

Technology industry findings & implications

6th Annual Digital IQ

Technology Institute
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pwc

Executive summary

The role of digital in the Technology industry might seem like a no-brainer. It's the engine behind the Technology industry's tectonic shift from predominately product-based business models to those that are built on or incorporate services and experiences.

But as our *6th Annual Digital IQ* survey revealed, the relationship is actually more complicated. How Technology companies understand the value of technology and weave it throughout the fabric of their own businesses—what we call Digital IQ—is uneven. Yes, the industry leads all others, with 40% of companies having a very strong Digital IQ, compared with an average of just 20%. Yet that still leaves the majority (60%) of Technology companies trailing behind.

Like so many of their own customers, Technology companies are investing in digital to meet changing customer demands. They're transforming the way they engage with customers and how they provide products and services. Technology companies are also exploring new business and revenue models, even pursuing opportunities at the intersection of industries—for example Retail and Technology, or RetailTech.

Digital is often short-hand for these market-facing efforts, while in the rest of the organization digital technology has yet to fully make its mark. That's not all that different from other industries, but here it's arguably a bigger challenge because Technology companies should be standard bearers for digital transformation. One Computer and Networking executive we spoke with summed up why Digital IQ matters so much to the industry: "We are a Technology company. It is our lifeblood."

In this report, we examine the Technology industry findings from our Digital IQ survey in five critical areas: strategy, customer engagement, analytics, innovation, and IT delivery.

The five Digital IQ behaviors

Our 6th Annual Digital IQ study of nearly 1,500 business and IT executives across 11 industries identified the five corporate behaviors that enable companies to maximize their use of digital technology and position them for better performance. The businesses in our study that leveraged these five interlocking behaviors were 2.2 times more likely to be top-performers in revenue growth, profitability, and innovation.¹

Behavior 1: CEO actively champions digital

Today's CEOs shouldn't delegate digital or view it as a separate strategy. A digital CEO sets and steers the company's digital vision and tackles the inevitable challenges that come with new ways of doing business. This means developing a digital strategy that considers everything the business does—its growth and cost goals, products and services, partnerships, marketing and customer engagement, talent acquisition and retention, operations, and more.

Behavior 2: Strong CIO-CMO relationship

The CIO-CMO relationship is important because a great many digital technology initiatives are driven by marketing needs. Organizations must develop a digital operating model to remove any room for interpretation when it comes to responsibilities for market-facing digital technology like consumer apps, websites, or customer analytics.

Behavior 3: Outside-in approach to digital innovation

Global CEOs ranked product and service innovation as their top strategy for growth, over increasing market share, entering new geographic markets, M&A, or joint ventures and strategic alliances. Yet most businesses don't cast a wide enough net in their pursuit. Organizations must develop an outside-in learning pipeline to seek out and share new ideas and applications for emerging technology from sources outside the company, such as universities, labs, complementary businesses, and vendors.

Behavior 4: Significant New IT Platform investments

A company's IT capabilities and infrastructure face crushing pressure from every direction to meet the daunting demands of the digital age. To address these demands, we believe an integration approach is required—what we call the New IT Platform. This entails designing an IT strategy and enterprise architecture that considers the increased demands of new and emerging digital channels, your mobile workforce and partners, third-party data, new analytics requirements, and cloud-based business and technology services

Behavior 5: View Digital as an enterprise capability

Companies must begin broadening how they think about their digitally-savvy resources, realizing that it is becoming essential to have a digital capability that is woven throughout the business rather than only centralized in a single function and hidden in the shadows throughout the business. To do this effectively requires developing a single view of the digital skills required to meet business goals. It also requires creating a common talent framework to manage and develop those in digital roles.

1. PwC, 6th Annual Digital IQ survey, 2014.

I. Strategy

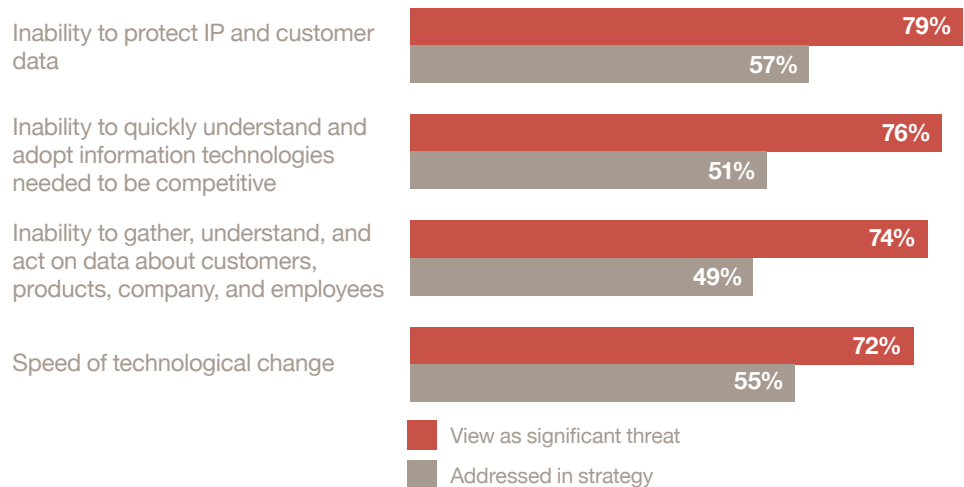
Along with new markets, new customers, and new ways of doing business, digital disruption also means unlikely competitors and new threats. One of the primary concerns of Technology executives is the ability to protect intellectual property and customer data. Although these threats are on their radar, many companies have yet to actively do anything about them.

Narrowing that gap demands a company leader who understands and owns digital and sees it as an intrinsic part of business strategy. In fact, our study identified an active-champion CEO as one of the five Digital IQ behaviors that determine

how well companies realize value from technology investments and position themselves to be top performers. Here, Technology companies are leading the pack: 77% have an active champion CEO, compared with 71% of all companies.

Explains one Computer & Networking IT executive, “We have a strong Digital IQ because our CEO is very involved. We find that when the CEO is involved, it helps give us a competitive advantage.”

Figure 1: Addressing digital threats



Q: How concerned are you, if at all, about the following potential threats to your company's growth prospects? Extremely/somewhat concerned

Base: 194

Source: PwC 6th Annual Digital IQ, 2014

II. Customer engagement

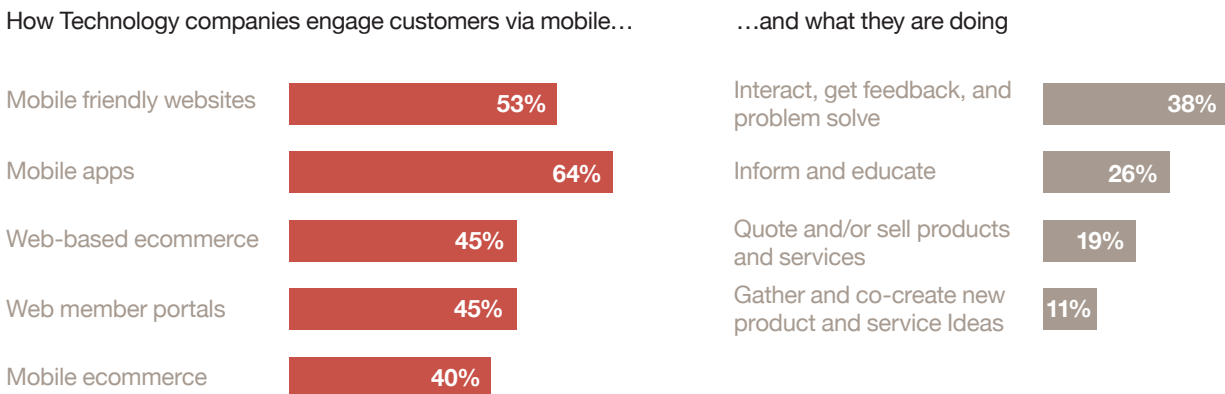
Technology companies know first-hand how IT acquisition has changed and they're dealing with buyers well beyond the CIO and IT organization. Technology as a service makes it possible for business units to get the applications, infrastructure, and other services they need. Today, nearly half of all technology spending happens outside of the CIO's budget: For all companies in our survey, 47% of technology spending happens outside of the CIO's budget and for Technology companies it is 46%.

Much of this spending is driven by digital marketing initiatives around mobile, social, and analytics. Companies that are focused here tend to have a higher Digital IQ; explains one Software & Internet executive, "We have better social media usage and improved mobile data technologies, as well as the use of cloud computing in the business."

Sixty-one percent of Technology companies say they are significantly interacting with customers via mobile technology, compared with 56% for all companies. When it comes to how they are engaging customers, however, Technology companies have considerable opportunities for growth.

When it comes to social media, Technology companies said that Facebook, followed by industry-specific or function-specific online communities, would be the most important social media platforms for acquiring new customers over the next three years. Twitter, online communities and blogs, and LinkedIn were the most important platforms for customer experience and retention.

Figure 2: Interacting with customers



Q: In what ways are you interacting with customers? How would you characterize your approach to interacting with customers using mobile technology? Is it mainly...

Base: 194

Source: PwC 6th Annual Digital IQ, 2014

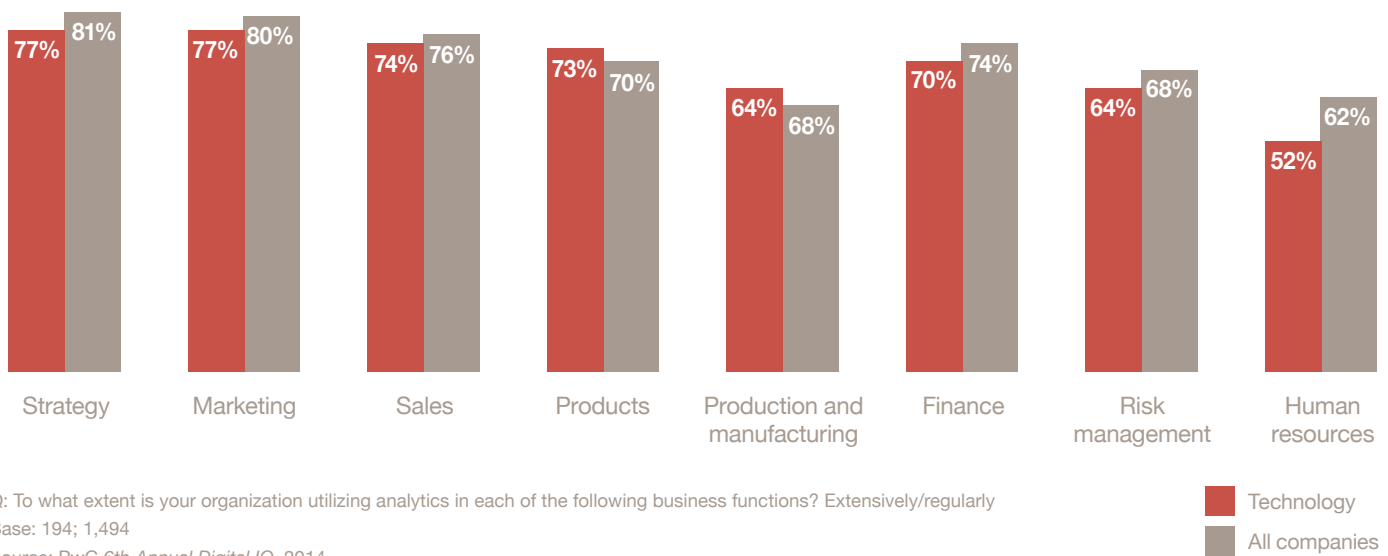
III. Analytics

On the analytics front, like all businesses in our survey, Technology companies believe that Big Data will give their companies a competitive edge—71% say so. Yet they see challenges as well: 54% worry about having the right talent to undertake deep analysis of their Big Data; 52% say getting from data to insight is a major challenge; and 35% say their systems can't process large volumes of data from different sources.

This is surprising, given the highly competitive talent market in the industry where Technology companies are taking a page from their customer playbook and striving to create a meaningful and connected experience for employees. By also taking advantage of predictive analytics they can better understand how different factors affect employee retention, then take the steps to enhance the most critical areas or focus on at-risk employees.

Looking at where they use analytics, Technology companies favor Strategy, Marketing, and Sales over other functional areas. The least utilized area is Human Resources, with only 52% of companies using Analytics there—well under the 62% average for all companies.

Figure 3: Where Technology companies are using analytics



IV. Innovation

For Technology companies, of course, innovation is critical. If they don't relentlessly pursue new customers, markets, and business models, an upstart or unexpected competitor from a different industry might come in and disrupt their business. Emphasizes one Computers & Networking executive we spoke with, "Our market domain is innovation."

This year's study identified an outside-in approach to innovation as being another one of the Digital IQ behaviors critical to success. What do we mean by outside-in? Casting a wide net and looking beyond the company's four walls for ways to apply emerging technology to enhance products or services or create new ones.

While Technology companies are more likely to look outside the organization to gather ideas for applying emerging technologies—41% use outside methods like customer or vendor input or industry analysts, compared with 33% of all companies—there's still plenty of room for improvement.

Looking outside means you will gather more new ideas for your pipeline. It is important to quickly and systematically filter them so that you end up with a short list of those that are promising and you will act upon. Part of this well-defined process is measurement—another factor in top performance. Technology companies are consistently higher in measuring innovation on all counts. For example, 51% measure

innovation success by explicit business value added, 25% by the number of patents filed, and 33% by ideas commercialized by explicit business value added.

Another area that's ripe for improvement is in the CIO's role in innovation. As with the full sample, only about 30% of Technology companies have the CIO focus on external aspects of innovation, such as acquiring new customers or improving products.

In our core survey, the top-five emerging technologies that companies identified as being of most strategic importance to their business in 3 to 5 years were: mobile customer technology, private cloud, data mining and analysis, externally-focused social media, and cybersecurity. Additionally, Technology companies are focused on public cloud apps and infrastructure, as many are moving to technology-as-a-service or other cloud-enabled business models.

While their level of investment in these strategic technologies is increasing, not all companies are as forward-looking. Complains one Software & Internet executive, "Executive staff still put a premium on short-term profit over investment in newer technology. Mid-level management and front-line employees have a higher Digital IQ and understand the value of investment."

Technology companies are focused on public cloud apps and infrastructure as many are moving to cloud-enabled business models.

Figure 4: Top strategic technologies

	Technology companies	All companies
Private cloud	37%	29%
Cybersecurity	33%	30%
Public cloud applications	29%	18%
Mobile for customers	28%	31%
Public cloud infrastructure	25%	14%
Data mining and analysis	25%	29%
Digital delivery	21%	25%
Data visualization	20%	19%
Mobile for employees	18%	18%
Open source applications	16%	16%
Simulation, scenario modeling	16%	12%
Social media for external	15%	29%
Open source infrastructure	13%	10%
Robotics	11%	15%
3D printing	11%	7%
Virtual meeting and collaboration	10%	15%
Sensors	10%	14%
Social media for internal	9%	13%
Battery and Power	8%	9%
NoSQL databases	8%	7%
Wearable computing	7%	5%
Gamification	5%	4%

Q: Overall, which of these technologies will be of the highest strategic importance to your organization over the next 3-5 years?

Base: 194; 1,494

Source: PwC 6th Annual Digital IQ, 2014

V. IT Delivery

Our study revealed that how Technology companies think about IT is also ripe for change. Adopting a new approach, what we call the New IT Platform (NITP), was one of the five Digital IQ behaviors that better positioned companies for top performance. Moving to a NITP requires rethinking everything about IT so that it functions as a services orchestrator and business consultant who empowers those in the organization through appropriate governance.

To make that work, you need strong relationships among the CIO and the rest of the C-suite and have ongoing “digital conversations.” Especially crucial is a strong CMO-CIO relationship. Technology CIOs are lagging behind here, with just 46% having a strong relationship between the two executives, compared with 51% of companies overall. This must be addressed as our study found that the majority of top-performing companies, 70%, had a strong CIO-CMO relationship.

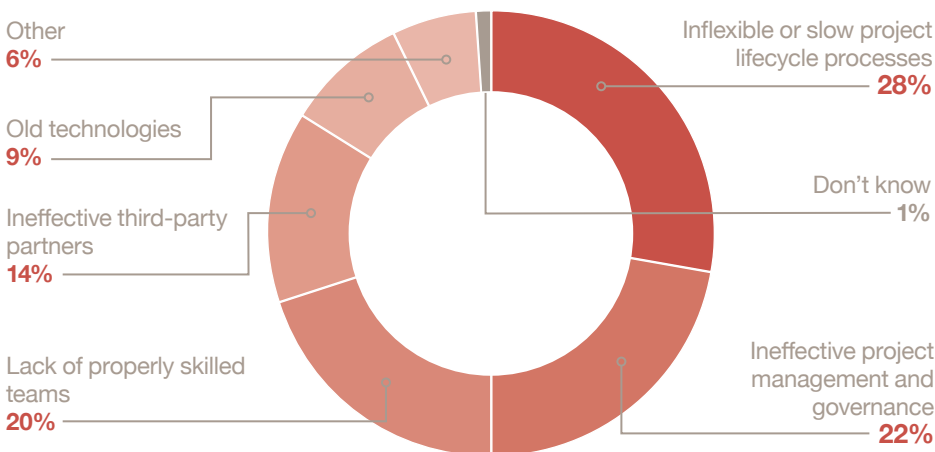
When it comes to the successful delivery of strategic IT initiatives, Technology companies also ranked below the average: 48% delivering on time (versus 53% overall), 36% deliver at or below budget (compared with 38% overall), and 39% with 100% of scope (versus 45%). Technology companies say the biggest barrier is inflexible or slow project lifecycle processes.

Explained one business executive at a Software & Internet company, “We are a company based on making the Internet faster and use technology to sell services to our customers. I would rate our Digital IQ as very strong except that we don’t leverage enough technology in a consistent and structured manner to support our daily operations.”

For Technology companies—and all companies—we see the adoption of Agile processes as an important way to improve delivery and integration. Technology companies are more likely to use agile processes on a majority of projects (37% versus 29% for all companies) and more are planning to increase their use of agile (44% versus 33% overall).

Technology companies also tend to have a higher level of skills in what we call the digital keystone skills. They especially stand out on crucial skills for operating in an environment with service providers and rapid innovation: technology prototyping (69% versus 60% for all companies), strategic partner management (65% versus 57% for all companies), and user experience design (61% versus 55% for all companies).

Figure 5: Why IT initiatives fail for Technology companies



Q: What in your view is the single largest barrier to executing your strategic IT initiatives successfully?

Base: 194

Source: PwC 6th Annual Digital IQ, 2014

Conclusion: Implications for Technology executives

As Technology companies navigate the New Digital Ecosystem Reality, Digital IQ has never been more important. “Business units have embraced and integrated with digital business ecosystems, where not only technologies are important but new inter-organizational business architectures. This approach enables us to respond to the velocity and turbulence of changes in our business environment, taking advantage of today’s low-cost and widespread digital technologies,” explains one Computer & Networking executive in our study.

How can Technology companies up their Digital IQ? We see three important steps:

- 1. Assess your Digital IQ.** It starts with knowing where you stand, relative to your peers as well as your customers. Digital IQ encompasses a range of dimensions that we’ve codified into five fundamental behaviors that position a company to get more from its digital investment and achieve better performance. To see how your company measures up, explore our findings by industry or region here: <http://pwc.to/DIQData>
- 2. Advance your Digital IQ by developing the five behaviors.** For recommendations that all companies can take today around each of the five behaviors, see our full Digital IQ report here: <http://pwc.to/DIQ>
- 3. Help your customers understand and enhance their own Digital IQs.** As the Technology industry shifts from selling distinct products to one that provides solutions to its customers, we see Digital IQ as an important part of this value-add. As you engage with customers to identify and deliver the right products, services, and experiences, use the Digital IQ framework to help them get more out of their technology investments.

About this report

Our *6th Annual Digital IQ Survey*, which examines the attitudes and practices of IT and business leaders around the globe, surveyed 194 Technology industry leaders about these themes. For more insights and to explore the data, visit www.pwc.com/us/digitaliq

PwC can help

For a deeper discussion on the five Digital IQ behaviors, and implications to the Technology industry, please contact one of our leaders:

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