IT Trends in the States: Priorities, Risks and Perspectives

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NASCIO
Representing Chief Information
Officers of the States

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NASCIO

More focus on enterprise cybersecurity models; cyber 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, focus on streamlining experiences, citizen IAM

More interest and use of artificial intelligence (AI), RPA, chatbots as adoption grows and benefits realized

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

22 new governors in 2018. 18 new state CIOs appointed in 2019 to date (August 2019).

Core Values

Our core values guide us in how we interact with one another and our customers. We encourage everyone to think of the ways you can incorporate the OIT values into your work every day.

COURAGE
We boldly take action on our convictions. We have the moral strength to venture, persevere, and withstand difficulty. We are entrepreneurial and embrace change to better ourselves and the people we serve.

INNOVATION
We foster new ideas. We challenge the status quo and continuously ask, "How can we do this better?" Then we take action and make a difference through novel processes and technology.

INTEGRITY
We do the right thing in the right way. We communicate with openness, honesty, and authenticity, and are accountable for our actions. We deliver on our promises and adhere to an ethical code. We are good citizens in the communities in which we live and work.

RESPECT
Our people matter. We value, encourage, reward, and recognize them. We choose to be positive and create meaningful connections every day. We are considerate, helpful, kind, and patient in all situations.

SERVICE
We provide value and strive to delight. We seek to understand the needs of our fellow team members, partners, customers, and Coloradans, and then exceed their expectations. We are committed to serving people serving Colorado.

TEAMWORK
We work together toward a common purpose, having fun along the way. We foster a collaborative, creative, and inclusive culture. We create an empowering environment where everyone can contribute and reach their full potential.

By the numbers

- Enterprise provider of IT
- ~1,000 employees in 71 locations
- Serve more than 31,000 state employees in 1,300 locations across the state
- Support more than 1,100 applications
- 300+ active projects in flight
- Resolve 336,000 Service Desk tickets annually
- Deflect ~8.4 million security events daily

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

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Wildly Important Purpose (WIPP)

CUSTOMER DELIGHT

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
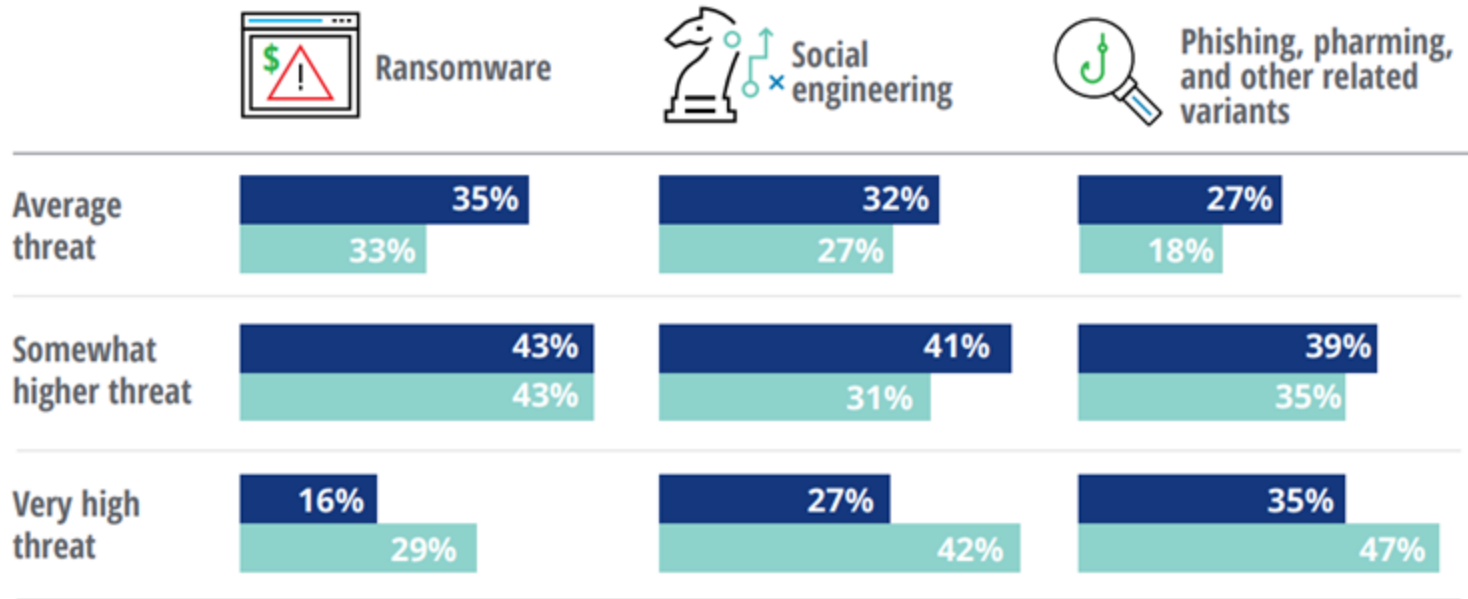
48% Improve IT governance

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

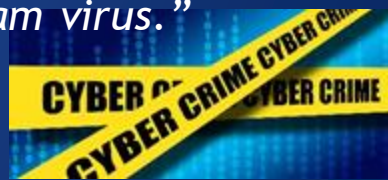|	Ransomware	Social engineering	Phishing, pharming, and other related variants
Average threat	35% / 33%	32% / 27%	27% / 18%
Somewhat higher threat	43% / 43%	41% / 31%	39% / 35%
Very high threat	16% / 29%	27% / 42%	35% / 47%

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Secure Colorado

- Prepare: Statewide policies, procedures, and plan
- Protect: 2-Step Verification, CIS Top 20 Critical Controls
- Prevent: Quarterly training, blogs, tips and tricks
- Example: SamSam Virus Attack 2018

"If there is a playbook for bouncing back from a ransomware incident, it might resemble the one the Colorado Office of Information Technology developed last year when that state's transportation agency had its own run-in with the SamSam virus."

StateScoop, March 22, 2019
https://statescoop.com/one-year-after-atlantas-ransomware-attack-the-city-says-its-transforming-its-technology/

What major barriers does your state face in addressing cybersecurity?

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

Cybersecurity Maturity in the States is Improving...

Characterize the current status of the cybersecurity program and environment in state government.
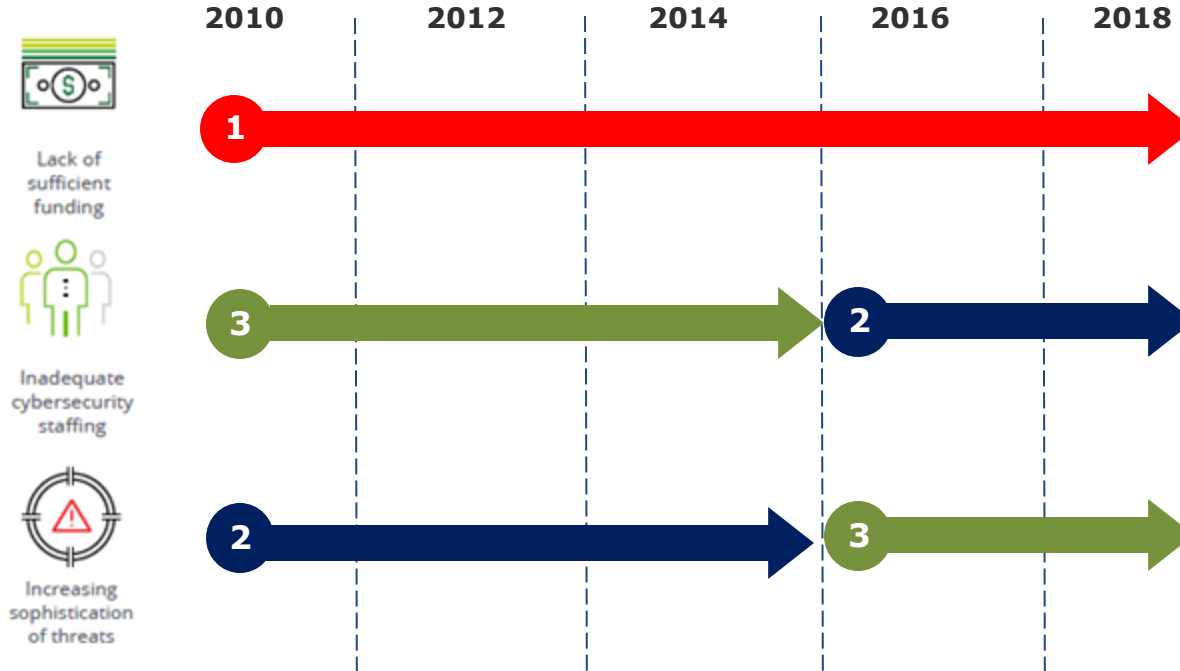
	2013	2015	2017	2018
Developed security awareness training for workers and contractors	78%	87%	88%	98%
Adopted a cybersecurity framework based on national standards and guidelines	78%	80%	95%	94%
Established trusted partnerships for information sharing and response	75%	80%	83%	92%
Adopted a cybersecurity 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%

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Source: NASCIO 2018 State CIO Survey

but persistent challenges remain…

Budget, talent and threats top three since 2010

	2010	2012	2014	2016	2018

Lack of sufficient funding — 1 (2010 → 2018)

Inadequate cybersecurity staffing — 3 (2010 → 2016), 2 (2016 → 2018)

Increasing sophistication of threats — 2 (2010 → 2016), 3 (2016 → 2018)

Survey question: Identify the top barriers that your state faces in addressing cybersecurity challenges.
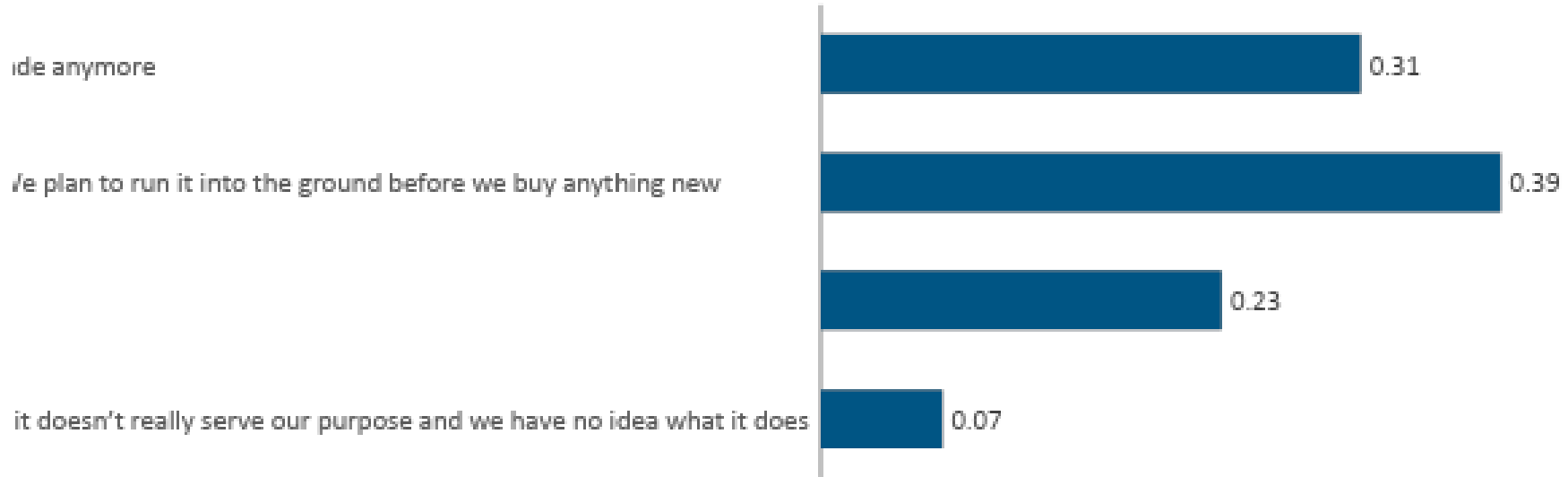
How does your state CIO organization plan to deliver or obtain IT services over the next three years (e.g., server and platform administration, backup, storage, software and hardware maintenance, network management and service desk management)?

	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

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Which automaker do you equate with your IT infrastructure?

...de anymore	0.31
...e plan to run it into the ground before we buy anything new	0.39
	0.23
it doesn't really serve our purpose and we have no idea what it does	0.07

CIO Business Models

What are the three strategic or operational issues that are driving the increase in the use of brokered services?
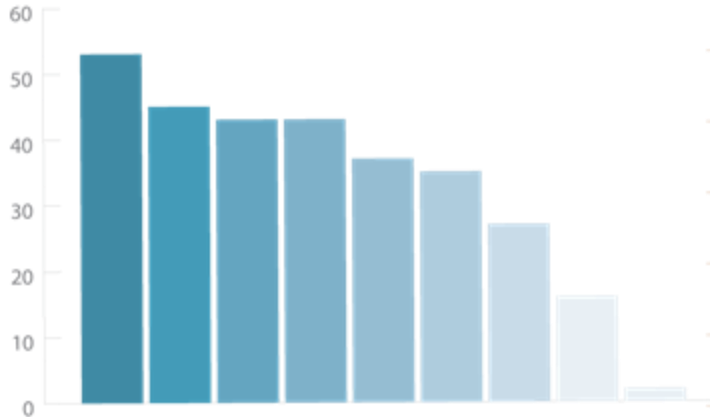
53%	Cost effectiveness
45%	Modern capabilities
43%	Quality of services
43%	Business outcomes
37%	Access to qualified resources and services
35%	Flexibility
27%	Transition to digital government
16%	Current funding or recovery model inhibits investment
2%	Other

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

Cloud First

CBMS (Colorado Benefits Management Systems) Transformation

- Making it easier for county workers:

  - Better integration with county systems and a modern front end = better user experience

- Making it easier for OIT and partners

  - Modular approach = ability to make changes faster

- Reduce long term costs

What categories of services are your top priorities for migration to the cloud? (select up to 5)

1	E-mail and collaboration
2	Disaster recovery
3	Office productivity software (e.g. word processing)
4	Program/business applications (e.g. Licensing, Unemployment Insurance, Workers Compensation etc.)
5	Enterprise Resource Planning (e.g., finance, budget, procurement)
6	Citizen relationship management
7	HR/payroll/time and attendance
8	Storage
9	Identity Management
10	Security services/monitoring

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

Advancing Digital Transformation

- Develop and implement Phase I of Digital Transformation Plan
- Areas of focus:
  - Chatbots
  - Blockchain
  - Artificial Intelligence
  - myColorado mobile application

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

VALUE AND VULNERABILITY:
THE **INTERNET OF THINGS**
IN A CONNECTED STATE GOVERNMENT

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

AI AND MACHINE LEARNING

Blockchains:
Moving Digital Government Forward in the States
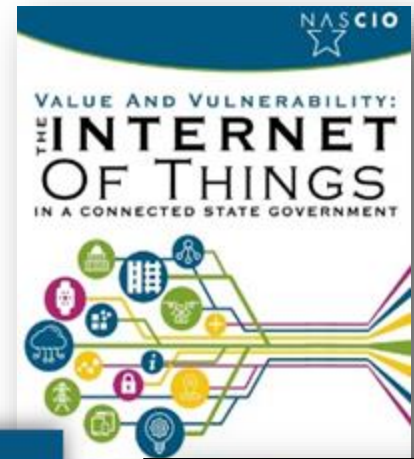
Lots of Projects = Many Opportunities

RUNNING   GROWING

                                        TRANSFORMING

KSO (Keep Systems On)   Agency Apps   Enterprise Apps   Emerging
Technologies

Backup Colorado   Colorado DRIVES   Secure Colorado
              Broadband
Digital Trunked Radio(DTRS) DeCORum   Email
              Blockchain
Voice & Data Services   CORE   Accessibility
              myColorado mobile app

….   CBMS Transform   2-Step Verification
              ….
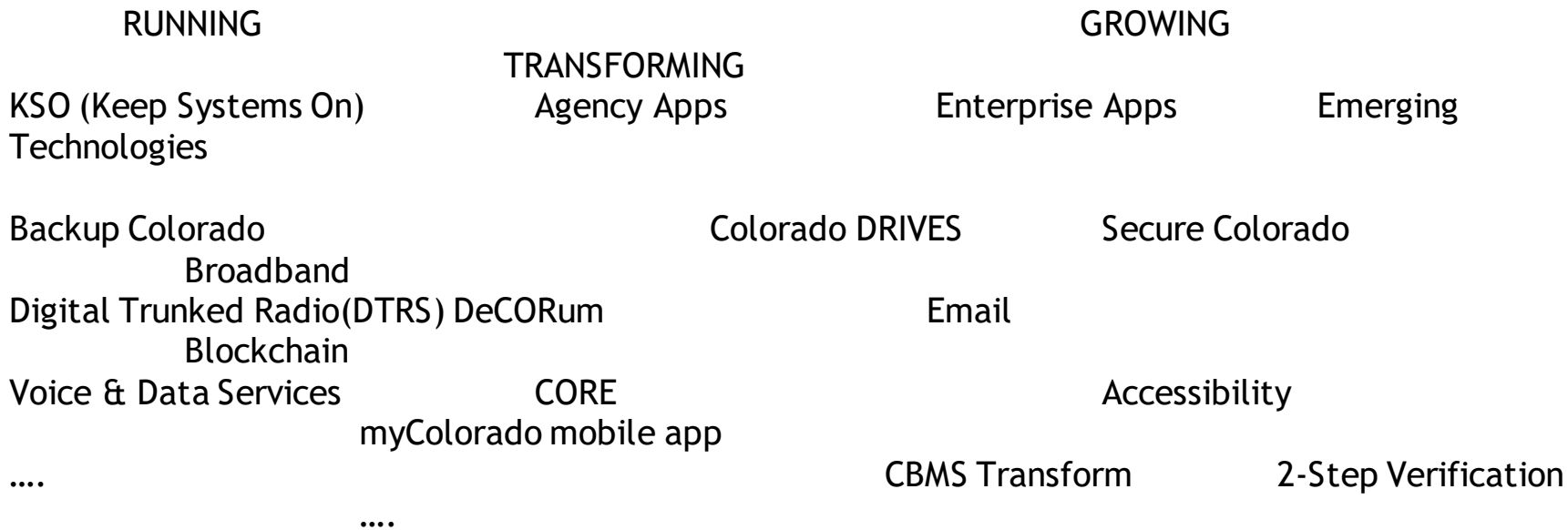
Tips for Doing Business with Colorado

- Register on ColoradoVSS - state's vendor self service portal that allows vendors to review and respond to solicitations of all types of goods and services (e.g., RFPs, RFIs, ITNs, Documented Quotes, etc.)

(https://codpa-vss.cloud.cgifederal.com/webapp/PRDVSS2X1/AltSelfService)

- *Vendors must be registered in ColoradoVSS in order to receive notifications of upcoming solicitations and to bid on those solicitations*

Tips for Doing Business with OIT

- **Read our Playbook - gives insight into what OIT is planning for the coming year**

  (oit.state.co.us/about/playbook)

- **Read our agency Five-Year IT Roadmaps – gives insight into our work with our customers**

  (oit.state.co.us/about/itroadmaps)

- **Visit our Vendor Services web page**
  (oit.state.co.us/financial/procurement)

Perspectives on Privacy

A Survey and Snapshot of the Growing State Chief Privacy Officer Role

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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

CoSA

PROCUREMENT

LIMITS ON LIABILITY BY STATE

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

★ Unlimited Liability
★ Limits to Liability
★ Subject to negotiation

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STATE CIO AS BROKER:
A New Model

CIO BROKER

Deloitte.
Insights

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2018 Deloitte-NASCIO
Cybersecurity Study

States at risk: Bold plays for change

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

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The 2018 State CIO Survey, October 2018

Grant Thornton
CompTIA

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

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