State Cybersecurity Workforce

Meredith Ward
Director, Policy & Research, NASCIO
The State of the State IT Workforce

Approximately how many total full-time IT employees does your state have in the executive branch of government?

![Bar chart showing the distribution of IT employees by the number of employees in a state's executive branch of government. The chart includes data from 2015 and 2020, with the years的颜色不同。]
Approximately how many total full-time state IT employees are in your CIO organization?
In the next year, do you anticipate an increase, decrease or no change in the IT staff in the executive branch of your state?
Competencies Missing from State CIO Office or Impacted by COVID-19.

2021, impacted by COVID-19
1. Application development
2. Customer experience/relationship management
3. Security
4. Vendor relationship management
5. Cloud platforms and services

2020
1. Cloud platforms and services
2. AI/machine learning
3. Business intelligence/data analytics/big data
4. Security
5. DevOps
Does the CIO office perform regular IT workforce assessments?
State CIO Workforce Priorities

- Continuing to recruit and retain qualified staff
- Training and career advancement/growth
- Workplace flexibility; culture; wellbeing of team
- Improving pay scales
- Increasing workforce bandwidth and competencies
- Succession planning
- DEI
Cyber Workforce

<table>
<thead>
<tr>
<th>Full-time equivalents</th>
<th>2010</th>
<th>2018</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 to 5</td>
<td>47%</td>
<td>18%</td>
<td>16%</td>
</tr>
<tr>
<td>6 to 15</td>
<td>39%</td>
<td>49%</td>
<td>30%</td>
</tr>
<tr>
<td>16 to 25</td>
<td>4%</td>
<td>14%</td>
<td>18%</td>
</tr>
<tr>
<td>26 to 50</td>
<td>4%</td>
<td>14%</td>
<td>20%</td>
</tr>
<tr>
<td>&gt;51</td>
<td>2%</td>
<td>4%</td>
<td>16%</td>
</tr>
<tr>
<td>Other</td>
<td>4%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>
Barriers impacting the development and support of cyber workforce

01 State salary rates and pay grades
02 Lack of qualified candidates
03 Workforce leaving for private sector
Top benefits to attract/retain cybersecurity talent

01 Opportunity to serve and contribute
02 Job stability
03 Workplace flexibility and predictable work hours

Top talent management practices to attract and retain cyber workforce

01 Promote nonsalary benefits
02 Highlight greater stability
03 Internship programs
Representing Chief Information Officers of the States

States’ plan to close the cybersecurity competency gap

- **94%** Provide training to staff who are developing the required competencies
- **69%** Use specialist augmentation (e.g., consultants and contractors)
- **51%** Contracting with a managed security services provider
- **40%** Outsource certain functional areas

2020 vs. 2018

Leading outsourced cyber functions

- **60%** Cyberthreat risk assessments
- **42%** Security operations center
- **40%** Forensics/legal support

2020 vs. 2018

+31%  
+66%  
+44%  
+27%

+17%  
+4%  
+8%
Private Pay Growth Exceeds State and Local Government Increases by the Largest Margin on Record

Difference between quarterly year-over-year wage cost growth rates for private and public sector workers

Note: The types of jobs and mix of industries that make up the two sectors are different.


© 2022 The Pew Charitable Trusts
Private Sector Workers Have Fared Better Than Public Counterparts Since Pandemic’s Start
Change in inflation-adjusted wage and salary costs per hour worked between Q4 2019 and Q4 2021

- All workers: -3.7% state, -0.5% private
- Educational services industry: -4.3% state, -3.3% private
- Health care and social assistance industry: -3.9% state, -0.9% private
- Office and administrative support occupations: -3.4% state, -0.6% private
- Professional and related occupations: -4.2% state, -2.2% private
- Service occupations: -1.8% state, 3.4% private

Note: The mix of private sector jobs differs from government positions in the same industry or occupation.
© 2022 The Pew Charitable Trusts
Recommendations

- Consider hiring from out of state/remote workers. Review policies and laws to make sure they are compatible with remote work and possibility of out of state workers.

- Ignore diversity, equity and inclusion at your peril. Figure out what that means for the cyber division.

- Look at job classifications/titles. The lack of modernization in state IT job titles and classification continues to be the change that CIOs say could be the most impactful in reforming the state IT workforce. California was able to successfully consolidate 36 different IT job titles into 9 in early 2018.
• Perform regular (yearly or every other year) IT workforce assessments. It’s impossible to plan for the future if you don't know which skills you have.

• Develop plans to reskill workers whose work becomes obsolete because of automation, modernization, etc. TN is a great example of this.

• Don’t ignore looming retirements. A lot of state workers have retired because of COVID-19 and others have delayed retirements because of it. This is where the assessment is key and succession planning is a must.