Digitization



n = 1,104 executive-suite questions.
Source: CEB analysis.

and external sources (e.g., Internet of Things sensors in the digital oilfield, smart meters, and cross-channel correlation).

Business and IT leaders recognize the data is a goldmine of insight that could launch new products, drive impactful customer experience, and optimize operations. As a result, they are investing in data lakes, analytical tools, and visualization engines. But many companies are still unable to derive insight from the data.

The vast quantities of data, the investments already made to build some of these solutions, and anxiety over data privacy and security issues are driving CIOs to emphasize data ownership as the solution to their digitization woes. They believe making someone (or a group of people) responsible for data will make its usage more manageable. EA, Information Security, Data Privacy, business lines, and HR are all included in governance committees today. And several roles that are becoming more common—data stewards, data owners, and data architects—are further blurring the lines of accountability and responsibility.

Lessons from Practitioners

Progressive organizations realize that focusing on data ownership is a poor substitute for a realistic data strategy. They believe that ownership follows strategy, not vice versa. Following are some pragmatic alternatives to data ownership:

- **Establish the CDO as an evangelist.** Instead of being responsible for all aspects of data (e.g., quality, governance, technology), some CDOs are taking on an evangelist role to help business leaders see the possibilities. The CDO might initially lead some big data initiatives, but they are most valuable as a data and insight consultant to the business.
- **Recognize the role of business subject matter experts in big data efforts.** While data infrastructure expertise might still lie with IT, progressive organizations recognize that the best ideas for exploiting data come from those in the frontlines. IT therefore works closely with the rest of the business to hire data scientists and analysts into business lines and engages with them in a flexible fashion.
- **Use a “lessons learned” approach to data governance.** Instead of developing strict rules and trying to enforce them, the most effective governance models recognize that data governance is ever-evolving. They document the decisions made, the rationale for those decisions, and the people who had to be involved. This precedent log then helps them speed the governance process and constantly improve it without heavy-handed steering committees to slow things down.

Take Action

- Understand how employee skill gaps can undermine the success of big data investments. | [Overcoming the Insight Deficit](#) (CEB CIO)
- Offer data and analytics to business users as product lines. | [Rockwell Automation’s Flexible Delivery of Business Outcome-Driven BI](#) (CEB CIO)
- Make business context-driven decisions about information use. | [Air Products’ Business-Oriented Information Use Decisions](#) (CEB Information Risk)
- Embed data usage within employee workflows. | [MetLife’s On-Demand Analytics](#) (CEB Architecture)
- Boost enterprise-wide access to data in legacy systems. | [Ameriprise’s Information-Centric Portfolio Modernization](#) (CEB Applications)

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9. Adaptive Skills and Mind-Sets

What Is It?

Organizations that adopt the IT operating model for digital require IT employees who exhibit three attributes:

- Competency in areas such as influencing, teamwork, communication, and learning agility, allowing employees to switch rapidly between tasks, work closely with business partners, and contribute fully to business outcomes
- The technical versatility to quickly evaluate and exploit new technologies and avoid becoming locked into legacy skills
- A risk-tolerant, collaborative, and open mind-set

How Does It Fit with the Rest of the Operating Model?

Many features of the new IT operating model require employees to be flexible, creative, and collaborative. For example, adaptive business engagement requires employees to flex between five types of engagement activity and be comfortable influencing, advising, and collaborating with business partners. Similarly, employees assigned to product lines or to Agile and DevOps teams must work side by side with business partners, take advantage of multiple technologies, and be ready to change direction at short notice. And as groups such as PMO, EA, and Information Risk seek to contribute more to strategy, they too need employees who excel at adapting, communicating, and collaborating.

Why Are IT Organizations Doing This?

Talent gaps may be the most important barrier to implementing the new operating model—and therefore to companies' wider digital ambitions. Today less than half of IT employees are proficient in the 12 competencies, few are technically versatile, and 94% have risk-averse, siloed, or process-bound mind-sets.

To make matters worse, IT groups face ever-greater competition to recruit and retain the minority of IT employees with the necessary skills and mind-set. Demand for some competencies has almost doubled since 2012 due, in part, to rapid increases in hiring by groups outside IT.

Lessons from Practitioners

To overcome their talent gaps, progressive organizations are pursuing tactics such as the following:

- **Foster all technology talent, not just IT's technology talent.** Growing demand for technology talent outside the IT organization creates new competition for the best IT employees, but also gives IT a new talent pool to tap. IT leaders at the best companies are

eroding the distinction between IT and non-IT employees, encouraging career paths that move in and out of IT, helping business partners make the right external hires, and offering training and development opportunities to all technical talent, regardless of organizational location.

- **Promote experience-based development.** Digitization is too fast changing and cross cutting to allow employees to develop through traditional moves up the organizational hierarchy. Instead, progressive companies rely on experience-based development to expose employees to on-the-job learning.
- **Encourage a climate of openness.** Many IT leaders regard organizational culture as beyond their control. But although organizations have deep-seated assumptions and beliefs, the organizational climate is shaped by shared perceptions that are easier to influence. There are several ways IT leaders can change the organizational climate, including setting performance reporting metrics, which send a powerful signal about organizational priorities and expected behaviors, and confronting fears of failure. Smart leadership teams are open about their past failures, take care not to penalize employees who take reasonable risks while working on innovations, and promote wider sharing of learnings from failure.
- **Invest in diversity and inclusion.** Increasing diversity in IT adds new perspectives and can boost versatility. It also opens up access to new talent in a tight labor market. Recognizing this, progressive companies are reassessing their recruitment processes to ensure they aren't inadvertently deterring specific groups and that both the perception

and the reality of their employment offer meets all potential employees' needs.

- **Develop a workforce strategy.** Building an adaptive IT workforce requires sustained and coordinated efforts in hiring, development, advancement, and retention. The best organizations use an IT workforce strategy to bring these activities together. A good workforce strategy should be closely linked to IT and business strategies. It should also identify the multiyear talent changes required by the organization, describe the assumptions and constraints that shape it, define the most important action steps, and select a few metrics to track progress.

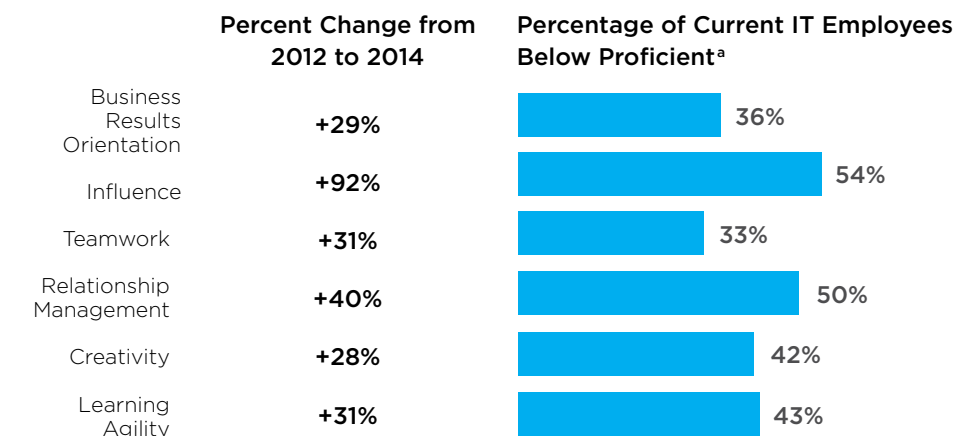
Take Action

- Understand the talent changes required for digitization. | [The Talent Implications of Digitization \(CEB CIO\)](#)
- Identify the actions the IT leadership team can take to change organizational climate. | [Building a Climate of Openness in IT \(CEB CIO\)](#)
- Create an IT workforce strategy. | [Workforce Planning Template \(CEB CIO\)](#)
- Assess the strength of the IT team in the 12 key competencies. | [IT Talent Assessment \(CEB CIO\)](#)
- Develop the right skills in the next generation of IT leaders. | [IT Leadership Academy \(CEB\)](#)

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Growth in Demand for Key IT Competencies

Percent Change in the Requests for Specific Competencies in IT Job Descriptions and Current Supply in IT



n = 2,957.

Source: CEB 2013–2015 IT Talent Assessment.

^a "Proficient" is defined as scoring a 3 on the five-point scale measuring competency. Employees are defined as "below proficient" if they score 1 or 2.