

The Government CIO of 2025

By 2025, 97 percent of government agencies will depend on artificial intelligence as an important, even mission-critical, capability to support their objectives, according to a new global Forbes Insight study.





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A woman with short dark hair, wearing a white blazer over a black and white striped scarf, is smiling and looking at her smartphone. She is also holding a blue clipboard with papers. The background is a blurred city street. In the top left corner, there is a large diagonal graphic element consisting of overlapping green and blue shapes.

Within 5 years, chief information officers (CIOs) for government agencies will have enthusiastically embraced emerging technologies such as machine learning and edge computing to drive efficiencies and improve constituent engagement and outcomes.

The Consumerization of Government

Government agencies of all types and levels globally are under pressure from the citizens and businesses they serve to operate more efficiently, cost-effectively, and transparently. Call it the consumerization of government. Constituents want the kind of access, response, and service from public institutions that they get from private enterprises.

To deliver these things, governments today are actively seeking ways to digitally transform at scale using technology. But government CIOs must overcome the challenges of entrenched legacy systems and employee attitudes, constrained budgets, archaic IT procurement policies, and shifting political winds that impact their ability to plan for the long term.

Efficiency and cost containment are always on the minds of government CIOs. Careers have been made—and broken—by agency leaders’ ability to be good stewards of taxpayer dollars. Yet, government CIOs report one of the top two reasons they are “driven crazy” is the lack of sufficient budgets allocated to them.

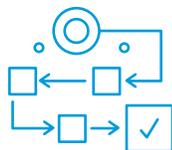
Still, striving to catch up and learn from the technology-pioneering private sector, government CIOs are shouldering tremendous responsibilities. Many are already the primary drivers of innovation within their organizations, and now 77 percent of recently surveyed government CIOs also see themselves as the primary leaders of change management—a daunting role within the public sector, which is often slower than other industries to embrace disruption.

To move forward, government CIOs intend to aggressively adopt emerging technologies such as artificial intelligence (AI), machine learning (ML), and edge computing, as well as guide their agencies through the enormous cultural shifts that come with deploying nascent technologies.

At the same time, government CIOs must undergo personal transformations into leaders aligned with other department stakeholders and constituents, capable of steering their organizations through uncertain technological, cultural, and political waters. Importantly, they believe they need to transform themselves into better leaders and adopt more innovative approaches to ensure the success of their digital transformation missions. Government CIOs also recognize the value of teamwork, reporting that the single most important key to succeeding in a tech endeavor is to use the professional services of expert partners or vendors.

These are some of the critical results of a [global Forbes Insight survey](#) of 150 CIOs from government organizations around the world. The research was done in partnership with VMware.

This brief explores



The expectations of and realities facing government CIOs, as well as the opportunities and obstacles they face.



How CIOs see emerging technologies as the way to meet many current organizational and operational challenges.



Ways CIOs can seize opportunities to achieve both professional and personal success.



Accelerating Innovation with Emerging Technology

Technology is transforming virtually all aspects of government—from offering citizens digital access to public meetings and databases to designing entire smart cities that are both economically and environmentally sustainable. Because outcome speed matters, current CIOs are accelerating investments in leading-edge technologies such as ML, AI, and edge computing.

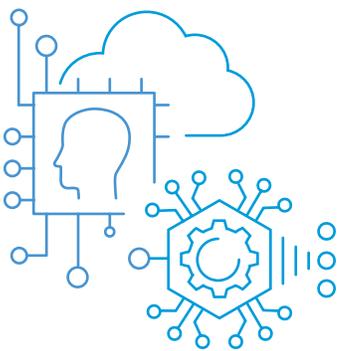
For government CIOs, the top emerging tech priority today is ML. Driving this need are the tens of thousands of gigabytes of data that agencies around the world generate, collect, and store daily. ML algorithms combined with advanced analytics can take everything from military service or census data to education and economic data, and identify patterns invisible to the human eye. ML can empower governments to analyze instances of disease to formulate public health plans. It can help them assess the socio-economic well-being of constituents to create new assistance programs. And it can even help them put measures in place to ensure public transportation runs on time.

In terms of urgency, today government CIOs rank AI as a close-second technology to ML. Leading government agencies are harnessing AI's potential for data-driven decision-making and for generating valuable insights. They are finding AI can help curb fraud, waste, and abuse by detecting improper or mischaracterized disbursements. AI can free workers to focus on more complex cases by automating rote tasks and eliminating manual data input and paperwork. And it can aid in constituent response by intelligently routing, responding, and even resolving requests for information or action.

Looking ahead to 2025, AI moves into first place in importance, with 65 percent of government CIOs surveyed expecting it to be either “very important” or “critical” to their agencies within 5 years. Government CIOs understand that although AI is a fairly new development only now being deployed, it will mature fast enough to dramatically impact government operations in the very near future.

Edge computing moves into second-place priority for 2025, with 57 percent of government CIOs expecting it to dominate their operations by then. Edge computing processing is performed by a device or machine that is geographically distant from a data center. In other words, instead of depending on the cloud to carry data to a data center to do work, or using the cloud to do the processing, the work is done locally.

This is already underway with embedded sensors being used in the creation of smart operations, such as, smart meters for public utilities, smart parking spaces and traffic lights moderating traffic in urban city centers, and smart buildings designed to reduce carbon footprints. Although many of these sensors will simply gather data, the rise of edge computing means the actual computing—and decision-making—can occur in buildings, parking lots, cars, and on other government properties rather than in central IT data centers or the cloud.



Machine learning is top of mind today, but in 2025 AI moves into first place in importance to government CIOs.



Overcoming Challenges

Successfully implementing any innovative technology requires the right combination of people, process, and technology. The chief obstacle government CIOs face will be finding people with sufficient expertise and hands-on knowledge to implement their plans. Interestingly, although naming AI the number one technology to pursue in 2025, more than one-third (35 percent) of government CIOs surveyed expect that AI will be the most challenging technology to implement for talent reasons. And one in five CIOs believes AI is “overhyped.”

Government CIOs will find they must grow their own expertise, hire third parties to aid them in their innovation efforts, or both, to manage leading-edge deployments. At the same time, they will need to champion the cultural shift to come. Government CIOs must forge long-term technology strategies robust and visionary enough to span multiple budget cycles and political administrations.

AI, ML, edge computing, and other new technologies are poised to significantly change the way public employees work and interact—with each other and with the people they protect and serve. Intelligent software robots (“bots”) will join the workforce, teaming with humans to complete complex tasks. This will require training, collaboration, handholding—and patience. Government CIOs surveyed identified getting employees to buy into new strategic initiatives as the top challenge to succeeding with a technology deployment. Entrenched legacy systems as well as employee attitudes are also challenges to overcome.

Significantly, the CIO 2025 survey revealed that government CIOs believe the single most important aspect of managing a successful technology implementation is utilizing partners’ or vendors’ professional services. Third-party partnership can quickly boost experience in emerging tech and help to fill skillset gaps at a time when few, if any, off-the-shelf AI, ML, or edge computing applications exist. Today, each system must be custom built to meet the specific needs of a particular agency. Vendors that offer quality solutions and possess deep technical expertise can be the answer.

In short, a majority of these leaders believe success in digital transformation will be achieved by engaging with knowledgeable and trustworthy partners.

By working and collaborating with trusted vendors, government agencies can explore the potential—and limitations—of leading-edge innovations, and come out the other side of digital transformation with high rates of success. Almost half (42 percent) of government CIOs believe that using partners’ professional services is the most important driver of technological success, and approximately four in ten government CIOs (37 percent) surveyed believe that a quality solution and strong vendor support are critical.

Government CIOs also admit they need to make personal adjustments to succeed in the digital age. When asked about the single greatest cultural or professional change they must make to be successful in the next 5 years, the number one answer was “adopt a more innovative approach.”



AI will be the most challenging technology to implement, say more than one-third of government CIOs.



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Maintaining the Role of Cyber-Dragon Slayer



More than eight in ten government CIOs surveyed believe the Internet requires a cybersecurity overhaul.

Defending government agencies against cybercriminals is a never-ending job. The public sector is a key target of bad actors, with a number of highly publicized cases of ransomware attackers locking up data from municipalities, public health organizations, and educational institutions, as well as sensitive data breaches across government departments. CIOs across all industries continue to invest millions in cyber defenses, but ongoing threats—and losses—far outpace spending. Most government CIOs surveyed say they can't keep up. Radical changes in tactics and tools are needed.

More than eight in ten government CIOs (81 percent) believe the Internet requires a cybersecurity overhaul. And approximately one in three (34 percent) government CIOs believe that cybercrime has the capability to actually shut down the Internet.

Although this sounds ominous, technology can also be used for good. Government CIOs can help secure the privacy and security of sensitive systems and data by deploying modern strategies such as intrinsic security.

Acting as a Moral Compass

Recent disclosures about personal data and information being used improperly across commerce, government, and social realms has the potential to sour constituents on technology.

CIOs are acutely aware of this, and a majority feel as though they have a social and moral responsibility to respond. Most government CIOs (65 percent) believe they should avoid using technology that does harm. Yet even more than that (70 percent) believe they should do better—that they should harness technology for social good.

Government CIOs are adamant about a number of specific social issues. And they believe CIOs will be pivotal in helping their agencies succeed in navigating socio-economic issues over the next 5 years, including ensuring privacy for individuals (59 percent) and easing the digital divide in young peoples' educations (62 percent).

The Government CIO of 2025

To become a government CIO of 2025 requires taking bold steps toward emerging tech while navigating and championing institutional and personal change. These leaders have to roll out digital transformation visions—evolving legacy, merging existing, and implementing new technologies to achieve mission goals. They also must continue to thwart cyber attackers and protect the privacy and security of public data and systems—all while helping drive social responsibility.

They will not be alone. Expert vendors will help government CIOs as trusted partners along their digital transformation journeys.

