City and County Technology and Workforce Trends

Highlights from the 2020 National Survey of Local Government Technology Executives

Tech Forecast 2020 Webinar

Dr. Alan R. Shark, Executive Director, Public Technology Institute

January 22, 2020
Background

- 9th year that PTI has conducted the survey
- Intent: To provide a snapshot of the technology management issues and organization priorities of local government
- Expanded for 2020 to include new topics and areas of interest
- National survey conducted November-December 2019
- 102 city and county IT executives participated in the survey
City/County CIO Technology Priorities Over Next 2 Years

1. Cybersecurity / data loss prevention - 93%
2. Innovation - 68%
3. Modernizing outdated IT systems, applications, etc. - 55%
4. Launching or updating digital services for citizens - 49%
5. Interoperability / integration of disparate systems - 33%
6. Data silos / more real-time and actionable data - 27%
7. Migrating systems / applications to the cloud - 24%
8. Streamlining IT procurement processes - 12%
City/County Technology Budget Expectations

72% of City/County CIOs (NET) expect their IT budgets to increase in the next fiscal year.

- 44% expect an increase of 5% or more.
- 28% expect an increase of 1% - 4%.
- 22% expect no change.
- 6% expect a decrease of 1% - 4%.
City/County CIOs Mostly Satisfied with ROI of IT

Degree of satisfaction with ROI of IT investments

- Mostly satisfied: 58%
- About in the middle: 35%
- Mostly dissatisfied: 7%

Top reasons for dissatisfaction with ROI of IT investments

1. On-going maintenance costs / support fees / upgrades
2. Staff time requirements to operate and maintain
3. Complexity / poor user experience
4. Upfront cost / too expensive for return
5. Features / capabilities don’t meet needs
## City/County Cybersecurity Priorities on Many Fronts

<table>
<thead>
<tr>
<th>Priority Level</th>
<th>Task Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lowest Priority</td>
<td>Deploying next-gen security, e.g. AI-enabled analytics, etc.</td>
</tr>
<tr>
<td>Secondary Priority</td>
<td>Developing proactive measures, e.g. penetration testing</td>
</tr>
<tr>
<td>Highest Priority</td>
<td>Establishing a security mindset for all facets of government</td>
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</tbody>
</table>

### Priority Levels
- **Lower Priority**
- **Secondary Priority**
- **Highest Priority**

### Priority Percentages
- **Deploying next-gen security, e.g. AI-enabled analytics, etc.**
  - Lower Priority: 34%
  - Secondary Priority: 44%
  - Highest Priority: 22%
- **Modernizing defenses, e.g. cloud security, SIEM, etc.**
  - Lower Priority: 10%
  - Secondary Priority: 22%
  - Highest Priority: 67%
- **Establishing a security mindset for all facets of government**
  - Lower Priority: 13%
  - Secondary Priority: 30%
  - Highest Priority: 57%
- **Updating polices to reflect new threats, e.g. ransomware**
  - Lower Priority: 18%
  - Secondary Priority: 26%
  - Highest Priority: 56%
- **Training for IT staff, e.g. technical training**
  - Lower Priority: 17%
  - Secondary Priority: 30%
  - Highest Priority: 53%
- **Developing or testing incident response plans**
  - Lower Priority: 11%
  - Secondary Priority: 41%
  - Highest Priority: 48%
- **Adopting a cybersecurity framework, e.g. NIST**
  - Lower Priority: 20%
  - Secondary Priority: 33%
  - Highest Priority: 47%
- **Training for general staff, e.g. security awareness**
  - Lower Priority: 3%
  - Secondary Priority: 27%
  - Highest Priority: 70%

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### Training and Professional Development

**Wish list for training at CIO’s agency / department**

<table>
<thead>
<tr>
<th>#1</th>
<th>More training on emerging technology areas</th>
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</thead>
<tbody>
<tr>
<td>#2</td>
<td>More training on core areas, e.g. infrastructure, systems, data, etc.</td>
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<tr>
<td>#3</td>
<td>More cross-training to better understand government operations</td>
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<tr>
<td>#4</td>
<td>More training on project management, agile design, user-centered design, etc.</td>
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<tr>
<td>#5</td>
<td>More leadership training for managers</td>
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<tr>
<td>#6</td>
<td>More soft skills training</td>
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<tr>
<td>#7</td>
<td>More simulations / real-world training scenarios</td>
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</tbody>
</table>
Emerging Technologies Start to Impact Cities/Counties

Technologies in some phase of adoption and/or on the radar of city/county CIOs

- Drones / Unmanned aerial vehicles (UAV): 62%
- 5G: 55%
- Internet of things (IoT): 54%
- Artificial intelligence (AI): 53%
- Automating technologies: 52%
- Autonomous vehicles / Self-driving vehicles: 17%
- Augmented or Virtual reality: 17%
- Blockchain / Distributed ledger technology (DLT): 15%
- Robotics: 7%
Potential Opportunities for Further Collaboration Between City/County CIOs and State CIOs?

Rating of jurisdiction’s relationship with the state CIO

- Non-existent: 49%
- Excellent: 19%
- Just okay: 29%
- Good, but limited: 19%

Top cited collaboration opportunities

- Cybersecurity assistance / alignment of cybersecurity strategies: 83%
- Procurement / purchasing and acquisition: 58%
- Shared services / managed services: 56%
- Collaboration opportunities: 52%
- Smart city / innovation / emerging tech: 39%
- Cloud / data center: 21%
In Addition to the Topics Just Presented the Survey Explores:

- IT Procurement
- Digital Service Delivery
- Staffing
- Budgeting
- Smart Cities and Counties
- Cloud Strategies
- Managed Services
PTI CIO and Leadership Summit: Research Priorities to Explore

Smart City/County Ecosystem:
A “deeper dive” into the usage and security needs and issues, and how to develop (or promote the need with elected leaders) a solid foundation for the ecosystem. Right now, many local governments are experiencing that individual departments are “doing their own thing” versus a city/county-wide approach or strategy.
PTI CIO and Leadership Summit:
Research Priorities to Explore

- How do IT executives manage IoT?

- More on AI – where is it headed, and can local governments develop a roadmap to implement AI within the organization and as a service delivery option.

- Managing IT Compliance Policy and Privacy: This should be considered a priority and not an after-thought for IT executives.
PTI CIO and Leadership Summit: Research Priorities to Explore

- **Blockchain** – What is the latest and ID examples of how local governments are using.

- **The Maturity Model of IT**: Not every IT department is the same. How can local government IT departments benchmark each other?

- **Regional approaches** to IT operations and service delivery for IT executives to explore?
PTI CIO and Leadership Summit: Research Priorities to Explore

- Skillsets that IT executives are looking for in their staff. The “soft skills” are often lacking.

- Innovative approaches to attracting and retaining IT talent.

- IT/project/department collaboration tools.

- The latest with the managed services concept of IT.
**“Ins and Outs 2019 - 2020”**

<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. Smart Applications</td>
<td>Smart Government</td>
</tr>
<tr>
<td>4. Database transactions</td>
<td>Blockchain</td>
</tr>
<tr>
<td>5. Uber/Lyft</td>
<td>Bikes/Scooters/Autonomous vehicles</td>
</tr>
<tr>
<td>6. Smart software</td>
<td>Artificial Intelligence (AI)</td>
</tr>
<tr>
<td>7. Robotics</td>
<td>Robots/Bots</td>
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<tr>
<td>8. Innovation</td>
<td>Change Management</td>
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<tr>
<td>9. Virtual &amp; Augmented Reality</td>
<td>Mixed Reality</td>
</tr>
<tr>
<td>10. Hiring IT Staff (internal)</td>
<td>Managing IT staff (external)</td>
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Weekly email scan of technology news

Blockchain makes new inroads into public sector

Over the past month, several states, local governments and federal agencies have started to explore blockchain's capabilities through pilot projects, legislation and research. READ MORE

PTI NEWS

Technology Forecast 2019: State and Local Governments

Thursday, January 17, 2019

2:00 PM - 3:30 PM

This annual webinar, presented by PTI and NASCIO, provides an overview of the pressing technology issues that will be impacting state and local governments for the coming year. Presenters are Divya Robinson, Executive Director, NASCIO, and Dale Shanks, Executive Director, PTI.

PTI Staff Contact: Dana Fowkes, Deputy Executive Director for Program Development, 202-626-2455.

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For more information contact:

Dr. Alan R. Shark
Office: 202.626.2445
Cell: 202.669.6544
ashark@CompTIA.org
Washington DC

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