

# Insights at the Speed of Change: IT Services for Digital Business

By Nicole France, Rajat Mishra, Kevin Delaney, and Ari Kapur



Predictive analytics, artificial intelligence, and automation yield powerful insights faster than human analysts ever could. These technology advances make digital business possible. They also make external IT services more valuable than ever before.

The ability to detect anomalies and accurately predict behavior doesn't just reduce unscheduled downtime for aircraft engines or increase the value of online retail purchases. It empowers IT departments to deliver reliable, secure technology capabilities as quickly as business operations require them.

Insights derived from data – a LOT of data – have generated a whole new class of technology services. In the hands of experts with a deep understanding of customer challenges, data insights deliver better, more effective services.

New technology services offer critical tools to manage shifting complexity, changing skill requirements, and demand for speed. By addressing these challenges, providers of IT services can become true business partners for IT departments – especially as IT's role shifts to support the wider transformation of their organizations.

In this study, we examine the major priorities and obstacles faced by IT departments in transition. We evaluate their expectations for what IT services should deliver and how new technology services are meeting those needs. Our study draws on a survey of 35 senior IT decision-makers using technology services,<sup>1</sup> eight in-depth interviews with IT executives, and our extensive experience working with customers. We also include preliminary data from our large-scale IT talent survey.<sup>2</sup>

---

1 Web-based survey of 35 executive IT services decision-makers across a variety of industries in the United States fielded in September 2017..

2 Preliminary results from 153 respondents in phone-to-web survey of business and IT executives across a range of industries in the United States and Europe fielded in October 2017.

# Business expects IT to operate with the speed and flexibility of cloud

There is one consistent theme in every conversation we have with IT executives: speed.

IT organizations face tremendous pressure to work faster — and respond to an unprecedented rate of change. As the vice president of business services at one healthcare provider describes, “The speed of business and change is just increasing ... Everything just keeps going faster and faster.”

## The conversation is now, ‘Okay, Google and ServiceNow can do this. Why aren’t we?’

Part of this need for speed is driven by a new set of expectations from the business. The prevalence of mobile apps, software-as-a-service, and other cloud services has forever altered their views of what is possible. Business units expect internal IT to operate with the same speed and responsiveness.

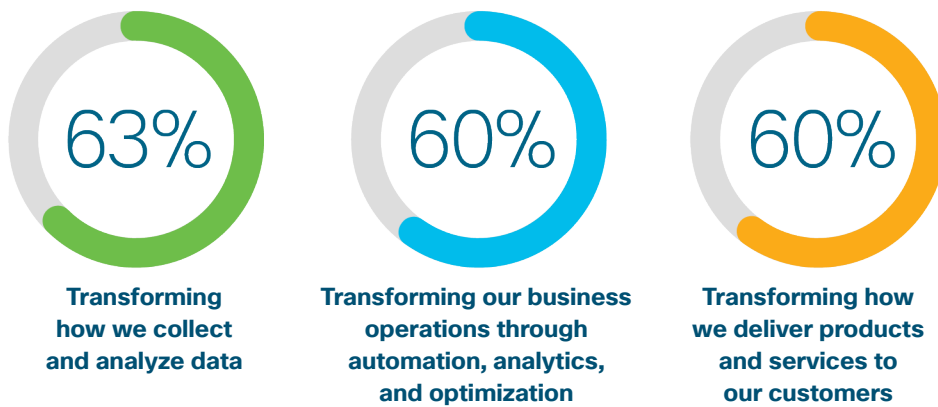
“The conversation has shifted tremendously,” says the former CIO and CTO of a genomics company. “The conversation is now, ‘Okay, Google and ServiceNow can do this and this. Why aren’t we?’”

The demand for speed is not superficial. It’s driven by a major set of business changes that directly impact success or failure. Among the IT executives we surveyed, the majority indicated that their businesses are undertaking multiple areas of transformation (see Figure 1). In a competitive environment where disruption can come from anywhere, speed is of the essence.

Which of the following are your organizations top business initiatives now or in the next 12 months?

FIGURE 1

Top three current business initiatives



Base size: Total = 35. Source: Cisco

Transformation within the IT department mirrors what is happening elsewhere in the business. Achieving greater speed in response to the pace of change isn't simply a matter of working faster. It requires doing things differently.

As one retail CIO put it, "You're really seeing a push for speed, but you're also seeing a push for architecting a more nimble way of doing business, a more insightful way of doing business."

Even though 61 percent of business decision-makers report they can rely on their IT department to transform their business starting from the strategy phase, 56 percent of them still believe that IT teams must fundamentally change the way they operate in response to internal business demand.<sup>3</sup>

IT departments are becoming technology advisors as much as technology providers. They must deliver an integrated, cohesive vision, but not necessarily provide all of the technology capabilities directly.

3 Source: Preliminary results of Cisco's IT talent survey

# Complexity is shifting, not disappearing

The focus for many IT departments is shifting away from “keeping the lights on” toward understanding and anticipating strategic business requirements. With this shift in focus comes a shift in complexity. As one IT executive observes, “Your complexity has changed from maintaining that environment internally to now orchestrating the integrations between all of these [systems].” This is just one example of the shift.

On the infrastructure side, complexity means monitoring performance and defining policies rather than managing servers or configuring network routers. For business applications, configuring SaaS parameters rather than customizing code.

IT leaders want to put more effort into strategic planning that can rapidly accommodate change. To do so, IT departments must work more closely with their business operations to understand their priorities. But they must also ask some tough questions.

Many CIOs believe IT invites trouble when it assumes business units know what processes they want to support and how to do it. Automating broken or outdated processes does not deliver business improvement. Business units that implement SaaS tools without IT’s involvement bring a whole different set of challenges.

Complexity today results from IT’s need to provide consistent, secure, highly reliable business solutions that meet ever-changing business requirements.

# Shifting complexity requires new skills

As IT's focus changes, so do the skills required. New technologies drive demand for new skills. So do new ways of working, like Agile and DevOps.

Automation, especially when it is powered by machine learning, reduces time spent on repetitive tasks. Instead, strategic planning, creative problem-solving, and setting policy represent have become priorities for IT. The hot new skills are orchestrating and managing systems more broadly.

**Whether it's application developers promoting weekly releases or fabric engineers with holistic infrastructure responsibilities, IT roles are changing.**

One healthcare organization is reorganizing its engineers to reflect this change in approach. The company's director of information security described the change:

"We're collapsing the traditional roles of server engineers and network engineers and storage engineers ... We're going with the concept of a 'fabric engineer.' The fabric engineer will be responsible for the connectivity, the compute, and the storage all wrapped into one. Most of that's going to be programmed through some sort of automation engine."

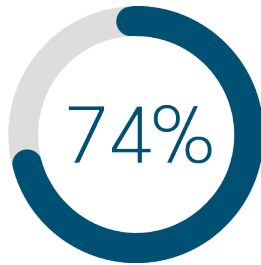
Whether it's application developers promoting weekly releases or fabric engineers with holistic infrastructure responsibilities, IT roles are changing.

# IT services provide a critical tool

In the midst of change and the quest for speed, IT executives turn to IT services. The vast majority of respondents we surveyed consider IT services essential to their success (see Figure 2).

## Using IT services is essential to our organization's success

Completely agree or strongly agree



Base size: Total = 35. Source: Cisco

**FIGURE 2**

IT executives consider IT services essential

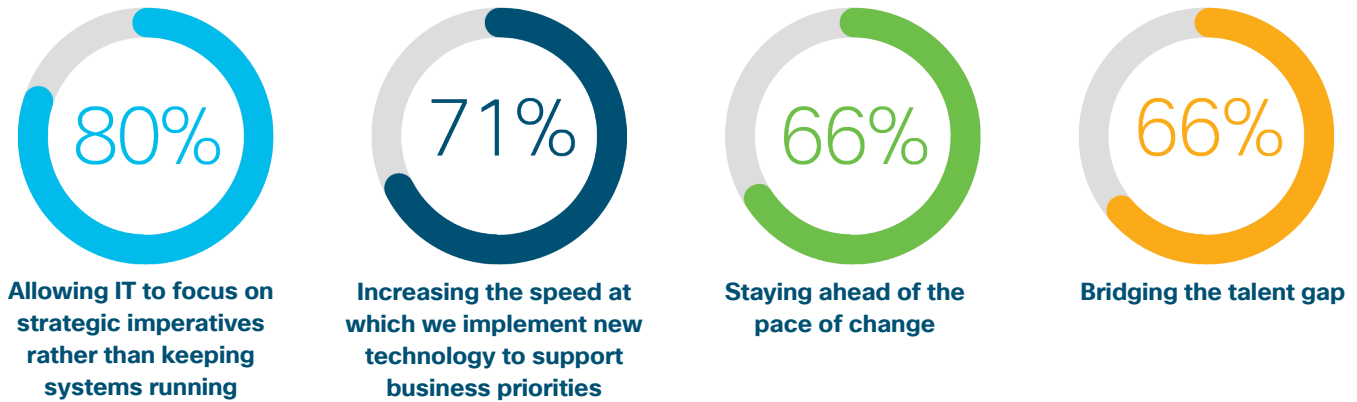
Technology services have long been an important tool for IT executives. That's no less true today, with good reason. Services help IT to concentrate internal efforts on its biggest objectives. For IT leaders, this boils down to four key priorities: focus on strategic imperatives, increasing speed, staying ahead of change, and bridging the talent gap (see Figure 3).

**How important are IT services in addressing the following strategic challenges in your organization?**

**FIGURE 3**

IT services are crucial to addressing strategic challenges

Extremely or very important attributes to find best fit IT services



Base size: Total = 35. Source: Cisco

The general manager of IT hosting services at an insurance company, neatly captured these challenges with a hockey analogy: “You’ve got to skate to where the puck is going, not to where the puck is.”

This IT executive and his team are tackling all four of these issues at the same time. “The pace at which technology is changing is driving my need to say ‘I can’t just have my people sitting here managing the world today.’ The world tomorrow is showing up so fast ... we’ve got to be much more future-thinking. We’ve got to be anticipating [business] changes and understanding how all aspects of our infrastructure need to change to support that,” he explained.

Where he once had a handful of staff doing occasional capacity management, the executive now has 25 percent of his team dedicated to future workload planning. Using IT services to improve and streamline ongoing operations has made this workforce shift possible.



# The reasons for using IT services haven't changed

Technology services have been around as long as information technology. There's a simple reason. For all of our advances, no technology has yet implemented, optimized, and managed itself on any significant scale.

Even the revolution of cloud-based services hasn't eliminated the need for services that help us adopt new technologies and maintain existing ones. In fact, when asked to rate the most critical technology gap in their organizations, 78 percent of IT executives and 69 percent of business decision-makers chose cloud.<sup>4</sup>

While new technologies continue to emerge, the motivations for using technology services haven't really changed. IT departments need access to key skills and the flexibility to scale them up and down as needed. That may be through either project-driven services or staff augmentation.

Either way, many IT organizations see knowledge transfer, from outside experts to in-house staff, as a key benefit. One retail CIO we spoke with emphasized the importance of knowledge transfer from a specialist application development provider to his own team as they adopted a DevOps model.

IT leaders are also concerned about critical coverage in key areas. Examples range from round-the-clock network monitoring to scalable enterprise application expertise. Most CIOs have decided that some areas are better left to external experts than handled by their own teams.

---

<sup>4</sup> Source: Preliminary results from Cisco's IT talent survey

The perennial – and constant – question for IT leaders is this: what is really strategic and core to my business? With all of the demands placed on internal IT, it is neither cost-effective nor possible to do everything. The biggest source of value IT departments have is their unique knowledge of how their IT operations support business activities. For the IT executives we spoke with, this has become the major determinant of what they build or buy.

# Deep insights come from data - LOTS of data

If the form of traditional IT services hasn't really changed, what's different today is the value and speed of insights they draw on. Analytics and automation have transformed IT services as radically as they have any other type of business.

One principal architect at a media company observed: "There's huge value that we've only, as an industry, barely begun to tap ... very fast data aggregation, pattern recognition, proactive analysis, and autonomous learning to be able to see things faster or better than a human analyst would be able to see."

Machine learning and other forms of artificial intelligence enable carefully calibrated analytics at unprecedented scale and speed. They can identify patterns, detect anomalies, and find correlations faster than teams of human experts. The result is near real-time detection of potential threats or performance issues.

The crucial ingredient, however, is data.

Any algorithm, however sophisticated, is only as good as its underlying data. This sets truly insightful technology services apart. "The computer will execute," one CIO said. "It will execute ruthlessly. So the quality has to be there. If you have crap data, all automation's going to do is give you crap faster."

The way to avoid garbage in/garbage out is with very large, high-quality data sets. Visibility into a wide range of customer environments and technologies generates the greatest ability to understand, predict, and avoid problems. This type of high-octane analysis makes it possible to detect malicious activity in encrypted data traffic without having to decrypt it.

# In the hands of experts, insights become power tools

Such insights amplify the power of a wide range of technology services. They underpin automated maintenance and support services. They reduce the manpower required to deliver these services and increase accuracy. They also make possible the kinds of predictive and proactive services that identify and avoid problems before they arise.

In the hands of experts these insights become even more useful. They dramatically reduce the time and labor required for the discovery stages of consulting engagements. Because these insights draw on a wide range of customer environments, they improve technology evaluation and optimization. With the combination of data-driven insights and human experts who understand business priorities, customers get more for their money.

The genomics CIO we spoke with stressed that the right services partner is critical, if AI is to work for the business.

“Anyone that understands well that need for automation and how to leverage the different technologies across these different platforms,” he said, “is going to really dominate the market. AI is the buzzword of the day. But to turn these buzzwords into meaningful cost savings or time savings that really help businesses excel is where it’s going to really make a difference.”

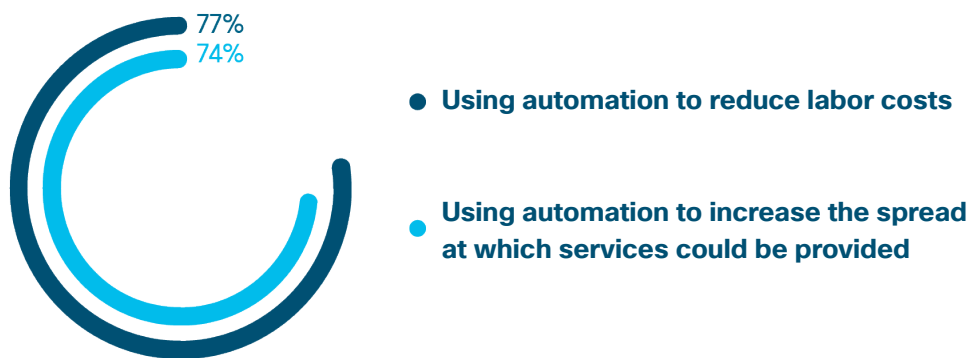
The combination of expertise and insights – human and machine – delivers greater value, faster and at lower cost. This isn’t simply a one-for-one swap between internal capabilities and external IT services. It’s a step change.

With access to vast data streams, services play a key role in sharing insights and ensuring the quality of those data sources.

# Automation delivers speed and cost savings

The impact of automation on IT is profound: 65 percent of IT executives believe automation is the driving force behind their business transformation initiative.<sup>5</sup> IT leaders not only anticipate the benefits of automation and AI, they expect them. Automation in particular is expected to both reduce labor costs and increase speed (see Figure 4).

**Which of the following innovations in IT services would be most appealing in your organization?**



Base size: Total = 35. Source: Cisco

**FIGURE 4**

Appealing innovations in IT services

We are already seeing the benefits of automation when it comes to data analysis. These tools identify known issues and flag anomalies that human experts then examine in detail. Automation can also execute repetitive tasks based on pre-defined rules and parameters.

Automation really gets interesting when it's fed by machine learning and other forms of AI. Soon automated management systems will be able to do more than identify potential issues. They'll also diagnose root cause and determine the appropriate actions to avoid or fix a problem.

<sup>5</sup> Source: Preliminary results from Cisco's IT talent survey

Getting to that point will require understanding how these systems make those determinations – and a big leap of faith. Understandably, most IT executives are wary. The potential fascinates, but the risks give pause.

For the moment, examples of automation driven by AI remain limited. As the data sets accumulate and machine learning expands – and more IT leaders trust the results – we expect to see its use expand rapidly.

# If it isn't secure, it isn't worth it

IT executives may be preoccupied with speed, but their primary concern, without exception, is security. This issue is top of mind for everyone with whom we spoke. It is also the most appealing area of innovation in IT services according to our survey.

Eighty percent of IT executives want a service to provide comprehensive security across all IT operations, regardless of the environment, application, data, device, or location. Sixty-six percent evaluate IT services companies on their ability to offer a holistic, integrated approach to security. Sixty percent consider it extremely or very important that external IT services provide the entire organization with a holistic, integrated approach to security.

Given that one well-publicized cyberattack can undo years of building brand equity, every internal IT team needs to be on top of security – in the most comprehensive and strategic way possible. Failure to comply with regulations for data privacy and security brings other costs.

**80% of IT executives want a service to provide comprehensive security across all IT operations, regardless of the environment, application, data, device, or location.**

Most IT teams expect to maintain their own core competencies in security. But many find it critical to augment those abilities with outside insight drawn from the data and experience of many companies. That outside perspective and connection to a wider community – from external services with deep experience and relentless focus on constantly evolving threats – can be saviors.

“I might have an internal team that will do a preliminary penetration test to see if they can hack into the application,” said the CIO of travel company. “But, I am constantly getting multiple companies to come in and do that penetration testing also. I’ve had situations where the third company that I’ve brought in to do a penetration test has found something that the previous two companies haven’t.”

Beyond brand equity and threats to personal data, security services ensure the safety of mission-critical functions that simply cannot afford disruptions from a cyberattack.

The genomics company CIO, for example, talked about medical devices at the edge of the network that monitor patients’ vital signs. Managing compliance and protecting the security of critical data in the healthcare space could not be more important.

“Those vital signs are critical to, in some cases, immediate responses and reactions to your treatment,” he said. “To not have that edge computing device and resulting data be managed in a very compliant and risk-secure manner could mean life or death.”



# IT services need to support multivendor and open source environments

All of our conversations with IT leaders make clear that they expect IT services to deal with the realities of their IT environments. They have a wide range of technologies from different suppliers. And they increasingly incorporate open source, to varying degrees.

Indeed, 60 percent of those we surveyed evaluate IT services based on their ability to manage a complex, heterogeneous environment.

The insurance company executive explained, “It’s never going to be a hundred percent one vendor’s environment. People have to be able to monitor and react to multiple sets of technology.” He adds, “Not only do you have to beat some extra capability [your customer] can provide in-house, but you have to be pretty open to being an expert at doing what you’re doing on your set of technology or someone else’s set of technology.”

**60% of those surveyed evaluate IT services based on their ability to manage a complex, heterogeneous environment.**

IT services that don’t accommodate whole classes and categories of technology don’t pass muster. Customers can’t afford the time it takes to make all of their suppliers play nicely together.

“The whole idea of open source used to be so foreign to an IT organization because we didn’t want to put our organization at risk,” says one retail CIO. “And yet now, if you look at where innovation is occurring, it’s occurring primarily in the open source community and it’s being adopted by the companies that then deliver it as a service. I see that as something that we look at as a way to get speed.”

Technology services that aren’t designed to incorporate the open-ness that most IT departments expect simply don’t meet today’s needs.

# Buying into the ecosystem: insights, foresight, and relationships

IT services promise technology solutions. But that is only part of the equation. There is exceptional value in their access to vast troves of data and insight, the depth of their experience, and the scope of their ecosystems.

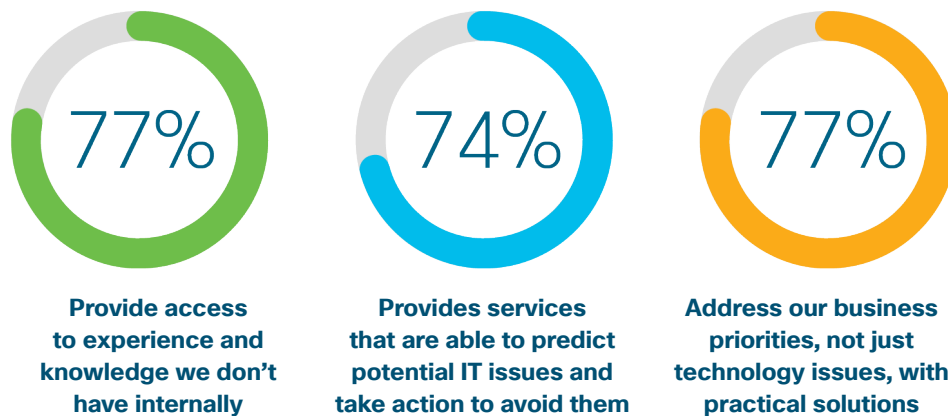
As the respondents to our survey indicated, they want more than just technical skills from their IT services providers. They expect them to fill their gaps, avoid problems, and anticipate what's coming next (see Figure 5).

**How important are each of the following attributes when deciding which provider of IT services best fits your organization's needs?**

**FIGURE 5**

IT Services must deliver more than just skills

Extremely or very important attributes to find best fit IT services



Base size: Total = 35. Source: Cisco

As the principal architect we spoke with stressed, such added qualities can be true differentiators for services.

“They are also competing on access to their ecosystem,” he said, “and the insights and learning that happen in that ecosystem. So you know when you buy into this ecosystem, you are not on your own.”

One healthcare IT executive spoke of finding the right balance between internal and external talent. “In services, it’s a constant ‘make-buy’ decision,” he said. “Is this something that I want to do myself? If I don’t have the talent to do that, I’m going to go out and try and grow this talent or buy this talent on the market.”

Deep insights reflect the new dimension expected in technology services. Analytics and machine learning must combine with prescient, predictive, and highly intuitive human expertise.

Beyond that, IT is expected to be closely aligned with business outcomes, using technology to directly impact growth, innovation, and the bottom line. Ecosystem partners can connect the dots for customers.

“There are so many services coming about that it’s mind-boggling,” said a retail CIO. “But you want to be able to turn that data and information and use it to really drive the company, and the old technologies just don’t cut it.”

# Technology services must help manage the big picture

Effective technology services provide insights based on understanding a wide range of customer environments. They deliver unique insights because they draw on large data sets across many customers. Predictive analytics and automation make it possible to identify important patterns and detect potential problems. In some cases, AI-driven automation already takes steps to address them.

These valuable insights feed an extensive range of services that makes all of them more useful. That includes everything from securing against threats and improving service quality to anticipating business requirements and determining the best technologies to implement.

This combination of data and expertise is transforming the way technology services support business agility. It makes IT services providers invaluable business partners. And not a moment too soon for IT leaders.

# CONNECTED FUTURE

Executive Insights by Cisco

## Acknowledgements

The authors gratefully acknowledge the valuable input of the following contributors to this paper: Joe Cozzolino, Joseph Bradley, Ulf Vinneras, Sam Grimee, Jaishree Subramania, Eran Levy, Ingrid Kambe, Pascal Severins, Ammar Rayes, Priti Agarwal, Rahul Singh, Elizabeth Naumann, Rick Ripplinger, Jessica Hill.

