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Ignition

Foreword

Dear readers,

Over the last several years, governments have made dramatic advances in utilizing technology to power trusted, digital processes that connect constituents to services and support their employees. The COVID-19 pandemic demonstrated that governments could move quickly to respond to unprecedented challenges—taking actions from accelerating research and development to adopting new platforms for communication, learning, and transactions.

Today, the challenges are evolving, but the need for technological transformation is no less urgent. Emerging technologies are poised to reshape how government and other industries operate and interact. These technologies create extraordinary opportunities for governments to enhance how they fulfill their missions. But governments will need to continue the pace of modernization by adopting and embracing new technology, or they risk being left behind as the private sector rushes forward.

The adoption of emerging technologies is crucial for government to remain relevant in the future for several reasons:

- **Improving services:** These technologies enable governments to provide more personalized and responsive services to the public. Generative AI, for example, can create tailored responses, and digital twins can offer real-time insights for better decision-making.
- **Increasing transparency:** Blockchain technology, in particular, can enhance transparency and accountability in government operations. It provides tamper-resistant records, which can be used for everything from supply chain management to anti-corruption measures.
- **Data-driven decision-making:** Quantum computing allows for the rapid processing and analysis of large datasets. Governments can leverage this capability for evidence-based policymaking and scientific research. Quantum computing can enable predictive services, such as healthcare interventions based on individual health data or traffic management systems that anticipate congestion and adjust routes.
- **Virtual engagement:** The metaverse offers a new way for governments to engage with constituents. Virtual town hall meetings, immersive educational experiences, and collaborative workspaces can enhance civic participation and communication. Government agencies can establish virtual offices within the metaverse, allowing constituents to access services, attend meetings, and receive assistance in a virtual environment.
- **Secure transactions:** Blockchain ensures secure and transparent transactions, which can be used for various government functions, such as tax collection, grant and contract management, and property registration.
- **Infrastructure monitoring:** Digital twins enable real-time monitoring and maintenance of critical infrastructure, from bridges to utility networks, reducing downtime and improving safety.
- **Global collaboration:** Many of these technologies facilitate international collaboration on global challenges, such as climate change, public health, and space exploration, making governments important players in addressing these issues.

Overall, embracing these emerging technologies empowers governments to adapt to an increasingly digital and interconnected world. Governments will face significant new risks on this journey, including data security, privacy, and operational risks, and increasing pressure to keep pace with commercialization of traditional public sector missions such as space exploration and satellite launches. Managing these risks while leveraging emerging technologies will require advances in governance and operational resilience.

Governments can serve a leading role in building an ambitious vision of the future. This paper aims to help public sector leaders do just that.

Lorna Stark

National Sector Leader,
Government & Public Sector

KPMG LLP

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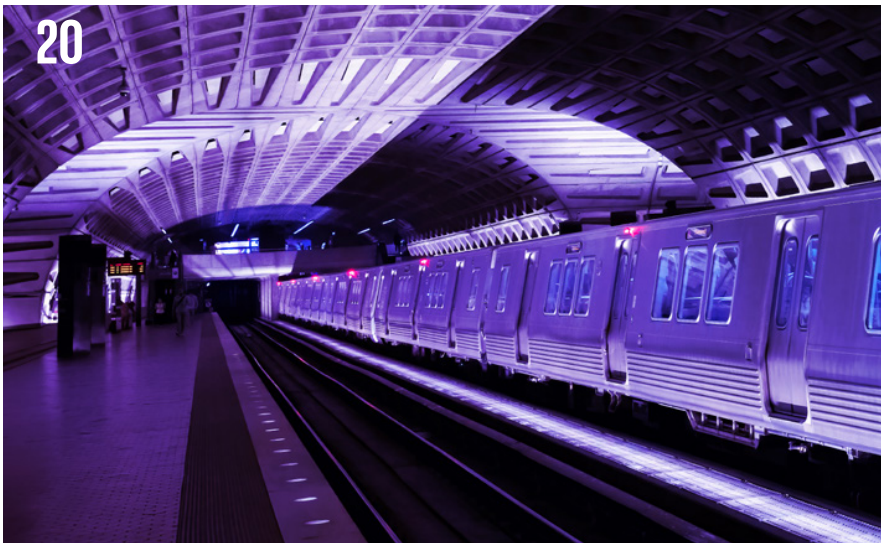


Introduction

James just moved to one of the Midwest's new smart cities. He bought a house designed to his own specifications and built in hours using 3D printing and low-cost, high-strength composites. With the local government's automated portal—and aerial drone land surveyors—the building permit and deed were completed in only a few clicks and a smart contract will automatically process tax payments. Utility costs will be virtually too cheap to meter. Electricity here is sourced from a nuclear fusion reactor recently approved by the Nuclear Regulatory Commission; pneumatic tubes carry household waste to a recycling center that has been steadily increasing reuse rates. Travel will be easy, too. James can hail an autonomous electric vehicle (EV) that charges during the drive using wireless coils under the road. The vehicles automatically communicate with each other and the transportation infrastructure to optimize traffic for fast, safe commutes.

On the East Coast, Vidya, a systems engineer, works at a federal agency developing satellites. Constellations now provide free public internet nationwide and harvest solar energy that is transmitted wirelessly to ground receivers and fed into the grid. She only recently returned from low Earth orbit, which is bustling with ships traveling between space station manufacturing plants and moon facilities harvesting strategic materials such as neodymium used in electronics. Vidya also helps maintain satellites monitoring weather and climate data that—paired with quantum computer simulations—improve the accuracy of storm forecasting by orders of magnitude, allowing communities more lead time for preparation, exponentially decreasing disaster casualties and greatly improving resiliency.

Most of the solutions James and Vidya rely on are not currently in place, but the technologies are real. They are being developed and used in labs and pilot programs—with many expected to emerge in only a few years.

Today, we are living through an inflection point of dramatic technological change. Advances in artificial intelligence (AI), quantum computing, data analytics, sustainable energies, space systems, and other disciplines are emerging and converging in ways that could propel waves of new technology solutions. These advancements have the potential to reshape industries and radically improve how we live.

State and federal government agencies already serve a vital role in these advances as technology funders, developers, adopters, and regulators. Often working alongside private sector, academic, and nonprofit collaborators, governments help catalyze new technologies and sustain an ecosystem of innovators.

With the pace of change today, we believe governments are only scratching the surface of the technological possibilities that are rapidly emerging. New technologies could give governments unprecedented tools to serve constituents, empower workforces, and fulfill their missions. However, without a forward-looking technology strategy, governments risk being left behind as the private sector rushes forward. If this occurs, governments will have a harder time retaining inventive talent and maintaining public confidence. They may also become ill-equipped to address the new risks and social disruptions that always come with breakthroughs.

KPMG has explored trends, tools, and leading practices that can help governments accelerate technology-enabled transformation. Through surveys and interviews with government leaders and constituents, and experience working with public sector organizations, we've found the modernization of government is well underway.

To help accelerate modernization, we look at how governments serve a unique role driving innovation, the forces and investments fueling the next great wave of breakthroughs, how public sector leaders are approaching emerging technologies, and the hurdles slowing leaders down. We discuss how agencies can establish strategies and governance to more effectively adapt and secure technologies in their unique environment and keep pace with change. This approach can help governments be more deeply connected to constituents, powered by the latest technologies, and trusted by stakeholders.

Great innovations start with government

Great innovations start with government

Today, many people are skeptical about governments' ability to innovate. While this perception may be rooted in real challenges, history demonstrates that—with the right vision, organizational culture, and investments—governments can serve a leading role in breakthrough innovations.

Much of the technology now embedded in daily life originated with government agencies. It's well known that the Defense Advanced Research Projects Agency (DARPA) helped create the Advanced Research Projects Agency Network (ARPANET), the precursor to the internet, and invented digital protocols that made the internet possible. But DARPA also provided many other advances that led to speech recognition, touch screens, and core technologies used in smartphones and tablets.[1] Global Positioning System (GPS), AI, machine learning, and much more resulted from government research and development (R&D).

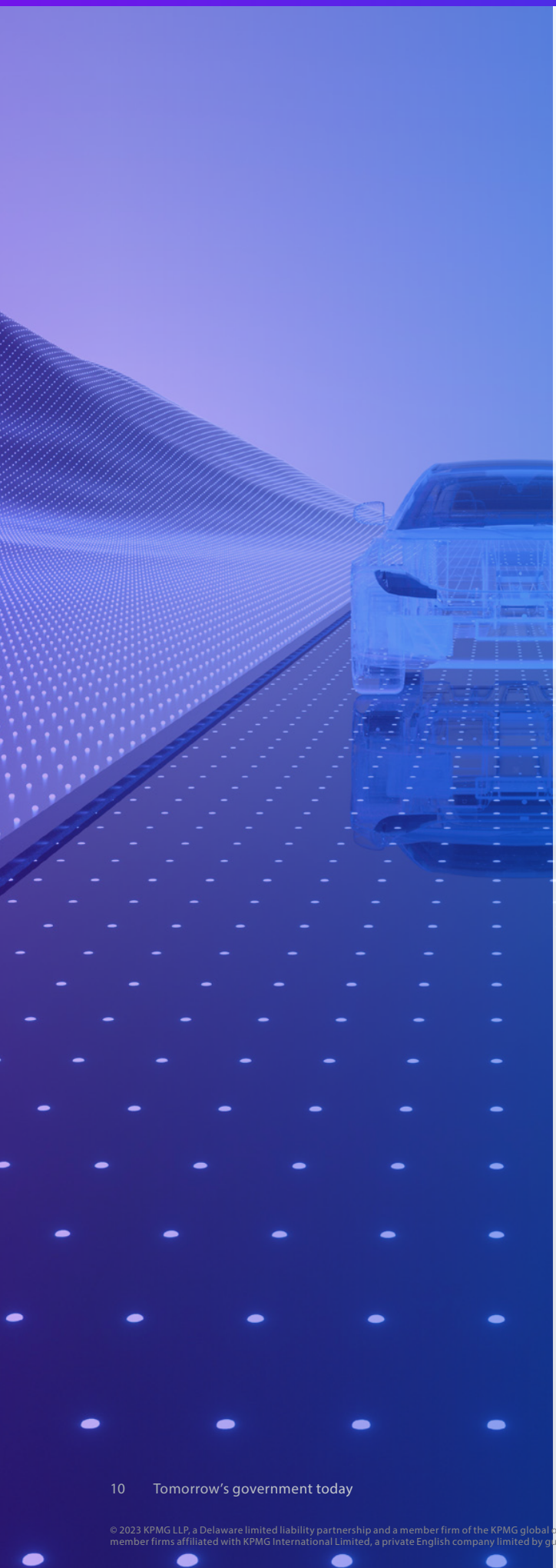
Beyond DARPA, the US space program led to new technologies and materials now used in everything from satellite television and water filtration systems to Nike shoes and scratch-resistant lenses in glasses.[2]

The US Post Office Department (USPOD), the predecessor of the United States Postal Service, had a key role in the development of road, rail, and air networks. USPOD weather forecasts also provided farmers with crucial information, and cheap parcel service helped rural communities access markets. Regions linked into the national mail system even experienced an increase in locally issued patents as residents gained greater access to ideas, communication, and outside resources.[3]

The pioneering roles of governments stem in part from the ability to invest in new technologies when profit potential is not yet clear and the investment horizon will likely extend beyond the exit window commonly expected by private sector venture capital firms. Governments also support innovation as early customers of emerging technologies. For example, the US federal government was IBM's primary customer of mainframe computers, supporting the private computer industry.

Whether innovation originates in government research facilities or commercial labs, public-private partnerships have proven to be a successful model to develop advanced technologies. Private companies often take innovations catalyzed by governments and synthesize them into consumer products. For instance, the Google search algorithm was originally built on research funded by the National Science Foundation.[4]

Governments also drive innovation through regulation, such as the Clean Air Act and other pollution controls spurring cleaner fuel injection systems and better onboard diagnostics in cars. Building on this legacy of innovation, recent years have seen the burgeoning space industry, advances in solar, wind, and nuclear energy, and COVID-19 vaccines and treatments, all partly as a result of public sector engagement.



The forces catalyzing the next great wave of innovation

Societal challenges—such as the space race, Cold War, or COVID-19—have often motivated rapid technological advances. Today, there are new forces driving behavior change and innovation.

Concerns about environmental sustainability have increased demand for cleaner energy. Geopolitical tensions have led to new defense efforts and reshoring or nearshoring of critical manufacturing. Social inequities—exemplified by declining US life expectancy from "deaths of despair"—have underscored the need to improve public health, mental health and wellness, and access to benefits.[5] Technology itself, such as social media and AI, has spurred demand for better strategies to mitigate risks.

Forces like these have led to public investments that can help fuel innovation in the years ahead. This includes federal stimulus and localized investments enabling governments to craft new solutions. These investments and the growing, collaborative ecosystem of private sector, academic, and nonprofit organizations can enable far-reaching changes across society.

Highlighted investments in public sector innovation

Improving the constituent experience and internal systems

- The FY24 President's Budget request includes **$74 billion** of IT spending for federal civilian agencies—**up 13 percent** from 2023.[6]
- The Federal Technology Modernization fund received over **$1 billion** to help agencies upgrade technology to deliver a secure, digital-first constituent experience.[7]
- Massachusetts invested more than **$19.2 million** as of 2022 in competitive grants to more than 300 municipalities to support local government technology upgrades.[8]

Workforce development

- The CHIPS and Science Act of 2022 provides **$13.2 billion** for workforce training and R&D.[9]
- The National Science Foundation launched a new **$30 million** workforce program—Experiential Learning for Emerging and Novel Technologies (ExLENT)—for upskilling in emerging tech.[10]
- The Department of Education launched the Raise the Bar: Unlocking Career Success initiative to increase pathways for in-demand jobs.[11]

Climate resilience and infrastructure

- The FY24 President's Budget invests a total of **$52.2 billion** in discretionary budget authority to tackle the climate crisis – the largest budget request for climate change in history.[12]
- The Infrastructure Investment and Jobs Act invested **$7.5 billion** in EV charging, **$10 billion** in clean transportation and over **$7 billion** in battery development.[13]

Defense and space

- The US Space Force requested **$30 billion** for FY24—a **26 percent increase**—most of which will be for R&D, testing, and evaluation.[14]
- The Department of Defense requested **$67.4 billion** for cybersecurity, IT, and electronic warfare for FY24.[15]

Artificial Intelligence

- The federal government spent **$3.3 billion** on AI in FY22—a **2.5x increase** from 2017.[16]
- The National Science Foundation provided a **$140 million** investment to launch **7** new National AI Research Institutes—for a **total of 25**.[17]

Outlook: How leaders will embrace technology in the years ahead

How are government leaders responding to forces spurring demand for technological transformation? In 2023, KPMG surveyed and conducted interviews with 200 state and federal executives to understand their technology priorities and their outlook for the years ahead. We also surveyed constituents to understand their expectations of governments.

Many leaders have ambitious goals to ensure governments are powered by the latest technology, connected to constituents and other agencies, and trusted by stakeholders.

Building on a solid foundation

The encouraging news is leaders are broadly confident in their current technology. **94 percent** said their agency is at least moderately equipped with the technology needed for their mission, compared to only **6 percent** who said poorly equipped.

Leaders report being relatively well-equipped with technology needed for the mission

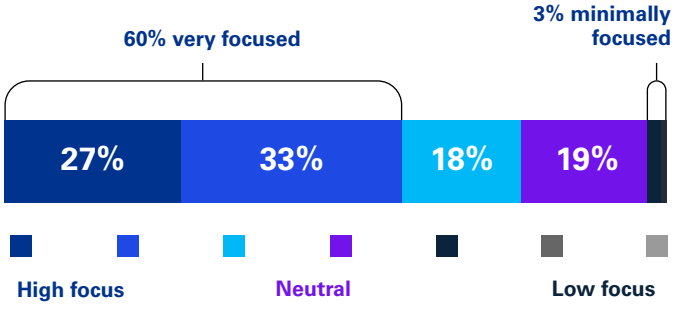
The 2023 results suggest an improvement since a 2020 KPMG survey in which **29 percent** of government executives reported that inefficient IT systems undermined their agency's mission.[18] The more positive perception today may be partly due to COVID-19 accelerating digitization and adoption of lightweight platforms for communication, learning, and transactions.

Constituents seem to notice. **Fifty-six percent** of constituents surveyed are satisfied with government services they use. However, there is room for improvement. Constituents are becoming more like consumers of private sector goods—with high standards for services they select. **Sixty-four percent** of constituents say governments need further enhancements to customer service, efficiency, and accessibility, and **70 percent** want governments to embrace advanced technologies, such as 5G for faster communication and AI for improved efficiency.

Governments powered by the latest technology

Modern governments will require the latest IT infrastructure, the ability to extract insights from data, and capabilities to deploy cutting-edge tools. Recognizing the urgency, **60 percent** of leaders are very focused on enhancing IT and data systems to improve decisions and efficiency.

Rate your agency's focus on this use case over the next 3-5 years: Enhancing internal data and IT systems to improve agency decision-making and efficiency



We asked leaders to identify the top three technologies that would help their agency overcome its current technology challenges. Cloud technologies emerged as the top priority **(67 percent)**. Most leaders surveyed already utilize some cloud solutions but are prioritizing further deployments and upgrades needed to support both the latest technologies and data and analytics. Leaders are also responding to fast-developing trends in generative AI and machine learning, which were top priorities for **36 percent** and **35 percent**, respectively.

Beyond the top three, there was also significant interest in other emerging technologies, such as quantum computing, the Internet of Things, and low-latency, high-throughput wireless services such as 5G. Together, these high-priority technologies can support a host of front- and back-office use cases.

Leaders are taking steps to implement these technologies. "Our focus can be summarized in one word: modernization," said **Sarah Schelle, Chief Digital Officer** with the **Indiana Department of Correction** (DOC). As she explained in an interview, Indiana DOC has launched a new, cloud-enabled platform intended to consolidate systems such as vendor management. While some Indiana prisons were built over 100 years ago, better IT systems support upgrades to physical infrastructure, such as new digital networks and cameras.

Indiana DOC is also utilizing data for predictive analytics. The Department built a model intended to predict situations when prison violence may occur—enabling frontline staff to understand and work to reduce triggers that lead to violence.

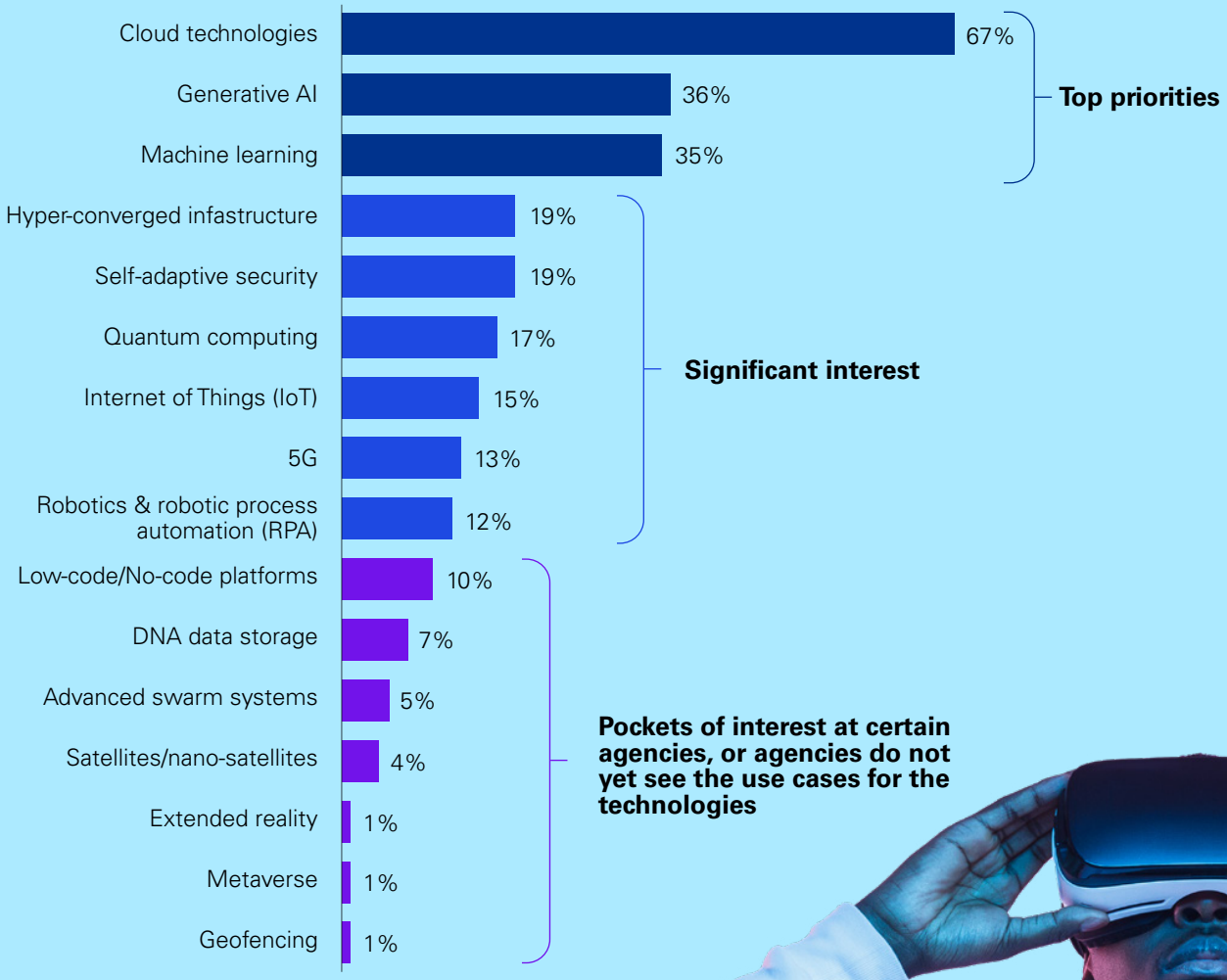
Federal leaders are also exploring new technologies for their environments. "A high priority is developing better models and simulations for our work," said **Joe Incorvia, Acting Director, Digital Department** at the **Naval Air Systems Command**, which acquires, develops, and validates US Navy aviation systems.

The agency is exploring digital twin technology—virtual replicas or simulations of physical objects—to better predict system performance. For instance, digital twins have the potential to model how aircraft metals will wear in certain weather conditions, enabling a more accurate maintenance schedule to reduce costs and accidents.

"A key challenge," Incorvia told us, "is adapting these technologies for our mission. We have thousands of aircraft. Maintaining accurate models of these units over time is going to be a major hurdle."

What are the top three technologies that would help your agency overcome its current technology challenges?

Multi-select, top three



What the future could be—a quantum military

How quantum computing and AI could transform defense

In the not-too-distant future, US military personnel gather at a test range for a demonstration. They soon see what looks like a dark cloud in the distance. But it's no cloud—it's a swarm. Thousands of small autonomous drones waft like locusts over the field.

The drones are designed for optimal aerodynamics in quantum computer-supported simulations. This enables airframes with precisely balanced advanced composite materials, including graphene-reinforced hulls for maximum resilience, metamaterial stealth coatings, and photovoltaic energy cells.

The drones quickly dart into complex formations. They can coordinate with each other autonomously, or receive orders worldwide via satellite uplink. Quantum key distribution provides hyper secure encryption against potential hackers.

A nearby battery of radar-guided, rapid-fire cannons attack the swarm. But because they are equipped with quantum sensing technology, the drones detect otherwise-imperceptible signals in magnetic fields, temperature, and light, enabling them to identify and evade projectiles.

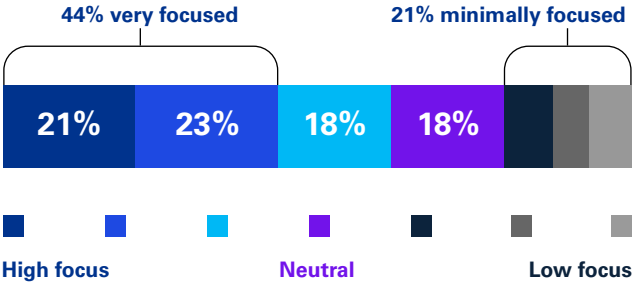
In Washington, DC, the Pentagon's National Military Command Center receives real-time updates. The facility monitors tens of thousands of autonomous aircraft, ships, land vehicles and robots, satellites, and bots in cyberspace. Computers automatically sort trillions of data into reports tailored for each station when human attention is needed.

With the reach of these adaptive and resilient technologies, personnel can now remain in command centers—coordinating all necessary operations far away from danger.

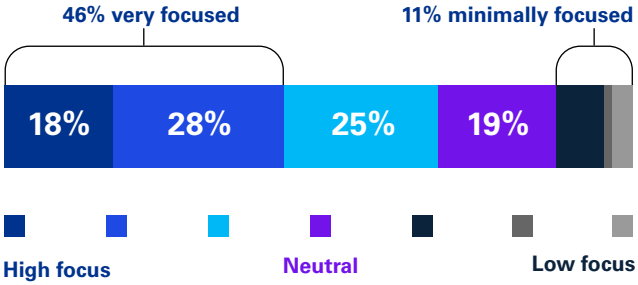
Governments connected to constituents and other agencies

A core purpose of upgrading systems will be to create services more responsive to constituents while enabling interagency collaboration and equipping workforces with the latest tools. **Forty-four percent** of leaders are very focused on creating a more personalized, streamlined constituent experience. Moreover, **46 percent** of leaders are very focused on services aimed at helping the US workforce become future ready, such as programs to support upskilling and reskilling for constituents or helping their own workforces understand and utilize the latest technology.

Rate your agency's focus on the following use case in the next 3-5 years: Using technology to streamline and/or personalize the constituent experience



Rate your agency's focus on the following use case in the next 3-5 years: Supporting up-skilling to help the US workforce be future ready



As **Brian Wong, Deputy Secretary of Innovation and Technology** at the **California Labor & Workforce Development Agency**, said, "Our IT capabilities are primarily focused on how to use technology to improve the customer experience." For example, California is joining several formerly fragmented services—including unemployment, disability, and paid family leave—into a unified system. Part of the goal is to give constituents a streamlined digital experience rather than force them to navigate multiple locations. The new structure could further improve back-office collaboration and accelerate response times.

Also, within the framework of the recent Executive Order on Generative AI, the Department is also exploring ways this new technology could be useful. "We want to manage it well to avoid unintended consequences," said Wong.

"Our IT capabilities are primarily focused on how to use technology to improve the customer experience." - Brian Wong, Deputy Secretary of Innovation and Technology, California Labor & Workforce Development Agency.

What the future could be—learning with generative AI

How generative AI could transform workforce development

The US has revitalized its semiconductor manufacturing sector and needs a larger workforce trained for advanced foundries. In response, US states and public universities launch a new educational program.

This program doesn't require hefty tuition fees. Instead, it is free and on-demand. Participants learn from AI-generated instructors who craft a personalized, adaptive curriculum based on the student's preferred language, learning style, and educational background.

Students are even able to learn the manufacturing process. In high-fidelity virtual reality (VR) simulations, students practice etching, ion implantation, and photolithography—transferring circuit patterns onto silicon wafers using light. The students also get VR tours of the foundry, learning to use robotic equipment and practice clean room operations.

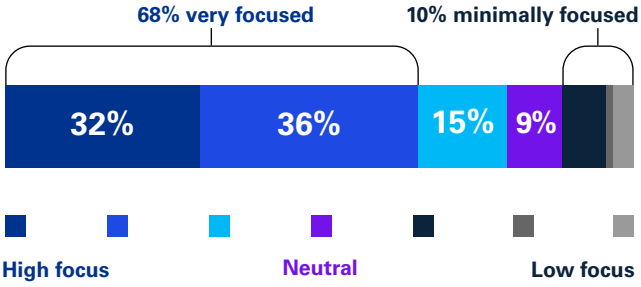
Students who complete the course move on to accelerated real-world training and are soon ready to start their new jobs. This program helps reduce the workload on educators, enables students to start careers or ease transitions, and equips a vital industry with skilled workers.

Governments trusted by stakeholders

For all its upside, digitalization brings new risks, such as widening the threat surface for cyberattacks. Modern governments must maintain data security and privacy, resilience and operational continuity, compliance, and an inclusive strategy that considers diverse stakeholders. Leaders are well aware of the challenge.

Sixty-eight percent of leaders surveyed expect to be very focused on preventing compromises to data security and privacy in the years ahead—the highest priority of any use case examined. Moreover, **59 percent** of government executives cited regulatory and security concerns as the main catalyst for further technology upgrades.

Rate your agency's focus on the following challenges in the next 3-5 years: Preventing compromised data security and privacy



Ensuring trust is top of mind for **Ruby Choi, Deputy Commissioner of the New York City Office of Technology and Innovation** (OTI), who is driving modernization of its services.

"Technology is usually not the hardest part of change," Choi told us, "the key challenge is determining where you want to go and engaging stakeholders to address complex accessibility, security, and program objectives."

For example, to digitize one benefit application, the City conducted interviews with constituents to understand their needs, engaged the workforce on how manual processes could be replicated digitally, and aligned with federal and state stakeholders on back-end security protocols.

What the future could be—more connected healthcare

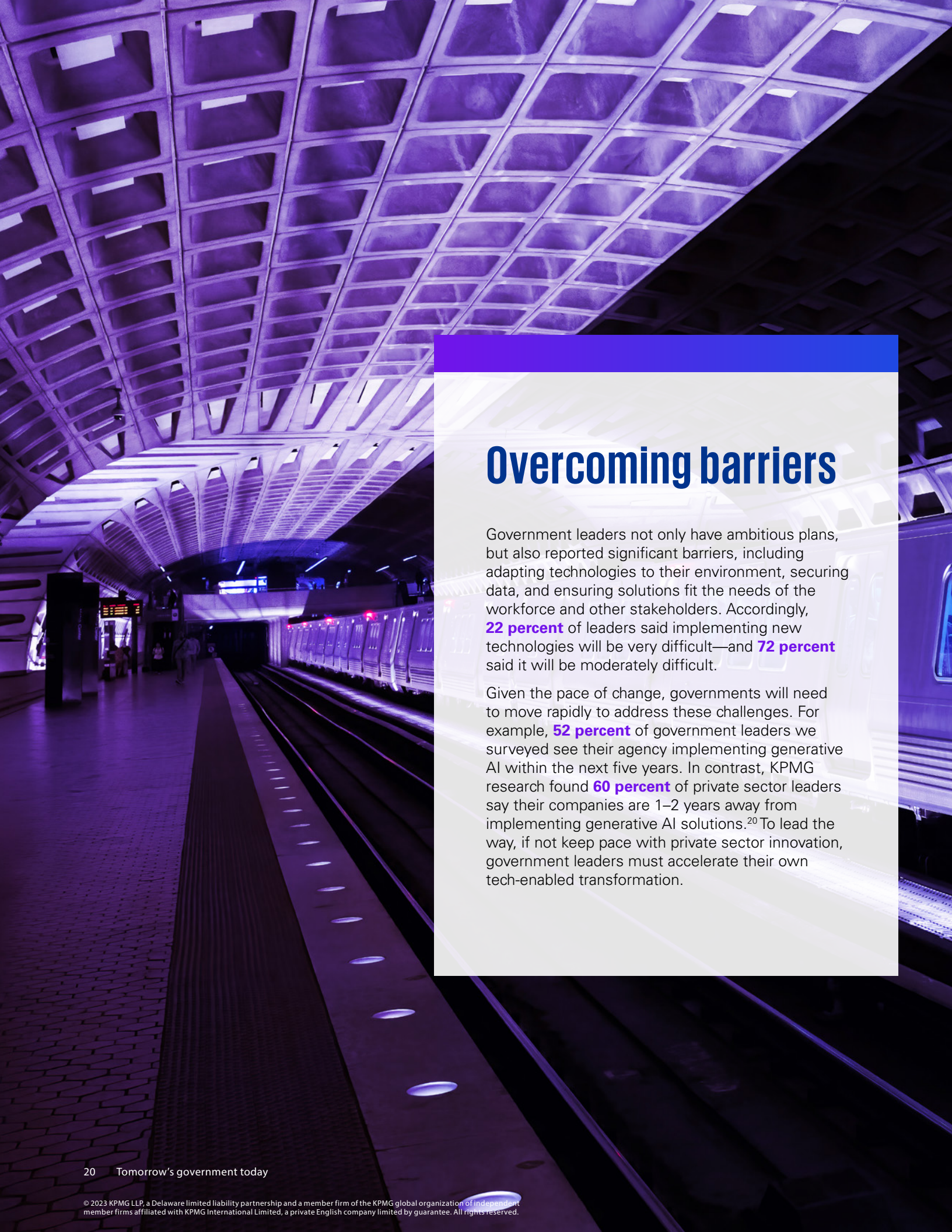
How the Internet of Things and advanced analytics could transform healthcare

Medicare and Medicaid have helped revolutionize healthcare—driving costs to a fraction of historic levels and making quality care accessible for all.

Smart devices have supported part of the transformation. Constituents have the option to receive a free medical watch with a personal AI assistant. The devices are made exponentially cheaper by advances in additive manufacturing, durable thin film batteries, and energy-efficient microLED technologies. The devices monitor vital signs, manage medication reminders, and make appointments. Advanced biosensors can now even detect potential cancer markers. Any warning signs requiring further review are flagged for a physician of choice. As these devices lead to earlier disease detection, fewer hospital visits, and better health outcomes, constituents who opt in receive discounts on premiums.

Through public-private partnerships, governments supported deployment of 6G wireless networks (with 100 times the capacity of even the best services today), enabling connected health devices and telemedicine in even the most remote communities. Vast sums of metadata from the devices are fed back into agency cloud databases where predictive analytics help allocate healthcare resources, such as recommending beneficiaries visit doctors with greater availability to reduce prices and wait times.

The connected devices facilitate the seamless transfer of encrypted health records and automate benefit distribution and payments. With highly integrated, real-time data, deep learning algorithms are deployed to detect potential fraud and billing errors. These solutions dramatically reduce waste and administrative costs.



Overcoming barriers

Government leaders not only have ambitious plans, but also reported significant barriers, including adapting technologies to their environment, securing data, and ensuring solutions fit the needs of the workforce and other stakeholders. Accordingly, **22 percent** of leaders said implementing new technologies will be very difficult—and **72 percent** said it will be moderately difficult.

Given the pace of change, governments will need to move rapidly to address these challenges. For example, **52 percent** of government leaders we surveyed see their agency implementing generative AI within the next five years. In contrast, KPMG research found **60 percent** of private sector leaders say their companies are 1–2 years away from implementing generative AI solutions.[20] To lead the way, if not keep pace with private sector innovation, government leaders must accelerate their own tech-enabled transformation.

Preparing for tomorrow, today

Ready or not, major technological changes are coming—and they will affect every dimension of how agencies operate. Accelerating technology-enabled transformation will require a governance approach that supports the incubation of new ideas, adapting tools to one's unique environment, harnessing and securing data, and ensuring the talent to leverage systems effectively.

Establish or refine the incubation process within your agency

Tech incubators help identify, shape, and scale innovative ideas. Some agencies, such as DARPA or Advanced Research Projects Agency–Energy (ARPA-E), are explicitly formed as incubators. But any agency can adopt aspects of an incubation model within their organization. This requires ensuring practices are flexible enough to encourage prototyping and pilot programs while establishing a disciplined process to refine ideas into secure and cost-effective solutions. For example, the US Department of the Navy taps into the creativity of its people by pursuing build-a-thons in which staff seek to automate workflows using lightweight platforms and replicate what works.[21]

Adapt technologies to your environment with an ecosystem approach

Many government agencies have access to an abundance of technology products and licenses. The challenge often comes from determining how to effectively utilize technologies and fit solutions into an agency's unique environment. Even out-of-the-box platforms often require augmentation to produce value and mitigate risks. Thus, it is important to avoid treating applications in isolation and instead take an ecosystem approach that maps how technologies fit together and serve an overall purpose. For example, KPMG worked with a federal agency to develop and build a smart warehouse—a storage and distribution facility using automation, robotics, analytics, AI, and edge computing. This required a cross-functional strategy to avoid silos and assess upgrades to logistics, supply chains, and operations. This top-down view helped identify synergies, redundancies, and risks across systems.

Determine when to maintain legacy systems or build new ones

Advanced technologies cannot function without accurate, accessible, and secure data. However, governments often work with data and IT systems that are fragmented or insufficient for the latest technologies and methods. Sometimes, new technologies can help modernize legacy systems. We've seen agencies exploring the use of generative AI to update code written in old languages such as COBOL. Low-code platforms have also been used to bridge gaps in legacy systems and constituent or employee expectations. Agencies may benefit from simply building new systems in a cloud environment that will be easier to keep secure and update over time. Consider building new environments using a now-popular modular approach and platforms that can integrate both new and legacy systems.

Cultivate strategic partnerships to strengthen your talent community

Recruiting tech talent is difficult across industries, but the challenges are often amplified for governments. Strategic partnerships can help address gaps. We are seeing more agencies develop private sector working groups to collaborate on shared challenges such as cybersecurity. Agencies can also engage with educational institutions to align on talent training. KPMG has worked with the City University of New York to update the IT curriculum for private sector needs; agencies could likewise work with universities to refine talent pipelines. Interagency rotational programs that encourage upskilling are another option to develop talent.

KPMG can help you get started today

Technology-enabled transformation is a continuum. Wherever governments are on their journey, KPMG has a wide range of services to help secure and accelerate transformation.

- **Strategy.** Our teams help state and federal agencies develop strategies to adapt technologies to their mission and unique environment, such as improving the constituent experience and back-office processes. We have experience helping agencies identify implications and determine the right solutions in cloud technologies, AI, machine learning, quantum computing, low-code platforms, and more.
- **Governance.** Advanced technologies will require advances in governance and controls. KPMG helps agencies develop governance frameworks to manage technologies and risks. For example, our AI security framework helps organizations start using AI tools while mitigating cybersecurity and other risks.
- **Incubation.** We help agencies ensure incubation methods are aligned to industry leading practices to encourage prototyping and pilot programs. KPMG Studios and KPMG Ignition work with governments to surface, develop, and scale effective technology solutions.
- **Funding approach and prioritization.** Amid recent increases in state and federal tech spending, agencies need a clear strategy to prioritize the right solutions and secure needed funding. KPMG works with agencies to craft a funding approach to secure grants and other funding vehicles to fuel transformation.
- **Data and analytics.** KPMG offers advanced data and analytics capabilities to provide greater visibility into agency operations and accelerate decision-making. Our teams help agencies develop systems and strategies to enable accurate, accessible, and secure data.
- **Talent readiness and versatility.** Our teams help agencies enable their workforce with emerging technologies and support upskilling and reskilling, such as effectively and securely utilizing generative AI to improve performance.
- **Implementation.** KPMG has extensive experience helping agencies implement technology solutions, such as full cloud deployments. We bring a market-leading network of technology alliances to connect agencies with the latest capabilities.

The future James and Vidya live in is one of extraordinary possibilities. While 3D-printed houses and moon travel may still seem a bit distant today, so did many of the technologies we now rely on and even take for granted. It took forward-looking governments to help bring innovations from the drawing board into daily life. Today's governments can do so again—tapping the power of human ingenuity to build a more abundant, sustainable future.

Afterword

Ty Enmark

Principal, Federal Advisory

KPMG LLP

We are in the early stages of technological revolutions that will bring transformative opportunities and challenges for governments. Over the past few years, we have seen significant changes in how governments operate. Lightweight communication and connectivity solutions, for example, have streamlined public services and enabled wider adoption of hybrid work for agency team members. The rise of big data and AI have helped many agencies accelerate and improve decision-making.

However, far more significant changes are ahead as cloud technologies, generative AI, machine learning, quantum computing, and more, mature and scale. In this report, we have discussed some of the potential benefits and risks. However, the changes brought by technological breakthroughs will be complex and often unexpected.

We are eager to hear your perspective on emerging technologies and the risks and opportunities they could bring—and collaborate on a constructive approach forward.

Thank you for taking the time to consider the KPMG perspective on public sector technology trends. We look forward to connecting with you and hearing your thoughts on the possibilities ahead.

About the research

In April 2023, KPMG conducted a survey **1,234 US residents** to gather their perceptions of emerging technologies in government. In June 2023, KPMG conducted a survey of **100 federal** and **100 state government directors** and **executives** in the United States to gather their perceptions of emerging technologies in government. The purpose of the survey was to gain insights into how government employees view the impact of emerging technologies on their work and the future of government services.

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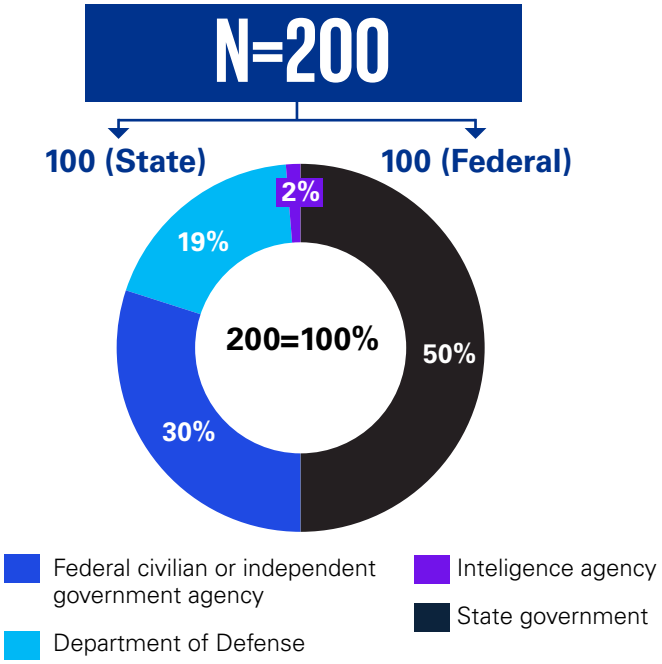
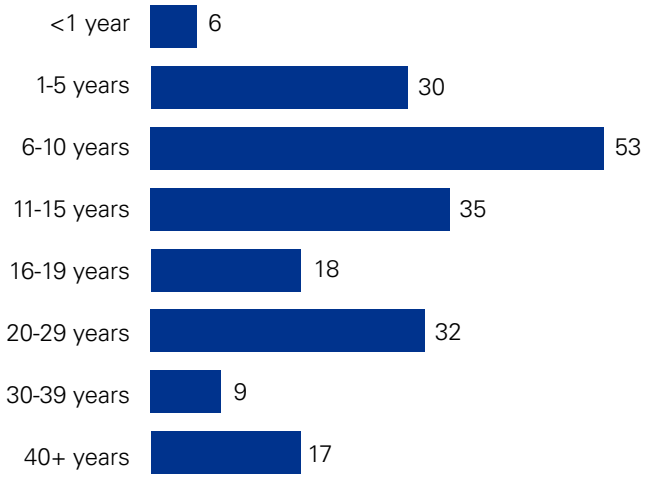
We appreciate the research and technical assistance of KPMG's Rebecca Haverson, Sami Kosaraju, Ada Neylan, Jack Surprenant, George Yin, and Brennan Morris.

Note: Totals might not add up to 100% due to rounding.



By level of experience



By gender

58% MALE

42% FEMALE

By level at work

80% DIRECTORS

20% Executive Suite

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