



# Technology Forecast 2019



## What State and Local Government Technology Officials Can Expect

January 17, 2019



# Speakers

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Executive Director,  
PTI

# State-of-the-States 2019: Trends and Perspectives

## Technology Forecast 2019: What State and Local Government Technology Officials Can Expect

Doug Robinson, NASCIO Executive Director  
@NASCIO



# STATE CIO TOP 10 PRIORITIES

## 2019 Strategies, Management & Process Solutions



1. Security and Risk Management
2. Cloud Services
3. Consolidation/Optimization
4. Digital Government
5. Broadband/Wireless Connectivity
6. Budget, Cost Control, Fiscal Management
7. Customer Relationship Management
8. Data Management and Analytics
9. Enterprise IT Governance
10. Identity and Access Management

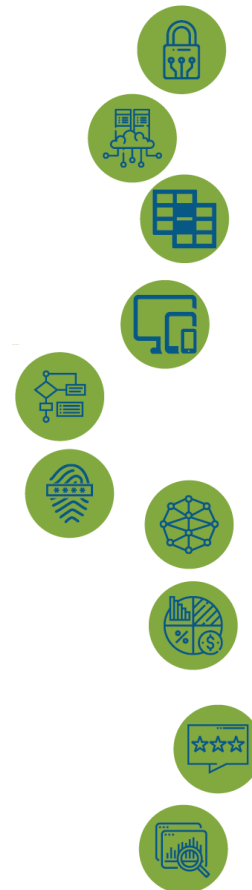
Source: NASCIO State CIO Ballot, November 2018



# STATE CIO TOP 10 PRIORITIES

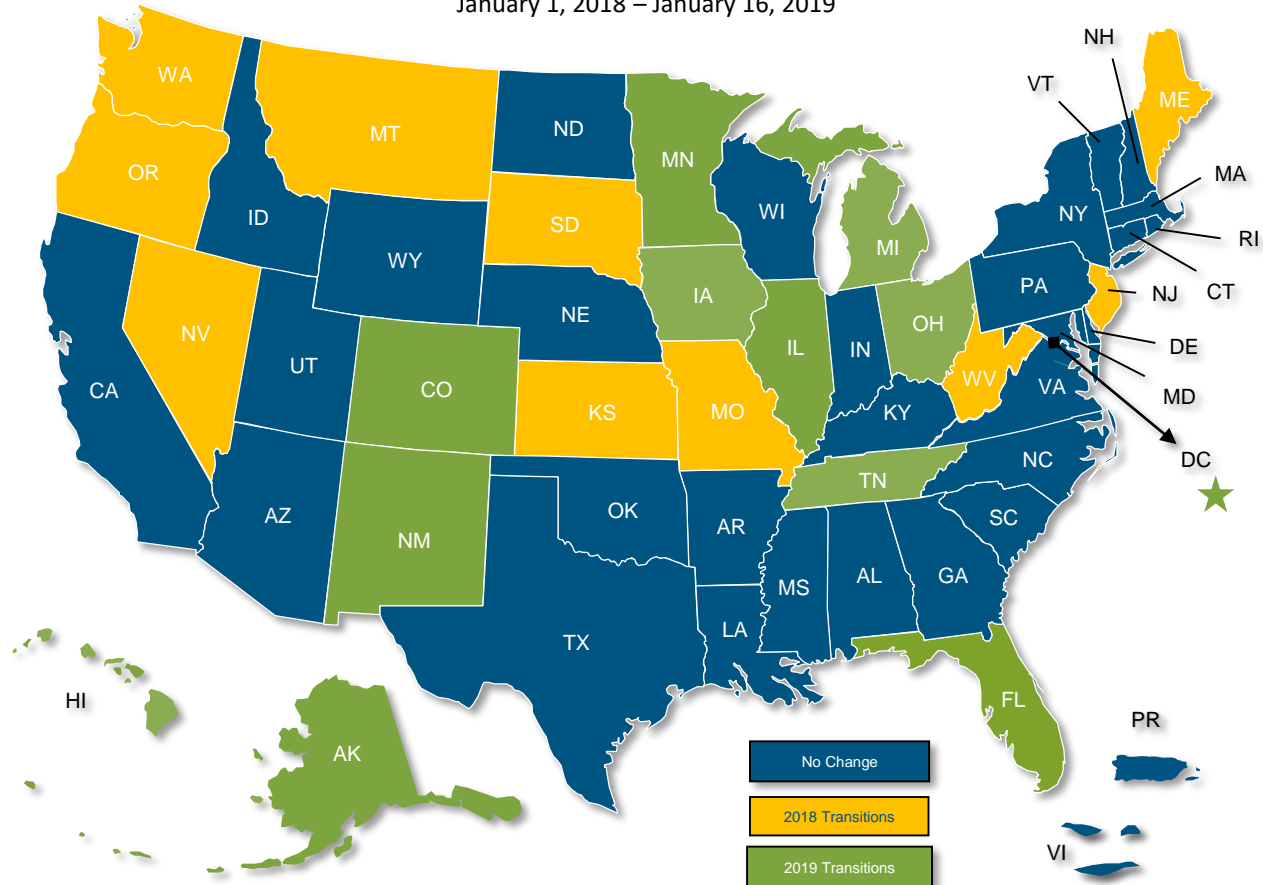
Technologies, Applications and Tools

- 1. Cloud Solutions**  
software as a service
- 2. Security Enhancement Tools**  
CDM, advanced analytics, digital forensics
- 3. Legacy Application Modernization/Renovation**
- 4. Business Intelligence (BI) and Business Analytics (BA)**  
applications, big data, data analytics
- 5. Identity and Access Management**
- 6. Collaboration Technologies**  
file sharing, document management, workflow, intranet services
- 7. Data Management**  
Master Person Index/Master Data Management; information exchanges
- 8. Enterprise Resource Planning (ERP)**
- 9. Disaster Recovery / Business Continuity**
- 10. Networking**  
voice and data communications, unified, SDN

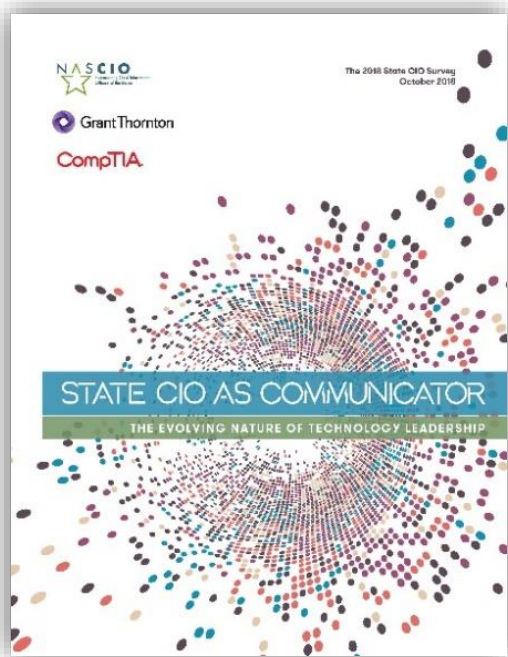


# State CIO Transitions 2018-19

January 1, 2018 – January 16, 2019



# What would you consider your top priorities/goals as a CIO?



64%

Ensure IT systems comply with security and regulatory requirements



60%

Improve IT relationships with the business



58%

Create and drive IT strategy that aligns to overall state objectives



48%

Improve IT governance



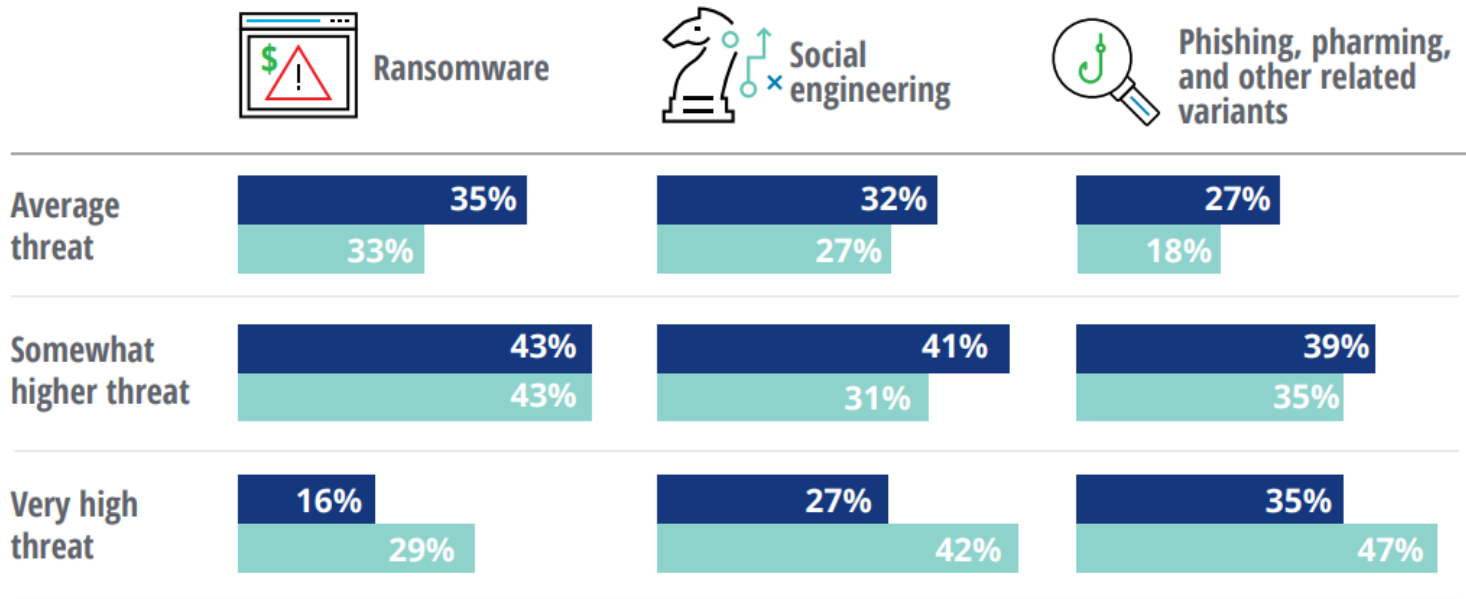
40%

Improve portfolio management and project delivery metrics

# Ransomware, social engineering, and phishing are the top cyber threats for states

Please choose the prevalence of the following cyber threats in your state for the next year.  
(49 respondents)

■ 2018 ■ 2016





# Cybersecurity Maturity in the States is Improving...

Risk based strategies are being adopted

Expanded focus from operational to strategic

Expect continued progress in 2019

Characterize the current status of the cybersecurity program and environment in state government.

	2013	2015	2017	2018
Developed security awareness training for workers and contractors	78%	87%	88%	98%
Adopted a cybersecurity framework based on national standards and guidelines	78%	80%	95%	94%
Established trusted partnerships for information sharing and response	75%	80%	83%	92%
Adopted a cybersecurity strategic plan	61%	74%	83%	85%
Acquired and implemented continuous vulnerability monitoring capabilities	78%	80%	79%	81%
Created a culture of information security in your state government	73%	74%	83%	79%
Developed a cybersecurity disruption response plan	45%	52%	69%	69%
Documented the effectiveness of your cybersecurity program with metrics and testing	47%	52%	57%	63%
Using analytical tools, AI, machine learning, etc. to manage cybersecurity programs	n/a	n/a	n/a	44%
Obtained cyber insurance	n/a	20%	38%	42%

# Budget and Staffing Remain Top Barriers to Effective Cybersecurity

## State CIOs say...



**82%** Increasing sophistication of threats



**71%** Inability to attract and retain top-tier security and privacy talent



**47%** Lack of adequate funding



**43%** Inadequate availability of security professionals



**31%** Emerging technologies



**31%** Lack of support from business stakeholders

## State CISOs say...



Lack of sufficient cybersecurity budget



Inadequate cybersecurity staffing



Increasing sophistication of threats

# Three Bold Plays for Change



## ADVOCATE FOR DEDICATED CYBER PROGRAM FUNDING

CISOs should raise cybersecurity's visibility with the state legislature and executive branch by making it a line item in the IT budget. They can also seek funding from federal agencies to support compliance with those agencies' security mandates.



## CISOs AS AN ENABLER OF INNOVATION, NOT A BARRIER

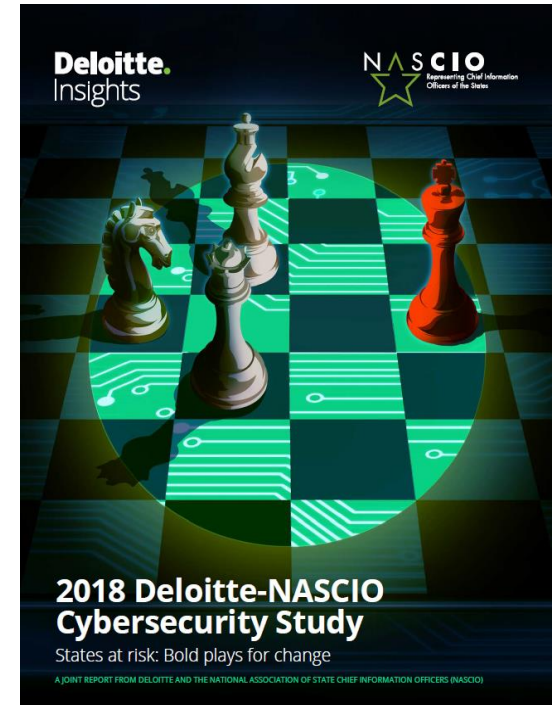


CISOs should actively participate in shaping the state's innovation agenda, collaborate with state digital and innovation officers, and lead the charge to help program leaders securely adopt new technologies.



## TEAM WITH THE PRIVATE SECTOR AND HIGHER EDUCATION

CISOs should leverage public-private partnerships and collaborations with local colleges and universities to provide a pipeline of new talent, as well as consider outsourcing to private-sector firms.



How does your state CIO organization plan to deliver or obtain IT services over the next three years (e.g., server and platform administration, backup, storage, software and hardware maintenance, network management and service desk management)?

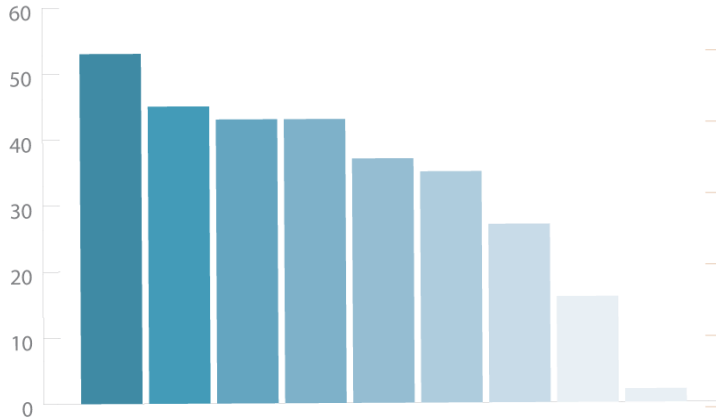
	Introduce	Maintain	Expand	Downsize
State-owned-and-operated data center(s)	0%	35%	14%	52%
Outsourcing service model	15%	26%	57%	2%
Managed services model	10%	23%	65%	2%
IT shared services model	0%	22%	75%	2%
“As-a-service” models (e.g. SaaS, PaaS, IaaS, etc.)	14%	12%	75%	0%
State IT staff	0%	69%	10%	22%

## Evolving Business Model: CIO as Broker

Source: 2018 NASCIO SURVEY | State CIO as a Communicator

# CIO Business Models

What are the three strategic or operational issues that are driving the increase in the use of brokered services?



53% | Cost effectiveness

45% | Modern capabilities

43% | Quality of services

43% | Business outcomes

37% | Access to qualified resources and services

35% | Flexibility

27% | Transition to digital government

16% | Current funding or recovery model inhibits investment

2% | Other



# Does your organization have a strategy to migrate legacy applications to the cloud?



**41%** | Yes, cloud migration strategy in place

**37%** | No, but cloud migration strategy in development

**22%** | No cloud migration strategy planned



## Are you planning to move to an off-premise Main-frame-as-a-Service solution in the next 2-3 years?



18% | Yes, already complete

20% | Yes, planned

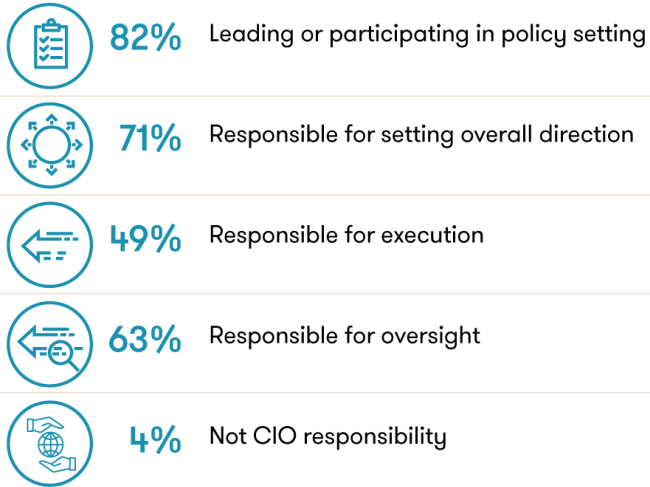
27% | Yes, considering

29% | No

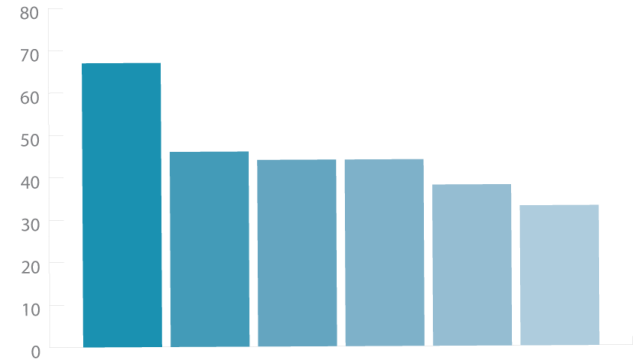
6% | Unsure

# Digital Government

What is the current role of your CIO organization in administering statewide digital government services?



What is your approach to delivering digital government services?



**67%** | Establishing a multi-agency governance council

**46%** | Creating data sharing

**44%** | Agile development processes that incorporate user feedback

**44%** | Creating a single digital services organization to drive state wide efforts

**38%** | Responsibility of individual agencies/departments

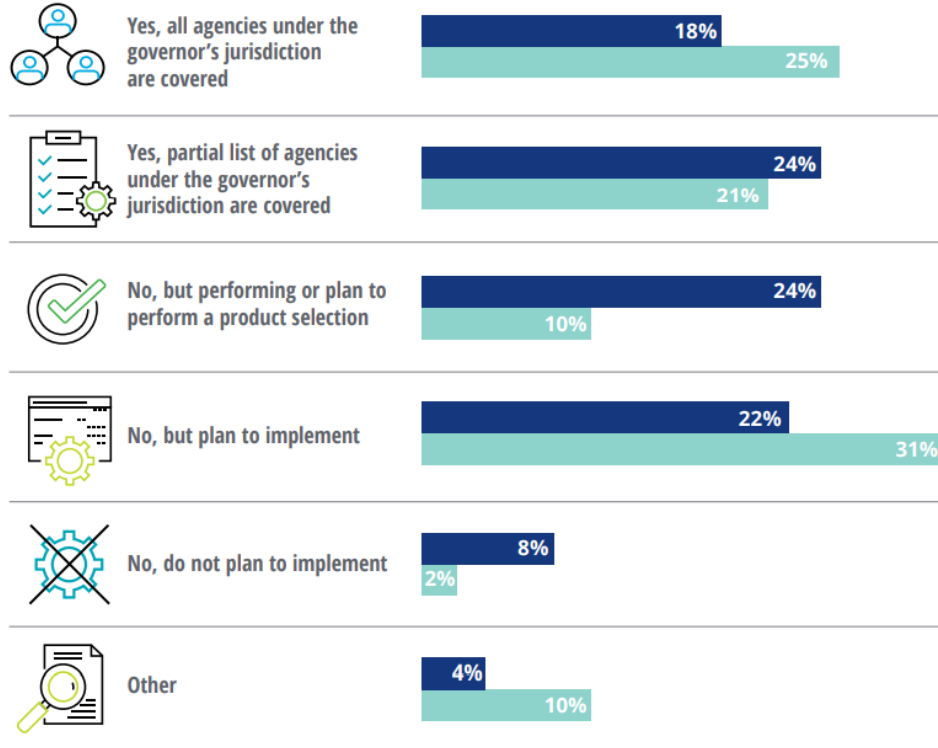
**33%** | Focus on creating a unique citizen ID



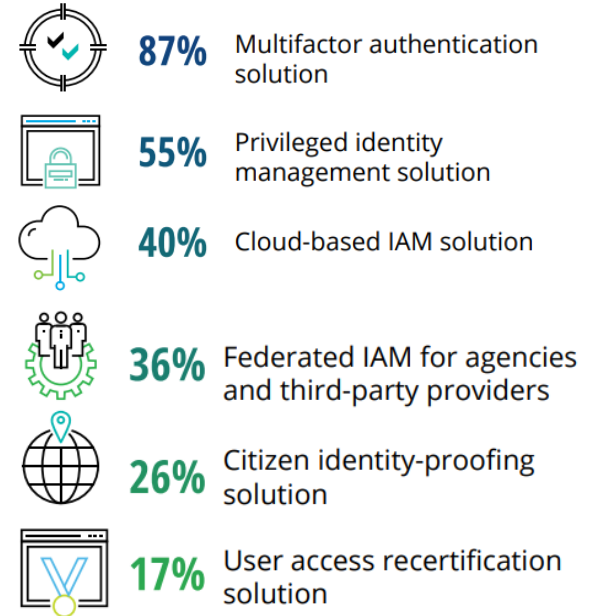
## Thirty-three states have either established an enterprise IAM solution or plan to perform a product selection

Does your state provide an enterprisewide IAM solution? (50 respondents)

■ 2018 ■ 2016



## Current Initiatives



# What do you think is the biggest opportunity for using analytics?



- 54% | Data-driven policy making
- 14% | Surfacing insights from the data, or insight enabling capabilities
- 10% | Transparency and accountability to citizens
- 6% | Ability to create dashboards and meaningful reports
- 4% | Ease of combining data from multiple sources
- 4% | Workforce planning and analytics
- 4% | Performance-based budgeting
- 4% | Low code or no code capabilities that can be employed by front line staff to explore data and surface insights that influence decision making



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



**57%** | Artificial Intelligence/robotic process automation

**27%** | Internet of Things (IoT)

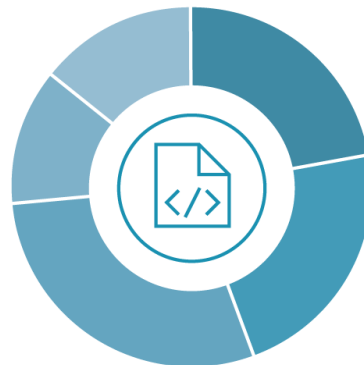
**8%** | Connected/Autonomous Vehicles

**4%** | Blockchain

**2%** | Unmanned Aerial Systems (UAS)

**2%** | Other

## Are you planning to deploy automation software, either for robotic process automation (RPA), machine learning, or artificial intelligence (AI), in the next 2-3 years?



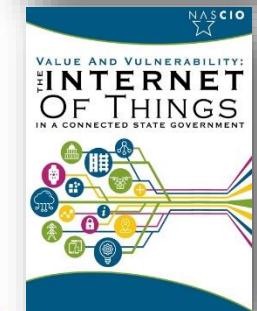
**22%** | Yes, already complete

**22%** | Yes, planned

**29%** | Yes, considering

**12%** | No

**14%** | Unsure



22 new governors elected in 2018. 11 state CIO transitions to date. Some surprises already and more to come...

More focus on enterprise cybersecurity models; talent and workforce crisis remains

CIO as broker business model: evolution from owner-operator to more managed services and multi-sourcing initiatives

Digital government: user centric design, citizen IAM

Interest and use of AI and RPA slowly grows as state roadmaps are created and benefits are realized

State IT organization transition continues: more consolidation, hybrid and unification initiatives

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**THE STATE CIO TOP TEN:  
WHY IT'S MORE THAN A LIST**

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**READY FOR PRIME TIME?  
State Governments Tune in to Artificial Intelligence**

**AI AND MACHINE LEARNING**

**STATE ARCHIVING IN THE DIGITAL ERA**  
A Playbook for the Preservation of Electronic Records

**October 2018**

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**CoSA**

**PROCUREMENT LIMITS ON LIABILITY BY STATE**

- ★ Unlimited Liability
- ★ Limits to Liability
- ★ Subject to negotiation

**2010**  
28 States have limitations on liability  
5 States have some degree of limitations on

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**STATE CIO AS BROKER:  
A New Model**

**Deloitte Insights**

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**2018 Deloitte-NASCIO Cybersecurity Study**  
States at risk: Bolo plays for change

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

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**Grant Thornton**  
**CompTIA**

The 2018 State CIO Survey  
October 2018

**STATE CIO AS COMMUNICATOR**  
THE EVOLVING NATURE OF TECHNOLOGY LEADERSHIP

**State Cybersecurity Governance Case Studies**  
CROSS SITE REPORT  
December 2017

**Homeland Security**

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**A View from the Marketplace:  
What They Say About State IT Procurement**

**October 2018**

