State Information Technology and the Forces of Change

State of Vermont
November 16, 2015

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National Association of State Chief Information Officers (NASCIO)
About NASCIO

- National association representing state chief information officers and information technology executives from the states, territories and D.C.

- Founded in 1969

- NASCIO's mission is to foster government excellence through quality business practices, information management, and technology policy.
Fiscal recovery and IT budgets: CIOs still seeking IT operational **cost savings**, consolidation, innovation

**Cybersecurity threats!** New risks, organizing for success, funding inadequate, talent crisis

**Transition:** systems-centric *to* technology as a service. Changing business models

Continuing IT **workforce** retirements, skills gap, recruiting challenges, talent management

Investments in **cloud services**, mobile, data analytics

Alternative **sourcing** options, procurement challenges, agile approaches
### Top Ten: State CIO Priorities for 2016

1. Security
2. Cloud Services
3. Consolidation/Optimization
4. Business Intelligence & Data Analytics
5. Legacy Modernization
6. Enterprise Vision and Roadmap for IT
7. Budget and Cost Control
8. Human Resources/Talent Management
9. Agile and Incremental Software Delivery
10. Disaster Recovery/Business Continuity

*Source: NASCIO State CIO Ballot, November 2015*
The Forces of Change

1. Service models and sourcing options
2. Adoption of cloud services
3. Power of data analytics
4. Changing state IT workforce
## Business Models and Sourcing are Changing

### What business models and sourcing strategies does your state CIO organization currently use?

<table>
<thead>
<tr>
<th>Strategy</th>
<th>2010 Responses</th>
<th>2015 Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owns and operates all state IT assets and operations</td>
<td>32%</td>
<td>30%</td>
</tr>
<tr>
<td>Owns and operates multiple data centers</td>
<td>58%</td>
<td>53%</td>
</tr>
<tr>
<td>Owns and operates a consolidated data center</td>
<td>55%</td>
<td>64%</td>
</tr>
<tr>
<td>Outsources some of its IT infrastructure operations</td>
<td>58%</td>
<td>58%</td>
</tr>
<tr>
<td>Outsources some of its IT applications and services</td>
<td>42%</td>
<td>79%</td>
</tr>
<tr>
<td>Uses a managed services model for some or all IT operations</td>
<td>50%</td>
<td>55%</td>
</tr>
<tr>
<td>Uses an IT shared services model for some or all IT operations</td>
<td>66%</td>
<td>83%</td>
</tr>
</tbody>
</table>

Source: The Value Equation, 2015 State CIO Survey
### Service Delivery in the Next Three Years?

<table>
<thead>
<tr>
<th>How does your state CIO organization plan to deliver or obtain IT services over the next three years?</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expand existing IT shared services model</td>
<td>62%</td>
</tr>
<tr>
<td>Outsource business applications through a Software-as-a-Service model</td>
<td>55%</td>
</tr>
<tr>
<td>Expand existing managed services model</td>
<td>53%</td>
</tr>
<tr>
<td>Downsize state-owned-and-operated data center(s)</td>
<td>49%</td>
</tr>
<tr>
<td>Expand outsourcing</td>
<td>43%</td>
</tr>
<tr>
<td>Introduce a managed services model</td>
<td>26%</td>
</tr>
<tr>
<td>In-source some operations that currently are outsourced</td>
<td>17%</td>
</tr>
<tr>
<td>Introduce outsourcing as a new service model</td>
<td>15%</td>
</tr>
<tr>
<td>Maintain the status quo</td>
<td>13%</td>
</tr>
<tr>
<td>Introduce an IT shared services model</td>
<td>6%</td>
</tr>
<tr>
<td>Build new data centers</td>
<td>2%</td>
</tr>
<tr>
<td>Increase state IT staff</td>
<td>2%</td>
</tr>
</tbody>
</table>

Source: The Value Equation, 2015 State CIO Survey
To what extent do you see your CIO organization migrating from a direct provider of services to a ‘broker’ of services, where you would source a mix of services from multiple providers and coordinate the provision of these services to your customers?

- **85%**: We already function primarily as a broker of services
- **11%**: We see ourselves in the future migrating to primarily a broker of services
- **4%**: We see ourselves in the future being a broker for some services while continuing to directly provide other services

Source: The Value Equation, 2015 State CIO Survey
Forces of Change: Why Cloud?

- Cost savings and efficiency
- Flexibility and scalability
- Rapid provisioning
- Measured service
- Better data security
- Shift from capital spend to operating spend
- Reduced IT staffing and administration costs

This transition is disruptive to the traditional notions of state IT. It has serious implications for state budgeting, procurement, legal, business processes, project and portfolio management.
What is your State's status regarding Cloud Services?

- 83% - The State is already highly invested in Cloud Services
- 11% - The State is still investigating Cloud Services
- 4% - The State has some applications in the Cloud and is considering others
- 2% - Other

Source: The Value Equation, 2015 State CIO Survey
State Government Data Landscape

| Data stored across multiple systems from multiple agencies in multiple formats |
| Data quality issues: dirty and messy |
| Lack of standards, consistency |
| Data sharing is difficult – format, language, access, culture, myths |
| Security concerns and privacy issues |
| Little insightful, usable data on “customers” |
Managing Data as a Strategic Asset

How would you characterize your data management function in terms of importance and maturity?

- We have a long way to go to develop an enterprise view of data and governance of that data as a state asset: 47%
- We have made some progress in developing operating discipline for managing data: 49%
- We have a formal data management discipline that includes governance, roles and responsibilities, and tools: 2%
- We have a formal data management discipline that includes governance, roles and responsibilities, and tools. We are now moving toward data as an enterprise asset: 2%

Source: The Value Equation, 2015 State CIO Survey
Indiana: Can Big Data Reduce Infant Mortality?

- Governor Pence executive order in 2014 creating a Management and Performance Hub (MPH) for all agencies
- Coordinated effort among the state's agencies, the Indiana OIT and state OMB
- MPH provides centralized data sharing, correlation and analysis for the state in areas where multiple agencies must work together
- Initial focus: a major public health issue in Indiana
Progress: Building & Using the Solution

Before

7.1 / 1000

- Statistically quantified importance of risk factors—many of which had never been considered by health professionals

- There are infant subpopulations with distinct quantifiable, predictable underlying drivers for death

After

- Regions have distinct needs based on population demographics, industry, access to care, etc.

- Establish correlation frequency between known and previously unknown risk factors (STDs and STDs to deaths)

- Different subpopulations of mothers have distinct risk profiles and needs

- Understand the complicated “human factors”

Source: Office of Information Technology, State of Indiana
What did Indiana find? How did it change public health policy and funding?
Forces of Change: State IT Workforce

- Retirement
- Recruitment
- Retention
- Reform
Given these **Forces of Change**, what are the patterns of success and best practices found in the states?
What Do We Know? Patterns of Success

- 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
Best Practices: States and Stories

**IT Leadership and Governance**
- Michigan – centralized IT budget and personnel; IT investment fund
- Missouri
- New Jersey – data governance office
- Utah
- Washington - prioritization of IT budget requests

**Consolidation and Optimized IT Spending**
- Indiana – statewide server consolidation
- Ohio – consolidation and optimization, private cloud, $125 M savings to date
- Oklahoma - IT unification and mainframe consolidation
- Tennessee – consolidation and mainframe outsourcing
- Texas – data center services model
- Utah – data center consolidation and cloud services

**Statewide Information Security and Risk Management**
- Colorado – sustainable risk reduction
- Delaware – disaster recovery/business continuity
- Michigan – cyber disruption response planning
- Pennsylvania – advanced cyber analytics
- South Dakota – enterprise cyber program including K-12
Best Practices: States and Stories

Statewide Enterprise and Application Architecture
- Colorado – universal application for early childhood assistance
- Delaware
- Michigan – MiPage cross-agency solutions
- North Carolina
- Utah – supporting innovative services

Enterprise Project, Portfolio and Investment Management
- California – project academy; reducing project risk
- Georgia
- Maine
- Michigan – centralized EPMO with dashboard
- Virginia – IT investment management

Business Transformation Enabled by Technology
- Arkansas – mobile apps and services
- Indiana – reducing infant mortality with big data
- Minnesota – streamline online permitting
- Pennsylvania
- Virginia – Electronic birth certificates on demand at DMV
Looking Forward...

- Forces of change: sourcing, public cloud, X-as-a-Service
- Data governance, data as enterprise asset, power of analytics
- Digital government – a new experience for citizens
- Risk management, enterprise IT portfolio
- Growth in mobile services, apps, devices
- State IT workforce: talent management, reform, innovation
- Organizing for success, flexible, agile
- Emerging IT, policy and data: IoT, UAS, BWCs, What’s next?
The Value Equation
Agility in Sourcing, Software and Services

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