ROUTE FIFTY

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INTRODUCTION

State technology leaders who gathered in Minneapolis for the National Association of State Chief Information Officers' annual conference in mid-October described a somewhat uncertain future, acknowledging that the growth of automation and artificial intelligence will change not just their workplaces but also their own roles.

State tech leaders agree that generative AI will have an enormous impact on IT. They see it as a way to help agency staff streamline their workloads, but caution that more rules or codes of ethics may be needed to prevent potential abuses or privacy breaches.

It's not just the technology that's advancing. State CIOs see their own roles evolving from directing technology and infrastructure deployments into services brokers, setting strategic direction and managing relationships with vendors. One respondent to NASCIO's annual State CIO Survey said the role will become more "visionary" and focused on digital transformation across state agencies.

While NASCIO officials reflected on enormous progress in digitizing government services over the last two decades, challenges remain. CIOs are still working to make digital government even more accessible through one-stop portals and a "no wrong door" approach that makes it easy for residents to access all government services, no matter which agency website or office they start with.

Underpinning everything are workforce concerns as well as the need to modernize legacy infrastructure. State leaders acknowledged significant vacancies across government, including in their technology offices, which are unlikely to be filled any time soon. And the legacy IT systems that proved inadequate during the COVID-19 pandemic are slowly being retired and replaced.

But among the challenges, state CIOs see significant opportunities for improving services delivery.

Read on to see how state CIOs will be leading their tech enterprises into an increasingly digital future.

—Chris Teale

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State CIOs look ahead to a collaborative, automated future

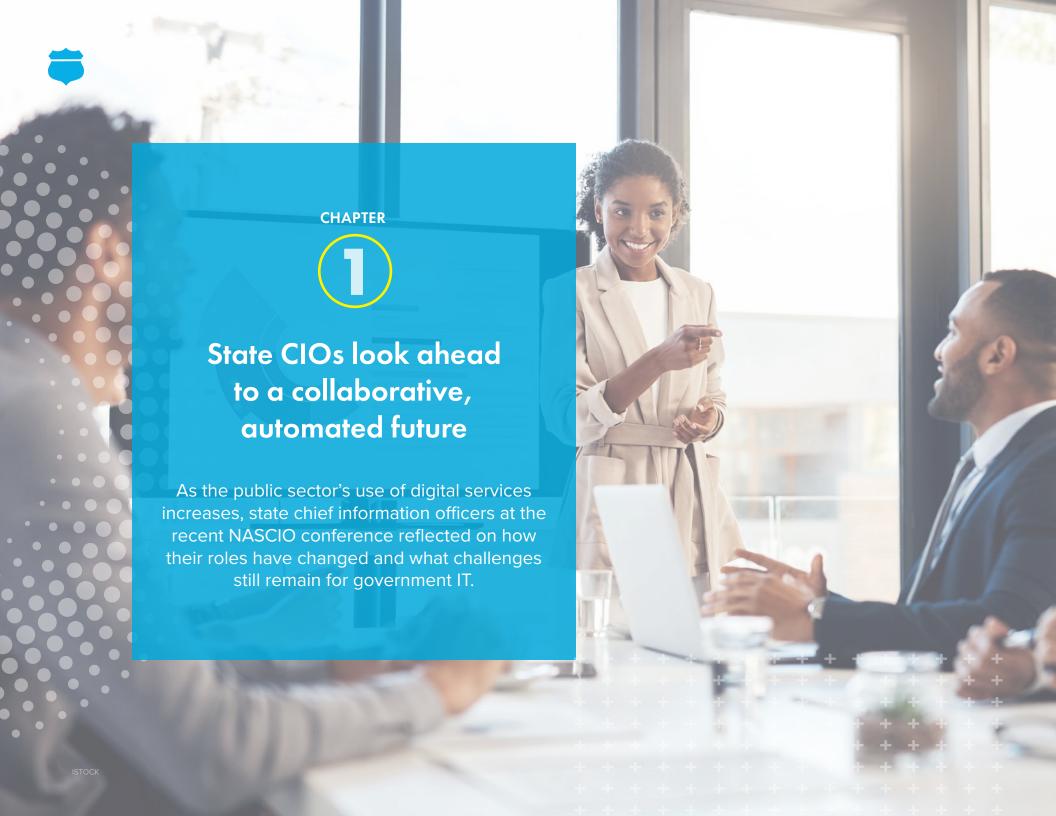As the public sector's use of digital services increases, state chief information officers at the recent NASCIO conference reflected on how their roles have changed and what challenges still remain for government IT.

ISTOCK

State chief information officers describe the future of their roles not as equipment jockeys but as collaborators, according to [a new survey](#).

Most CIOs—96%—said they expect to serve agencies by setting strategic direction and providing an enterprise vision, according to the National Association of State Chief Information Officers' annual State CIO Survey, released at the group's conference in Minneapolis in October. One respondent was quoted as saying the CIO's role will be as a "visionary" that promotes digital government services across departments.

The evolution means CIOs expect to spend more time collaborating with agencies, with the centralized IT office acting as a broker of services.

The transition is being driven by higher demand for digital services, which the surveyed CIOs ranked as the biggest factor in their changing role. Forty-nine states responded to the NASCIO survey. Only South Carolina did not participate.

It's a major shift in how the position functions, said Greg Hoffman, deputy CIO for North Dakota. When he started over a decade ago, Hoffman was focused on providing hardware, software, networks and other technological infrastructure. Now, he said, equipment is "just supposed to work." And CIOs are now expected to partner with service providers and connect them with agencies, rather than build out their own infrastructure.

"Our business partners within our agencies and those trying to get services from government, they just want to go in and do business," said Michigan CIO Laura Clark during a fireside chat about the future role of the CIO.

Some CIOs see their role evolving to one of mentor, in a bid to help agencies within their state understand why modernization is necessary, how to use new technology and how to help their employees get up to speed. Hawaii CIO Doug Murdock said he wants his office to be the "best educational department in the state."

Beyond the evolution of their roles, state CIOs also weighed in on the top priorities of their offices.

Cybersecurity was highlighted as a key concern. Those surveyed said they are leading efforts to develop

robust cybersecurity strategies, a requirement to receive federal cyber grants.

Almost half of those surveyed said they have also received supplemental state funding for cybersecurity. But Wisconsin CIO Trina Zanow noted during a panel discussion that funding needs to be sustained over several years to have any real impact on cybersecurity challenges.

Rhode Island CIO Brian Tardiff argued on a panel for every state to adopt the National Institute of Standards and Technology's Cybersecurity Framework. "I think it's critical to speak the same language across all state governments, especially now that the state IT organization is responsible for the execution of the [state and local grants]," Tardiff said.

And Arkansas Secretary of IT Jonathan Askins called on states to focus less on the threats that are out there—whether they be state-sponsored actors or teenage hackers in their parents' basement.

"They think they have a culture of information security because they know about all the different threats out there," Askins said. "But they can't tell you what their defense postures are."

Attracting and retaining a workforce remains a big challenge for CIOs, both in cybersecurity and the broader technology sector. Ninety percent of CIOs surveyed said they offer remote or hybrid work arrangements to cybersecurity employees, a dramatic change from the 2022 Deloitte-NASCIO Cybersecurity Study, which found that only 25% of state chief

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> Jonathan Askins, Secretary of IT of Arkansas

information security officers reported that full remote work was offered in their states.

"We just can't compete [with the private sector] unless we have more flexibility," said Washington CIO Bill Kehoe during a panel discussion.

And while some states may be concerned about automation taking away people's jobs, artificial intelligence and machine learning could help fill some of the most intractable vacancies in state government, according to the survey. Many states have around 20% of all jobs, including IT, unfilled.
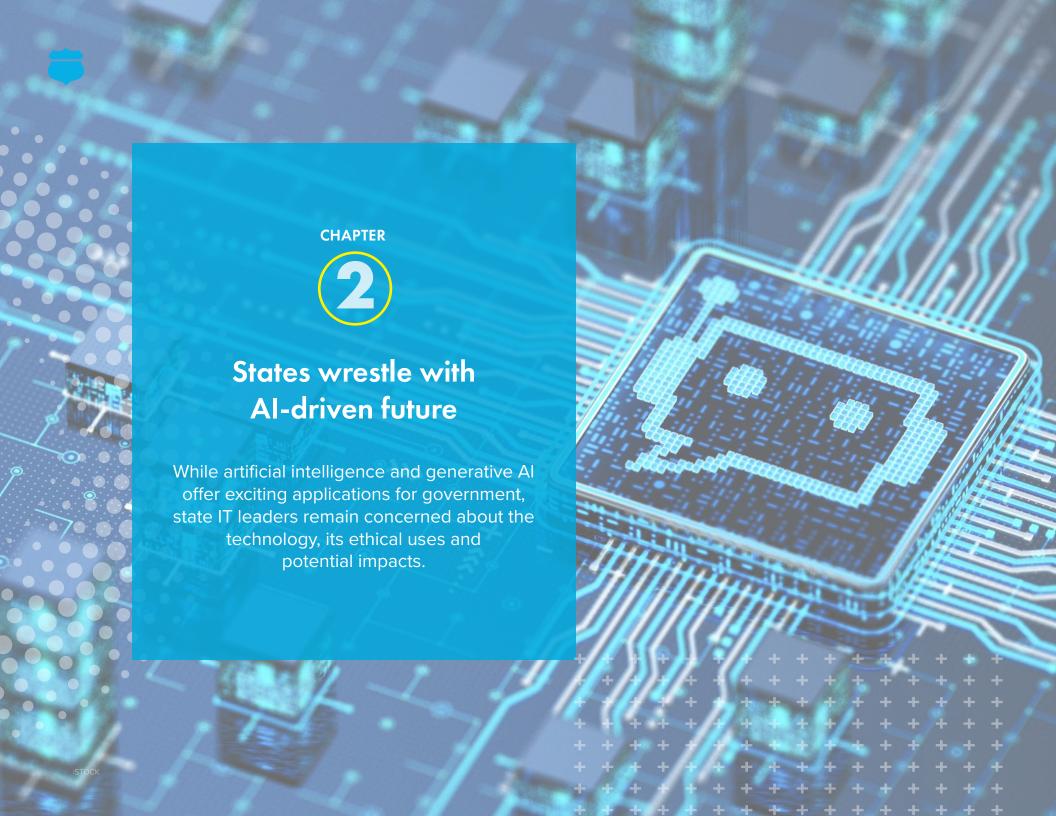
But Denis Goulet, New Hampshire's CIO, cautioned during the fireside chat against fear guiding AI and automation decisions. "There's a lot

of fear out there about displacing jobs," he said. "But … you want somebody at the end of an AI or automated process, you want that human at the end of the day to make sure that we actually know what happened and why it happened."

More than half of those surveyed said generative AI will be the most impactful emerging technology area in the next three to five years, while another 20% said AI and machine learning more broadly would be most impactful.

Modernizing legacy technology remains a top priority for state CIOs as well, and an increasing number of states are investing in technology modernization funds to help achieve that. CIOs reported receiving supplemental funding in several

areas as they try to navigate difficult fiscal climates. One-third said they received funds for a one-off capital investment, and 29% said the money they received went into a technology modernization fund.

CHAPTER

2

States wrestle with AI-driven future

While artificial intelligence and generative AI offer exciting applications for government, state IT leaders remain concerned about the technology, its ethical uses and potential impacts.

Two states, on two sides of the country, illustrate some of the uncertainty that state IT leaders feel over the role of artificial intelligence, machine learning and generative AI in government operations.

California Gov. Gavin Newsom called for the state to preserve its role as a "global hub" for generative AI and a leader in "shaping the future of ethical, transparent and trustworthy AI." A recent executive order on the technology, requires agencies to draft a report by early November on potential use cases, risks and policies to guide the state government's use of generative AI.

Meanwhile, Maine in June instituted a six-month moratorium on its state government's use of the technology, saying the pause—that could be extended—is necessary to help keep the state ahead of a "rapidly evolving cyber threat landscape."

Numerous other states and cities have issued guidelines on generative AI's use, all with an eye on the evolving technology.

Amid that uncertainty, state IT leaders gathered in Minneapolis for the National Association of State Chief Information Officers annual conference. They were intrigued by some of the potential use cases for generative AI and machine learning, but are still unsure how to proceed. Indeed, California CIO Liana Bailey-Crimmins said that agencies are already experimenting with products and services that use AI, but there is still a lot to learn.

"Believe it or not, the IT community still hasn't figured out the difference between traditional and generative AI," she said during a panel discussion at the conference.

There is plenty of excitement surrounding the technology, too. Of those who responded to NASCIO's 2023 State CIO Survey, 53% said generative AI will be the most impactful emerging IT area in the next three to five years, with another 20% citing AI and machine learning more broadly.

Still, some state leaders urged continued caution on embracing generative AI. Vermont Director of Artificial Intelligence Josiah Raiche said during a conference workshop that governments should implement codes of ethics before devising policies governing their use of AI. Raiche, who is one of just two state leaders with that job title, said he aims to build a coalition of state AI directors—as more are hired—in a

> **Q: What will be the most impactful emerging IT in the next three to five years?**
>
> **A: 53% of state CIOs said generative AI, 20% cited AI and machine learning more broadly.**

bid to encourage "good governance" of AI across the states.

Other state tech leaders are pushing for a consortium-based approach to help agencies get up to speed. Washington CIO Bill Kehoe said during a panel discussion that states that are ahead on generative AI should share their findings, use cases and best practices. That way, he said, it can be more than just an "academic discussion."

Education on generative AI will be crucial, North Dakota's Deputy CIO Greg Hoffman said during a panel discussion, especially as it promises to be "that next huge turning point from a technology perspective." It will change how agencies work and how citizens and users consume services, he said.

And state tech leaders repeated their confidence that AI is not coming to replace employees, but instead will augment certain functions of their jobs and help agencies deal with a shortage of workers, all while ensuring humans make the final decisions.

"Most states are in that predicament where you have a set number of staff that you're allowed to bring on through appropriations," Hoffman said. "Beyond that, as your needs increase, as demand increases, how do you meet that demand? There isn't always the opportunity to just wait and set something aside for another cycle to get that workforce."

That's where AI can help.

Some states have already gained efficiencies using AI. North Carolina Chief IT Procurement Officer James Tanzosch said during a breakout session that the technology has helped streamline procurement by eliminating repetitive form filing by government and vendors and helping procurement officials ensure they have the right documents. In time, he said generative AI could help write requests for proposals, albeit not the whole document, but perhaps get RFPs "80% there."

AI-augmented cybersecurity is a use case that especially excites state IT leaders, as they believe it can enable quicker response times to attacks and help find vulnerabilities. Montana CIO Kevin Gilbertson said states will need generative AI to combat hackers, who also will embrace the same tools.

"The traditional way of detecting threats based on signatures and then human responses, that's all going away very, very quickly in favor of automation," said Ian Milligan-Pate, area vice president of state, local and education at security company Zscaler. AI can also help governments that traditionally do not have a large cybersecurity staff do their own monitoring, he said during an interview at the conference.

Meanwhile, state governments continue to wrestle with fraud, such as the theft of millions of dollars from pandemic-era unemployment insurance programs. These threats will continue as hackers get more sophisticated and embrace emerging technologies, like generative AI.

Generative AI is also fueling disinformation. Fraudsters can "create images, voices, videos that can pass [the test of] the human eye," Matthew Thompson, senior vice president and general manager of public sector at identity management company Socure, said in an interview. When people trust a government "document, a voice, a video, less and less," it weakens trust in government, he said.

States must learn how to leverage AI to defend themselves against increasingly complex and sophisticated threats, he said, and ensure that laws and policies enable them to truly embrace the technology and not be left behind.

CHAPTER

3

The future of government is (still) digital

More than 20 years after a report foresaw a government dominated by digital services, an update finds that a lack of tech savvy workers and funding are hampering efforts to realize that vision.

"Have you seen the future of government?" booms the voice of late public television announcer Peter Thomas in a 2001 video from the National Association of State Chief Information Officers. His narration overlays visuals of large desktop computers, old web browsers, scrolling binary code and a soundtrack that sounds like jaunty elevator music.

The video is a time capsule from a different era, envisaging an "architecture of information" that allows residents from the comfort of their homes to access and order birth certificates and other vital records, communicate disaster relief needs instantly and update driver's license records with new addresses or name changes, among other services.

The Future of Government video accompanies a report that paints in greater detail a time where state and local governments embrace digital technology and the internet to provide an easy-to-use, consistent and unified set of services across multiple agencies.

Twenty-two years later, NASCIO has issued an update to that report.

And while many of the ideas in the two-decade-old report and video have come to fruition, its authors conclude that a lot of work remains to be done if governments are to truly realize the vision outlined: a future where digital services deliver a government experience that is "personal, custom-built for each user with features that are accessible." The report acknowledges that states have indeed undertaken an

extensive list of projects to digitize their services and that strategies and planning documents emphasize the importance of digital government and ensuring positive experiences for residents.

But significant challenges remain. The report calls for state leaders to prioritize cybersecurity, privacy and identity management when digitizing government services, including by requiring cybersecurity training of employees. Indeed, CIOs worry that the state government workforce lacks the skills necessary to implement and maintain digital services.

About 63% of CIOs said in a recent survey that a lack of workforce skills and capabilities constrain their efforts to deliver digital services, despite ongoing attempts to recruit

tech savvy employees and the proliferation of new job titles like "director of customer experience."

A lack of a unified approach to digital services across government agencies can also hamstring progress, especially if those agencies think of themselves as their "own separate, independent business," said Utah CIO Alan Fuller during a panel discussion at NASCIO's annual conference in Minneapolis.

The challenges of digitizing government was a frequent topic of panelists throughout the conference. In his session, Fuller explained that when agencies are siloed or act alone, identity management can be especially difficult. One resident may have separate credentials to engage with separate agencies and different

data housed in different places. With more than 1,800 government services available online in Utah, he said, that can be unwieldy for residents.

That is why Utah is moving forward with a one-stop portal to try and unify digital government services, Fuller said, in keeping with Gov. Spencer Cox's priority to provide better customer experience to Utah residents. Once built, for example, someone could pay for a hunting license and vehicle registration in one place using one credential.

Fuller said he has looked to get state agencies to embrace the "no wrong door" philosophy, meaning that residents can go to any part of state government, either online or in person, and be recognized. He also said he wants agencies to have

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>
> Alan Fuller, Chief Information Officer of Utah

a similar look and feel online, all to give the idea of a unified structure.

Another area for improvement is getting all citizens to engage with digital government services. Ohio CIO Katrina Flory stressed the importance of making sure "we're bringing everybody along" by offering multiple ways for residents to get involved, including by phone and in-person.

Fuller said states should try to map out the "customer journey" to understand how humans move through various systems. For those residents needing social services, he said, governments could use digital offerings to show them which benefits they are entitled to receive, and "make it so much easier and better for that person to get through the process."

Privacy remains a major concern, however, especially as residents fear what Tennessee CIO and NASCIO President Stephanie Dedmon called a "big brother-ish" government that monitors online users' every move. Fuller said if states promote one-stop portals, it is imperative for them to be transparent about the records they collect, how they track and share data, under what authority they do so, and the rules around how long the data is retained.

"The citizen portal then becomes a platform to push out more data privacy and visibility than we've ever done before, as a state," he said. "Hopefully that gives citizens a sense of comfort."

Finally, funding digital government services remains a big obstacle, even as study after study has shown the economic benefits of such efforts. For example, Fuller noted that even as Utah's population has expanded, the growth of digital services has meant the state has not needed to build any new Division of Motor Vehicles customer service facilities. But while it can be tricky to get lawmakers to see the economic impact of digital services, lowering capital investments can help.

"The bottom line is, we're not having to invest in the brick-and-mortar business nearly to the extent that we have seen before," Fuller said. "They can see those savings."

ABOUT THE CONTRIBUTOR

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