Generating Opportunity:

The Risks and Rewards of Generative AI in State Government

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At NASCIO's 2023 Midyear Conference, state chief information officers (CIOs) found that most conversations were leading back to generative AI (GenAI). Free public tools, which had been available for only a few months, were already changing the way people work, and state CIOs could see that the potential benefits and the potential risks may be significant. Shortly after that, NASCIO started the Generative AI Working Group. One of the most common questions that CIOs want to know is "What are other states doing with generative AI and what is the role of the state CIO?"

This publication seeks to answer that question as part of the 2024 president's initiative report spearheaded by NASCIO's then-president Jim Weaver who also serves as secretary and state CIO in North Carolina. "Over the past 18 months, it has probably been the most focused topic of the IT (information technology) community. We see the immense capabilities it brings to the public sector. It also has the ability to generate results or outcomes that can be harmful, biased, and incorrect. It is extremely important that we take a balanced perspective," said Secretary Weaver. Information from this report comes from the generative AI section in the 2024 State CIO Survey as well as interviews with 11 state CIOs.

Generative AI and the Role of the State CIO

When interviewing state CIOs, we asked them what they believe the role of the state CIO is with respect to generative AI. We knew the answers would vary slightly depending upon the state's operating model, however we did hear some themes.

Most state CIOs we interviewed mentioned that they believe they are responsible for **setting guidelines and policies** for AI use across the executive branch. This includes establishing training programs to ensure responsible use and evaluating the potential of AI to enhance efficiency, productivity and creativity. Utah CIO Alan Fuller explained, "We have data that says we have about 60-70 percent of employees using free available tools. It's becoming fairly ubiquitous like a Google search. We are trying to establish what is appropriate and not appropriate."

California chief information officer and director Liana Bailey-Crimmins sees the role of the state CIO has having three aspects: an **innovative trusted advisor** to ensure agencies are using the right tool to solve the right problem, an **integrator** to ensure that solutions can be leveraged across the enterprise and an **influencer** serving as a change agent with the goal of influencing change that's least disruptive. "Even though the CIO role has evolved, it still remains focused on having a vision, executing a strategy and ensuring that actions are aligned with that strategy to benefit constituents," said Bailey-Crimmins.

Most CIOs agreed that it is their job to **lead the strategic direction** for GenAI while collaborating with key stakeholders in the executive branch such as the chief privacy officer (CPO), chief information security officer (CISO), chief data officer (CDO) and chief technology officer (CTO). As Washington state chief information officer and director Bill Kehoe said, "The state CIO serves as the lead of technology strategy in the state and therefore should be setting the strategic direction for AI in collaboration with enterprise agency executive staff, executive branch agencies, the governor's office and the legislature." In some cases, the CIO may also be approving agencies' use of GenAI on a case-by-case basis.

The role involves advocating for AI adoption, encouraging a **culture of learning** from mistakes and breaking down cultural barriers and fears associated with AI. As New Jersey state chief technology officer Chris Rein said, "Typically, government systems are designed to provide definite, fact-based answers. Generative AI sometimes will give incorrect answers, or partially correct ones. So, with AI-assisted solutions, our government services have to be very carefully crafted and tested to minimize this. And rather than chastising or punishing the developers of these systems, which take advantage of the power of generative AI when there is a wrong response, we have to learn and encourage. It's an agile, iterative and learning process."

CIOs also must **prepare the workforce** for the changes that will come with GenAI and the shift in jobs. "I don't think it will always be true that you will only be replaced by people who know how to use AI. Some jobs will be replaced. There won't be less jobs, but there will be different jobs. We have to make sure that the workforce is ready for an AI economy (or what's to come) and we must learn how to build an adaptive workforce," said Montana CIO Kevin Gilbertson.

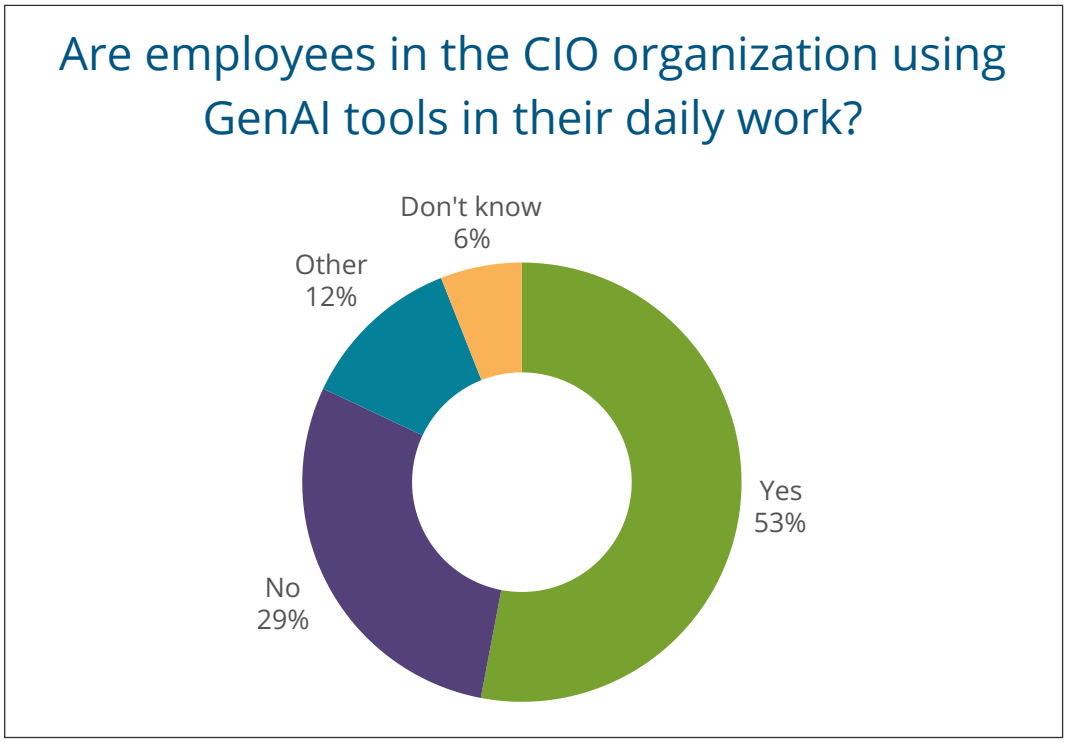
The CIO also plays a critical role in **managing data governance**; ensuring standards for access; restricted use and sensitivity of digital data; and preventing sprawl and uncontrolled use of AI tools.

Some state CIOs also oversee AI **procurement**, requiring them to address legal implications and update terms and conditions related to AI acquisition. They must also ensure appropriate transparency and disclosure when working with vendors.

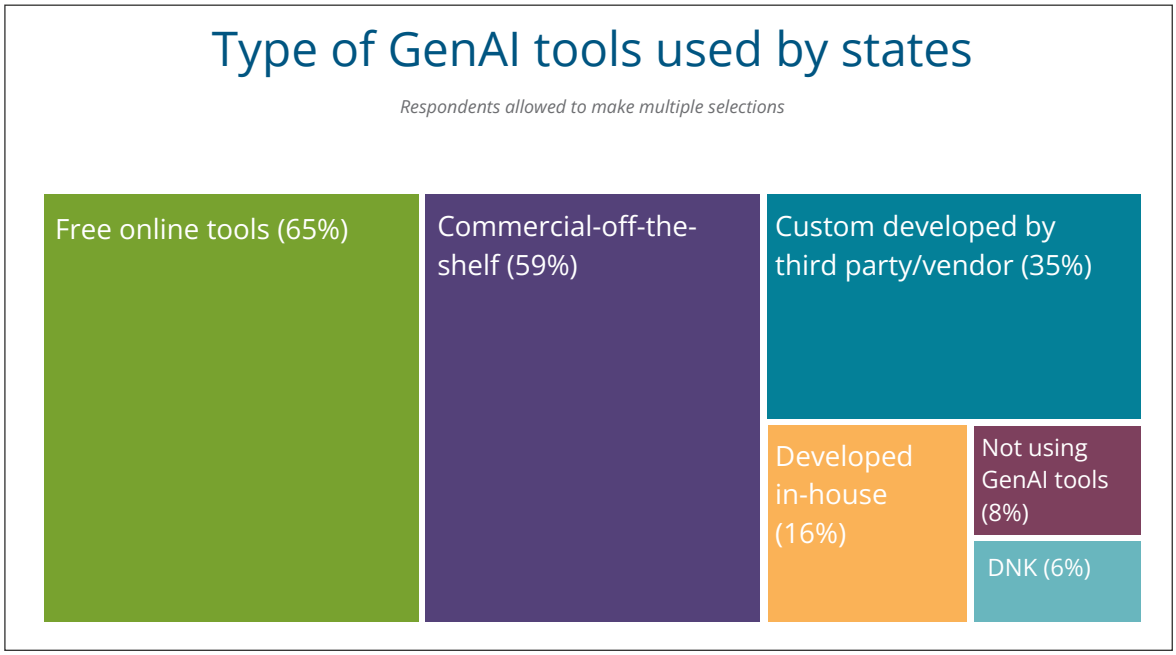
Finally, the state CIO must **ensure that the IT infrastructure and platforms are available and suitable** for AI development and use by various agencies. Not only will GenAI require vast computing power, but also increased electrical power.

How Are States Using Generative AI Today?

In the 2024 State CIO Survey, we asked state CIOs if employees in their organization are using generative AI tools in their daily work. Surprisingly, only 53 percent said yes, 27 percent said no, and six percent said that they don't know. Another 12 percent chose "other" and most of the comments were that it was being used in limited ways. It doesn't seem plausible that over a quarter of state CIOs report that employees in their organization are not using generative AI. We have heard from some CIOs that they know that employees are using it on their personal devices even if state computers have blocked generative AI websites. As one state CIO said, "Our agency blocked access to most free GenAI tools, but we know that employees are still accessing sites and using workarounds. Others are certainly using GenAI that is built into already-purchased products."



For those states that are using GenAI, the most common type of GenAI tools used are free online tools (65 percent) and commercial-off-the-shelf (59 percent). Some states reported that they are using custom tools developed by a third party or vendor (35 percent). Only 16 percent said they are using GenAI tools developed in-house. Eight percent of respondents said that their state (executive branch) is not using GenAI tools.



We asked CIOs which action items regarding GenAI have been implemented in their states. Respondents indicated that at least one of the following GenAI practices have been implemented:

- The creation of advisory committees and task forces (78%)
- Implementing enterprise policies and procedures on development/use (72%)
- Responsible use / flexible guardrails / security / ethics (67%)
- Inventory / documenting uses in agencies and applications (61%)
- Transparency and accountability (35%)
- Procurement terms and contract provisions (28%)
- Data governance (24%)
- Requiring disclosure by software providers (24%)
- Impact on operations and workforce (22%)

Next, we asked CIOs if their states currently use GenAI in certain business practices. The top GenAI business practice use cases are virtual meeting assistants and transcription; cybersecurity operations; document generation and management; and software code generation. The top business practices where GenAI is being piloted include document generation and management; data analytics / predictive analytics; virtual meeting assistants and transcription; and software code generation.

Top business processes in which states are using GenAI

In Use

1. Virtual meeting assistant transcription
2. Cybersecurity operations
3. Document generation and management
4. Software code generation

Piloting

1. Document generation and management
2. Data analytics
3. Virtual meeting assistant transcription
4. Software code generation

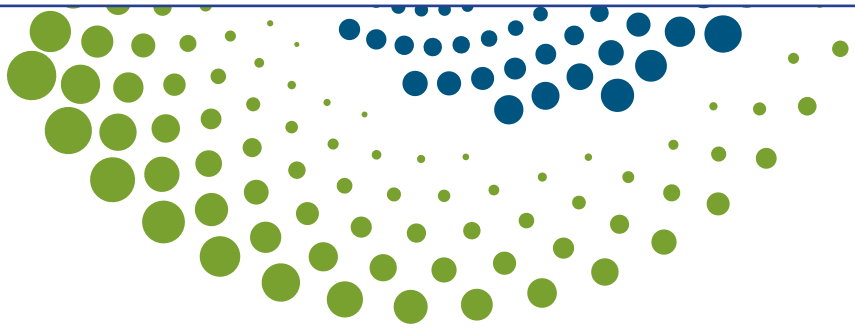
Respondents allowed to make multiple selections

GenAI's ability to generate code can be an important asset to states as they work toward legacy modernization. California, like many states, is dealing with the fact that many applications are run on outdated computer programming languages and many of the employees who understand how to write and support that code have retired. "GenAI can document large scales of what this code is meant to do, give recommendations on how to break it up or modernize it, and then recode it," said California's Bailey-Crimmins.

Despite the popularity of the top business practices mentioned above, there are states using or piloting GenAI in every category that we offered up on the survey from education and human services to road conditions and environmental quality monitoring. It's easy to see that all business areas in government will likely be utilizing GenAI in the coming years.

One way that Utah is planning to use generative AI is to assist the 200 agents in their tax commission call center. They plan to take all of Utah's tax laws, tax websites and training manuals and ground that information to a large language model. "What you get back is more contextually rich, fact-based information with less hallucination and more references to your knowledge base," explained Utah's Fuller. "It will be this superpower assistant/intern to our agents to help them answer questions."

Washington's Kehoe plans to use Gen AI across the enterprise. "Our potential use cases span from human resources, correspondence, policy development, review and access, GIS modeling, data analytics, customer engagement, accelerating legacy code review for modernization efforts, coding, security, contracts and procurement and process improvement efforts."



Challenges and Roadblocks

When talking with state CIOs in our interviews, we wanted to know what challenges and roadblocks are holding states back from utilizing generative AI more. One significant issue is **reliability**. As Utah's Fuller said, "Traditional AI tools are very math intensive. With traditional AI, you build a statistical model and that drives the AI choices. GenAI is a little different than that. It's really good at helping you do creative things and bad at helping you with complicated math."

There are also **trust** issues with GenAI and concerns that we aren't yet at the point where we can trust the technology to deliver consistent, accurate responses. As Vermont's secretary of the Agency of Digital Services Denise Reilly-Hughes put it, "We want GenAI to get to the point where we don't have unintended consequences."

We heard from several state CIOs about the **high costs** associated with AI tools. States must weigh the productivity gains against these costs to determine if the expense is worth it. There's an understanding that many of the AI companies are taking losses right now and will eventually be charging what they need to in order to get a return on their investment. "We can get in and try something and have someone help us cheaply, but do we really understand the long-term costs of these tools?" explained Connecticut state CIO Mark Raymond.

There is also a need for substantial computational power, infrastructure and **natural resources** to power and cool the data centers. As North Carolina's Weaver explained, "Our power grid can't support the power consumption of what AI is projected to require. We are going to have to look at other service providers to provide this capability and we are starting to see the creation of AI factories or AI pods to meet that demand."

Moreover, the **fear of change** and the **difficulty in identifying potential AI use-cases** further complicate adoption. Massachusetts secretary and CIO Jason Snyder told us, "Ultimately, it's change management. There's a fear of change and there's a weakness to identify uses. People say 'Oh, I could do that with AI?! I didn't know AI could help with this.' It's getting the word out."

Another major challenge is the **lack of comprehensive training and governance**. There is a fear of moving forward due to potential risks and biases in AI solutions. Ensuring that agencies adhere to guidelines and have the necessary tools for safe AI deployment is crucial. Workforce training and education on generative AI are essential to mitigate these risks and foster a culture of responsible AI use.

Additionally, the unknown aspects of generative AI, such as new data and **public records creation** (meeting transcripts, drafts, prompts) and **public perception**, require careful exploration and transparency to address concerns effectively. "We have to consider the public perception, while it may not always be fair or accurate, artificial intelligence requires us to go carefully and be transparent in everything we are doing. We must over share, be thoughtful and have a steady approach," said Texas state CIO and executive director Mandy Crawford.

Lack of holistic **governance**, including strong data and cybersecurity protections, is holding states back right now. As mentioned earlier, we know from our 2024 State CIO Survey data that only 24 percent of state CIOs reported implementing data governance around GenAI. As Vermont's Reilly-Hughes said, "We want to make sure that foundation is strong before we just light it up everywhere."

Additionally, **technical infrastructure** and **data quality** issues must be addressed to support AI deployment. In a recent survey conducted by NASCIO and EY, 95 percent of respondents believe that increased adoption of AI and generative AI will impact the importance of data management. As Crawford from Texas pointed out, "Poor data quality has not had a lot of focus in the past—it's always been pushed to the side. A lot of the data cleanup needs to be done."

Recommendations for States Using Generative AI

In our conversations with state CIOs, we asked them for recommendations for state technology leaders with respect to leading the use of AI in the executive branch. Six key points emerged from those conversations.

1. **Encourage Exploration and Set Policies**

Promote a culture of exploration and learning with generative AI. Employees are likely already experimenting with these tools, so state CIO organizations should lead the way by setting clear policies and guidelines for their use. Establish a community of practice, develop initial use cases and provide a sandbox environment for proof-of-concept projects.

2. **Establish Strong Governance and Regulatory Frameworks**

Ensure that a robust regulatory and governance framework is in place before widespread AI adoption. This includes setting up guardrails to protect privacy and ensure responsible use, as well as creating a risk-based maturity scale to manage AI deployment from low to high risk. The NIST AI Risk Management Framework is a good place to start. Regular testing and oversight are essential to maintain trust and security.

3. **Focus on Data Quality**

The effectiveness of AI systems is heavily dependent on the quality and accessibility of data. Prioritize data governance, including data retention policies, and work closely with state CDOs to ensure clean and reliable data. Address data privacy concerns with state CPOs and be transparent about data collection, storage and usage practices.

4. **Build Partnerships and Foster Collaboration**

Develop strong partnerships with peers across different departments and agencies. Share knowledge and learn from other CIOs, CISOs, CDOs and CPOs. Consider engaging with academic institutions to ensure ethical AI practices. Collaboration can be key to overcoming challenges and leveraging AI effectively.

5. **Adopt an Incremental Approach**

Start with small, low-risk pilot projects to identify potential use cases and build on lessons learned. This type of phased approach provides valuable insights that can inform broader AI strategies in the future. See NASCIO's report with the National Association of State Procurement Officials, *AI-Powered Procurement: Harnessing AI's Potential for More Efficient State Procurement Practices*.

6. **Be Transparent**

Communicate openly about AI initiatives, including successes and limitations. Avoid overpromising and manage expectations by clearly distinguishing between hype and reality. Transparency with constituents about data practices and AI usage is crucial for building trust. Ask vendors for transparency in contracting and ask them to disclose the use of AI in their services and products.

Looking Ahead

In the next three to five years, states are expected to see significant growth and development in the use of generative AI, akin to the early days of the internet. The potential applications are vast, spanning human resources, policy development, geographic information systems modeling, data analytics, customer engagement and more. Though current capabilities are still evolving, GenAI is likely to transform work processes and citizen interactions. As generative AI matures, more use cases will emerge, driving productivity and enhancing citizen experiences. Here are a few themes that emerged when we asked state CIOs about the next three-five years of GenAI:

- **Initial GenAI use cases are likely to be internally focused**, such as call center assistance and training accelerators, with a human in the loop to ensure effectiveness. Over time, a mix of internal and external applications will develop, guided by a risk-based evolution.
- GenAI will **take over routine processes**, allowing human workers to focus on more complex tasks. The technology's ability to simplify complex information will be particularly valuable in government functions like eligibility determination and policy assessments.
- **Data quality** and data accessibility will be critical to the success of GenAI initiatives. Many states will invest in data projects to ensure clean and reliable data, which is essential for more advanced AI applications.
- The practice of **blocking GenAI tools is expected to decline**, with AI becoming integral to various functions.
- As AI adoption increases, there may be a **shift in the workforce**, with some employees being reskilled to learn GenAI and some retiring due to resistance to change.
- Overall, GenAI will enhance back-office processes, automation, and document creation, **improving both employee and customer experiences**.

So how *are* states using generative AI? Most are using it in the same way as the rest of us—to create efficiency in daily workflows through creating text, summarizing complex documents and creating transcripts. But others are digging deeper and finding ways to improve citizen services through improved communication and translation; enhancing the expertise of call center agents; updating legacy code; improving traffic management; and enhancing the acquisition process.

Over the next months and years, we will continue to see creative use cases as generative AI improves, and states become more comfortable with the technology's ability to provide accurate and trustworthy outcomes. At the same time, states will work to improve data quality, solidify AI policies and implement governance around AI in general. One thing is for sure, GenAI is here to stay. As Utah's Fuller put it, "I really encourage people to jump in and start exploring. I think the employee base is probably doing it anyway. We IT organizations should be leading the technology, not lagging the technology."

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