



The future of IT

Strategies to advance the IT
function in a cloud and AI-enabled era

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Foreword





Will IT be behind the digital revolution transforming organizations? While IT functions are playing a central role in today's digital transformation, their future is uncertain.

Public cloud, everything-as-a-service (XaaS), AI and other advancements are making new demands of IT leaders — and their teams. KPMG believe IT can be a driving force behind the successful integration and application of technology, to build innovative, resilient, sustainable, data-driven organizations. But a leap in role is required, and fast.

In the recent report, [Preparing for the future of IT](#), we carried out in-depth research into the forces of change in IT, identifying six prevailing trends: everything-as-a-service (XaaS), data, resilience, talent, innovation, and ESG.

Firstly, we highlighted an exponential shift from on-premises to IT consumed as a service (**XaaS**), with IT supporting applications by brokering, integrating, and orchestrating cloud-based as-a-service systems. Secondly, **data** was seen to be poised as IT's primary value proposition, which provides IT teams with an opportunity to take on more of a data management role, to enable the power and advantages of advanced analytics and emerging AI solutions.

The third trend identified was the ever-growing pressure of **cyber** threats, which demands a growing focus on resilience. Fourthly, the severe shortage of vital IT **talent** calls for novel, creative solutions to recruit and retain people with the right skills to drive digital transformation.

Trend number five exposed the pressure IT faces to do more — faster and better — to support rapid **digitalization and innovation**. The sixth and final trend — the rise of **ESG**: IT needs to step up to support non-financial reporting, embed ESG into systems, reduce its own carbon footprint and improve its performance in terms of diversity and fair working practices.

In this paper, we discuss the impact of these six trends on IT's mission and value proposition in an AI-enabled world. And, casting our eyes forward a few years, we imagine how IT can enable the future digital organization by informing technology investments, using AI and automation, and harnessing the power of data. We also suggest the capabilities that IT leaders and teams need to acquire to make this future a reality.

The CIO's role has never been more important. KPMG professionals believe IT leaders — and their teams — should master **six key priorities**:



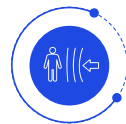
1 XaaS champion

Fostering the benefits of XaaS by assessing the overall strategy and operating model as well as the IT business functions. Business transformation presents a huge opportunity, and the future of IT combines technology, processes, and people, to realize this potential.



2 Data-centric

Re-wiring data architecture and expanding capabilities, to progress from enabling to delivering processes. Helping to obtain insights and achieving data maturity to gain a competitive edge.



3 Resilience-focused

In the second great platforming, combining technology and humans to reduce cyber vulnerability and build a strong resiliency culture.



4 Talent incubator

Rethinking recruitment and personal development to help overcome talent gaps and foster diverse, exciting, and fulfilling workplaces.



5 Innovation at velocity

Accelerating the velocity of innovation to continue helping companies redefine how they reach customers and employees and optimize supply chains.



6 Responsible operations

Driving ESG performance across organizations to deliver value via growth, employee retention, and reduced regulatory and reputational risks.

Each of these capabilities will be discussed in depth in the paper.



XaaS champion





The transition to XaaS can bring significant benefits — but also presents IT functions with new risks and costs.

The second great re-platforming — the shift to IT solutions consumed as-a-service and hosted on the public cloud — is underway. IDC research shows that spending on public cloud services is expected to reach US\$1.3 trillion by 2027. As with the first re-platforming, when organizations moved their mainframe to a client-server architecture, this latest iteration is set to drive a highly dynamic market for new products and services.

Cloud/XaaS brings significant benefits to customers, enabling them to scale up and down at short notice,

64 percent of respondents to the KPMG global tech report 2023 say they've increased profitability or performance as a result of their digital transformation efforts with public cloud and XaaS technologies.

benefitting from the most up-to-date and innovative solutions, and reduce upfront costs for implementing new solutions.

Already, XaaS users are reporting high satisfaction levels.¹ Almost two-thirds (64 percent) of respondents to the [KPMG global tech report 2023](#) say they have increased profitability or performance as a result of their digital transformation efforts with public cloud and XaaS technologies.

As more use the public cloud, the core responsibilities of IT organizations will likely change, no longer directly providing the technology that underpins business models. In the new world, public cloud vendors — not IT — will likely drive the changing functionality of their solutions. Meanwhile, IT needs to rethink cyber and resilience, integrating new applications with legacy solutions and adapting to shared security models. Possibly the largest challenge will be forecasting and managing costs in the face of complex and unpredictable, consumption-based pricing models and diverse pricing strategies used by technology vendors.

The future XaaS champion

Successful future IT organizations have the opportunity to be XaaS champions, providing appropriate technology, managing costs, mitigating risks and leveraging intellectual property investments made by dozens or even hundreds of vendors. To run a XaaS suite, tomorrow's IT leaders may manage the overall strategy and operating model as well as the IT business functions, such as financial transparency, vendor management, performance reporting and governance. In this vision of the future, solution architects, data architects and

To run a XaaS suite, tomorrow's IT leaders may manage the overall strategy and operating model as well as the IT business functions, such as financial transparency, vendor management, performance reporting and governance.

subject matter experts can design, integrate and support solutions and data across the ecosystem. As they do, they can optimize the user experience, and define best practices and standards for delivering and supporting multiple SaaS applications.

Organizations that make this shift early are already seeing the potential benefits. According to the [KPMG global tech report 2023](#), the major benefits from public cloud platforms and XaaS technologies are better data management and integration, accelerated adoption of advanced technology, and reduction of carbon footprint/improved sustainability.²

IT leaders, too, benefit. These early XaaS champions are seen as partners and conduits of the company's digital transformation. Future XaaS champion will take on the features as outlined on page 7.



Timely support

To quickly roll out enhancements and new features, future IT leaders should be skilled in harnessing release automation and establishing testing centers of excellence, both of which can enable faster, more efficient testing cycles, and speed up the time to market. This offers greater assurance that products are reliable and secure.

User experience (UX) centrality that engages users

User experience is at the forefront of XaaS product design and development, but tomorrow's IT developers and product managers are not expected to be accountable for designing every aspect of the visual and logical experience. Instead, they can rely on the skills and investments of software vendors that have built products with well-designed, intuitive and delightful interfaces. Product teams then act as 'experience integrators' where they harmonize modules or products to create an engaging user experience.

Architectural elegance

To integrate solutions faster and more effectively, IT leaders should establish flexible and adaptable architectures to efficiently build a stable and integrated environment of connected in-house and provider solutions. Modularity will likely become commonplace, with applications divided into many parts that work together to provide overall functionality. This way, applications can be developed and tested separately, rather than being dependent on a single 'line of code'. Using open standards can drive interoperability across the application portfolio and reduce the need for customization, while cutting down on the number of errors. And finally, information is exchanged between applications via APIs, which are programmable and highly automated — meaning fewer custom exchanges.

Seamless delivery that brokers and orchestrates solutions

Tomorrow's IT function brokers and orchestrates a complex web of solution providers and managed service providers (MSPs). This can enable flexibility and speed when scaling up (or down) to meet changing demands. As a broker, IT is aligned with the business to create new and exciting technology solutions, often proactively, by anticipating business problems.

To support this rich collaboration model, IT may run an extensive portfolio of cloud-based solutions and services. The portfolio can be self-service for users seeking quick answers, and flexible enough to tackle large, complex problems that may take months or years to resolve. Each solution would be carefully monitored to ensure it is secure, utilized, compliant and cost-effective. Software vendors should be accountable for the operational performance of their products and commit to being involved in incident and problem resolution.

Most importantly, the experience is made simple for the business — it can trust and rely on IT to deliver exceptional solutions and services, no matter how complex the challenge.

"Beyond the firewall" resilience and cybersecurity programs

In a cloud-based, perimeter-less environment, organizations require a zero-trust security framework where all users — internal or external — are authenticated, authorized and continuously validated. For IT, this means gaining visibility across all providers, with clear, quick remediation processes for handling any disruptions, along with controls to minimize losses.

Real time cost management

In a XaaS environment that is heavily driven to maximize operational expenses, the future IT function has extensive tooling that can monitor cloud spend and usage in real time. Cloud financial operations (FinOps), IT financial management (ITFM), and IT asset management (ITAM) teams can view all cloud spend, including traditional cloud (IaaS/PaaS) as well as SaaS. Cost remediation is no longer the job of one person or one team. Instead, it likely will be automatically orchestrated by advanced AI that can detect when certain thresholds are met or spend policies are broken, and drive appropriate action.

Policies are continuously reviewed and updated to respond to the dynamic nature of cloud products and the expansion of the software portfolio. There is likely a clear, well documented understanding of SaaS cost drivers, effectively negotiated by the vendor management teams.

The major benefits from public cloud platforms and XaaS technologies are better data management and integration, accelerated adoption of advanced technology, and reduction of carbon footprint/ improved sustainability.



Accelerating XaaS

The criteria for the XaaS champion is clear. To get here, IT leaders need to take immediate action. Here are some steps to get started:

Instill governance to manage the evolution to the public cloud

Transparency is essential to manage the cost of the cloud estate in real time. Too often, this is complicated by very low entry barriers for cloud, enabling business stakeholders to easily acquire their own software or cloud resources. To minimize such complexity, governance is needed now, and should be developed in a way that allows it to scale as cloud growth accelerates. Governance should revise purchasing policies and processes to limit who can purchase software; form councils or forums to review purchase requests; and coordinate records of all enterprise cloud spend to determine the size of the challenge.

Coordinate and collaborate between IT and its business partners and vendors

In the future, vendors are likely to own a larger share of the technology vital to an organization's success — and even its survival. A single vendor error or dispute can disrupt critical operations. To mitigate such risks, steps should be taken now to build stronger relationships with vendors, and improve coordination and collaboration between IT, its business partners and vendors. The process should start with a thorough review of all mission-critical vendors to consider their performance, reliability, customer satisfaction and future roadmap. The review could also be used to identify potential weaknesses in terms of people or processes that could prevent positive vendor relationships, which can be resolved through broader operating model changes.

Develop cyber and data protection capabilities

XaaS resilience and cybersecurity capabilities will not happen overnight. The process begins with charting a course toward an enterprise-wide zero trust security framework and executing against it. As important as it is to stay in the cybersecurity 'arms race,' it is even more important to win the battle for resiliency by scaling technology that can help diminish threats.

Shift financial systems and policies as IT costs move from CapEx to OpEx

As organizations transition to the cloud, IT expenditure will shift its focus from capital expenditures (CapEx) to operating expenses (OpEx). To prepare, IT should work with its finance partners to forecast the longer-term financial implications of cloud, and liaise with the accounting function to align capitalization policies to the latest regulatory guidance. This way, IT can help clear the path to growth and avoid potential disruptions that could stall progress.



Data-centric





To progress from enabling processes to delivering insights, IT leaders need to re-wire data architecture and expand capabilities.

Releasing data — from use cases to data democracy

Effective data management is now essential to building competitive advantage. Two-thirds of respondents to the [KPMG global tech report 2023](#) say that data and analytics have improved their organization's profitability or performance. It will become even more important as companies explore the potentials of AI, which depends on clean and reliable data.³

As a result, IT spend on data and analytics is likely to increase substantially over the next three to five years, as a percentage of the total IT expenditure. This investment increase will begin a shift away from funding specific use cases for data involving specific application development and operations.

Instead, IT should focus on building advanced data management capabilities across the enterprise. This can help democratize analytics and enable organizations to deliver rapid insights that create business value.

This shift will impact how IT leaders design solutions and the skills they bring onto their teams. Collaboration will also become critical. Now that data are essential to every part of the organization, IT leaders will need to partner with functions across the enterprise and bring them together to achieve true data centrality.

Further, there will be a growing pressure on IT leaders to elevate data maturity and maximize the return on data budgets, while innovating and managing data analytics with technologies such as AI.

Already, many organizations are struggling with making these changes. Nearly half (46 percent) of technology leaders admit they are behind schedule on their data and analytics strategy.⁴ As such, traditional, older collaboration models remain where data engineers and data scientists react to requests from business partners. Broad data strategy and governance, too, continues to get lost in the push to develop exciting products and deploy new technologies.

This lack of progress is creating a 'data debt' in organizations, which can build up duplicate and siloed data sources, highly manual data pipelines, multiple sources of truth, and/or redundant tooling.

The future data-centric IT organization

Tomorrow's IT function is expected to transform its data architecture, and completely revamp the governance, technology and culture that underpins it. In this democratized data world, business and IT will coordinate on how to get the most value from data.

Data will also be accessible to all, near-instantaneous, traceable, rich in metadata, up-to-date and secure. This will allow businesses to shorten the path between insight generator and decision-maker, allowing them to be more agile and resilient to unforeseen market events or competitors' moves.

In this future, IT leaders, with support from data leaders, will likely oversee an IT function with the following features:

Data-centered coordination and collaboration

Backed by strong governance and coordination, the IT function of the future can set policies that align the data strategy and roadmap with the technology strategy and business priorities. Should these fall out of sync, the IT function should step in to present potential solutions to support fast, secure, data-centric product development.

It will also consider wider data implications during the design and development of enterprise applications. This should prevent product teams from sinking into 'data debt' in search of short-term solutions. For example, acquiring point-specific tools to satisfy an immediate need without thinking of current and future needs for data management tools.

Establishing central governance in terms of standards, policies, common technologies and cost management will enable future IT leaders to transfer a degree of governance to the business to encourage ease and self-sufficiency in leveraging data. Central data policies will also likely need to promote easily accessible data sources and open sharing so data is available to all, so long as it complies with regulatory and ethical guidelines.

Nearly half (46 percent) of technology leaders admit they are behind schedule on their data and analytics strategy.

Source: KPMG global tech report 2023



Data literacy evangelist and champion

In a federated data model, expertise to build, maintain and leverage data products comes from the distributed data model. The organization will assign their own people to data product development teams who will understand the data value chain from start to finish, including the complexities of integrating data sources and, perhaps most importantly, the responsibility and regulatory considerations of using AI and machine learning (ML) in their models. The business will own the data products they develop, and open new channels of information for the rest of the organization. The Chief Data Officer (CDO), meanwhile, should provide a central pool of engineers and data scientists to help tackle the most difficult problems.

The CDO also needs to facilitate wider data literacy across the organization to allow teams to rapidly develop its own data products. By offering training to everyone in the organization, not just data specialists, the CDO brings the necessary skills and confidence teams need to develop data insights and apply them in their day-to-day roles.

At the center of it all, the CDO should be the ambassador for data use across the enterprise, enabling business leaders to use data to inform decisions and identify problems that can also be solved by data. As part of this role, CDOs should regularly communicate new data products and recent successful use cases to influence change across the organization.

Data-focused technology and architecture

A robust, trusted technology architecture — using XaaS, AI and ML with data products hosted and managed through the cloud — should underpin the new IT operating model. This provides a seamless customer experience with self-service-based access and scalability, and the fast exchange of information through a central data marketplace, offered through application programming interfaces (APIs). This will

likely replace exchanging information through email or manual downloads.

Expanding XaaS can enhance data standardization and quality, and make data more readily available. Technology leaders surveyed in the [KPMG global tech report 2023](#) cite improved data management and integration as the number one benefit of both XaaS technology and public cloud platforms.⁵





Delivering XaaS through close collaboration between the business, data and IT organizations breaks down silos and seamlessly integrates data sources across the enterprise into clean, useful information. In this way, data sources and data products should be accessible to everyone, including users in other areas of the business.

The technology will also look and feel the same across domains so that products under development are familiar to everyone, minimizing the need for new skills or training. AI and ML solutions can drive advanced analyses and produce results that can be applied to other domains. Products should be exposed to genAI solutions, enabling rapid insights through simple dialogue. What might take weeks, possibly months, to generate today may only take days if not hours to produce in the future.

Technology leaders surveyed in the KPMG global tech report 2023 cite improved data management and integration as the number one benefit of both XaaS technology and public cloud platforms.



Accelerating data centrality

The following are steps IT leaders can take now to begin the transition to a data-centric organization:

Integrate data into the broader technology strategy

Rather than fixing data issues and responding to requests, data leaders will want to actively partner with the business and IT to create a flexible technology strategy. As new technologies constantly emerge and new entrants fail or succeed, data leaders need to regularly revisit the data technology strategy to ensure it aligns with the broader technology strategy and ecosystem.

Create a data-centric IT operating model and roadmap

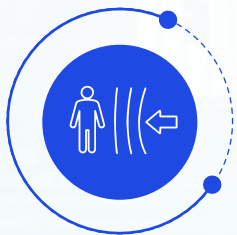
Executing the future IT vision will require appropriate technology, governance, operating models and processes. It will also call for new relationships outside of IT, and new ways of working and collaborating — all of which can involve years-long transformation in close partnership with the business.

Close the data talent gap

Traditional hiring techniques will not work in a world where technology skills are in high demand and getting more expensive. Instead, organizations will want to shape the workforce around specific capability needs, accessing the right people through new sources and creating compelling employee experiences to help close the gap.

Shift to XaaS

Effective data management cannot be achieved with legacy technology. The cloud, on the other hand, offers a breadth of new data tools and solutions that can be deployed in weeks or even days. The large cloud providers have entire portfolios dedicated to advanced data management and analytics, while SaaS platforms offer extensive, built-in analytics features. With the right partner, these solutions can be integrated into data management to swiftly unlock value. Meanwhile, SaaS solutions can capture disparate data in ready-made databases that can be widely used.



Resilience-focused





Combining technology and humans, supported by a strong resilient culture, can reduce vulnerabilities to service disruption and cyber threats.

IT faces an increasingly challenging cyber arms race. Many organizations have substantially increased their cyber spend, which has been further intensified as incidents — and their associated recovery costs — rise. While IT cannot afford to sit on the sidelines of the cyber arms race, the relentless nature of attacks has shifted the focus from prevention to swift recovery.

This is especially important as the increasing use of public cloud, XaaS vendor technologies and smart products will accelerate the convergence of IT with operational technology (OT) systems. As this happens, the attack surface increases and makes organizations more vulnerable to cyber attacks because they are more reliant on external parties. The [KPMG Cyber Trust Insights 2022](#) survey reports that 60 percent of respondents claim their supply chains are leaving them vulnerable to attack.⁶ Moreover, the demand on IT to deliver more technologies at a faster rate is pressuring engineers to shorten deployment cycles to avoid holding back digital transformation, creating pressure on the team.

As technologies are re-platformed to the public cloud, third parties will likely be responsible for resilience; however, in the eyes of the organization's leaders, responsibility for resilience will remain in IT. According to the [KPMG global tech report 2023](#), technology transformation is faster when it prioritizes trust.⁷ In a challenging environment, IT leaders should continue to invest in security to

protect profitability and performance from the harm of cybersecurity breaches.

The future, resilient IT organization

In the future, successful IT organizations will likely be significantly more resilient. They will have greater awareness of threats, understand their vulnerabilities and be better able to recover in near real-time. To get here, IT organizations will need to focus on mastering the following features:

Resilient by design everywhere

Chief Information Security Officers (CISOs) will likely need to work with the entire enterprise to prioritize cybersecurity risk management. This involves partnering with business product teams to embed resilience into operational and business technologies, which can help build customer trust.

Customers expect 24/7 service reliability, which can be tricky to do when multiple third parties are involved in delivering services. This will demand tomorrow's configuration, development and integration teams to embed resilience at every stage of product design and development to promote service continuity and cybersecurity. In addition to being secure and scalable, products and systems should have the ability to self-correct, self-heal and bounce back to normal after a disruption. Resilience will be a non-negotiable for both employees and contractors, regardless of whether systems are homegrown, vendor-developed or mixed.

Resilience also has an operational component. By establishing ongoing downtime assessments, recovery plans and monitoring capabilities, IT teams can identify failure scenarios, and respond swiftly and decisively to

restore operations after any disruption. Further, to ensure the organization learns from past incidents, knowledge sharing should be routine and widespread — an ability that will be aided by rapid advancements in AI. The IT function should also build a strong case for continued investment in resilience.

IT needs to develop and promote a more holistic view of resilience to help drive the right behaviors across different business units and ensure everyone — including the C-suite — is fully aware of their cybersecurity roles. Vendors and other third parties also need to understand their cyber capabilities, while clarifying their responsibilities and liabilities in the event of a cyber breach.

Human firewalls

To achieve better, measurable results, future technology leaders should be in charge of changing organizational culture. Taking on this role, they can ensure cyber defense and resiliency is at the forefront of operations. They can also develop awareness campaigns and holistic programs

60 percent of respondents to the KPMG Cyber Trust Insights 2022 survey admit their supply chains are leaving them vulnerable to attack.



to prioritize cyber literacy across the organization, routinely training employees and staff from third-party vendors on current and emerging cyber threats. IT leaders will also build a cyber-resilient culture, encouraging employees to focus on solving problems, openly celebrating individuals who expose vulnerabilities and weaknesses, and using metrics to identify and address weaknesses quickly.

The ultimate aim is to produce dedicated 'cyber warriors', who sustain the cultural vision (set by the technology leader) and keep the ecosystem protected and resilient. This cannot be done through training and awareness alone, and requires constant reminders for all workers to adopt cyber-secure behaviors — something that could be reinforced through AI assistants.

Immediate recovery capabilities

Automation does not just speed up product innovation. With automated monitoring and AI, it can give digital teams insights to improve uptime and prevent breaches before they impact customers. Automation will become even more important with the continued shortage of IT security professionals in the industry, and the subsequent rising salaries for this talent.

Automation can improve capabilities to rapidly identify or predict an issue, then diagnose and respond to prevent service disruption with minimal human intervention.



AI tools understand complex applications and can reliably predict incidents or anomalies, and swiftly replicate data and functionality to new protected environments, or switch to prepared recovery environments. Automation can also improve capabilities to rapidly identify or predict an issue, then diagnose and respond to prevent service disruption with minimal human intervention.

Recovery capabilities can be boosted through testing and drills, while roles and responsibilities should be clarified in advance of any cyber event, so the organization can mobilize quickly. By clarifying the most critical processes and systems, the response team can protect what is most important to business continuity — assisted by appropriate metrics and reporting that tracks a return to normal. Some IT functions may want to keep expertise on retainer, enabling them to access critical skills when they most need them. Finally, plans and playbooks should be reviewed regularly to ensure they can address the constantly changing threat landscape.

Zero trust for XaaS

As the XaaS ecosystem grows, zero trust architecture can help decrease vulnerabilities and ensure a seamlessly secure cloud environment. Future IT leaders should increase visibility over who has access to different assets and environments, reducing the potential for bad actors to move within their organization undetected, and quickly isolating threats or compromised assets.

Tomorrow's enterprise technology will likely integrate an array of homegrown and as-a-service technologies, making security at the API management layer more important. XaaS vendors are expected to provide more and more granular access controls, monitor individual user activities more closely, and constantly check that users have the right amount of access. As XaaS solutions evolve ever faster, vendors and their customers should maintain zero trust architecture that keeps pace with change.



Accelerating cybersecurity

It may not be possible to win the cyber arms race and prevent attacks, but there are some steps that IT leaders can take now to boost resilience:

Build a bullet-proof case for technical resilience and identity-based security

At a time when funding is tight, IT leaders may struggle to show the value for investing in resilience to senior leaders and board members. However, getting this right is vital for every organization should they want the chance to respond quickly to cyber attacks, which are a near inevitability for almost any business.

Tackle the cultural obstacles that create cyber risks

Cultural barriers, such as low awareness, disinterest and limited aptitude of cyber can increase the potential for phishing and other forms of hacking. Additionally, well-meaning teams that work with industrial control systems or operational technology (OT) may ignore, misapply or misinterpret cybersecurity policy as they rush to satisfy demands from the business. Modern OT — even non-internet-connected systems — can expand the attack surface of the enterprise. As such, IT leaders will need to expand education and protocols to build a culture of resilience by design to mitigate cyber risks.

Plot a cyber roadmap in anticipation of the second great re-platforming of technology

Legacy systems that are not designed to cope with modern-day security threats can make it difficult to implement zero trust architecture as new XaaS solutions are added into these environments. In addition to these new vulnerabilities, organizations, especially those with complex application ecosystems and multiple attack surfaces, will be challenged to assess and prioritize resiliency needs. As part of the second great re-platforming, cybersecurity should be an integral part of technology planning.



Talent incubator



Through creative approaches to recruitment and personal development, organizations can overcome talent gaps and foster diverse, exciting and fulfilling workplaces.

The war for IT talent is only likely to intensify with the long-standing shortage of IT skills becoming more pronounced.⁸ An estimated 30 to 70 percent of data, security and development job postings continue to go unfilled, and by 2025, the global shortage of full-time software developers and cybersecurity professionals is expected to reach 8 million.^{9, 10} Specialized architecture and data engineering skills can be added to the list of those required to succeed in the XaaS future.

Furthermore, as technologies advance, capability demands will change, too. However, despite projected increases in overall IT investments, the proportion spent on training is expected to decline — globally, IT training and education already represents less than 1 percent of total IT spending.^{11, 12}

Training and the opportunity to develop skills are key drivers for the majority of technology professionals to stay with an organization.¹³ If the decline in training continues, worker attrition will likely increase whereas the total pool of professionals with adequate skills could decrease.

Not surprisingly, a 2023 KPMG poll of technology leaders pointed to the lack of key talent and skills to be their top challenge, inhibiting successful digital transformation.¹⁴ IT may struggle to meet the demands of the future if they do not fundamentally rethink talent.

The future, talent-rich IT organization

Tomorrow's successful IT organizations will be talent incubators able to find and generate the skills needed for success, characterized by the following features:

Next generation recruiting

Leading IT functions should have a strong brand presence that resonates with younger generations — one that targets diversity, equity and inclusion to appeal to potential recruits, while widening the pool of candidates. Crucially, the talent search needs to begin early and extends beyond top universities. Instead, IT organizations will want to tap into high schools and community colleges to build talent pipelines through

early-career internships and apprenticeship programs for in-demand roles, such as code developers, business analysts and data engineers.

Unambiguous commitment to learning and development

As IT plays an increasingly central role in the future organization, learning and development strategies should adapt to create a workforce that can meet growing needs. This calls on organizations to reverse the downward trend in IT training spend, and funnel funds into a holistic talent strategy. They should also set performance expectations and define career paths, investing in diverse training and focusing on developing future-ready skills.

In addition to technical skills, fostering a planning mindset can enable growth. Exposure to other seemingly unrelated topics, like cell biology, may also be valuable to unlock creative thinking, encourage curiosity and accelerate innovation. People should also be coached on being open and collaborative, and developing the social skills that can help them better tap into the skills of others.

A 2023 KPMG poll of technology leaders finds the lack of key talent and skills to be their top challenge.

The ubiquitous nature of technology will increasingly drive new areas of collaboration between IT and Finance, Operations, Legal and other business functions. Together, they can build training and immersion programs for employees that extend IT skills beyond the boundaries of specific departments to cross-pollinate technology and wider business acumen to unlock innovation.

Purposeful employee experience

Although financial rewards are a strong motivator, IT professionals want to work in organizations with common values where they can thrive and grow. Future IT organizations will likely need to be flexible, with remote working, technology support, personal empowerment (i.e., replacing traditional hierarchies), work-life balance and opportunities to innovate.

Aligning to company ESG ambitions and targets, IT leaders can tie technology to purpose, and when backed with action can encourage cooperation, well-being and support for one another after setbacks. Working with exciting technology, which drives the entire business, is a powerful force to attract and retain top talent. Understanding and articulating this power should bring genuine competitive advantage in the battle for the best people.





Accelerating the talent agenda

Despite a strong case for IT organizations to incubate talent, there are obstacles that can limit access to the skills needed to thrive. To overcome potential hurdles, IT leaders can take the following actions:

Build a more dynamic partnership with HR

Talent management in IT has often adopted short-term strategies where HR recruits employees in reaction to immediate needs for specific tasks and projects. While it may be hard to initially demonstrate the return on investment for talent as results can take years to realize, IT leaders will need to make the case to avoid further limiting already scarce funding for essential upskilling, recruitment and retention.

Working in partnership with HR, IT should share the shifts happening in its hiring pipeline and together plan ahead for timely access to emerging roles and skills. HR as well as other business partners, like Procurement, can help IT take a strategic view of needed skills and how they can be sourced. In the KPMG paper [The future of HR: From flux to flow](#), this collaboration is referred to as strategic flow, anticipating needs and matching skills to tasks via talent marketplaces.¹⁵ Future IT tasks are likely to be performed by a mix of full-time employees, vendors and technology (e.g., AI, automation) — which can be augmented by upskilling programs and increased workforce efficiency.

Many HR functions are ready and evolving to meet these developments. In the next 2 to 3 years, 60 percent of HR leaders expect to change their operating model to find new ways to source talent to meet changing demands.¹⁶

Evolve HR processes and job/career architecture now

It is not just about attracting, developing and retaining people in new ways. Organizations have to operate differently, pausing to consider the shape of the new workforce. But re-designing the IT talent structure can challenge existing practices. Individuals may need to upskill to different jobs or change their existing role. Meanwhile new roles, titles and pay bands are likely to emerge, along with new management styles. All of this could generate significant resistance to change.

HR teams may also lack the technology to target and engage new sources of talent in new ways. Existing HR systems, which of course operate for other functions beyond IT, could be ill-equipped to adapt to novel approaches needed to manage IT career paths and performance requirements. But IT is uniquely positioned to adapt systems and develop features to manage the future IT talent lifecycle. After all, one of IT's core strengths is getting technology to match how the business wants to operate.

Modernize technology and ways of working to create an exciting workplace

IT professionals want to work with cutting-edge technologies. Organizations that want to attract and retain the best IT talent, then, will want to build or buy the right technology. This will enhance the IT employee experience as workers will work with the latest innovations. Employees in other functions can also benefit as exciting technologies will introduce new ways of working across every function.



Innovation at velocity





IT is now well-positioned as a transformative business partner, but it should accelerate the velocity of its innovation to maintain prominence.

IT earned its place at the table in its response to the COVID-19 pandemic. Almost overnight IT helped their organizations redefine how they reach customers and employees, and optimize supply chains — which was detailed in KPMG’s [Preparing for the future of IT](#).¹⁷ In these early days digital leadership became table stakes, placing IT at the center of the digital transformation agenda.¹⁸

Fast forward to 2023 and a cohort of digital leaders has emerged. They have helped their organizations transform at a faster pace and achieve better results than the global average. They did this with greater innovation, higher employee productivity and enhanced customer engagement — the very characteristics of the future of IT.

Business strategy is now inseparable from technology strategy. This requires IT to remain a vital innovation partner to the business, helping them navigate a dynamic environment. However, IT spend is likely to outpace GDP growth, putting pressure on IT to do more, both faster and better, as a partner to the business. As a result, digital leadership should be highly tuned to the business, while letting market signals guide their IT organizations appropriately.

The innovation-focused IT organization

In the future, successful IT organizations should be true digital leaders delivering innovation at pace with the business and the market. To do so, the IT leader should oversee a function with the following features:

Product management excellence at scale

Teams working on high-profile systems tend to transition seamlessly to product management excellence, due in part to the high stakes of their work. These teams have a clear understanding of how the technology links to business outcomes. They also engage and collaborate closely with business partners, work on long-lasting teams, and have access to funds that can scale up (or down) as needed.

What organizations expect from product management will likely become more sensitive to where the product is in its lifecycle. At the creation stage, IT teams are ideating and innovating. As the technology begins to produce a steady stream of value, the focus turns to continue to deliver value faster for highly engaged stakeholders. At this stage, innovation is likely less intense than it was during the creation phase.

What organizations expect from product management will likely become more sensitive to where the product is in its lifecycle.

At the maintenance stage, teams continue to manage products and innovate where needed, but with less scope and intensity.

Institutionalized lean ways of working

As IT organizations adopt advanced technologies, many abandon their legacy practices for completely new ways of working. However, many find their new practices are no leaner than the ones that came before.

For IT to deliver more, faster and better, it will likely need to fully embrace lean thinking. Not every product team within a portfolio needs to plan in an agile way. Instead, a mix of methodologies that are lean and compatible will likely be best. For example, one team might prioritize exploration and experimentation, while another may take a more controlled approach to meet upfront requirements (e.g., in regulatory compliance contexts). The key will be to know when to use iterative or recursive planning (e.g., agile), and when to opt for linear planning (e.g., waterfall).

Lean principles should also be used across IT operations to allow swift changes in priorities and funding, as circumstances dictate. By institutionalizing lean ways of working across development and operations teams, IT leaders can gain greater transparency and control over what gets done, and speed up the scale of innovation.

Extreme automation leveraging genAI and other AI technologies

Technologies like genAI are already empowering software engineers to quickly interpret, enhance, write, test, and even translate code from one language to another. This is driving faster innovation — similar to how cloud and DevSecOps accelerated software delivery over the past decade. Future use cases for genAI involve rapidly producing common business artifacts, such as applications, charts, dashboards, templates, presentations and emails. These tasks used to be very time-consuming, but in the future, genAI can free workers to be more creative, critical and responsible, with a greater focus on hypothesis development and insight generation. In short, people will focus on things only people can do.

The future IT leader recognizes where to push AI to do more, and how to position people to gain greater value from this technology. They recognize the future is not just about asking people to work harder, faster and better. It is about targeted use of AI to increase the speed of innovation.





Accelerating innovation

With a clear case for digital leadership, now is the time get started. Here are some steps that IT leaders can begin to take to accelerate innovation:

Rethink AI strategies and the technical architectures that underpin them

IT organizations are becoming more and more reliant on AI and automation to deliver value, but are they getting the most from these exciting technologies? As a result of the rapid advances in AI, particularly genAI, many businesses are being forced to reassess their AI strategies. In last year's KPMG global tech report, 40 percent of businesses said they had reached the proactive stage of their AI deployment strategy.¹⁹ Today, that figure has dropped to 15 percent.²⁰ While they recognize the potential of AI to help them with their short-term ambitions, they are also determined to be agile in their approach to execution.²¹

Many current operating models are not set up for working with automation, and employees and business partners also need to be brought up to speed. Building up this foundation will take time and could lead to some resistance. Employees worry the technology could take over jobs, while organizations have concerns over upskilling workers, and integrating AI with existing tools and systems. However, rapidly changing AI tools and capabilities call for an immediate reassessment of how to implement and scale automation effectively.

Break down the collaboration and coordination challenges that frustrate digital transformation

Businesses often lack an understanding of how to operate products. Many are also unaware of how critical it is to have a standard product taxonomy across the enterprise. Before organizations can scale a product, they first need to agree to a clear product definition and value proposition. Then, strong product teams should innovate at pace and scale swiftly and adeptly to continually generate new value for the enterprise. Throughout this process, teams should maintain visibility, and practice consistent governance and reporting. To do so, business and IT organizations should align their capabilities onto one team to optimize technology, quickly adapt to new structures and ways of working and incentivizes a high degree of collaboration.

Rapidly evolve funding approaches

Existing funding models are based on annual planning and static budgets. [New funding mechanisms are needed](#) to build and sustain product teams who are heavily innovating to allow financial resourcing to be as dynamic as product operations. It is a similar story with targets and metrics, which should adapt to measure success and ensure accountability.

Acquire capabilities — and the job architecture — to attract, retain and develop the right people

Innovation at speed can only happen with the right capabilities. Faced with significant leadership and skills gaps, and challenged with continually shifting DevSecOps and product-centric development, IT organizations require new roles, skillsets and career paths. They need to make new hires in a competitive marketplace, and adopt highly integrated and automated toolchains so new employees can rapidly deliver value in a product model. It is equally important for the workforce to adjust to this new environment, being open to operating within new structures and learning new ways of working.



Responsible operations



IT is uniquely positioned to help drive ESG performance across organizations.

ESG represents a new and dynamic source of value for organizations, both immediate (e.g., cost savings, lower cost of capital) and longer term, such as market share growth, employee retention, and reduced regulatory and reputational risks.

Investors are eager to buy into green companies, accounting for the continual rise in ESG assets under management in financial markets. Debtors are offering loans with favorable terms to fund sustainable activities. Customers also want sustainably produced products, and a recent KPMG survey found that almost one in two (46 percent) workers want their employer to demonstrate a commitment to ESG.²²

The rise of ESG has driven investment in reporting tools and a shift to the cloud. To capture value from ESG requires the entire organization, including IT, to operationalize ESG. The IT value proposition will depend, in part, on its ability to contribute to their company's ESG performance.

IT and ESG are intertwined

IT can significantly contribute to organizations' emissions by managing power consumption of data centers, as well as the manufacturing and supply chains of hardware and end-user devices. With IT vulnerable to supply shortages, supply chain disruption places pressure on procurement teams to source critical components from inclusive and environmentally responsible suppliers.

Talent diversity is also important, which impacts IT recruiting and talent management, as well as vendor selection.

Then there is AI, including genAI, which brings questions over responsible use of this emerging technology. AI is coming under the regulatory microscope with a raft of new laws governing AI and data use, which will impact data and technology teams considering these solutions.

The responsible IT organization

The IT function of tomorrow is set to play a central role in embedding and operationalizing ESG objectives into their companies. As such, technology leaders should think beyond simply supplying data and technology for corporate reporting. They will have to evolve their operations to embrace ESG as a source of value and help achieve aggressive targets that meet the expectations of boards, investors, regulators, customers and employees.

Operational ESG

IT is expected to play a critical role in reducing the enterprise's carbon footprint by creating a circular business model, and evolving ESG measurement and reporting to comply with emerging regulations. Responding to regulatory changes will require close collaboration between the business and IT engineers and analysts to source the latest information, and deliver relevant data on emissions, supply chain, diversity, governance and other important topics to the appropriate stakeholders.

In parallel, IT leaders can address tactical issues like procurement. IT leaders can help companies practice responsible sourcing, vetting suppliers for exploitative

labor practices, diversity and inclusiveness, as well as adapting to disruption and climate change. These measures help secure nearshore and friendshore (i.e., sourcing with geopolitical allies) alternatives for critical goods and services. Monitoring tools can help keep a close eye on the supply chain to spot and react to conflicts and irresponsible practices.

IT may also shift from multiple, large data centers to a lower emission (or offset-emission), cloud-first hosting approach, which can promote high flexibility and responsiveness to move fast as lower-carbon options become available. A green device strategy can also help organizations apply circular principles to its hardware practices. Phones, laptops and other hardware are purchased or leased from manufacturers with strong ESG credentials and, in addition to consuming less energy, are easily recycled after use. Sustainability and energy management software can also be used to gather and analyze ESG-related data on energy, circularity, diversity and other areas to identify opportunities to reduce energy consumption, cut or offset emissions, and improve performance across the organization.

KPMG survey found that almost one in two (46 percent) workers want their employer to demonstrate a commitment to ESG.



Ethical champions

Ethics is the new frontier in technology, and companies will increasingly be judged on how they manage privacy, security and bias. Rather than simply allowing their collaborators to dictate where and how AI and ML models and tech products are deployed, IT leaders of tomorrow will be active partners who make responsible decisions each time.

They will establish guiding principles of fairness, integrity, explainability and resiliency, and align product managers, analysts, developers, data engineers, data scientists and others to them so they can act as champions. They can place responsibility at the center of product development and redefine value to include integrity. Further downstream, developers and engineers should question whether features and functions stay within accepted boundaries to ensure products remain responsible. Responsibility is expected to remain front of mind for architectural decisions around data access and visibility.

Empathetic, human-centered leadership

IT leaders should recognize that a diverse culture is not about ticking boxes. It is about widening the talent base, and bringing in new ways of thinking and working that enhances IT's performance as a function. This approach should make IT organizations more attractive to a new generation of workers.

Recruitment will likely pay close attention to diversity, equity and inclusion, and talent leaders in IT will need to address changing needs of employees in terms of flexibility, learning and career opportunities. In the coming years, IT should offer a nurturing, flexible working environment with multiple opportunities to learn and grow through training, secondments and job rotation. At the same time, cultivating an individual's sense of their values, and encouraging them to act on them to help the enterprise make a positive difference in the world.



Accelerating ESG in IT

The following are steps IT leaders can take today to begin moving toward an ESG-centered function:

Understand IT's contribution to the company's ESG strategy and ratings

ESG has become a widely accepted term in business, but unpacking exactly what it means to an organization and how to execute against it can be challenging. IT leaders should work with ESG leaders to clarify the organization's ESG strategy and determine how IT can drive value. For example, they might do this by satisfying external ratings agencies to improve investor sentiment, or identifying customer segments most interested in ESG. IT leaders should then focus their teams on areas where IT can make meaningful impacts on ESG goals.

Consider E, S and G

Much of the thinking and discussions on ESG has centered around reducing carbon emissions, but IT has a major role to play in other environmental issues like plastic pollution and a circular, low-waste economy. Social and governance are also greatly important aspects of ESG, and IT leaders should review how the function and its value chain participants manage human rights, diversity, inclusion, communities, corruption and reporting. Identifying and communicating these imperatives is vital to ensure that everyone in IT understands their role in contributing to the ESG agenda.

Capture value from ESG

Managers within IT may not be fully aware of how their decisions impact ESG and contribute to value. By incorporating ESG value capture into operational and development decision-making, leaders can embed ESG into every activity and foster an ESG mindset. Training can spread awareness. ESG imperatives should be part of strategic budget meetings, backlog and commitment ceremonies, and operations meetings.

Conclusion



Key takeaways

The future of IT is exciting. IT leaders and teams can help organizations navigate digitization and the second great re-platforming to become Connected, Powered and Trusted enterprises.

In this paper we have outlined a future with IT very much at the center of this work by highlighting the required capabilities as well as the steps to acquire them.

KPMG professionals work with IT teams every day to help them address these challenges and drive successful digital competitive advantage for their organizations.

Calling on KPMG professionals' experience and the topics raised in this paper, here are a few considerations for IT leaders to accelerate their path to the desired future state:

Leverage the rich potential of XaaS

Are you prepared to run an extensive XaaS suite, with appropriate internal and external governance over partners and vendors? Are your financial systems and policies adjusting to the shift from CapEx to OpEx?

Incubate talent

Are you building a dynamic partnership with HR? How effectively are you evolving HR processes and job and career architecture to create an exciting workplace?

Create a data-centric function

Have you considered the shape of the future, data mature IT function that has progressed from use cases to data management excellence? What steps are you taking to integrate data into broader technology strategy?

Innovate at speed

Are you driving collaboration and coordination to accelerate digital transformation? Have you set out a coherent AI strategy and underlying technical architecture?

Focus on cyber resilience

Are you building your awareness of threats and vulnerabilities with a focus on real-time recovery and longer-term resilience? Do you have a cyber roadmap to cope with the second great re-platforming?

Take the lead on ESG

How well do you understand IT's contribution to the company's ESG strategy and ratings? How are you embedding ESG and operationalizing its objectives?



Transformation never stops. Neither do we.

At KPMG, we believe that business transformation is too good an opportunity to miss. Combining the right technology and the best processes with people whose insight is as broad as it is deep are essential ingredients to successfully transform. KPMG member firms have worked at the heart of global businesses for many decades, helping our clients realize the full potential of their people and technology, working together to achieve real-world outcomes. Because when people and technology are in harmony great things can happen.

Making a world of difference:

KPMG people can make all the difference on your transformation journey. Together we can help you to orient your business around the customer, optimize functions for a new era, manage enterprise risk and regulation for a safer future, rise to a new level of value creation, and create an environment for managing ongoing change.

Transforming for a future of value:

KPMG firms' suite of business transformation technology solutions can help you engineer a different future — where new opportunities are designed to create and protect value.

KPMG Connected Enterprise

Rebuild your business, end to end, around your customers.

KPMG Powered Enterprise

Drive outcome-driven functional transformation.

KPMG Trusted Imperative

Build and sustain the trust of your stakeholders.

KPMG Elevate

Unlock financial value quickly and confidently.



Contacts

To learn how KPMG can help you accelerate the transformation of your IT function, click [here](#) or contact us:

**Bobby Soni**

Global Technology Consulting
Leader

KPMG International

E: bobbysoni@kpmg.com

T: +1 408 367 1585

**Guy Holland**

Global CIO Center of
Excellence Leader

KPMG International

E: guyholland@kpmg.com.au

T: +61 2 9335 7782

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Selim Assouad
Danielle Beringer
Rob Breakiron
Lavin Chainani
Michael Cheong
Blythe Chorn
Kevin Coleman
Kristine Coogan
Charisse Dean
David Ferbache
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Candice Galloway

Sam Ganga
Anne Gosal
Gernot Gutjahr
David Harrison
Harry Huang
Hannah Jenkins
William Koot
Doug Krause
Billy Lawrence
Silvester Liu
Bri Lumley
Mohamad Majid

Will Marshall
Beth McKinney
Marcus Murph
Aidan Muruve
Bassa Nerogeni
Chi Ngwube
Filip Nyczaj
Dina O'Donnell
Jeoung Oh
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Endnotes

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