Technology Forecast 2018: What State and Local Government Technology Officials Can Expect

Doug Robinson
Executive Director
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Executive Director
PTI
State-of-the-States 2018: IT Trends and Perspectives

Technology Forecast 2018: What State and Local Government Technology Officials Can Expect

Doug Robinson, NASCIO Executive Director

@NASCIO
FY18 budgets remain cautious. Enacted budgets increase general fund spending by 2.3%. Impact from federal tax reform? CIOs pressured to find **cost savings**, driving consolidation, efficiencies.

Growing investments in **cloud services** and X-as-a-Service. Continued evolution from the **owner-operator** business model to more managed services and multisourcing initiatives.

Cybersecurity as a **business risk**. Increased investments, frameworks, enterprise strategy, talent crisis.

Growing investments enterprise solutions: cloud, **data analytics**, service integration, mobile, digital government services.

FirstNet implementation in 2018: rollout, apps ecosystem, identity management.

18 State CIO transitions since January 2018. 36 gubernatorial elections in 2018 – impact on leadership.
**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

Source: NASCIO State CIO Ballot, November 2017
Cybersecurity Maturity in the States is Improving

Risk Based Strategies are Being Adopted

Expect Continued Progress in 2018
What is the current role of your CIO organization in administering the statewide cybersecurity program?

- Leading or participating in policy setting: 98%
- Responsible for setting overall direction: 88%
- Responsible for execution: 64%
- Responsible for oversight: 83%

Source: NASCIO 2017 State CIO Survey
A NEW ENGINE
Driving Innovation in State Technology
<table>
<thead>
<tr>
<th>How does your state CIO organization plan to deliver or obtain IT services over the next three years?</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expand existing IT shared services model</td>
<td>62%</td>
<td>72%</td>
<td>60%</td>
</tr>
<tr>
<td>Outsource business applications through a SaaS model</td>
<td>55%</td>
<td>66%</td>
<td>52%</td>
</tr>
<tr>
<td>Expand existing managed services model</td>
<td>53%</td>
<td>61%</td>
<td>55%</td>
</tr>
<tr>
<td>Downsize state-owned-and-operated data center(s)</td>
<td>49%</td>
<td>28%</td>
<td>55%</td>
</tr>
<tr>
<td>Expand outsourcing</td>
<td>43%</td>
<td>45%</td>
<td>45%</td>
</tr>
<tr>
<td>Introduce a managed services model</td>
<td>26%</td>
<td>17%</td>
<td>21%</td>
</tr>
<tr>
<td>In-source some operations that currently are outsourced</td>
<td>17%</td>
<td>19%</td>
<td>17%</td>
</tr>
<tr>
<td>Introduce outsourcing as a new service model</td>
<td>15%</td>
<td>17%</td>
<td>33%</td>
</tr>
</tbody>
</table>

Source: NASCIO 2017 State CIO Survey
Which business model will drive your investments in the next five years? (state members only)

<table>
<thead>
<tr>
<th>Choices</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>On-Premise, Centralized/Enterprise Model</td>
<td>20%</td>
</tr>
<tr>
<td>On-Premise, Distributed/Federated Model</td>
<td>8%</td>
</tr>
<tr>
<td>Off-Premise, Centralized/Enterprise Model</td>
<td>55%</td>
</tr>
<tr>
<td>Off-Premise, Distributed/Federated Model</td>
<td>17%</td>
</tr>
</tbody>
</table>
Business Models, Sourcing and the CIO as Broker

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

- **67%** Cost effectiveness
- **60%** Flexibility
- **48%** Quality of services
- **45%** Access to qualified resources
- **38%** Modern capabilities
- **26%** Current funding or recovery model inhibits investment
- **7%** Other

Source: NASCIO 2017 State CIO Survey
Cloud Migration Strategies

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

- **28%** Yes, cloud migration strategy in place
- **55%** No, but cloud migration strategy in development
- **17%** No cloud migration strategy planned

Source: NASCIO 2017 State CIO Survey
Are you planning to move to an off-premise Mainframe-as-a-Service solution in the next 2-3 years?

- **10%** Yes, already complete
- **14%** Yes, planned
- **33%** Yes, considering
- **31%** No
- **12%** Unsure

Source: NASCIO 2017 State CIO Survey
State CIOs and Digital Government

What is the current status of digital government in your state?

- 10% Undefined
- 45% Informally defined
- 14% Formal strategy
- 5% Formal strategy and implementation roadmap
- 24% Formal strategy, roadmap and some capabilities have been deployed
- 2% Other

What is your approach to delivering digital government services?

- 17% Ad hoc / Not defined
- 23% Responsibility of agencies /departments
- 20% Plan to create digital services organization
- 40% Already have a digital services organization

Source: NASCIO 2017 State CIO Survey
How would you characterize the use of Agile or incremental software development approaches within your State?

- **2%** No use
- **17%** Limited use, uncoordinated
- **34%** Pilot/trial adoption on certain projects
- **37%** Widespread use, but not subject to centralized oversight or guidelines
- **10%** Widespread use, subject to centralized oversight or guidelines

Source: NASCIO 2017 State CIO Survey
What emerging IT area will be most impactful in the next 3-5 years?

- **43%** Internet of Things (IoT)
- **10%** Digital Assistants
- **29%** Artificial Intelligence /Machine Learning
- **2%** Connected /Autonomous Vehicles
- **9%** Blockchain
- **7%** Other

Source: NASCIO 2017 State CIO Survey
State IT Workforce

Photo: AWS, State of Tennessee

What single personnel reform could be implemented that would be the most impactful in reforming your State IT workforce?

- **10%** Streamlining the hiring process and reducing time to hire
- **14%** Removing IT positions from the civil service system
- **31%** Modernizing the IT job titles and classifications
- **12%** Eliminating state unions representing IT
- **5%** Implementing phased retirement options
- **14%** Modernizing office culture*
- **14%** Other

*(i.e. flexible work schedules, telecommuting, etc.)*
2018 PTI Top Issues and Policies

Dr. Alan R. Shark
Executive Director
Public Technology Institute
and
Associate Professor
George Mason University Schar School of Policy & Government
<table>
<thead>
<tr>
<th>OUT</th>
<th>IN</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Cyber Security as a concern</td>
<td>Cyber Security as a crisis</td>
</tr>
<tr>
<td>2. Perimeter-Based Security Focus</td>
<td>Holistic Active Monitoring and Response Systems</td>
</tr>
<tr>
<td>3. Hacked</td>
<td>Ransomware</td>
</tr>
<tr>
<td>4. GIS</td>
<td>IVIS (Interactive Visualized Information Systems</td>
</tr>
<tr>
<td>5. Touch</td>
<td>Voice</td>
</tr>
<tr>
<td>7. Smart software</td>
<td>Artificial Intelligence (AI)</td>
</tr>
<tr>
<td>8. Robotics</td>
<td>Robots/Bots</td>
</tr>
<tr>
<td>9. IQ (intelligence quotient)</td>
<td>EQ (emotional intelligence quotient)</td>
</tr>
<tr>
<td>10. Virtual &amp; Augmented Reality</td>
<td>Mixed Reality</td>
</tr>
<tr>
<td>11. Credit Cards</td>
<td>Bitcoin</td>
</tr>
<tr>
<td>12. Database transactions</td>
<td>Blockchain</td>
</tr>
<tr>
<td>13. Big Data for Public Consumption</td>
<td>Big Data for Data-Driven Decision Making</td>
</tr>
<tr>
<td>14. IOE (Internet of Everything)</td>
<td>SIOE (Secured IOE)</td>
</tr>
<tr>
<td>15. Hiring IT Staff (internal)</td>
<td>Managing IT staff (external)</td>
</tr>
<tr>
<td>16. Cloud Computing</td>
<td>Managed Services</td>
</tr>
<tr>
<td>17. Converged Infrastructure</td>
<td>Hyperconvergent Infrastructure</td>
</tr>
</tbody>
</table>

Source: Dr. Alan Shark, January 2018
Top IT Strategies, Management Processes, and Solutions for 2018 (ranked)

Provided City & County IT officials with the list of priorities identified by NASCIO and asked them to rank them.

Results of Two Combined Polls

• Poll of *County* IT Officials conducted December 2017: PTI and the National Association of Counties IT Standing Committee

• Poll of *City* IT officials conducted by PTI January 2018
Top IT Strategies, Management Processes, and Solutions for 2018 (ranked)

PTI / Local Government Priorities

1. Security and Risk Management
2. Consolidation/Optimization
3. Cloud Services
4. Budget, Cost Control, Fiscal Management
5. Enterprise IT Governance
6. Data Management and Analytics
7. Digital Government
8. Shared Services
9. IT Staffing (not on the NASCIO survey)
10. Broadband/Wireless Connectivity
11. Agile and Incremental Software Delivery
Top IT Strategies, Management Processes, and Solutions for 2018 (ranked)

<table>
<thead>
<tr>
<th>Local Government</th>
<th>(State Government)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Security and Risk Management (1)</td>
<td></td>
</tr>
<tr>
<td>2. Consolidation/Optimization (3)</td>
<td></td>
</tr>
<tr>
<td>3. Cloud Services (2)</td>
<td></td>
</tr>
<tr>
<td>4. Budget, Cost Control, Fiscal Management (5)</td>
<td></td>
</tr>
<tr>
<td>5. Enterprise IT Governance (9)</td>
<td></td>
</tr>
<tr>
<td>6. Data Management and Analytics (8)</td>
<td></td>
</tr>
<tr>
<td>7. Digital Government (4)</td>
<td></td>
</tr>
<tr>
<td>8. Shared Services (6)</td>
<td></td>
</tr>
<tr>
<td>9. IT Staffing (not on the NASCIO survey)</td>
<td></td>
</tr>
<tr>
<td>10. Broadband/Wireless Connectivity (7)</td>
<td></td>
</tr>
<tr>
<td>11. Agile and Incremental Software Delivery (10)</td>
<td></td>
</tr>
</tbody>
</table>
Robots 'to take 50% of our jobs by 2050 and outperform humans at almost anything'

Prof Moshe 

lack of direct...
This Calculator Will Tell You If A Robot Is Coming For Your Job

The answer is yes. The real question is when.

Is a robot coming for your job? Now you can find out via an algorithm, appropriately. A handy calculator from NPR, based on research from
WILL ROBOTS TAKE MY JOB?

Enter your job

or show random example
1.5% Chief Executives

Determine and formulate policies and provide overall direction of companies or private and public sector organizations within guidelines set up by a board of directors or similar governing body. Plan, direct, or coordinate operations/activities at the highest level of management with the help of subordinate executives and staff managers.

Automation Risk Level: Totally Safe

Projected Growth: -1%

Median Annual Wage: $181,210

People Employed: 223,260
66% 

Janitors and Cleaners, Except Maids and Housekeeping Cleaners

SIC CODE: 3759-28

Key responsibilities include: Performing heavy cleaning duties, such as cleaning floors, shampooing rugs, cleaning walls and glass, and cleaning windows. Duties may include handling floor wax and polish, performing routine maintenance activities, monitoring equipment or need for repairs, and cleaning areas or facilities from smoke.
2018 Top Policy Issues

• Net Neutrality
• Privacy
• Surveillance
• Artificial Intelligence
• Capital budgets vs. Operations Budgets
• IT Modernization
• Rural Broadband
• FirstNet
• Autonomous vehicles

Source: Dr. Alan Shark, January 2018
QUESTIONS?