States at Risk: Cybersecurity Priorities and Trends

OSU Digital Solutions Gallery
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Fiscal impact of pandemic: increased state revenues and spending - increased IT spending? Impact of ARPA and IIJA funding for state IT? **$1B State and Local Cybersecurity Improvement Grant** funds - $200M in FY2022

State IT organization transition continues: CIO as broker business model, evolution from owner-operator to more managed services, outsourcing and multi-supplier initiatives

Elevated cyber threats during pandemic, nation state and criminal attacks, more focus on enterprise cybersecurity models, whole-of-state collaboration, ransomware mitigation, zero trust framework

5R challenges of state IT workforce: recruitment, retention, reskilling, retirements, resignations - a **crisis with cybersecurity positions**

Focus on digital government services: user centric design, improved customer experience, **enhanced security**, automation, citizen identity management

State Governments at Risk!

States are attractive targets – constant attack

More aggressive threats, more intensity, ransomware

Nation state threats, organized crime

Critical infrastructure impact: disruption and resiliency

Human factor – employees, contractors

Election security - disinformation

STATE CIO TOP 10 PRIORITIES

2022 Strategies, Policy Issues and Management Processes

1 Cybersecurity and Risk Management	#1 for nine consecutive years. On the top ten list since 2006
2 Digital Government/Digital Services	Steadily moving up the list. Pandemic impact
3 Broadband/Wireless Connectivity	#4 in 2021 - on/off list for a decade. Pandemic impact
4 Cloud Services	Major force of change. In top three since 2013
5 Legacy modernization	Pandemic impact! On the list since 2011
6 Identity and Access Management	New to the list in 2021. Enables digital services
7 Workforce	A continuing priority. Back on the list
8 Enterprise Architecture: governance	New to the list in 2022
9 Data and Information Management	On the list since 2016
10 Consolidation/Optimization	CIO priority each year. Frequently #1 since 2007

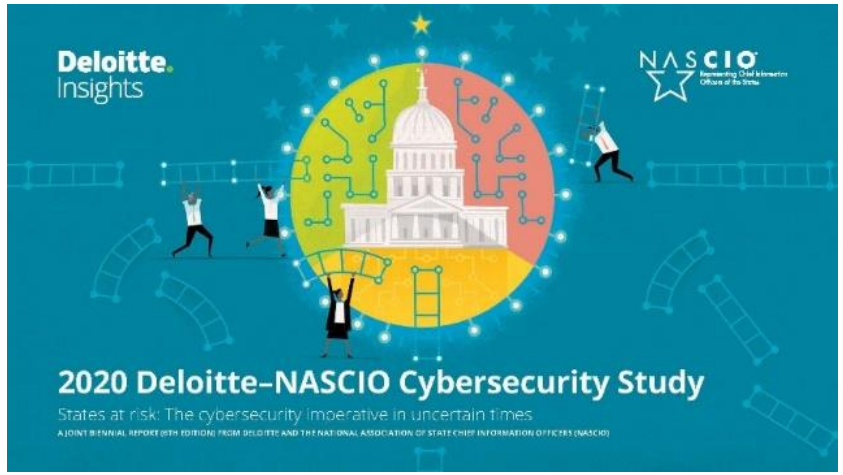
Cybersecurity involves more than *just* IT – it's a business risk.

Protecting data and infrastructure is a core responsibility of state government leaders and an investment in risk management and resiliency.

It's a complex ecosystem that requires governance and regular communication on risk.

Cyberthreats

30 states said financial fraud was a leading cause of breaches in the past year compared to ***10 states in 2018***.

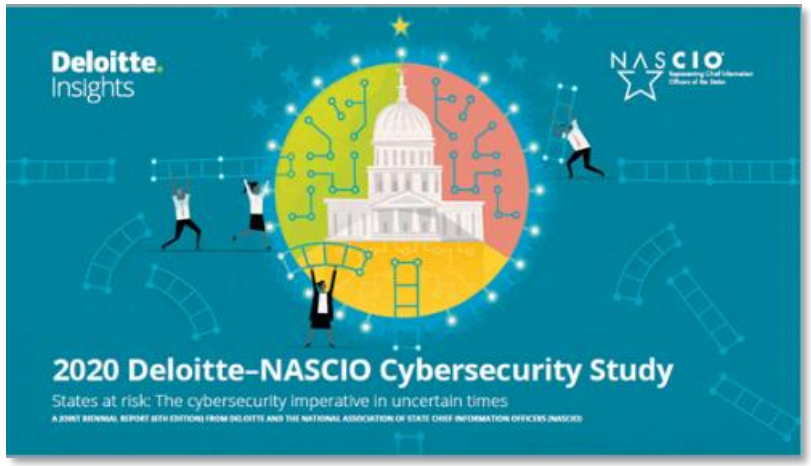


Leading causes of breaches continue to be from external sources: ***malicious code*** (68%), ***web applications from external sources*** (81%), and ***"hacktivism"*** (86%), which is on the rise.

Challenges

Top barriers to overcome cybersecurity challenges

1. Lack of sufficient cybersecurity budget
2. Inadequate cybersecurity staffing
3. Legacy infrastructure and solutions to support emerging threats
4. Lack of dedicated cybersecurity budget
5. Inadequate availability of cybersecurity professionals



Budget and Spending

Average cybersecurity spend in 2020 (percentage of IT budget)

1–3% Most state governments

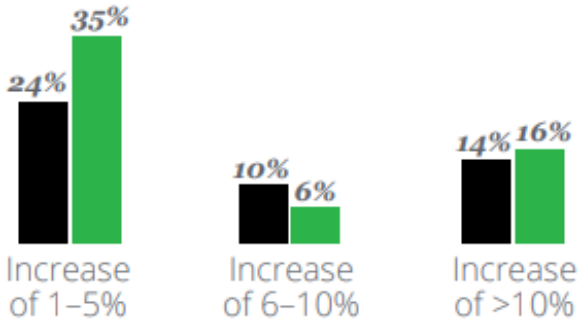
16.3% Federal agencies*

10.9% Financial institutions

**Federal civilian agencies under the CFO Act of 1990.*

Only a few states reported a budget increase since 2018

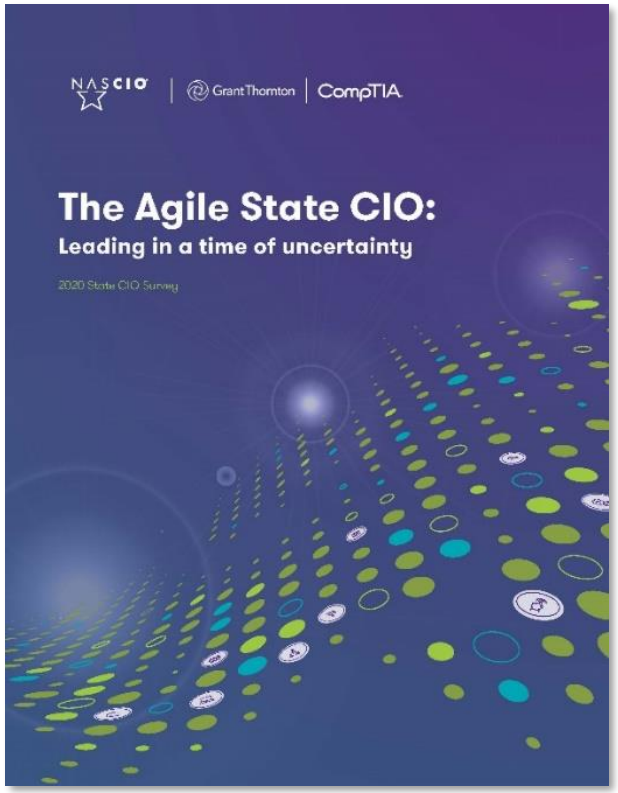
2018 vs. **2020**



The number of states that receive funding through the overall IT budget increased from *48% in 2018* to *57% in 2020*.

Assessing Cybersecurity Maturity

Characterize the current status of the cybersecurity program and environment in state government.	
Developed security awareness training for workers and contractors	96%
Acquired and implemented continuous vulnerability monitoring capabilities	89%
Established trusted partnerships for information sharing and response	89%
Adopted a cybersecurity framework, based on national standards and guidelines (based on NIST)	80%
Created a culture of information security in your state government	77%
Developed a cybersecurity disruption response plan	66%
Adopted a cybersecurity strategic plan	66%
Obtained cyber insurance	55%
Documented the effectiveness of your cybersecurity program with metrics and testing	52%
Used analytical tools, AI, machine learning, etc. to manage cyber security program	41%



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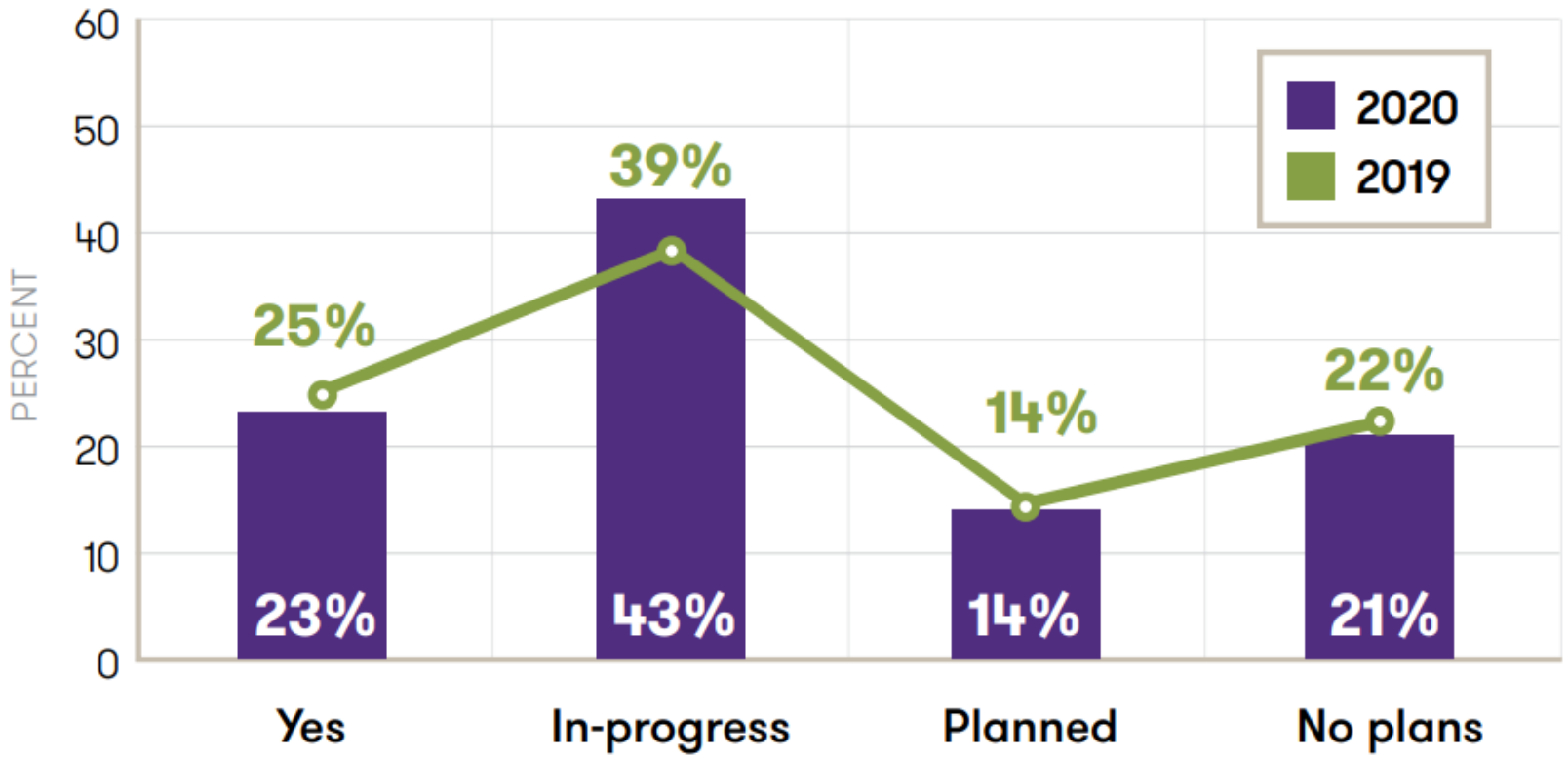
Has your state adopted a whole-of-state approach to cybersecurity with collaboration among state agencies, local governments, utilities, private companies, universities, healthcare and others?



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What Do We Know? Patterns of Success

Enterprise Leadership and Governance

Statewide Cybersecurity Framework & Controls

Cybersecurity Culture: A Team Sport

Know the Risks, Assess the Risks and Measure Progress

Communicating the Risks: Awareness

Invest: Operations and Security Technologies

Centralized Operating Model Reduces Risk

A centralized structure helps CISOs position cyber in a way that improves agility, effectiveness, and efficiencies

Advantages of a centralized structure

1. A centralized model should help to increase adoption of essential enterprise security services.
2. States have an opportunity to leverage federal funding for implementing and delivering cybersecurity services in a shared model to benefit all agencies.
3. The ability to manage a centralized cybersecurity budget is likely to help evaluate the overall cyber posture
4. Cross-training and upskilling can also be simplified and more easily scaled, providing more career growth opportunities for cyber staff.

Based on the impact of the COVID-19 pandemic, what cybersecurity initiatives will receive more attention in the next 2-3 years? (select all that apply)

83%	69%	67%	67%
Adoption/expansion of enterprise identity and access management solutions	Continuous enterprise cybersecurity assessment	Endpoint detection	Introducing or expanding a zero trust framework
63%	60%	56%	50%
Increased due diligence with vendors and third-party providers	Improved anti-fraud capabilities and services	Cybersecurity awareness training	Increased use of behavioral analytics

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State Cyber Trends to Watch

- Talent crisis: recruitment, retention, compensation
- More centralized operating model for cybersecurity
- Increasing threats with expanded digital services
- Whole-of-state cybersecurity resiliency
- Supply chain compromises; considering SBOM
- Support and partnerships with local governments