

State of the States Tech Forecast 2025: All Aboard!

January 14, 2025

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@NASCIO

2025 STATE CIO TOP 10 PRIORITIES

Priority Strategies, Management Processes and Solutions

1 CYBERSECURITY AND RISK MANAGEMENT



2 ARTIFICIAL INTELLIGENCE / MACHINE LEARNING / ROBOTIC PROCESS AUTOMATION



3 DIGITAL GOVERNMENT / DIGITAL SERVICES



4 DATA MANAGEMENT AND ANALYTICS



5 LEGACY MODERNIZATION



6 BUDGET / COST CONTROL / FISCAL MANAGEMENT



7 IDENTITY AND ACCESS MANAGEMENT



8 CLOUD SERVICES



9 WORKFORCE

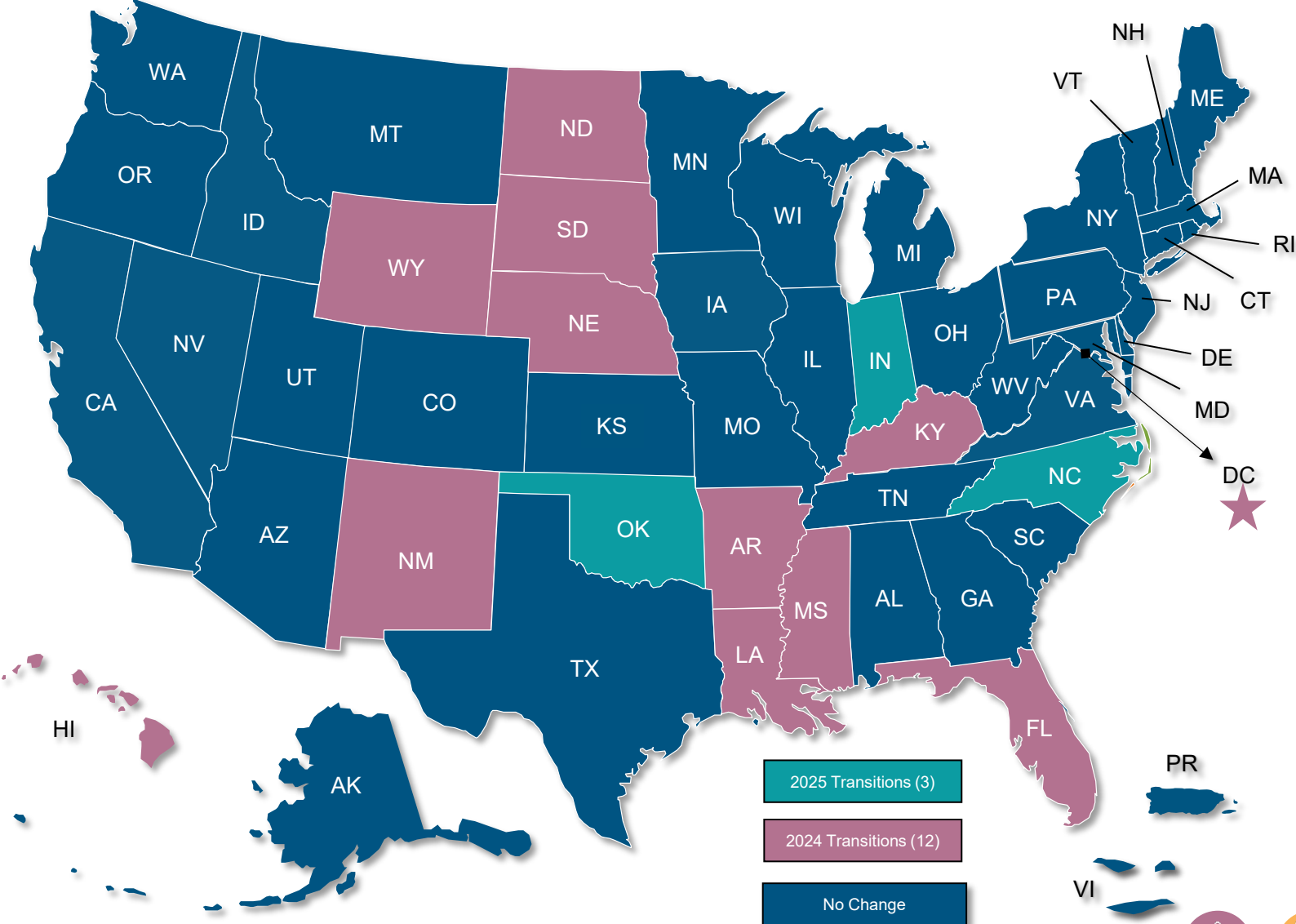


10 ACCESSIBILITY



State CIO Transitions

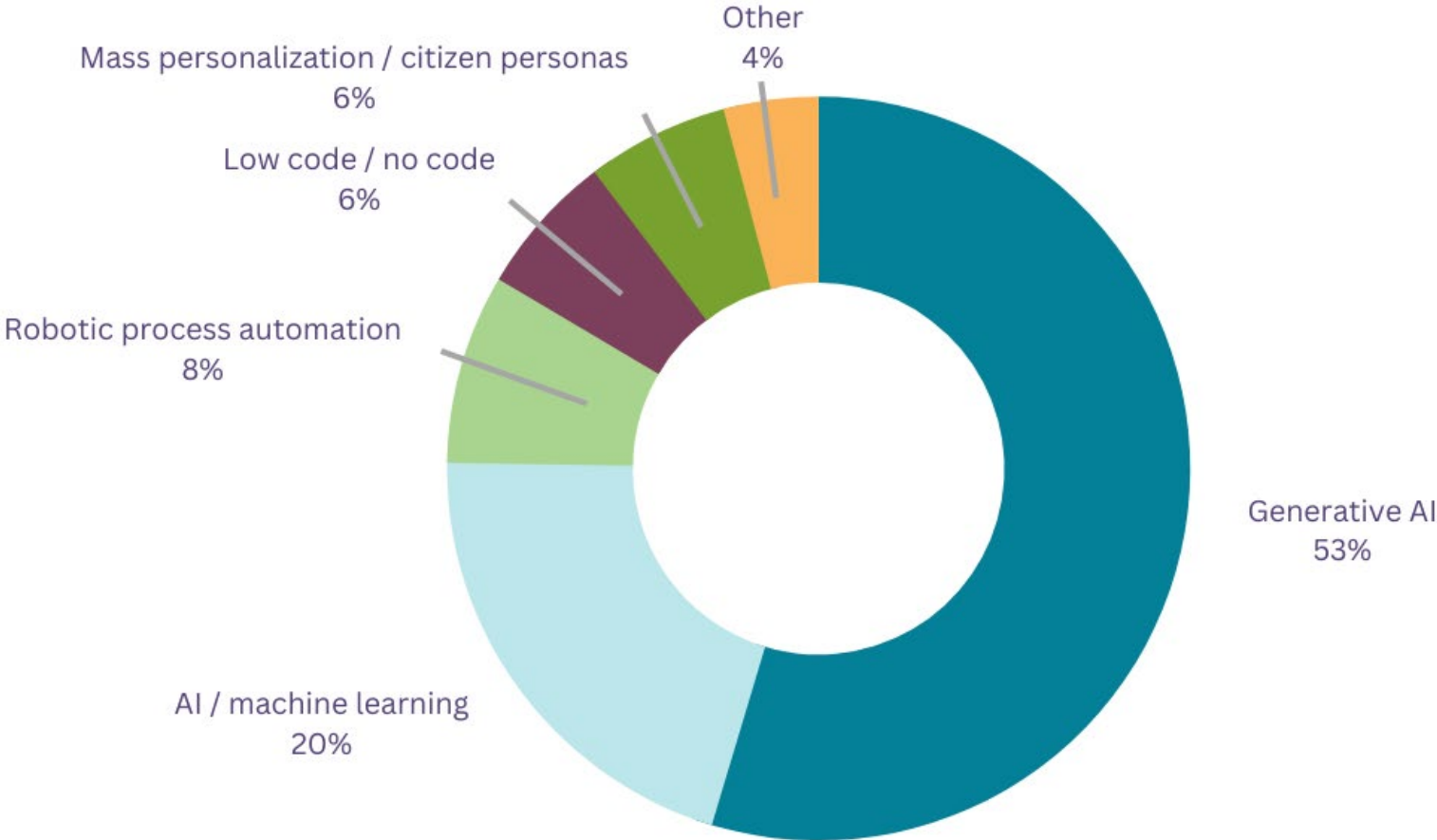
(January 2025)



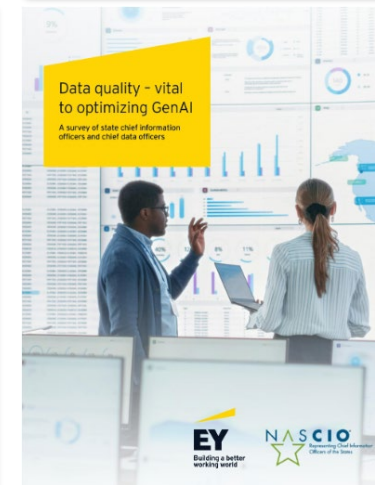
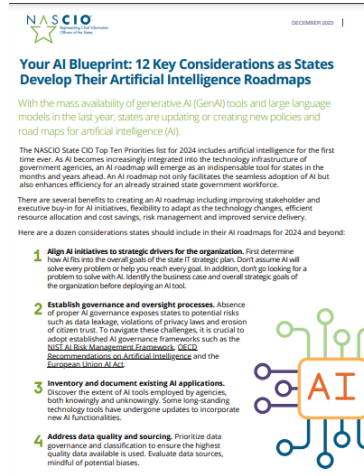
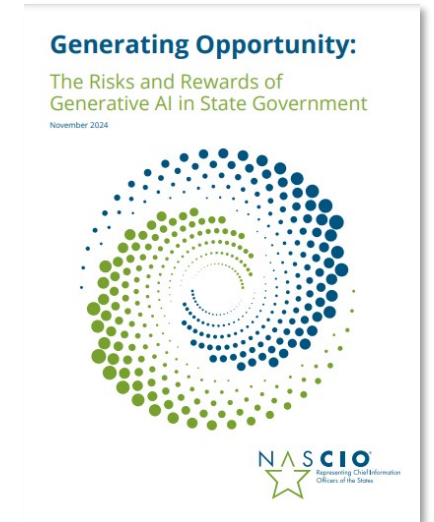
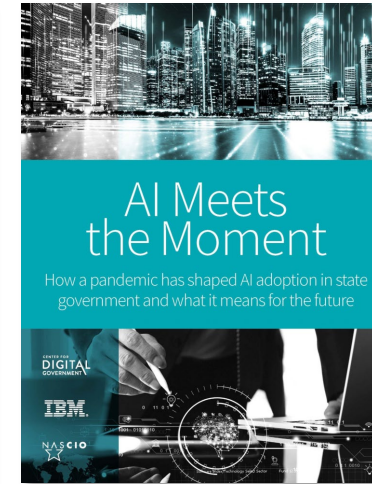
Representing Chief Information Officers of the States



What emerging IT area will be the most impactful in the next 3-5 years?



NASCIO AI Publications Since 2018



NASCIO Considerations for Developing AI Roadmaps

1. Align AI initiatives to strategic drivers for the organization
2. Establish governance and oversight processes
3. Inventory and document existing AI applications
4. Address data quality and sourcing
5. Collaborate with stakeholders and industry
6. Assess privacy and cybersecurity risks of AI adoption
7. Infrastructure and technology
8. Create acquisition and development guidelines
9. Identify potential use cases
10. Expand AI workforce expertise and training
11. Create guidelines for responsible use, ethics and transparency
12. Measure and communicate effectively

Source: NASCIO Your AI Blueprint: 12 Key Considerations as States Develop Their Artificial Intelligence Roadmaps, December 2023



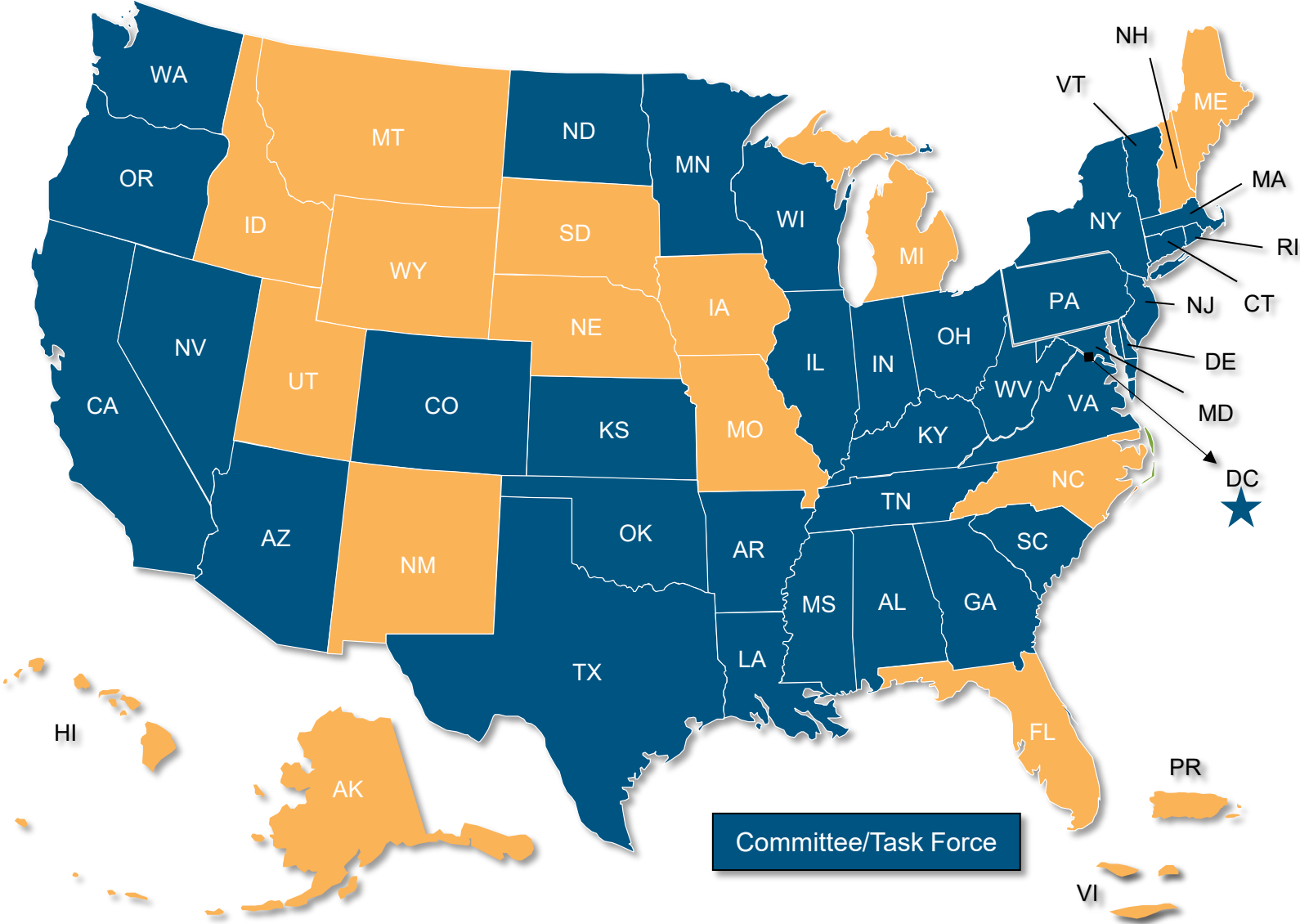
Top AI Actions Taken by States

- ▶ 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%)



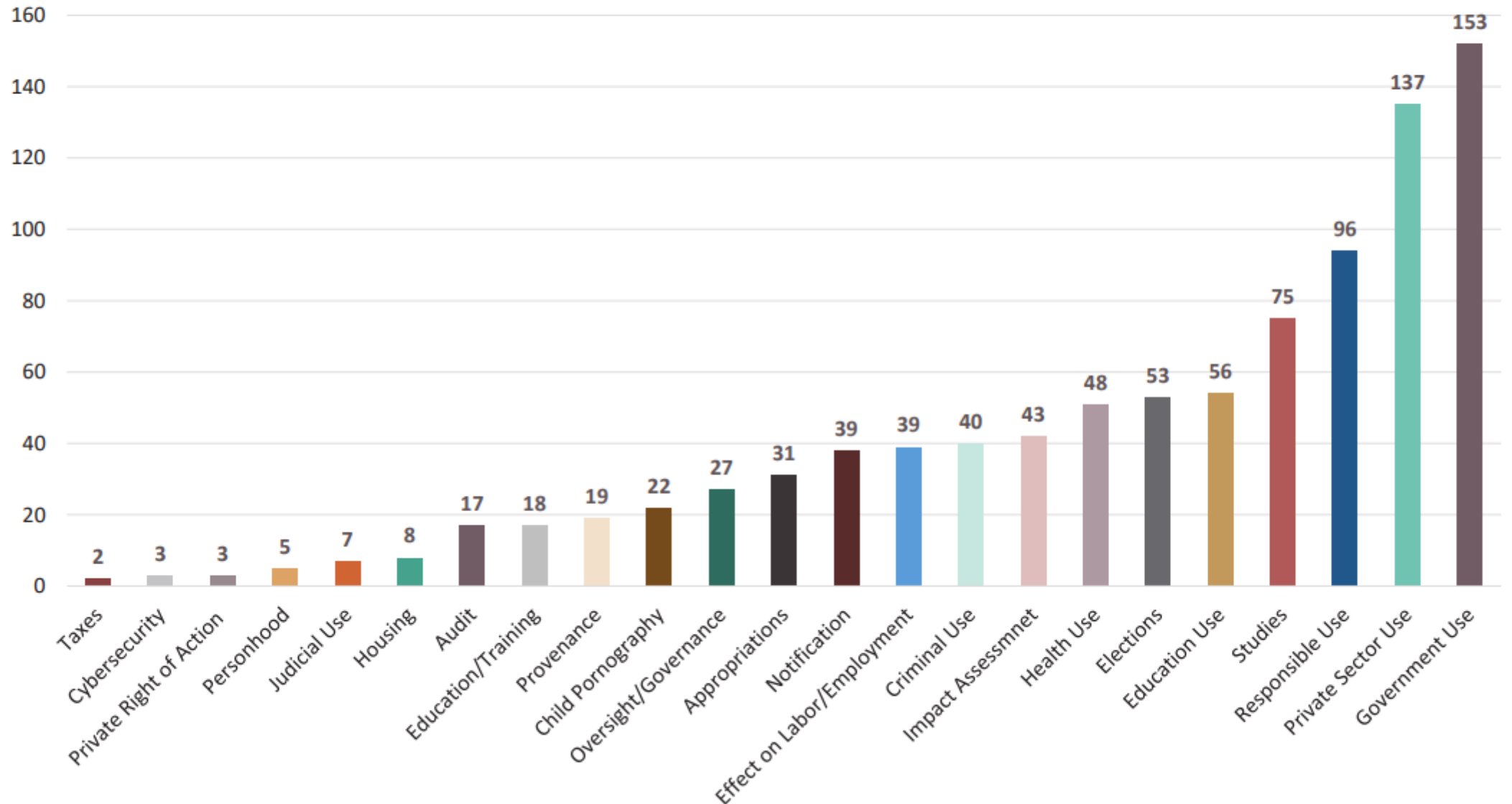
State AI Committees and Task Forces

January 2025



ARTIFICIAL INTELLIGENCE 2024 LEGISLATION

By Issue Category



Top Business Process Where 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



State IT Use Cases for Generative AI

- Supporting virtual agent chatbots to help citizens
- Generating ideas, crafting emails and streamlining research
- Language translation for online services
- Analyzing survey data and making recommendations
- Cataloging databases and identifying their owners
- Downloading and reposting PDFs in more accessible formats
- Converting outdated computer code to modern programming languages
- Fraud prevention and detection



State IT Use Cases for Generative AI (cont.)

- Cybersecurity threat detection, identify anomalies
- Analyzing vehicle crash data
- Streamline health care facility inspections
- AI-enabled bots to assist call center agents
- Monitoring new legislation and creating a summary
- Human resources: writing effective job descriptions, interview questions
- Streamline procurement (repetitive forms, communication)
- Improve traffic patterns and reduce congestion



Analysis: Application Categories

IHE Top Application Categories

| | | |
|----|--------------------------------|-----|
| 1. | Business Automation | 123 |
| 2. | Data Analytics and Warehousing | 70 |
| 3. | Content Management System | 59 |
| 4. | Security Systems | 57 |
| 5. | Systems Management | 38 |
| 6. | Document Management Systems | 34 |
| 7. | Desktop Productivity | 30 |

25%

Business Automation (123 ADS)
accounted for 25% of IHE ADS

14%

Security Systems (70 ADS)
accounted for 14% of IHE ADS

State Agency Top Application Categories

| | | |
|----|--------------------------------|----|
| 1. | Security Systems | 75 |
| 2. | Content Management System | 44 |
| 3. | Business Automation | 30 |
| 4. | Data Analytics and Warehousing | 23 |
| 5. | Case Management Systems | 20 |
| 6. | Systems Management | 15 |
| 7. | Document Management Systems | 12 |

29%

Security Systems (75 ADS)
accounted for 29% of state agency ADS

12%

Business Automation (30 ADS)
accounted for 12% of state agency ADS



Representing Chief Information Officers of the States



Generating Opportunity:

The Risks and Rewards of Generative AI in State Government

November 2024



“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 process improvement efforts.”

“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,”

“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.”

“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.”

“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.”

“We want GenAI to get to the point where we don’t have unintended consequences.”



Recommendations for States Using Generative AI

- 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.
- 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.
- 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.
- 4. Build Partnerships and Foster Collaboration.** Develop strong partnerships with peers across different departments and agencies.
- 5. Adopt an Incremental Approach.** Start with small, low-risk pilot projects to identify potential use cases and build on lessons learned.
- 6. Be Transparent.** Communicate openly about AI initiatives, including successes and limitations. Transparency with constituents about data practices and AI usage is crucial for building trust.



Cybersecurity Priorities Today

Talent crisis: recruitment, retention, reform, compensation

GenAI impacts on cyber

More centralized operating model; **zero trust framework**

Adopting **whole-of-state cybersecurity** resilience

Executing Year 2 of \$1B State & Local **cybersecurity grant**

Support and partnerships with **local governments**

Software supply chain risks



Leading causes of a cybersecurity incident in states over the last year



Security breaches involving a third party



AI-enabled attacks as a threat vector



Foreign state-sponsored espionage



Phishing, pharming, and other related variants



Exploits of vulnerabilities from unsecured code



Social engineering



Exploits of vulnerabilities in emerging technologies



Increasing sophistication and proliferation of threats



Cloud platforms and solutions information systems



Operational technology cyber



Malware or ransomware

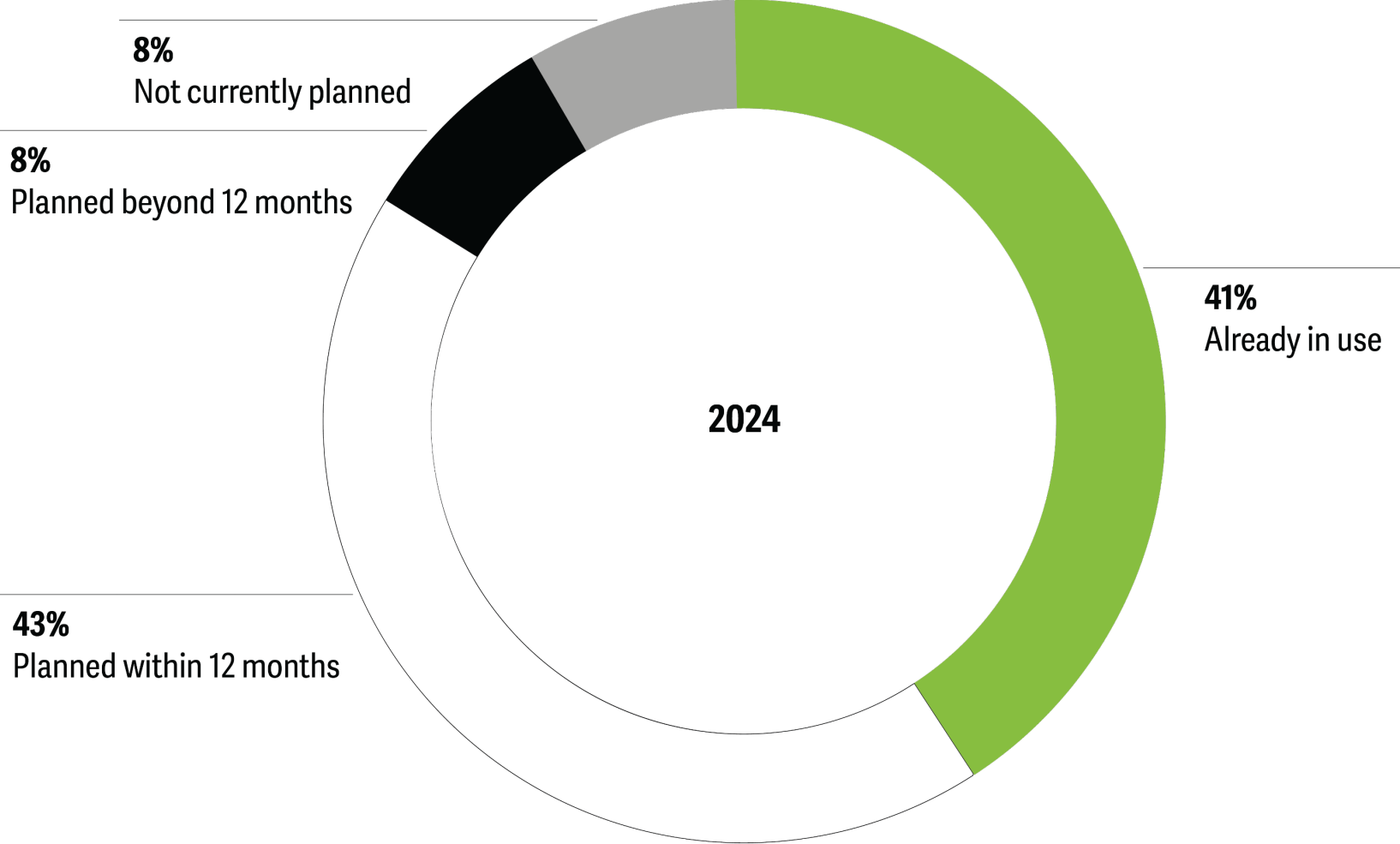


● 2024 ● 2022

Note: The 2022 survey did not include the options "AI-enabled attacks as a threat vector" and "operational technology cyber."

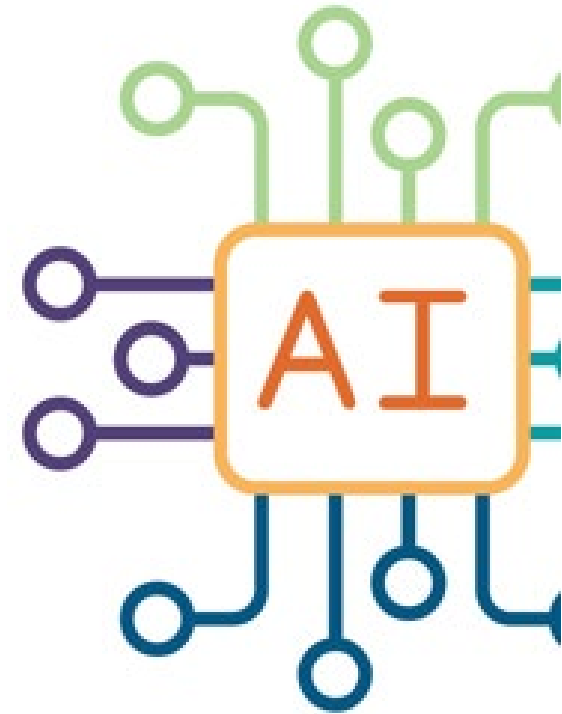


Current and planned use of GenAI in state cybersecurity operations

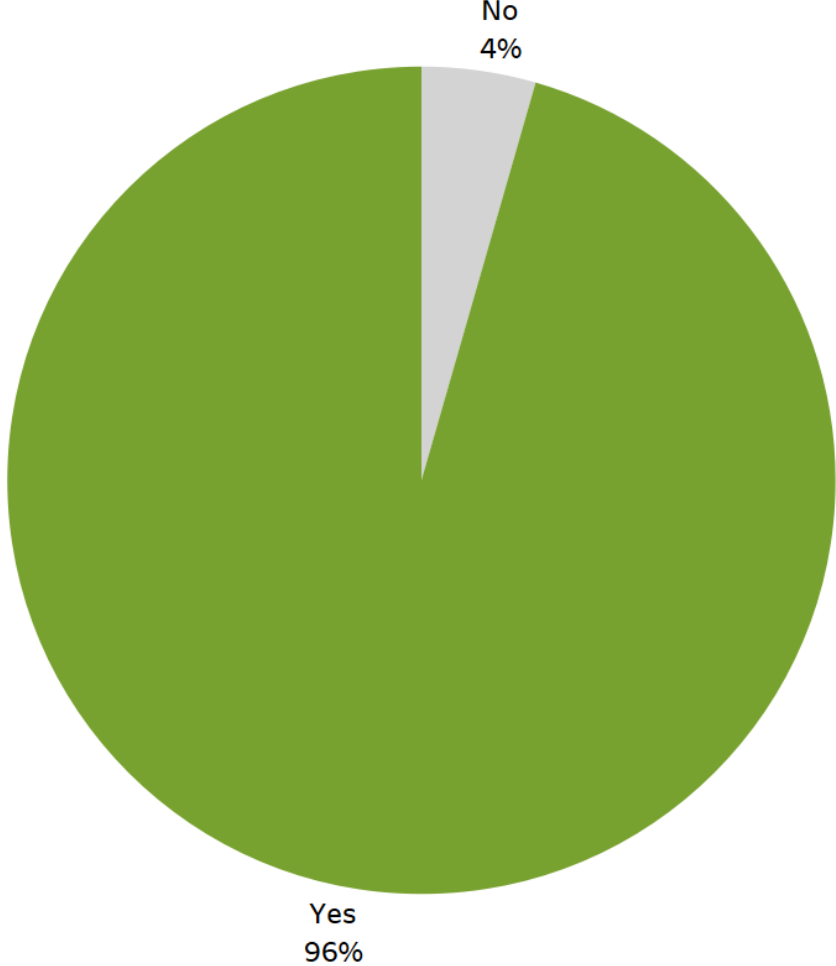


Challenges for States: GenAI Adoption

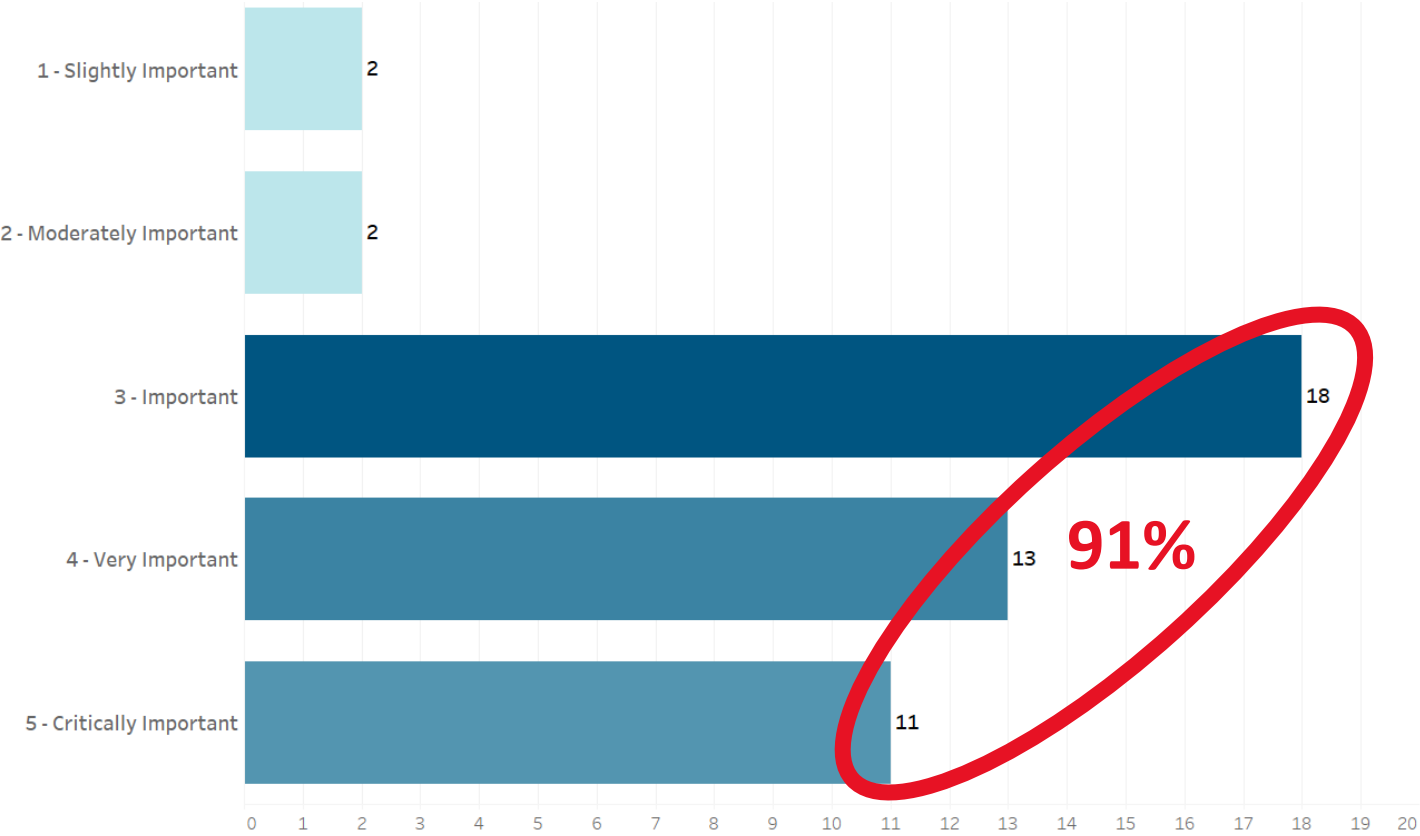
- **Poor data quality/integrity**
- **Lack of enterprise governance**
- **Workforce skills gap / lack of training**
- **Shadow GenAI use by employees**
- **Long-term costs**
- **Legal issues; public records creation**
- **Technical infrastructure**



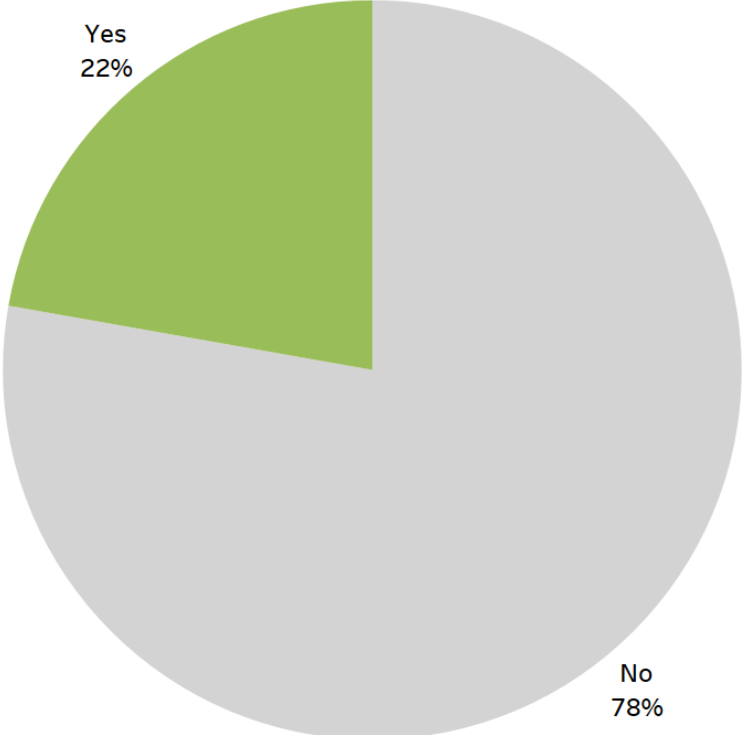
Do you anticipate increased adoption of AI and GenAI impacting data management importance?



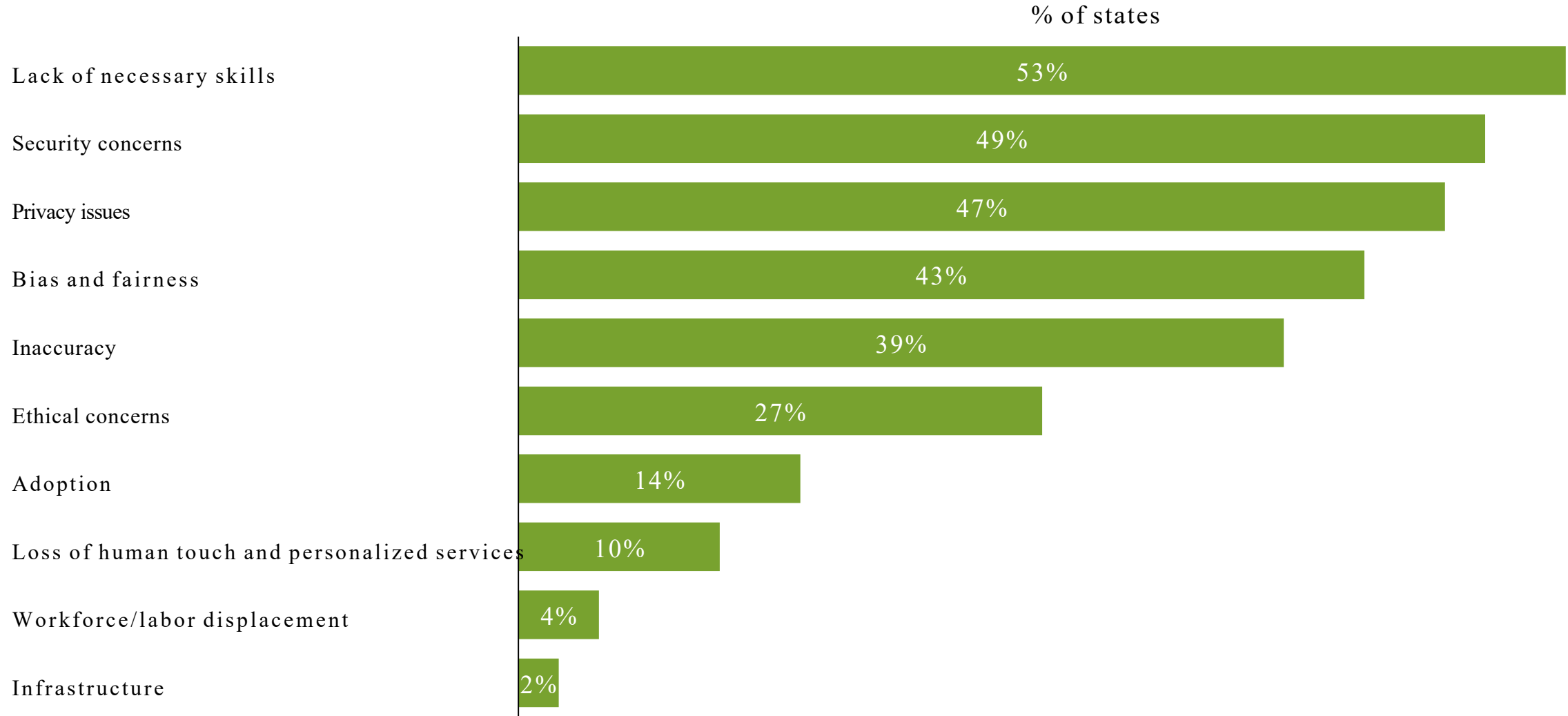
How would you rate the importance of data quality in your organization?



Do you have a data quality program?



Concerns Regarding the Impact of GenAI on State Government Technology Workforce



The Tech Forecast for 2025

AI and **Generative AI**: governance, legislation, framework, policy, use cases, data quality, privacy, security, workforce skills

Increase in state tech policy and **legislation**: focus on data privacy, AI, deepfakes, social media safety, cybersecurity, prohibited products

Focus on digital services and modernization: improved **citizen experience**, more AI and automation, citizen **identity management**

Continued investments in **legacy modernization**, growing hybrid **cloud** and **SaaS adoption**

Changing IT workforce: **remote/hybrid flexibility**, skills-based hiring, eliminating 4-year degree requirement

Impact of the **new Congress and administration** on state and local government technology policy?



Resource Center at NASCIO.org

Creating A Citizen-Centric Digital Experience: How Far Have We Come?

September 2023

Data Literacy Within State Government: Building a Knowledgeable Workforce That Knows How to Use Data for Better Decisions

MARCH 2024

Data literacy among state employees was addressed in *The 2023 State CIO Survey*, an annual survey conducted by NASCIO. Only 16 percent of state chief information officers (CIOs) report that they have a formal data literacy/proficiency program for state employees with 84 percent answering no. In light of this data, NASCIO recently convened a panel of state chief data officers who shared their approaches and experiences with data literacy. This panel described six competencies that comprise effective data literacy across the state government enterprise.

NASCIO has published extensively on data management and analytics and data management has been on the *State CIO Top Ten Priority Strategies, Management Processes and Solutions* since 2016. To fully manage data within state government, there is necessarily a minimum capability required among state government staff. As states employ more sophisticated automated and manual capabilities for data driven decisions making, this minimum capability is becoming increasingly important.

- Understanding the importance of data - what is data and what is its importance

Further, with the emerging use of generative artificial intelligence (GenAI), the criticality of data

Your AI Blueprint: 12 Key Considerations as States Develop Their Artificial Intelligence Roadmaps

With the mass availability of generative AI (GenAI) tools and large language models in the last year, states are updating or creating new policies and road maps for artificial intelligence (AI).

The NASCIO State CIO Top Ten Priorities list for 2024 includes artificial intelligence for the first time ever. As AI becomes increasingly integrated into the technology infrastructure of government agencies, an AI roadmap will emerge as an indispensable tool for states in the months and years ahead. An AI roadmap not only facilitates the seamless adoption of AI but also enhances efficiency for an already strained state government workforce.

There are several benefits to creating an AI roadmap including improving stakeholder and executive buy-in for AI initiatives, flexibility to adapt as the technology changes, efficient resource allocation and cost savings, risk management and improved service delivery.

Here are a dozen considerations states should include in their AI roadmaps for 2024 and beyond:

- Align AI initiatives to strategic drivers for the organization.** First determine how AI fits into the overall goals of the state IT strategic plan. Don't assume AI will solve every problem or help you reach every goal. In addition, don't go looking for a problem to solve with AI. Identify the business case and overall strategic goals of the organization before deploying an AI tool.
- Establish governance and oversight processes.** Absence of proper AI governance exposes states to potential risks such as data leakage, violations of privacy laws and erosion of citizen trust. To navigate these challenges, it is crucial to adopt established AI governance frameworks such as the *NIST AI Risk Management Framework*, *OECD Recommendations on Artificial Intelligence* and the *European Union AI Act*.
- Inventory and document existing AI applications.** Discover the extent of AI tools employed by agencies.

DECEMBER 2023

Generative artificial intelligence and its impact on state government IT workforces

McKinsey & Company

NASCIO Representing Chief Information Officers of the States

April 2024

The Shifting Privacy Paradigm

State Chief Privacy Officers' Evolving Roles and Persistent Realities

March 2024

NASCIO Representing Chief Information Officers of the States

Generating Opportunity: The Risks and Rewards of Generative AI in State Government

November 2024

NASCIO Representing Chief Information Officers of the States

The 2024 State CIO Survey

Building Blocks of the Next Generation CIO

NASCIO Representing Chief Information Officers of the States

2024 Deloitte-NASCIO Cybersecurity Study

A joint biennial report (8th edition) from Deloitte and the National Association of State Chief Information Officers (NASCIO)

State chief information security officers are striving to counter ever more sophisticated threats

Deloitte Insights

NASCIO Representing Chief Information Officers of the States

Data quality - vital to optimizing GenAI

A survey of state chief information officers and chief data officers

EY Building a better working world

NASCIO Representing Chief Information Officers of the States

