



WRITTEN TESTIMONY OF
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NATIONAL ASSOCIATION OF STATE CHIEF INFORMATION OFFICERS
(NASCIO)

WAYS AND MEANS COMMITTEE
KANSAS STATE SENATE

HB 2331

MARCH 13, 2018

Madam Chair McGinn, Vice Chair Billinger, Ranking Member Kelly and members of the Ways and Means Committee:

Thank you for the opportunity to testify before you today on issues related to House Bill 2331. My name is Eric Sweden and I serve as the Program Director of the National Association of State Chief Information Officers or NASCIO, which is headquartered in Lexington, Kentucky.

My appearance before the Committee today is in the capacity of an interested party to present information and insight about the general organizational models for state information technology functions and the role of state chief information officers (CIOs). My remarks will offer a generalized view of the states and cover CIO roles, responsibilities, trends, and challenges. As background, NASCIO is a non-profit organization that represents state chief information officers and information technology executives and managers from the 50 states, U.S. territories, and the District of Columbia. The mission of the NASCIO is “to foster government excellence through quality business practices, information management, and technology policy.” A key goal of NASCIO is to be the premier network and resource for state CIOs. To that end, we regularly publish surveys and studies on current business trends within the state CIO community which I plan to reference today.

We understand that you are currently considering House Bill 2331. While we will not comment on the merits of this specific bill before you, we would like to share with you the national perspective on the issues addressed in HB 2331.

The Importance of IT and the Changing Role of the State CIO

In decades past, IT was viewed as one of many tools to support the mission of state executive branch agencies. Today, IT is not just a tool, IT is a part of the “fabric” of state government which enables innovative service delivery and provides the platform by which citizens interact with government. The changing and increasing value of IT also has implications for the state CIO whose responsibilities in the past were primarily to manage and provide infrastructure services and support. Now, the state CIO is viewed as a **change leader** who leads and facilitates government organizational transformation efforts in support of and in coordination with the agenda of the governor and state policy goals.

State CIOs now have a multifaceted, enterprise role which includes many responsibilities related to:

- Enterprise strategic IT planning
- Enterprise policy and directives
- Investment management
- State IT governance bodies
- IT budget review and approval
- Enterprise Architecture and Standards
- Provision of the state IT infrastructure and shared application services
- Communications and networks
- Project Management oversight
- Disaster recovery and business continuity
- Procurement and contract management
- Service level management
- Risk management, security and privacy
- Digital government and portal services
- Geographic information systems
- Homeland security
- Business process improvement
- Health information technology
- Multi-media production
- Electronic records management
- Customer relationship management
- Cross-boundary collaboration
- Cybersecurity

From the collective experience of the states and NASCIO’s research, three key elements emerge to foster a successful state IT management strategy: **governance, leadership, and organization**. This starts with an enterprise perspective of IT strategy, investments, authority, and policies. From the leadership perspective, the state CIO articulates the enterprise view and harnesses the power of IT in support of the policy goals of state government. In addition to managing the core IT infrastructure for the state, an overwhelming majority of state CIOs today have enterprise responsibilities for overall IT strategy, policies, budget review, and project oversight as well as managing the agency that provides a wide array of services to state agencies.

Common State CIO Priorities, Challenges, and Forces of Change

Every year since 2007, NASCIO has produced the “[Top Ten](#)” list which identifies the top ten priorities for state CIOs. The most frequently cited top three priorities over the last ten years were: consolidation/optimization, security, cloud services, and budget and cost control. Consolidation has been on the State CIO Top Ten Priorities list consistently since its inception and has always ranked as one of the top three priorities. For 2018, security topped the list, followed by cloud services, and consolidation/optimization. These priorities are not surprising given the strained financial environment facing state governments. State IT costs are often driven by diversity and complexity and by reducing both factors through consolidation and optimization, state CIOs are attempting to recoup savings for the state.

While the priorities for state CIOs remain largely consistent over the years, state CIOs are operating in an environment that is affected by what we call the “forces of change” – these are broad trends that impact the way state governments and specifically, state CIOs, conduct business:

- Low revenue growth in many states reflecting 2017 budget cuts. State CIOs are pressured to find cost savings through consolidation and optimization strategies.
- Continued evolution from the owner-operator business model to one that focuses on services and hybrid models of delivery.
- Regarding cybersecurity as a business risk.
- Growing investments in cloud services, data analytics, and mobile services.
- Continuing IT workforce challenges: retirements, skills gap, recruiting, talent management, workplace innovation.
- Advocating for IT procurement reform, advancing agile approaches, IT modernization.

Additionally, state CIOs across the country face similar challenges:

- Many state CIOs shoulder much of the responsibility for statewide IT governance, but do not possess the same level of authority
- Cybersecurity is an enterprise imperative and a top priority for state CIOs
- States have been dealing with especially sluggish revenue growth; general fund revenues grew 2.3 percent in fiscal 2017, after growing 1.8 percent in fiscal 2016.¹

It is possible to achieve the strategic goals and priorities of the state by harnessing the power of IT. In order to do so, it is critical that state CIOs operate in an environment that facilitates cost savings by leveraging economies of scale, maximize cybersecurity through enforceable enterprise wide policies, and manage IT assets and investments in a manner that anticipates change.

Governance: State CIO Reporting Structures and Executive Branch Agency Organization

Across the nation, there are three general ways in which state CIOs are organized: report to the governor, report to agency head, and report to a board. Twenty-five states CIOs report to the governor, twenty-three state CIOs report to an agency head and two state CIOs report to a board. Ten years ago, twenty-one state CIOs reported to the governor and were a member of the governor's cabinet and twenty-seven state CIOs reported to an executive department head. In comparison to the reporting structure of 2007, the state CIO position seems to be moving toward a cabinet-level position. However, changes in administration and executive branch reorganizations result in constant fluctuations in these models.

While the reporting structure of state CIOs is generally split between reporting to the governor or to an agency head, the organizational structure of executive branch agencies is more difficult to determine as the answer to that question usually rests somewhere between very decentralized/federated at one end of the spectrum and very centralized at the other. However, we do know that the current trend is toward greater alignment and centralization of IT management due to the need to exercise a greater degree of control over IT direction and investments while delivering more efficient IT support to increasingly complex government organizations. Today, most states are in the midst of this movement, slowly maturing and adopting the characteristics of a more centralized approach with IT consolidation and shared application delivery initiatives. A major driver of the "enterprise view" of IT are the business risks associated with security threats or cybersecurity.

There is no "one right way" to organize the state executive branch because each state will define their approach that reflects the unique culture, politics, and decision making processes of the state. However, the lack of organizational stability contributes to greater challenges in execution, project oversight, and can be a barrier to implementing new strategies.

IT Service Delivery and Funding

With a couple of exceptions, almost all state CIO organizations operate on a chargeback basis. This means that state executive branch agencies sit in a customer relationship to the state CIO who is charged with providing IT services to those agencies. In other words, the agencies are "customers" that purchase data center, network, email or voice services under a published rate or pro-rated assessment method. The chargeback funding model presents a challenge to modernizing outdated or legacy systems which are known to be insecure and expensive to maintain. In 2016, NASCIO found that 90 percent of states consider at least 20 percent of their IT systems are due for replacement or modernization, while nearly two-thirds of state CIOs viewed more than 40 percent of IT systems as legacy.

Regarding *how* state CIOs deliver IT services to executive branch customer agencies, there are several business models but the most prevalent models are shared services (74%) and managed services (63%). The "shared services" model is typically defined as one part of an organization sourcing a product or service for the benefit of multiple parts of the organization or for the entire organization/enterprise. This model incentivizes economies of scale which in turn can produce cost savings for the state.

Traditionally, state governments had owned and operated everything from infrastructure (e.g. broadband) to desktops. 2016 NASCIO data indicate that two thirds of states outsource at least some IT infrastructure operations (e.g. running broadband services), almost two-thirds of states use a managed services model (e.g. managed services provider manages and assumes responsibility for providing some defined service) for some or all IT operations, and only one-third of states own and operate all state IT assets and operations. 79 percent of states outsource at least some IT applications and services (e.g. email, GIS), a significant increase from 42 percent reported just six years earlier in 2010.

The increase in the use of brokered services is due to a variety of reasons. When asked to identify the top strategic or operational issues in 2017, state CIOs responded as follows. (NASCIO, Grant Thornton, CompTIA, [2017 State CIO Survey: A New Engine Driving Innovation in State Technology](#), October 2017).

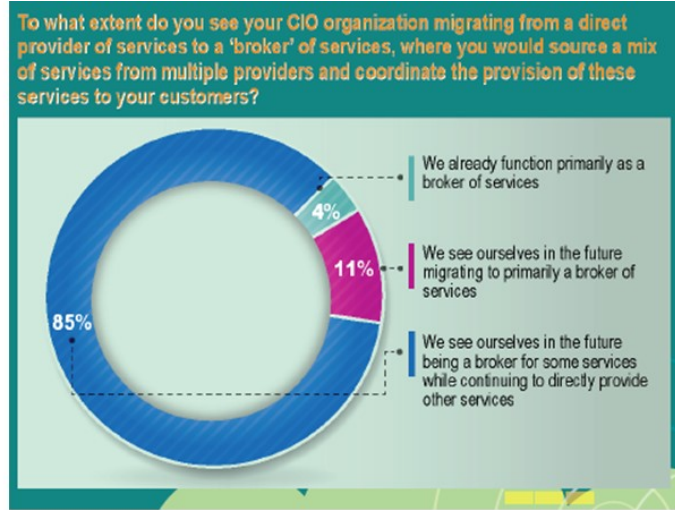
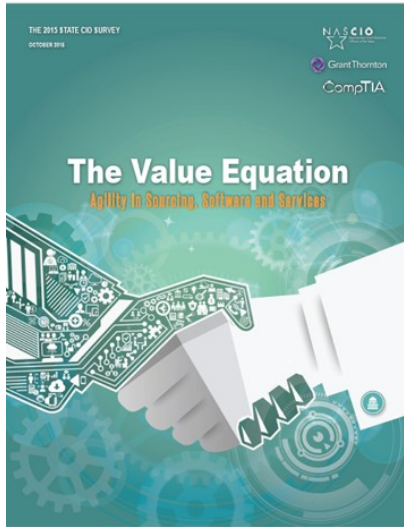


What are the top three strategic or operational issues that are driving the increase in the use of brokered services?	
Cost effectiveness	67%
Flexibility	60%
Quality of services	48%
Access to qualified resources	45%
Modern capabilities	38%
Current funding or recovery model inhibits investment	26%

The business of state government is conducted through IT but the speed at which technology advances outpaces the ability of government to adapt. This is one explanation as to why state governments are shifting from owning and operating IT assets and resources and shifting the adaptation responsibility to a managed service provider. A quote from a state CIO respondent accurately reflects the continued trend toward a managed service model: “We don’t build or develop anything, we buy things that are SaaS (software as a service) or COTS (commercial off-the-shelf) services. Our CIO serves as an IT facilitator vs. provider.” (NASCIO, Grant Thornton, CompTIA, [2016 State CIO Survey: The Adaptable State CIO](#), September 2016).

With such an emphasis on this new operating model, NASCIO has embarked on a new project this year that is anticipated to be a multi-year effort. That is the development of a key reference for states moving more toward multi-sourcing and brokering of services. States like Georgia and Texas have been continuing to develop their discipline for brokering and multi-source integration for over 10 years. Other states are following in their footsteps. We believe this will be the predominant model in the future. Again, moving from the owner operator to the role of broker of services. This trend has

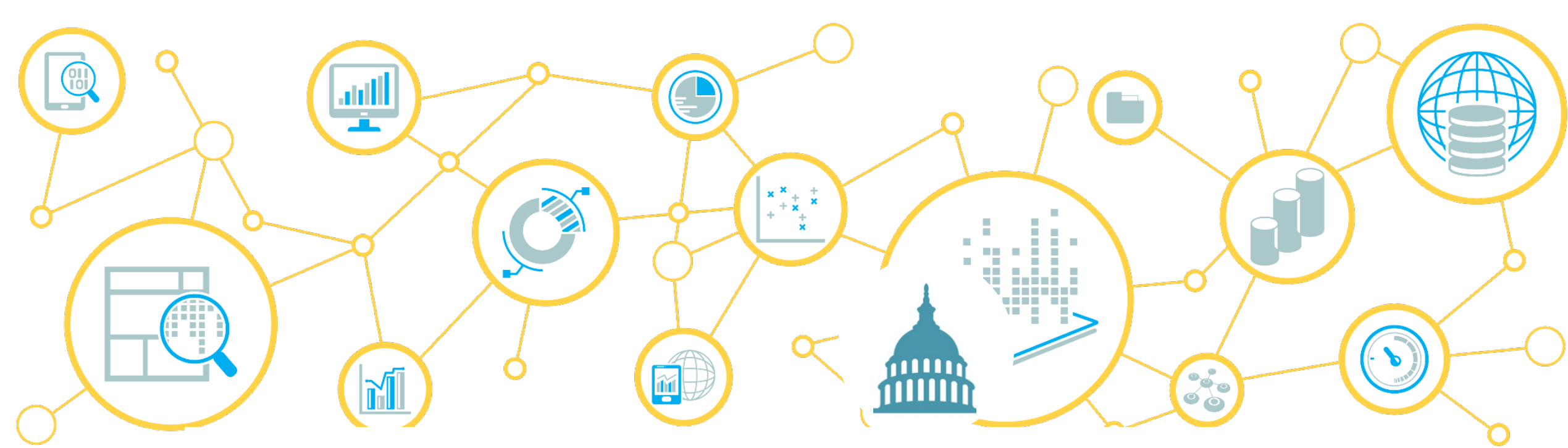
been in place for some time. From the 2015 NASCIO Annual CIO Survey, CIOs responded to the following question.



(NASCIO, Grant Thornton, CompTIA, [2015 State CIO Survey: The Adaptable State CIO](#), September 2015).

Madam Chair McGinn, Vice Chair Billinger, Ranking Member Kelly and members of the Ways and Means Committee, thank you for the opportunity to present the perspectives of NASCIO. I hope my comments have been beneficial as you consider HB 2331. I would be happy to answer any questions you may have at this time.

¹ "The Fiscal Survey of the State – Fall 2017", National Association of State Budget Officers (NASBO). p. VII. Retrieved on March 7, 2018, from <https://www.nasbo.org/reports-data/fiscal-survey-of-states>.



State Government IT Transformation

**WAYS AND MEANS COMMITTEE
KANSAS SENATE**

March 13, 2018 - 10:30 am

Eric Sweden, Program Director, NASCIO

About NASCIO

- National association representing state chief information officers and information technology executives from the states, territories and D.C.
- NASCIO's mission is to foster government excellence through quality business practices, information management, and technology policy.
- NASCIO provides members with products and services designed to support the challenging role of the state CIO, stimulate the exchange of information, and promote the adoption of IT best practices and innovations.

2017 budget cuts in many states. Budgets for FY 2018 remain cautious - 1% growth. CIOs pressured to find **cost savings**, driving consolidation, optimization strategies.

Continued evolution from the **owner-operator** business model for CIOs - focus on services and hybrid models of delivery.

Cybersecurity as a **business risk**. Ransomware, hacktivism and evolving threats. Enterprise strategy, communication and talent.

Growing investments in **cloud services**, data analytics, mobile.

Advocating for **IT modernization**, agile approaches, procurement reform.

Continuing **IT workforce challenges**: retirements, skills gap, recruiting, talent management, workplace innovation.

Top Ten: State CIO Priorities for 2018



1. Security



2. Cloud Services



3. Consolidation/Optimization



4. Digital Government



5. Budget and Cost Control



6. Shared Services



7. Broadband/Wireless Connectivity

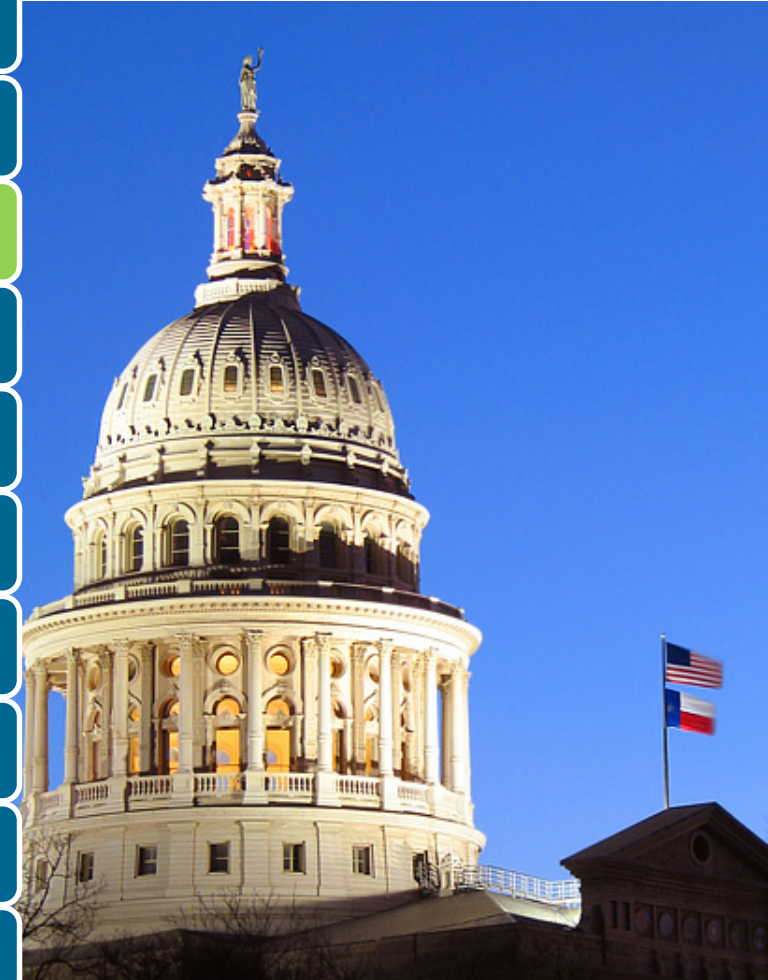


8. Data Management and Analytics



9. Enterprise IT Governance

10. Agile and Incremental Software Delivery





State CIO Top Ten Priorities for 2017

November 2016

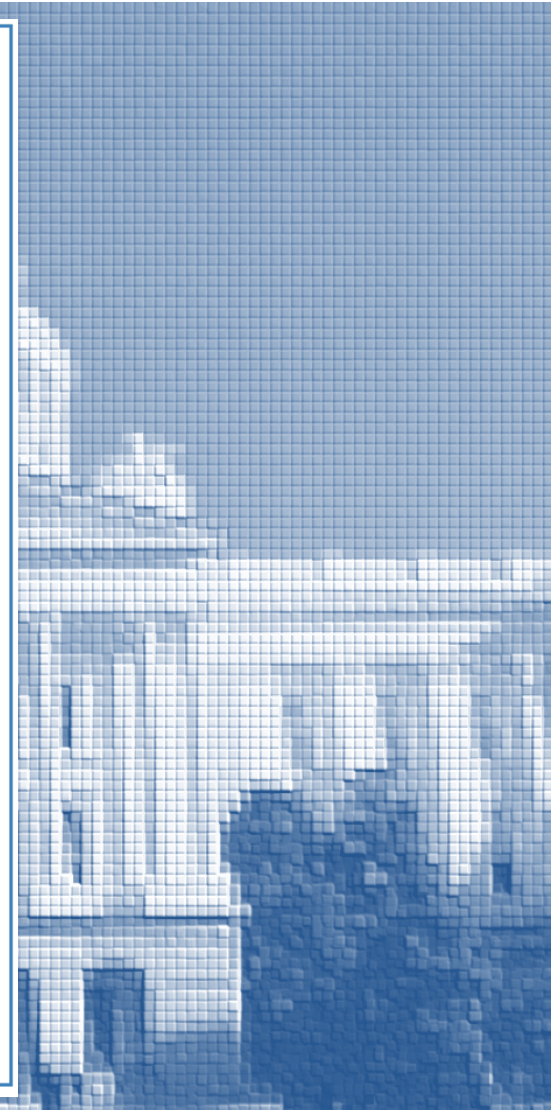
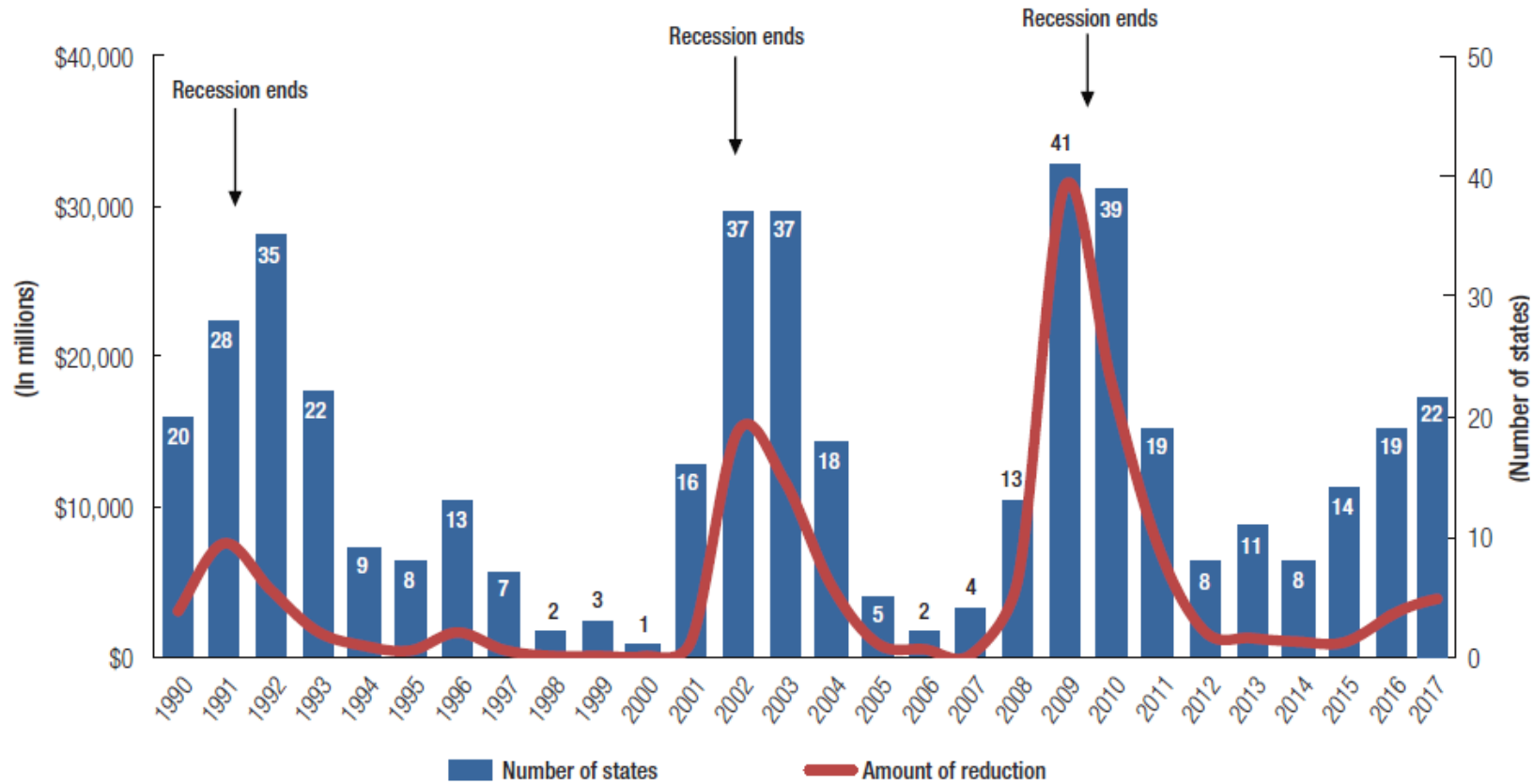
Top Ten Strategies, Management Processes and Solutions

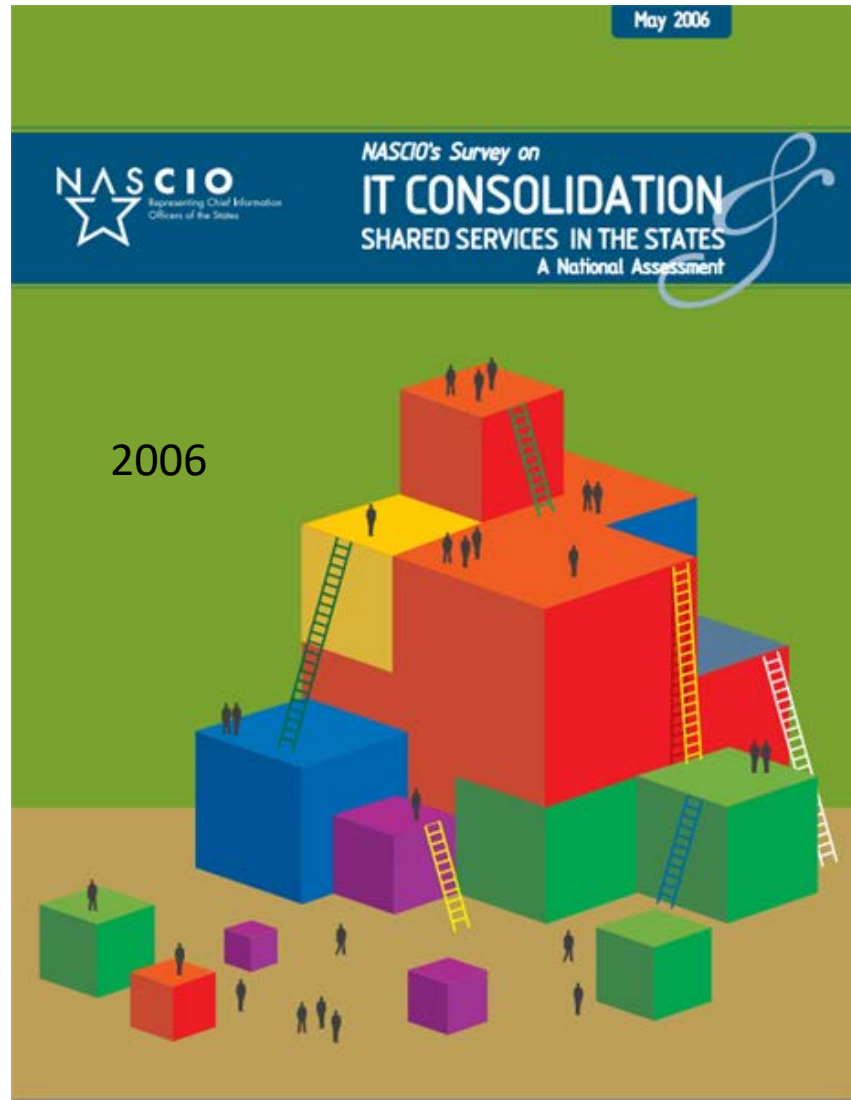
1. **Security and Risk Management:** governance; budget and resource requirements; security frameworks; data protection; training and awareness; insider threats; third party security practices as outsourcing increases; determining what constitutes “due care” or “reasonable”
2. **Consolidation/Optimization:** centralizing, consolidating services, operations, resources, infrastructure, data centers, communications and marketing “enterprise” thinking, identifying and dealing with barriers
3. **Cloud Services:** cloud strategy; proper selection of service and deployment models; scalable and elastic IT-enabled capabilities provided “as a service” using internet technologies; governance; service management; service catalogs; platform; infrastructure; security; privacy; data ownership
4. **Budget, Cost Control, Fiscal Management:** managing budget reduction; strategies for savings; reducing or avoiding costs; dealing with inadequate funding and budget constraints
5. **Legacy modernization:** enhancing; renovating; replacing; legacy platforms and applications; business process improvement
6. **Enterprise IT Governance:** enterprise IT policy and planning; improving IT governance; partnering; inter-jurisdictional collaboration; industry advisory boards; legislative oversight-achieving proper balance; agencies participating as members of a “state enterprise”
7. **Data Management and Analytics:** data governance; data architecture; strategy; business intelligence; predictive analytics; big data; roles and responsibilities
8. **Enterprise Vision and Roadmap for IT:** vision and roadmap for IT; recognition by administration that IT is a strategic capability; integrating and influencing strategic planning and visioning with consideration of future IT innovations; aligning with Governor’s policy agenda
9. **Agile and Incremental Software Delivery:** iterative design and incremental development of software solutions; allows for design modifications, prototyping and addition of new capabilities as part of the development process
10. **Broadband/Wireless Connectivity:** strengthening statewide connectivity; implementing broadband technology opportunities

Consolidation has been on the State CIO Top Ten Priorities list consistently since 2006

Budget Pressures

FIGURE 2:
Budget Cuts Made After the Budget Passed, Fiscal 1990 to 2017





Key Findings:

“strong trend towards states consolidating key IT functions and utilizing the shared services model whenever applicable.”

“most consolidation initiatives were begun in the state CIO’s offices in tandem with either the governor’s office or the state legislature.”

Targets of Enterprise Consolidation

- Data Centers
- E-mail/Collaboration
- Telecom/Networks
- Servers
- Storage
- Desktops
- Content Management
- Cybersecurity
- Help Desk
- Software Licenses



- Disaster Recovery/Back Up
- Automation Tools
- Application Development
- Business Intelligence/Analytics
- Project Management
- Imaging/Archiving
- Mobile Device Management
- Identity Management
- Contracts
- IT Staff

Rationale for IT Consolidation/Optimization

Reduce diversity and complexity of environment - cost savings

Economies of scale - reduce operational costs

Strengthen IT security

Promote enterprise integration and applications

Introduce process standards: ITIL and ITSM

Improved support for legacy systems

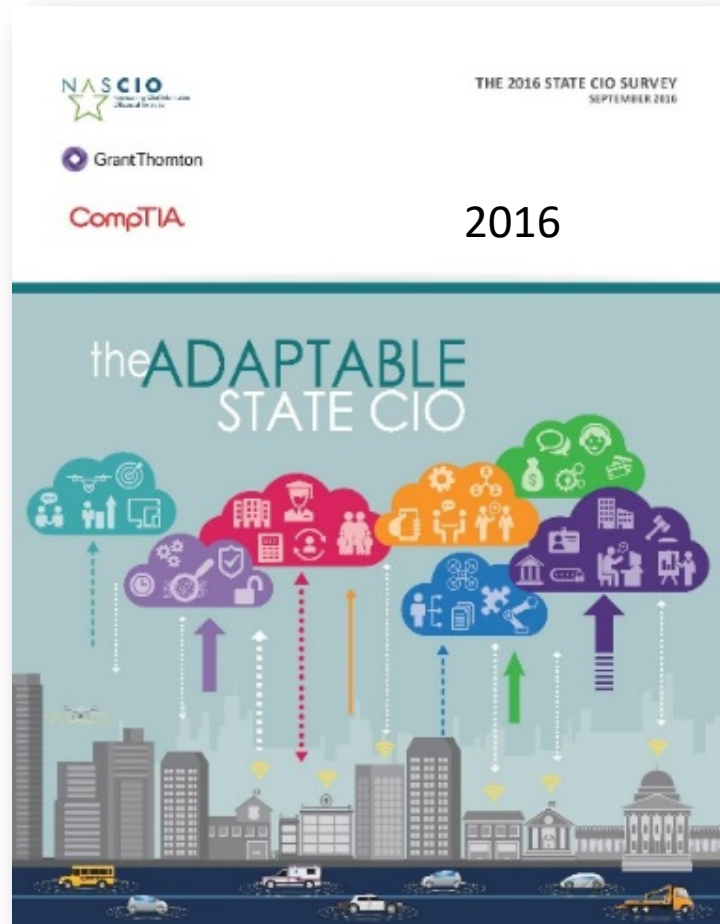
Centralize infrastructure maintenance and upgrades

Improve disaster recovery/business continuity

Reinvestment of spend to services



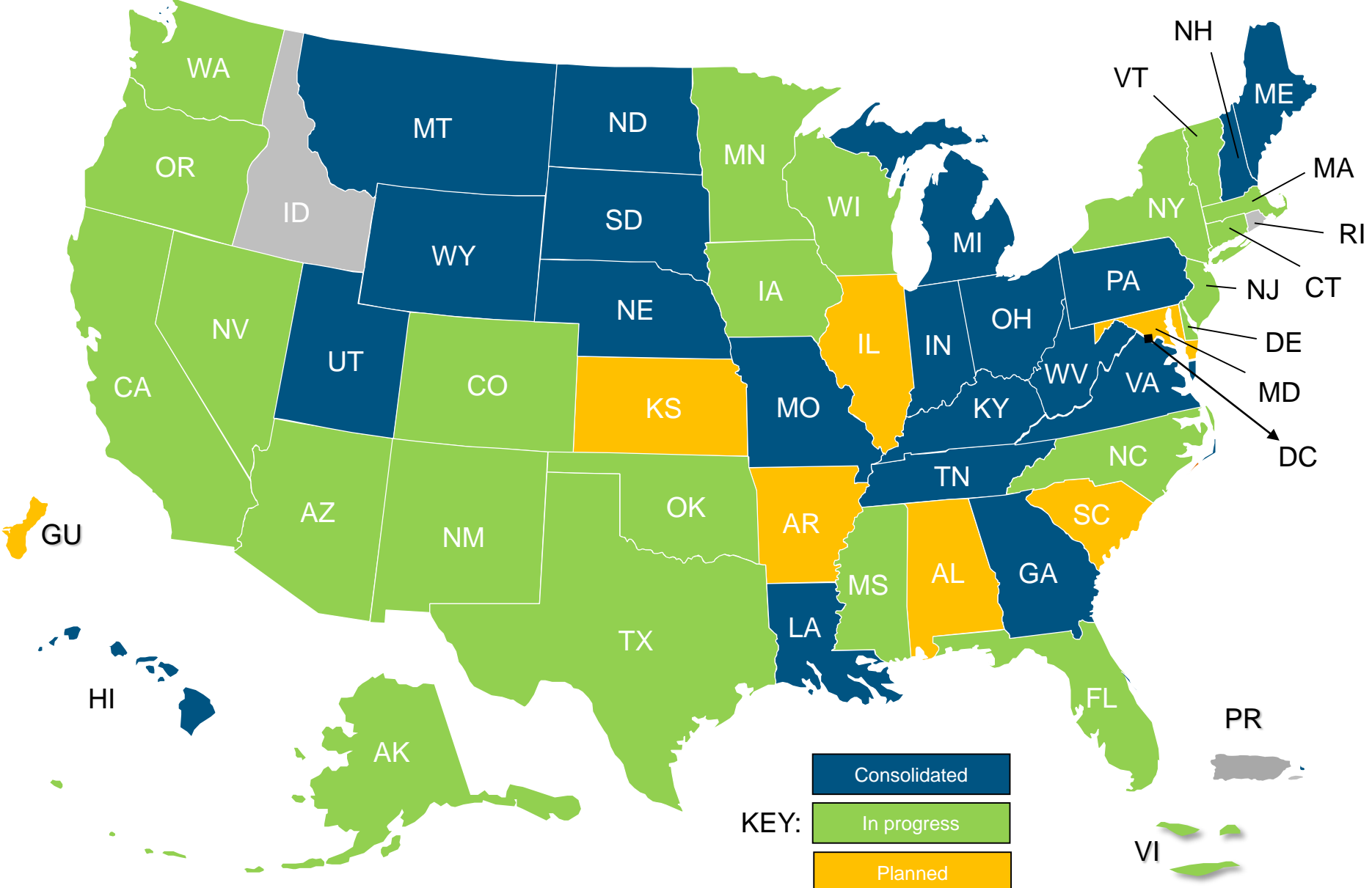
Status of Infrastructure Consolidation



	2016			
	DONE	ONGOING	PLANNED	DK/DNA
Backup/disaster recovery	32%	52%	13%	3%
Business applications	15%	44%	13%	25%
Content management	21%	42%	13%	26%
Data centers	42%	47%	11%	0%
Desktop support	31%	37%	20%	12%
Email	59%	35%	6%	0%
Imaging	19%	42%	12%	27%
Security	31%	56%	9%	4%
Servers	31%	65%	4%	0%
Staff	29%	33%	15%	24%
Storage	35%	54%	11%	0%
Telecom	57%	35%	7%	0%
Helpdesk	38%	28%	17%	17%
Mobile device management	37%	30%	20%	13%
Identity and Access Management	30%	39%	26%	5%
Data Warehouse/ BI/ Analytics	8%	40%	30%	22%
Project Management Office	39%	30%	17%	15%
State Portal	48%	36%	9%	7%

Enterprise Data Center Consolidation

Source: NASCIO 2016 State CIO Survey



Drivers for Brokered Services



What are the top three strategic or operational issues that are driving the increase in the use of brokered services?	
Cost effectiveness	67%
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Challenges to Consolidation Initiatives

Agency/workforce resistance to change

Lack of funding/investment to prepare for consolidation

Agencies desire to remain autonomous

Problems moving infrastructure from the agencies

Backlash when consolidation doesn't meet agency business needs

Higher than projected costs

Seeking exemptions from federal statutory and regulatory requirements

State of Ohio Story: Consolidation, Optimization, Collaboration

Reductions in the first year of IT Optimization

- Hardware spend reduced by **44.8%**
- Hardware Maintenance spend reduced by **65.9%**
- Mainframe spend reduced by **64.4%**
- Distributed computing software spend reduced **11.5%**
- Core Infrastructure Spending down **\$53.4M**
- IT Workforce down **116 FTE** without workforce actions
- Use of Centrex telecom services down by more than **19,000 users**

Increases in the first year of IT Optimization

- New Public Facing Systems and Services up **35.3%**
- Federally Funded Systems/Services up to **27%**
- Use of State Private Cloud up **367.3%** over prior year
- State server CPU utilization up to more than **50%**
- Server virtualization up from <9:1 to more than **20:1**
- Use of central State email system up to **100%**
- Adoption of VoIP up to more than **22,000 users**

[IT Optimization - Driving Business Value](#)

Enterprise IT Management Initiatives

OH, 2015

<https://www.nascio.org/Awards/SIT>

Technological achievements in the state of Oklahoma over six years with the forward momentum of unification as a new focus on the journey ahead towards digital transformation



Consolidation Project Savings	\$	111,946,302.00
Cost Avoidance Project Savings	\$	47,419,354.00
Cost Avoidance Purchasing Savings	\$	212,924,719.00
Total Savings Over 6 Years	\$	372,290,375.00



Critical Success Factors



Strong support from the Governor

Establishing trust with stakeholders

Effective governance model with a shared vision

Choosing the correct implementation strategy to ensure buy-in

Workforce impact - motivating staff through the transition

The Success Playbook

Have a plan - defined process with gap analysis

Document the "as is" - baseline of assets

Spend analysis: capture the known costs; hidden costs

Create aggressive roadmap with reasonable milestones

Establish a governance structure for shared decision-making

Engage the agency stakeholders early

Constant communication - expect resistance

Address federal cost allocation

Re-negotiate existing contracts

Manage expectations and expect surprises

Capture and report cost savings



What Do We Know? Patterns of Success in States



Enterprise IT Leadership and Governance



Statewide Enterprise and Application Architecture



Consolidation and Optimized IT Spending



Enterprise Project, Portfolio and Investment Management



Statewide Security and Risk Management



Business Transformation Enabled by Technology