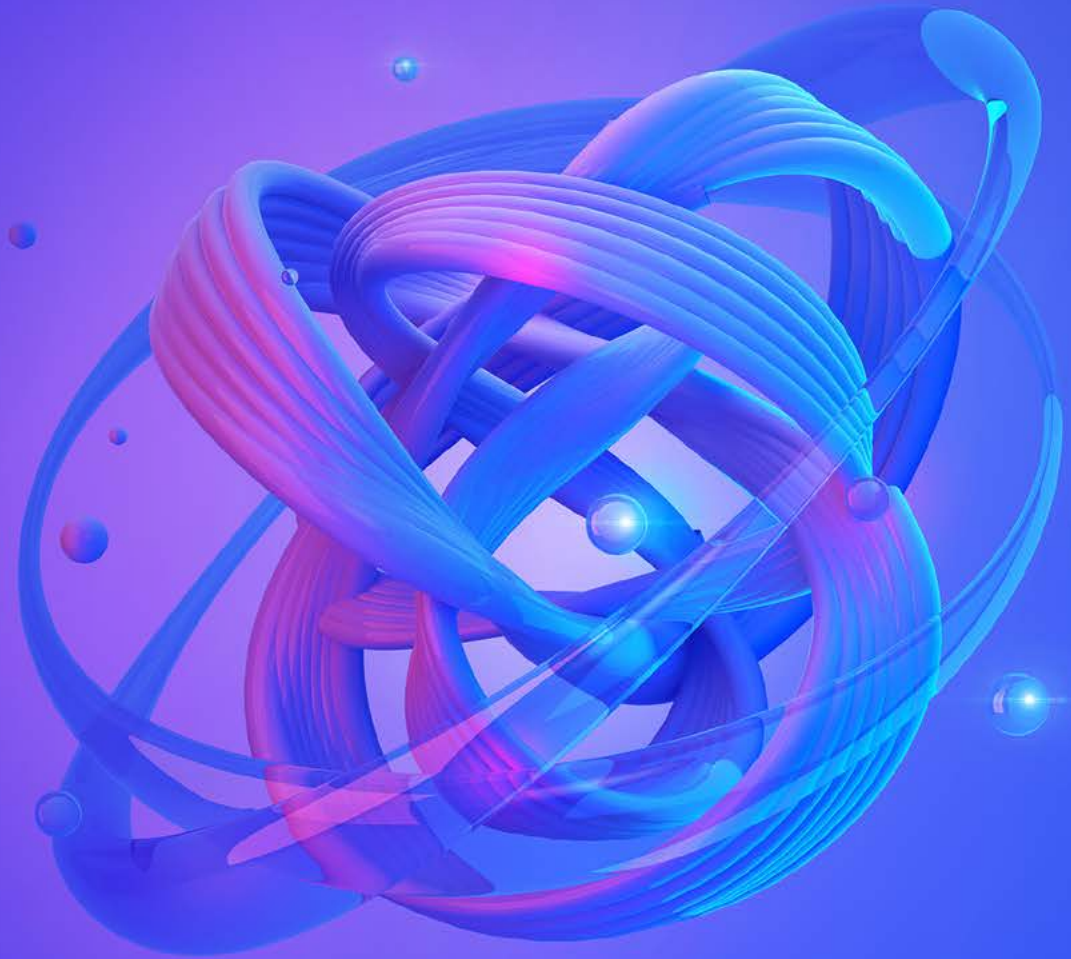# KPMG global tech report 2022

Global technology leaders share their digital transformation progress and explore how to strengthen ongoing digital maturity.

Contents

Foreword

Organizations today are operating in tense conditions. As they grapple with rising costs, economic uncertainty, geopolitical turmoil and a global talent crisis, they must defend their market share by strengthening customer loyalty and enhancing their offerings with innovative, market-leading products and services. To achieve these goals, proficient application of new and emerging technologies will likely be vital.

The good news is that KPMG's latest global tech report finds a resilient, forward-looking attitude among global technology professionals. Companies are enthusiastic about disruptive new tools and determined to further embrace ongoing digital transformation to enhance the customer experience.

The surge in tech investment and innovation seen during the COVID-19 pandemic has given organizations new confidence in the potential of technology to revitalize their businesses. In our 2020 global CIO research, 61 percent of respondents told us that the crisis increased the influence of technology leaders within businesses. Seven in 10 said it strengthened collaboration between the technology team and the wider business.

As seen in this year's report, the digital evolution, accelerated by the pandemic, is fueling record-high confidence levels around digital-transformation capabilities. This raising of industry standards can help redefine digital leadership.

To explore how companies are looking to sustain this digital momentum in an uncertain economic landscape, this year we widened the scope of our KPMG annual global CIO study to create the KPMG global tech report. We surveyed more than 2,200 executives and conducted a series of in-depth discussions with industry experts to uncover the technology strategies businesses are using to help outsmart their competitors in a time of unprecedented market volatility.

The headline numbers

Emerging tech

2 years

the expected timeframe for most businesses to embrace key emerging-technology platforms such as Web3, the metaverse and quantum computing.

Digital transformation

99%

of executives have generated returns from digital investments.

Talent shortages

#1 challenge complicating the adoption of digital technologies.

Cloud adoption

9 in 10

businesses indicate they are advanced in their adoption of cloud systems.

Cyber security

58%

of cyber security teams admit that they are behind schedule.

Tech enthusiasm for customer engagement burns brightly

Digital transformation is living up to its promise. In recent years, leadership teams have tasted success as a result of their transformation activities and remain optimistic about what they can achieve in the future. Despite market and geopolitical tensions, our research finds businesses embracing new technologies and poised to invest in new tools.

Almost all respondents to our survey say that their organizations' digital transformations have improved profitability and/or performance over the past 2 years. They also appear to be reaching key implementation milestones sooner than expected. Respondents are

Businesses expect to downscale over time, after hitting implementation milestones.

Where will your organization invest the most over the next year and years from now?

- Application modernization
- Intelligent automation
- Intelligent operations/IT service management

more likely to prioritize app modernization and intelligent automation during the next year than 3 years from now, which suggests that most expect to reach maturity in these capabilities sooner rather than later.

Our survey also reveals widespread appetite for new technology, even if it is untried and potentially disruptive. An average of 67 percent expect to embrace emerging platforms within 2 years, including the metaverse, non-fungible tokens (NFTs) and Web3. Seventy-two percent expect to have invested in quantum computing within the same timeframe.

Customer value is a primary driver of IT activity

Our survey suggests that customer experience is one of the primary levers that unlocks budget for digital transformation. This continues the trend we have seen in previous years.

Customer-centric experiences involve designing workflows, services and products to meet customers' needs in the most effective way possible. This approach also has commercial benefits. A study by Microsoft discovered that 96 percent of customers surveyed felt quality of customer service directly influenced whether they would purchase from a brand again. Furthermore, 56 percent of customers in that study admitted a frustrating customer experience would stop them from returning to a company.[1]

Our respondents indicate that Marketing, Customer Service and Sales functions are benefiting the most from digital-transformation programs, a direct result of the customer-centric techniques respondents are deploying.

[1] http://info.microsoft.com/rs/157-GQE-382/images/EN-CNTNT-Report-DynService-2017-global-state-customer-service-en-au.pdf

> "Customer experience is substantially motivating enterprise investments in IT and is becoming synonymous with digital transformation. Tech strategies are anchored to creating loyalty-winning experiences, to safeguard income and encourage [high] levels of repeat revenue from customers."
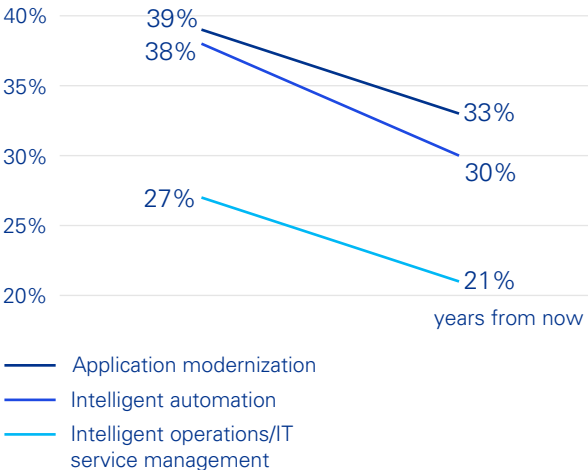
Barry Brunsman
Global Leader, CIO Center of Excellence, KPMG International & Principal Advisory, CIO Advisory at KPMG in the US

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>
> Our main ambition for digital transformation is to discover how we can become even more customer-centric and more data-led in our decision making. It's about taking a step back and asking where we should focus to create a brilliant customer experience.
>
> **Sedef Gavaz**
> Head of Digital Product at the UK's Natural History Museum

This mission to boost customer loyalty through technology is certainly a reality for Sedef Gavaz, Head of Digital Product at the UK's Natural History Museum.

To answer this question, the Natural History Museum is undertaking a transformation to modernize its ways of working. One example is the museum giving greater decision-making powers to product and digital teams. "We are prioritizing which problems we solve and which products we optimize," Gavaz adds. "This is about understanding how to get the best returns from where we invest our time and resources and linking this back to our product vision and strategy."

But what is the role that emerging technologies, such as non-fungible tokens (NFTs), can play in customer engagement, when many companies are still at the earliest stage of business-case development?

Konrad Dobschuetz, Head of Digital Innovation at Novartis at the time of interview, says that new technologies could empower clients to monetize their data. One example being patients in private healthcare.

Enterprise technology gives a smoother customer journey

Companies are giving enterprise technology a key role in their strategic ambitions to enrich customer experiences. And respondents tell us that customer-centricity is the primary motivation for investing in it.

Because customer interactions require collaboration across multiple departments, a lack of alignment between front, middle and back-office functions and systems adds complexity and slows down the engagement process. This fragmentation could

sabotage otherwise successful customer journeys and hold back operational efficiencies, prolonging or exacerbating customer issues or even introducing errors in how cases are managed.

About nine in 10 respondents (89 percent) say they have enterprise applications that are streamlined for each function (51 percent) or streamlined and integrated enterprise-wide (38 percent). Despite this progress, 62 percent of respondents still have work to do to remove silos between functions.

By re-engineering enterprise technology and breaking down silos between departments, companies can help improve the customer experience. Dedication to designing new ways of working to nurture seamless internal collaboration has become a key differentiator between businesses in today's landscape.

Reliable experiences earn customers' trust

Customer loyalty is built on — or broken by — whether customers trust the brand. So, embedding cyber security in digital-transformation initiatives from the beginning helps to build the reliable, trustworthy experiences for customers that can lead to trusting relationships.

It follows, therefore, that reinforcing customer experiences is one of the most powerful factors unlocking additional cyber security spending. Rather than seeing it as just a compliance burden, businesses in our research stress that cyber security is a growth enabler — a tool to build trust into business models and enrich the customer experience.

> **"**
>
> In the decentralized world, patients should be able to decide who has access to their health data," he suggests. "Their primary doctor (GP) is an obvious option, but which companies would they be happy to sell and share their healthcare data to, through NFTs? Whenever the data is sold on, the patient would get a chunk of money as well. For me, that's a key opportunity."
>
> **Konrad Dobschuetz**
> Head of Digital
> Innovation at Novartis

Digital momentum is growing, but threats persist

Most technology leaders are upbeat about what they can achieve through digital transformation. When it comes to confidence in capitalizing on technologies, for example, 66 percent of respondents believe their organizations are either extremely or very effective at using tech to advance their business strategies.
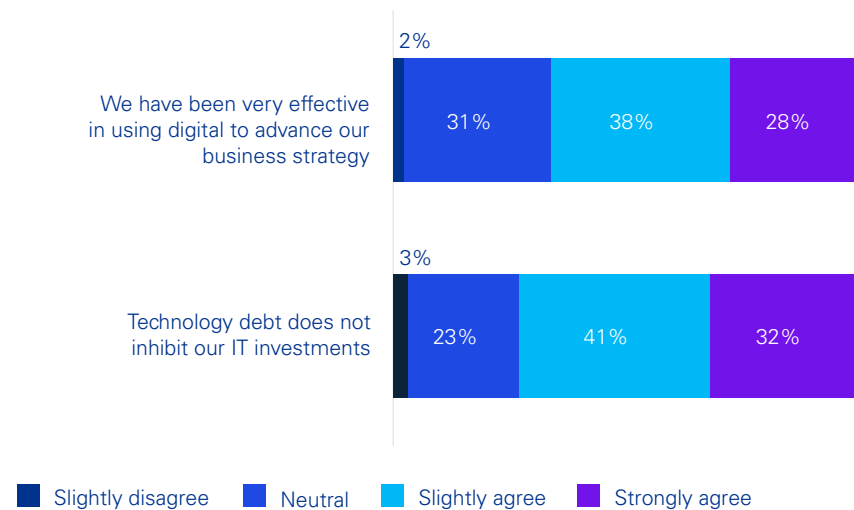
This year marks the highest confidence level in this research series, suggesting that effective digital transformation is less of a differentiator than in previous years.

Respondents' confidence is supported by high return on investment (ROI). Almost all businesses have successfully used digital transformation to improve their profitability or performance over the past 2 years, although most have only grown by between 1 and 5 percent in this period.

Just over 150 organizations in the study (7 percent of all respondents) have extremely effective transformation programs that have generated at least an 11 percent uplift in profit or company performance. These digitally advanced organizations are 5 percentage points more likely to take a proactive approach in executing digital-transformation strategies.
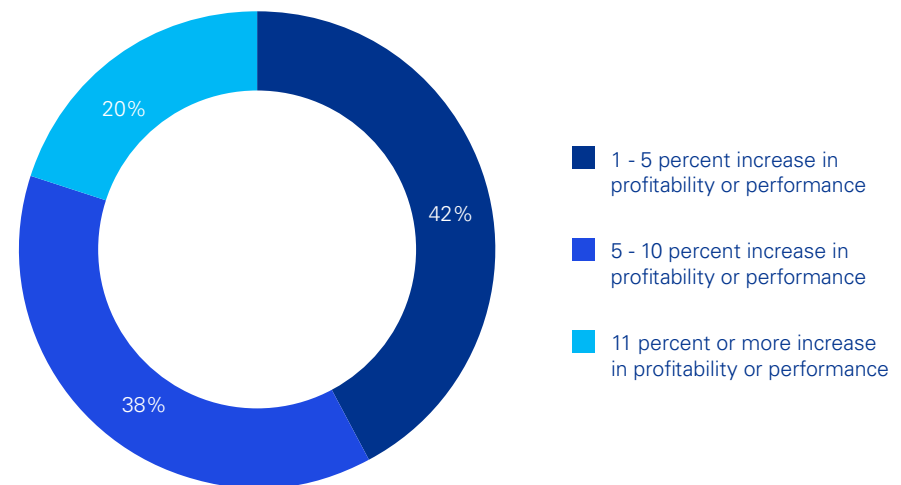
Sixty-six percent of tech leaders today identify as digital leaders. Digital transformation is less of a differentiator than it was.

To what extent to you agree with the following statements?

2%

We have been very effective in using digital to advance our business strategy
| 31% | 38% | 28% |

3%

Technology debt does not inhibit our IT investments
| 23% | 41% | 32% |

■ Slightly disagree   ■ Neutral   ■ Slightly agree   ■ Strongly agree

Respondents indicate that return on investment is extremely high — hardly anyone says returns are flat.

To what extent has digital transformation had a positive impact on profitability or performance in last 2 years?

42%

38%

20%

■ 1 - 5 percent increase in profitability or performance

■ 5 - 10 percent increase in profitability or performance

■ 11 percent or more increase in profitability or performance

> "
>
> I see the metaverse completely transforming the museum experience. Every technology investment needs to ladder back up to your strategy and mission, and the metaverse fits very comfortably within one our strategy pillars: reaching and engaging the widest audience."
>
> **Sedef Gavaz**
> Head of Digital Product at the UK's
> Natural History Museum

Konrad Dobschuetz, Head of Digital Innovation at Novartis, suggests that a strong focus on returns should be the guiding light for digital transformation: "Businesses should be past the point where strategies are driven by 'nice-to-haves' and 'because our competitors are doing it'," he says. "If you don't showcase value and impact, why are you doing what you're doing?"

Businesses are drawing up their roadmaps for emerging tech

Respondents acknowledge the potential of emerging technologies and are laying the foundations for their implementation. Nearly half (46 percent) are making plans for future investment and implementation of emerging technologies, although, for the majority (65 percent), little to no movement has been made yet.

When it comes to the metaverse, most respondents, even the most digitally effective and profitable organizations, admit that they are waiting for either competitors to adopt the relevant technologies or for customers to demand products and services reliant on these technologies before investing themselves. Compared with other industries, financial services has the biggest appetite for investing in the metaverse within the next year; energy and chemicals markets expressed the least appetite to invest in this concept within that timeframe.

At a recent online event, Ioana Matei, Head of Emerging/Immersive Technologies at P&G, said that companies must offer compelling metaverse experiences to generate interest from customers.

There are signs that in-house capabilities around emerging tech are in short supply. Thirty-seven percent more businesses are looking to partner with tech companies to tap into the metaverse and Web3 than to build capabilities in-house. Those who are extremely effective at digital transformation and are seeing the highest ROI are 5

percent more confident than the market average in their ability to build metaverse and Web3 features in-house.

About three-quarters of respondents (73 percent) indicate that "technology debt" (the long-term maintenance costs attached to new systems), has little-to-no impact on their IT ambitions. In comparison to the global average, respondents operating from India are most likely to feel that their IT ambitions are inhibited by tech debt, although only 11 percent said this. Just over half of total respondents (53 percent) usually address enterprise IT upgrades in line with an agreed schedule. Poorly managed tech debt can trigger integration issues and lower overall productivity levels.

To avoid creating fragmentations that could harm customer interactions, blueprints for emerging technologies should not overlook the importance of minimizing tech-debt responsibilities.

> "
>
> Technology debt is never considered an issue for people who are focused on innovation, because it will never hinder them. It's only once you hand over to the execution teams, which need to run the show, that it becomes an issue."
>
> **Michael Natusch**
> Chief Science Officer at Prudential

Natusch adds: "It's very easy to build pretty prototypes; it is very hard to build features that actually go live with real customers, while minimizing the chances of technology debt becoming an issue." Incorporating feedback from IT execution teams into early planning for emerging technologies can help these innovation efforts support seamless engagement with customers.

Cloud adoption is no longer the mark of a digital leader, merely the logical evolution of IT

The move to the cloud is well underway. Reflecting wider confidence levels, 88 percent of respondents say they are advanced in their adoption of the technology, with 73 percent saying they are migrating strategic workloads to the cloud and 15 percent saying they have already completed migration and are looking to optimize their systems.
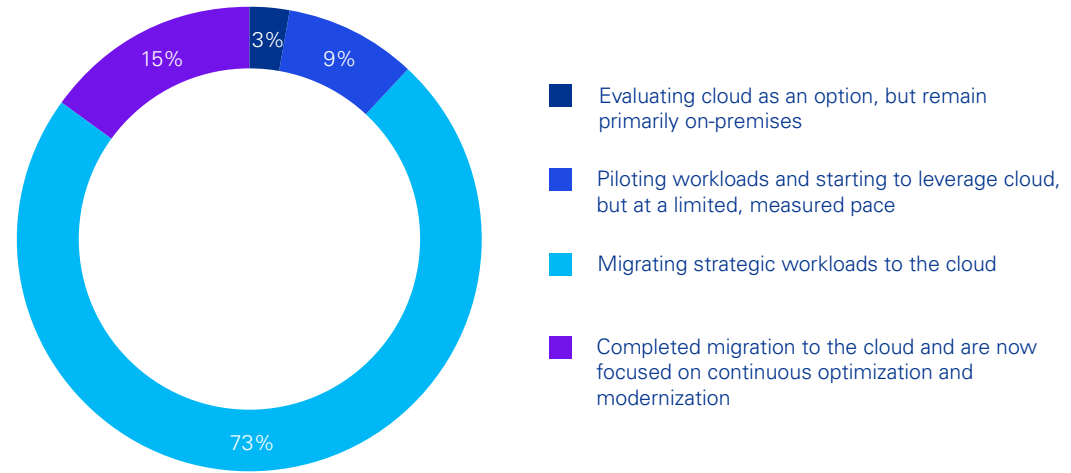
Organizations that are extremely effective at digital transformation and seeing the highest ROI are the most likely to have fully met or exceeded their objectives with cloud programs.

Eighty percent of respondents are satisfied with the returns their cloud transformation programs have attracted to date. The chief information security officers (CISOs) in the respondent base generally agree with this, with 76 percent saying they are happy with the success of their cloud transformation programs. Fifty-five percent of respondents have either been very effective or extremely effective in their migration from legacy applications to SaaS solutions.

The top advantages organizations are gaining from cloud systems are lowered total cost of ownership in comparison to end-to-end on-premises, IT infrastructure (35 percent) and efficiency gains (33 percent). Organizations that are extremely digitally effective and seeing the highest ROI are more likely to tap into the cloud's ability to improve efficiency and sustainability than the wider respondent base.

Nine in 10 businesses (88 percent) indicate they are advanced in their adoption of cloud.

Where would you place your organization in its cloud journey?

- Evaluating cloud as an option, but remain primarily on-premises
- Piloting workloads and starting to leverage cloud, but at a limited, measured pace
- Migrating strategic workloads to the cloud
- Completed migration to the cloud and are now focused on continuous optimization and modernization

Positive returns from cloud are high, especially around total cost of ownership (35 percent) and efficiency gains (33 percent).

How satisfied are you with the success of your cloud transformation programs?

- Highly satisfied: Fully met or exceeded objectives; realized benefits and substantial ROI
- Satisfied: Met most objectives and realized some benefits, with moderate ROI
- Neutral: Neither satisfied nor dissatisfied, with some ROI
- Dissatisfied: Met few objectives or realized few benefits, with limited ROI

Talent and culture are sticking points likely to slow transformation and optimization plans

The biggest challenge businesses face in their adoption of digital technologies is lack of capable talent; this is most prevalent in healthcare (52 percent) and manufacturing (48 percent). Claudia Saran, Advisory Industry Leader for Industrial Manufacturing at KPMG in the US advises companies to position themselves as compelling workplaces for software engineers, data scientists and other skilled technologists. This involves identifying and clearly communicating the development opportunities and benefits available.

With digital tools embedded into almost all aspects of business operations today, organizations are increasingly needing employees that embody a strong blend of business-domain acumen and digital skills. For many, it is proving a challenge to find individuals who hold the required depth in technical knowledge and business understanding to implement digital tools in a sophisticated manner.

Andrew Whytock, Head of Digitalization, Pharmaceutical Division at Siemens explains that Siemens is focusing on making itself an even more desirable employer in order to retain people and attract new staff. "Even at a company like Siemens, it has become hard to find new recruits with the appropriate skillsets," he says. "It must be very hard for small and medium-sized companies to attract young talent."

Limited budgets appear to be exacerbating the issue. Insufficient funding for training employees and recruiting talent is having a widespread impact across enterprises, complicating the adoption of new enterprise systems, cloud progress and cyber security initiatives.

Change-resistant organizations appear to threaten digital innovation. Risk-averse cultures are ranked among the top five digital-transformation challenges, holding back initiatives for 24 percent of respondents. Those who are extremely effective and seeing the highest ROI from implementing digital technologies are 11 percent less likely to see digital transformation projects damaged by cultural hesitancy. Of all the sectors in the research, consumer retail and life sciences companies are the most likely to suffer from risk-averse cultures. Risk-averse cultures in life sciences are rooted in the industry's stringent compliance requirements that protect patient safety.

Life sciences expert Konrad Dobschuetz believes that companies could make progress here by rethinking where responsibility for innovation should sit.

> "It's great having a big tech strategy. But employers are struggling to find the people to execute their plans."
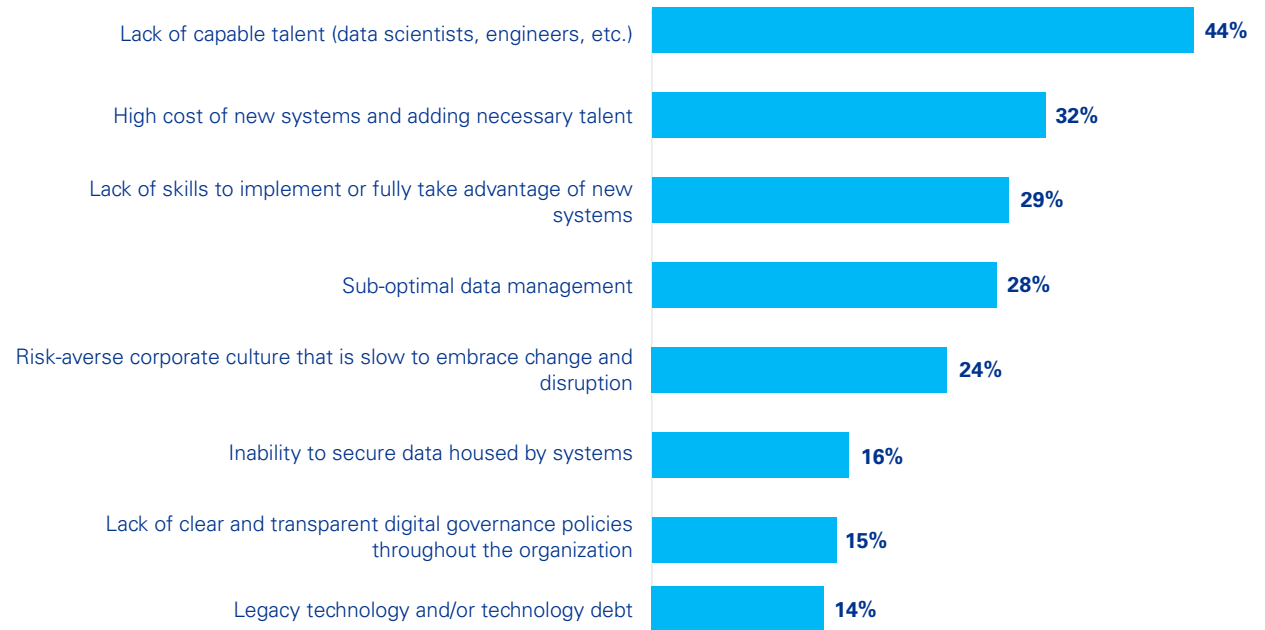>
> **Andrew Whytock**
> Head of Digitalization, Pharmaceutical Division at Siemens

> "Cloud adoption is no longer the mark of a digital leader, merely the logical evolution of IT."
>
> **Barry Brunsman**
> Principal Advisory,
> CIO Advisory at KPMG in the US

> "
>
> Legal and compliance departments are your gatekeepers. Responsibility for innovation should sit in compliance because they have a major influence on whether the innovation needle can be moved. Otherwise, other departments aiming to innovate just constantly get told 'no, go back to the drawing board' by compliance teams."

Konrad Dobschuetz
Head of Digital
Innovation at Novartis

What are the biggest challenges you face in your adoption of new digital technologies?

Challenge	Percentage
Lack of capable talent (data scientists, engineers, etc.)	44%
High cost of new systems and adding necessary talent	32%
Lack of skills to implement or fully take advantage of new systems	29%
Sub-optimal data management	28%
Risk-averse corporate culture that is slow to embrace change and disruption	24%
Inability to secure data housed by systems	16%
Lack of clear and transparent digital governance policies throughout the organization	15%
Legacy technology and/or technology debt	14%

When they need to, innovators can navigate resistance from even the most skeptical colleagues. A supportive culture is vital for digital innovation to succeed.

Budget inadequacy is an issue

The second-biggest challenge in pursuing digital transformation is the high cost of purchasing and implementing new systems and sourcing necessary talent. Most annual tech budgets sit at between 10 and 20 percent of their company's overall annual budget, and a significant minority (46 percent) are less than 10 percent.

A quarter of organizations say that lack of investment approval or executive buy-in is limiting progress with emerging tech. This is likely to intensify as organizations begin to navigate an increasingly uncertain economic landscape. These investment constraints reflect cost pressures across the business, but they may also be related to a general sense of risk-aversion.

Cyber security teams are struggling to keep up

Cyber security teams are under pressure to keep up with evolving threats, with talent shortages frequently undermining security efforts. Businesses say that a lack of key skills is the top issue preventing them from meeting their cyber security goals. Over half (58 percent) admit they are behind schedule with their position on cyber security, possibly reflecting the team's growing responsibilities across the business.

This should remind companies that they need to maintain momentum in cyber projects to help ensure they are not left exposed to fast-emerging cyber risks. Organizations that are extremely effective and seeing the highest ROI from implementing digital technologies see cultural obstacles as a more pressing challenge than consensus from the market average.

As technologies evolve, CISOs find themselves surrounded by additional systems and features, each of which requires attention. Cyber investment strategies should prioritize the areas of highest risk and return. An evidence-based framework of this nature can help ensure that cyber projects are advancing at the fastest rate possible.

Digitalization of customer channels creates cyber challenges that jeopardize trust

The digitalization of customer channels is the second-biggest cyber security challenge faced by organizations, after the adoption of hybrid working.

These findings are consistent with the idea that working practices adopted and investments made in response to COVID-19 have redrawn the cyber threat landscape. These weak spots should guide companies as they use new digital and disruptive technologies to reimagine the customer experience.

Without necessary oversight, new vulnerabilities could enter the system, potentially harming the customer relationship. According to KPMG's 2022 cyber report, *Mission: Trust. How to unlock the true value of the CISO*, concerns about data protection are the leading factor undermining stakeholder trust in businesses and their data management.

"Understanding the data you have is of utmost importance to your business," says Fersht. "It is one of the biggest areas where it's harder and harder to protect yourself and your systems against fraud and cyber crime."

How would you describe your organization's position today in your cyber security journey?

58% 42%
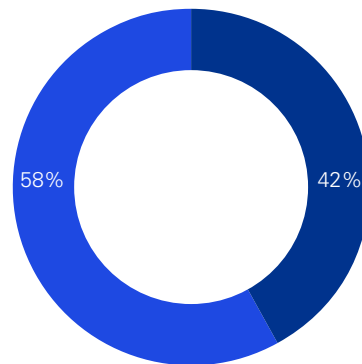
■ We are proactive in progressing against our strategy and are continually evolving

■ We are behind schedule, even if plans and a vision are in place

> Companies must remember they are not just exposing their own businesses, but also the privacy of their customers. You have a duplicated, highly negative impact if that information is leaked or gets hacked."

Phil Fersht
CEO at HFS Research

"

From an overall enterprise-risk perspective, this is an example of the digitalized environment providing a significantly higher degree of risk protection than the older processes used pre-digitalization."

Rowena Everson
MD and Head of Digital Channels at Standard Chartered Bank

To help ensure that tech innovations enhance customer trust and loyalty, rather than put it at risk, security should be incorporated into planning from the beginning, rather than added later as an afterthought. "Customer experience is reliant on customers trusting the technologies they need to use to engage with a company," explains Barry Brunsman, Principal Advisory, CIO Advisory at KPMG in the US. "Businesses must build in cyber security and CISO involvement into digital-transformation initiatives as early as possible. This will depend on embedding cross-departmental communication between cyber teams, the business and IT to enable collaborative customer-centric conversations across the enterprise."

Confidence to navigate the terrain ahead

Despite these problems, respondents are confident in their cyber capabilities. More than 50 percent are either very or extremely confident in combatting various cyber threats, including from organized crime groups, insiders and compromised supply chains.

Digital customer-interaction points create security risks, but the digitalization of contact channels requires a higher degree of risk protection. For example, customers no longer need to provide handwritten signatures on contracts and then email them as PDFs; instead, they can sign legal documents in encrypted, secure digital environments.

Seven defining traits of today's digitally-mature organizations

KPMG

To date, most technology leaders report positive returns from their transformative efforts to improve their competitive edge through technology. Almost all businesses have enhanced their profitability or other metrics of performance over the past 2 years through digital transformation. With confidence levels around digital effectiveness at a record high, our study shows us that digital-transformation success is fast becoming a baseline requirement for businesses.

In previous KPMG CIO studies we defined digital leaders as any organization that was either very or extremely effective at using digital technologies to advance their business strategies. This surge in digital competency will help reshape our definition of digital leaders in future instalments of this research series.

To begin our journey of mapping out the new definition of digital leadership, here we present seven traits we have observed in today's most digitally advanced organizations. These traits work together to optimize the output of IT, ensuring digital-transformation efforts are sustainable and continue to add value and contribute to loyalty-winning customer experiences in the long term.

Today's digitally-mature organizations…

1 Tear down silos so the voice of the employee can be heard between departments

Tech investments should remove points of friction from customer journeys and build convenience into points of interaction. However, when tech-implementation plans fail to incorporate feedback from key stakeholder groups, new digital investments can create inefficiencies that inflate operational costs and irritate customers.

To avoid creating unnecessary inefficiencies with tech-innovation efforts, digital leaders are tearing down silos so projects can draw continually on employee feedback from key stakeholder groups. Here, the voice of the employee guides innovation efforts away from flawed implementations that could damage customer experiences. Early strategy calls include involving the likes of cyber, procurement, IT and business functions to achieve a holistic perspective on the best path forward.

This spirit of collaboration lives on through the daily operations of digitally advanced businesses. As IT expertise is increasingly required across various business functions, routine cross-departmental collaboration and education allow business and IT employees to resolve misunderstandings and gain clarity on each other's perspective. This healthy dynamic enhances team productivity and can identify opportunities to introduce more convenience into customer experiences.

2 Are part of the solution for the talent crisis

The talent crisis is not going to resolve itself, especially when it comes to in-demand skills in new and emerging technologies. For technology teams, the short-term challenge is likely to worsen as businesses review their hiring plans to mitigate the impact of economic uncertainty and consider putting a freeze on new hires.

Progressive businesses are recalibrating their approaches to hiring and training specialist talent from the ecosystem. Long-term talent strategies should encourage organizations to widen their perspectives and expand the universe of talent.

Companies become part of the solution by restocking the talent pools available. Outreach programs with colleges and universities can educate and inspire individuals approaching entry-level jobs to develop the most in-demand skills.

At the same time, mature businesses ensure their staff feel supported in their professional growth. "Managers should constantly be trained so they can develop their teams," says HFS Research's Phil Fersht. "People often get frustrated and feel very boxed in if their direct manager isn't helping them. Consider breaking out of rigid management structures and build frameworks based on a matrix model. Employ more of an open structure to mentoring programs, so employees can learn from multiple people."

> "Rather than recruit candidates exclusively from [our industry of focus] within media and advertising, we can open our industry to gifted people from a wide range of backgrounds, experiences and even geographies. We have to cast a wide net in all forms as it builds diversity and it improves our ability to drive change more rapidly."

Hayley Cochrane
VP of Digital and Advanced Ad Sales, Global, at NBCUniversal

Technology leaders are looking to automation to address staff shortages and repair skill gaps. By automating workflows to take on the low-complexity, high-volume tasks, companies can redeploy staff and upskill teams to fill more strategic gaps elsewhere in the business. "One of the biggest issues right now is under-employment — a shortage of people to service businesses," says Fersht. "For example, touchpoints with customers can be critical. Leveraging automation can really help where there are particularly staff shortages."

3 Build airtight alignment between cloud stakeholders

Technology leaders are capitalizing on cloud's efficiency and cost benefits by optimizing their ways of working, with addressing stakeholder conflicts a key focus area.

Stakeholder misalignment is a major factor holding back cloud migration for the majority of businesses. CISOs say that stakeholder misalignment on outcomes is a bigger cloud challenge than security and compliance requirements.

Misalignment tends to occur between the IT team's vision of how cloud capabilities should be enabled and the cloud priorities of other business departments. "This misalignment tends to create a very disjointed cloud implementation," says Barry Brunsman, Principal Advisory, CIO Advisory at KPMG in the US. "Business units have their own distinct priorities and, as a result, their cloud approaches often become siloed and disconnected from the work of other departments."

Some digitally-mature businesses are making progress in this area by appointing a dedicated head of cloud who considers the requirements of each stakeholder group and creates a strategy to optimize the business's

What are the major internal challenges to achieving your organization's cyber security goals?

Challenge	%
Lack of key skills	40%
Cultural obstacles	35%
Limited funding/investment	32%
Immaturity of technology	22%
Lack of clarity on strategy	18%
Lack of sponsorship or executive buy-in	5%
None of the above	5%
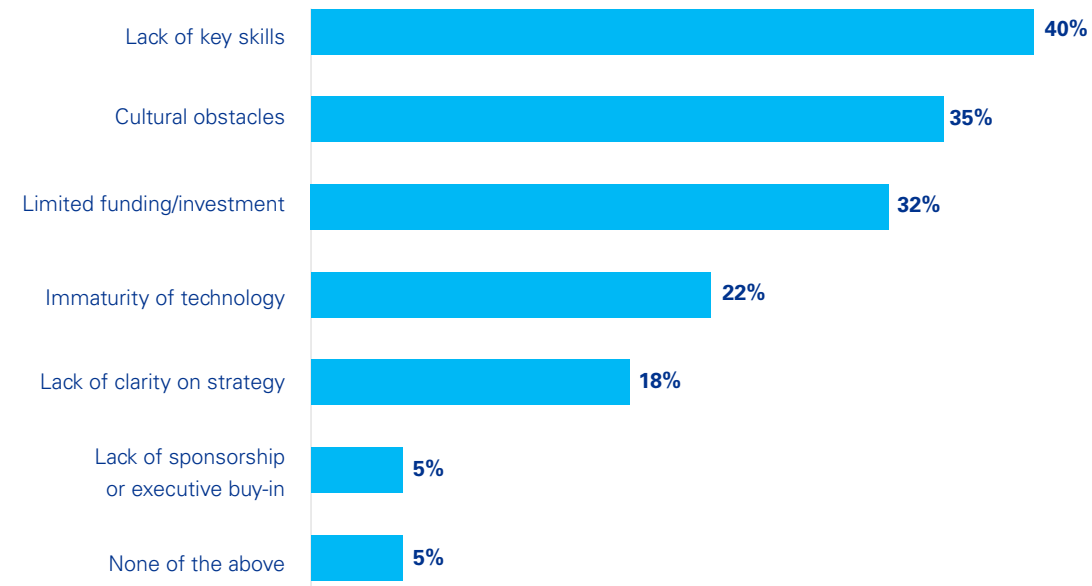
cloud journey. "Advanced businesses operate from a strong understanding of the needs of the business and IT departments," says Brunsman from KPMG in the US. "A unified strategic vision of the cloud's organizational returns for stakeholders drives a sophisticated implementation and enablement of cloud-based systems."

4 Ensure cyber specialists have early involvement in tech selection and staff education

This year's research suggests that businesses increasingly see cyber security as a golden thread running through growth and success, rather than just a compliance requirement. According to KPMG's 2022 cyber report, *Mission: Trust. How to unlock the true value of the CISO*,

enhancing corporate trustworthiness can increase profitability, as well as the size of customer base.

Digitally-mature businesses operate with tech-innovation workflows that include cyber specialists early on. In our research, CISOs say the internet of things (IoT) is highly likely to receive investment attention over the next year, but they also admit that IoT services can present a major cyber security risk. As such, to show digital maturity, organizations should ensure CISOs and their cyber teams engage in early-stage discussions about how and where the technology is going to be used, and what this means for customer experiences.

With staff behavior and low cyber security awareness constituting significant sources of risk, digitally mature companies empower CISOs to conduct regular education in risk management.

Security teams in these organizations educate staff through a variety of teaching mechanisms, training sessions and simulations. "I think a lot of employees see cyber security as just 'I've got a virus on my computer'. It's far more dangerous than that," says Andrew Whytock from Siemens. Cyber-attacks can trigger widespread disruption to supply chains and populations. "It's important to assess the value of the impact," says Whytock. "That shouldn't mean you avoid using a technology, but you need to have safeguards in place."

"To navigate the shortage of cyber security skills and democratize accountability, CISOs should work to build multidisciplinary teams that support digital-transformation security across the enterprise," says Brunsman from KPMG in the US. "It is not just the CISO who should be driving cyber resilience — this is a broader business issue."

⑤ Allow the voice of the customer to guide emerging-technology strategies

To retain customers and market share, companies must continuously improve their digital capabilities and think differently about how to use technologies to meet, and exceed, expectations.

This means constantly evaluating whether technology selection and workflow design is aligned with customer needs and expectations. Cross-functional workshops can provide real-life insights that stress-test the value of certain technologies.

Michael Natusch, Chief AI Officer at Prudential, says that the business has seen success with workshops that bring together disparate stakeholders, including customers. These sessions test prototypes and assess
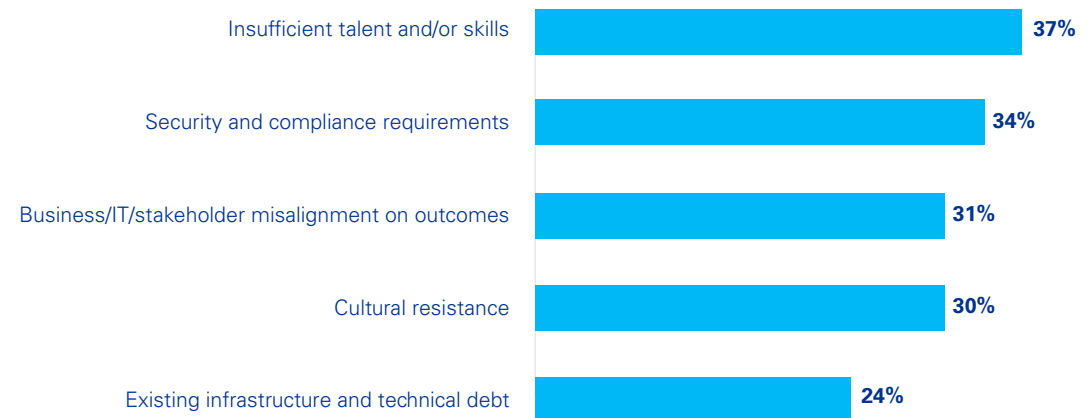
a technology's potential to provide meaningful value to target audiences.

Digitally mature businesses direct their emerging-technology investments towards capabilities that have the potential to deliver the outcomes that are of most value to customers. This approach can help keep more customers loyal to a brand in times of economic uncertainty.

"It would be wonderful to have a perfect predictive model showing where to direct investments but,

unfortunately, that's not realistic," says Rowena Everson, the MD and Head of Digital Channels at Standard Chartered Bank. "A productive approach is to focus on customer desires and behaviors and consider which technologies could support these areas. We need to assess technologies and concepts against four key customer needs that are driving demand: security, speed of execution, choice and flexibility."

What are the top challenges your organization is facing or has faced in your cloud journey?

Challenge	
Insufficient talent and/or skills	37%
Security and compliance requirements	34%
Business/IT/stakeholder misalignment on outcomes	31%
Cultural resistance	30%
Existing infrastructure and technical debt	24%

How a major museum is exploring the metaverse

Sedef Gavaz, Head of Digital Product at the UK's Natural History Museum, explains how her organization is considering the adoption of one of the most disruptive new technologies in the market.

"I see the metaverse completely transforming the museum experience. Every technology investment needs to ladder back up to your strategy and mission, and the metaverse fits very comfortably with one of our strategy pillars: reaching and engaging the widest audience."

The metaverse could allow the museum to connect remotely with customers around the globe. These engagement opportunities could have a positive effect on key societal issues like climate change or sustainability.

"Imagine, as a visitor, holding the most precious artefact in your hands. Imagine being able to interrogate that and turn it over to understand its detail and size. Imagine if you live overseas and can't fly to London, but, with immersive tech, you can experience looking up at that amazing blue whale in our entry hall. Imagine seeing that whale come alive and move around in a visualization of its natural environment," enthuses Gavaz.

"The flip side to all this wonder and possibility are, of course, considerations around pricing; access to tech and device penetration; as well as the data and network connections required to run metaverse experiences. As a business, we align that with our strategy because, although we're here to engage the widest possible audience, we have focus areas for the audiences with which we particularly want to engage."

6 **Are prepared to switch platform providers to enhance customer experiences**

There is a desire within corporate digital ecosystems to find one platform, or at least a reduced stack of enterprise technologies, which will meet business needs. This simplification of enterprise-system networks would have various benefits, including the reduction of technical debt. However, this aspiration to consolidate tech stacks will always be complicated by how capabilities advance and solution-provider landscapes shift.

As a result, even though it is a complex skill to master, the ability to move between platforms is becoming increasingly important for digitally mature businesses. A digital-transformation leader within retail maintains: "We need to be comfortable and ready to move between platforms. Because, if there is a new value proposition or a development in our business process that we want to achieve, we don't want to find ourselves tied down by legacy technology."

As business' tech stacks depend on a spread of systems from various providers, technology leaders are committed to ensuring the infrastructure of enterprise platforms is highly integrated, delivering

seamless interaction points in customer experiences. Application programming interface (API) integration is assessed carefully to avoid creating silos that introduce fragmentation into customer journeys. "Every business must ensure that the entire organization — front, middle and back — is aligned to deliver on its brand promise and customer expectations," agrees Brunsman from KPMG in the US.

7 **Aren't afraid to experiment wisely**

Digitally mature companies ensure that their success does not create an overly protective or perfectionist culture that stifles innovation.

"If you attempt to achieve a 100-percent level of certainty over everything, you are hoping for a false level of precision," says Standard Chartered Bank's Rowena Everson. "All this will do is paralyze experimentation in the business, which will ultimately paralyze growth. The only answer is to ensure that transformation and investment strategies can adapt."

This involves moving away from traditional investment frameworks that are structured to achieve benefits only at the very end of the initiative. Instead, says Everson: "Achieve objectives on the way to the ultimate objective. Set your program objectives to have an ultimate outcome but acknowledge upfront that the actual path you take could deviate from initial expectations. This allows you to pivot as you progress and bank wins as you go."

It is important to recognize that some avenues may turn out to be dead ends. "If you have this practice of breaking down your ultimate end-goals into achievable objectives on the route," says Everson, "then you can access beneficial outcomes, even if you decide that either your original investment strategy has been superseded by the external environment or your business goals have changed."

Closing remarks

Digital-transformation triumphs are empowering today's businesses to face the uncertainty ahead with a confident spirit. The returns and performance improvements earned to date have branded customer-centric technology strategies as lifesaving tools in any business' survival kit.

The widespread surge in digital transformation effectiveness redefines what it means to be a digital leader in today's economy. Deeper examination of the behaviors we observed in many digitally advanced companies will be a key consideration for future editions of the KPMG global technology research series.

As you progress through the challenging business landscape, you can help maximize your company's resilience and performance by considering these the seven traits of today's digitally-mature organizations:

1 Tear down siloes so the voice of the employee can be heard between departments

2 Be part of the solution to the talent crisis

3 Build airtight alignment between cloud stakeholders

4 Ensure cyber specialists have early involvement in tech selection and staff education

5 Allow the voice of the customer to guide emerging-technology strategies

6 Be prepared to switch platform providers to enhance customer experiences

7 Experiment wisely

About the research

KPMG surveyed 2,200 executives in Q2 2022. This quantitative study was complemented by a set of interviews with seven technology and industry experts.

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We would like to thank the industry and technology experts who participated in the interviews for this research.

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