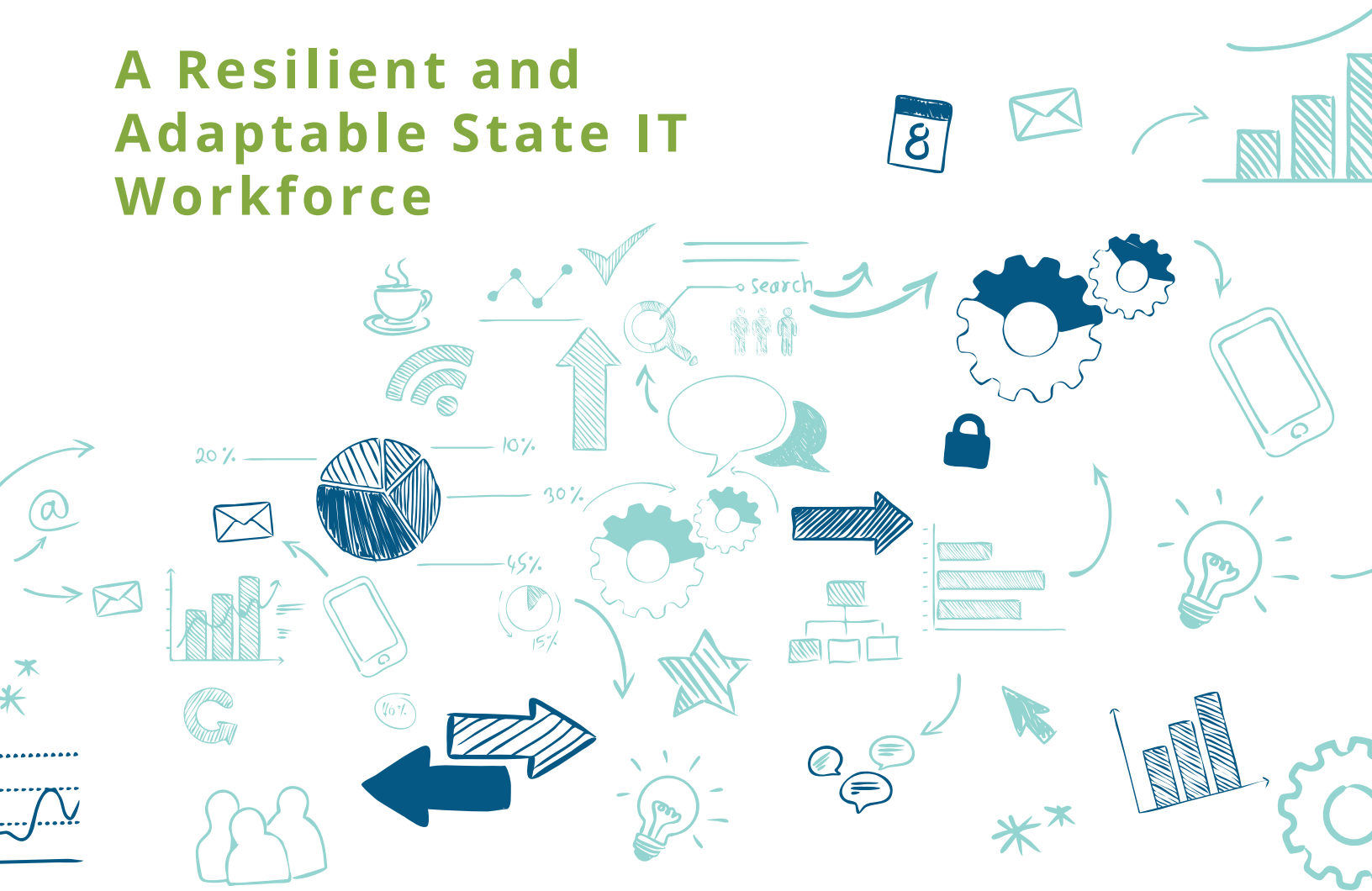


YESTERDAY, TODAY AND TOMORROW:

A Resilient and Adaptable State IT Workforce



A Resilient and Adaptable State IT Workforce

The advancement of the information technology (IT) workforce has been a longstanding interest for NASCIO state chief information officer (CIO) members. So, in February and early March of 2020 NASCIO set forth surveying state chief information officers about the state of their current workforce and future aspirations. All was going well until—you guessed it—COVID-19 hit. As we wrote in the [2020 State CIO Survey](#):



By March [2020], the COVID-19 pandemic had significantly disrupted the United States federal, state and local governments and, like the rest of the world, state CIOs were forced to act and adjust with stability, resiliency and flexibility.

Truth be told, this project was deferred during COVID-19 pandemic. State CIOs were securing work from home for the majority of their states' workforces, figuring out how to deliver citizen services in a remote work environment and helping track pandemic data, to name a few. In the summer of 2020 CIOs started to think about "the big comeback" and what life would be like post-pandemic. But, by the later part of 2020 CIOs had realized that, even with the good news about vaccines, the return to "life as we knew it" would not be anytime soon if at all. So, NASCIO pivoted and we decided to look at the state IT workforce from a pre, during and post pandemic world.

This publication includes insights from data collected from CIOs during the first/pre pandemic workforce survey in February/March 2020 and the mid-pandemic phase in January/February 2021. NASCIO has studied the uniqueness of the state IT workforce for several years and released reports in 2007, 2011 and 2015 on the topic. This publication also includes data comparisons from those previous reports.

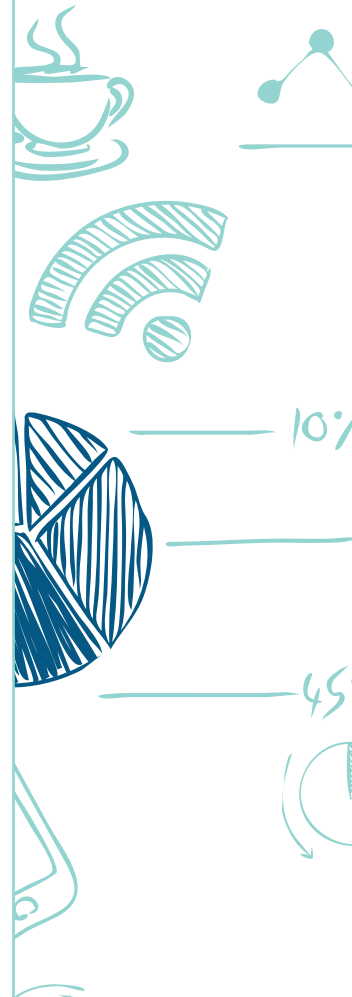
What State CIOs Told Us

In both the 2020 and 2021 workforce surveys, we asked state CIOs about their top workforce priorities in the coming year and next three years. In both the 2020 and 2021 surveys, CIOs mentioned:

- Continuing to recruit and retain qualified staff
- Training and career advancement/growth
- Workplace flexibility
- Improving pay scales
- Increasing workforce bandwidth and competencies
- Succession planning

This is consistent with what CIOs have told us in previous workforce surveys and anecdotally. However, the most interesting comparison is what CIOs *did* say in 2021 that they *didn't* the previous year.

First and foremost, in the 2020 survey, only *THREE* CIOs mentioned remote work as a workforce priority in the coming year or three years. Oh, how times have changed! In the 2021 survey responses, CIOs' responses were generally based on the assumption that remote work will be around permanently or at least for a while. This is consistent with what



we learned in the 2020 State CIO Survey when asked what was projected to change permanently post-pandemic when expanded work from home ranked highest: “put simply, state CIOs think expanded telework is around for the long haul and they will need to make it as easy as possible for the state workforce.”

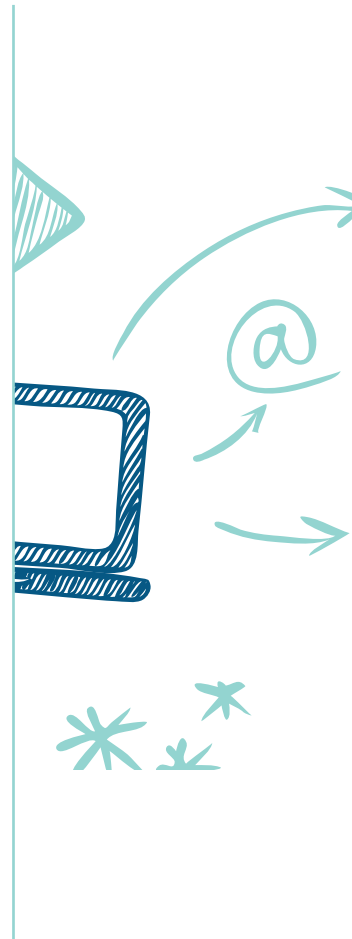
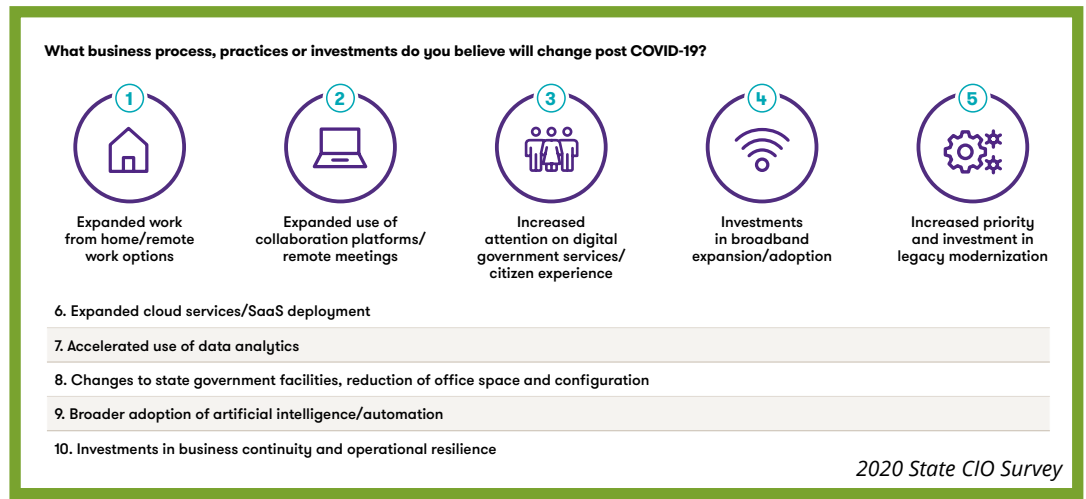
Another topic that was scarcely mentioned in 2020 (only once) is creating a diverse workforce and emphasizing diversity, equity and inclusion. In contrast, several CIOs listed this as a priority in the 2021 survey. One likely cause for this is the civil unrest and calls for social justice and change in the summer of 2020. Additionally, CIOs told us that culture was more important than ever with workplace flexibility, culture management and creating a connected culture all listed as goals by several CIOs.

Another priority that CIOs mentioned in 2021 that was not mentioned in the 2020 survey is increased use of artificial intelligence (AI). This makes sense considering that pre-pandemic, CIOs felt that they didn’t consistently have the “right” business case for the use of AI technologies such as robotic process automation (RPA), machine learning or chatbots. However, the COVID-19 pandemic became the right business case and, today, over three quarters of states are using AI via chatbots. As stated in the NASCIO publication, [Chat with Us: How States are Using Chatbots to Respond to the Demands of COVID-19](#):

Today around three quarters of states are deploying chatbots to assist with questions on unemployment insurance, general COVID-19 questions or for other state agencies that may be receiving unusually high traffic due to the pandemic. These chatbots have responded to millions of citizen questions and continue to learn and build on the existing knowledge base.

Observations from the Field: Lessons Learned

As is often the case at NASCIO, some of the best information we receive is when we ask CIOs open ended questions and one of our favorites is to gauge the wisdom of the crowd via their lessons learned. In the 2020 State CIO survey, we asked CIOs about their general COVID-19 lessons learned and, this time around, we wanted to ask specifically about workforce lessons learned by the pandemic.



State CIO Teams Got Stuff Done

First and foremost, CIOs praised their teams' ability to quickly pivot and work from home while remaining highly productive and continuing the business of the state. There were several noteworthy quotes from CIOs:



"We are much more flexible than we previously believed. IT was never the barrier to more flexible work arrangements, culture was."

"Within the IT functional area, our workforce is much more resilient and flexible than previously realized. They are also energized by being asked to be creative in dealing with emergent challenges."

"Our IT staff can effectively work remotely, still deliver projects on-time or ahead of schedule and be accountable for their work."

"Most of our workforce LOVES working from home and are more productive than before."

"Staff are very flexible and capable, can adapt to changes and implement needed technologies quickly. "

"We have learned that our people are even bigger rock stars than we previously thought. People came together to do good."

Considerations for a Remote Work Environment

This quote sums up how CIOs feel about work from home: *"no longer does anyone ask the question 'can this task really be performed from home'... that has been answered."* However, their lessons learned identified important considerations for the future workforce like onboarding new employees in a remote environment. As one CIO asked, *"how do we develop a cohesive team?"* Other insight from CIOs:



"Remote work is here to stay – how, where, when work is done will be fundamentally different after the pandemic ends and employers that don't embrace remote work will struggle to compete for talent."

"Remote work would seem to open the door for 'our staff can be anywhere - in rural areas in-state or potentially out of state'. I haven't seen this actually materialize yet. There are some policy discussions that need to be had surrounding broad adoption of out-of-state workers."

"Our 'return to work' committee quickly transitioned to a workforce management committee."

"The flexibility in work schedules we were finally allowed to give during COVID increased retention and employee engagement. Having a more flexible work schedule has been a huge win for us."

"The workplace is no longer a place. The mindsets about the location of government operations and people must change accordingly."



The Well-being of the Team

CIOs also told us that COVID-19 has put an increased focus on employee mental health and well-being with one CIO saying the pandemic has taught them to be more “nimble and understanding.” CIOs also talked about the difficulties faced as COVID changed our way of life, with one CIO saying, “*how do we continue to function when team members were focused on family safety issues?*” CIOs also told us about the importance of managing burnout, encouraging vacation time and recognizing and celebrating milestones and accomplishments in a remote environment. CIOs summed it up this way:



“It is critical that senior leadership make opportunities to speak regularly to the whole agency workforce, work groups and individuals to express gratitude for their efforts and to assess what folks need to be successful in this new operating model. Morale enhancement is critical to continuous operations.”

“We may be a technology agency, but we’re still powered by humans. And while we can automate systems and processes, we cannot automate a healthy, resilient workplace culture.”

Culture

We also gained a lot of insight from CIOs about how a remote working environment changes interaction between supervisors and supervisees and among staff. Here is what they had to say:



*“Members of the workforce appear to work **MORE** at home citing the reduced commute time and flexibility to complete tasks. The focus is on completing work successfully rather than attendance.”*

“Don’t assume all employees or all home offices are suitable for remote work – identify/ create other options to work safely and productively.”

“We have to encourage, remind and cajole many of our supervisors and managers to work hard at communication with their team members. Individual check-ins are very important.”

“Although various remote meeting platforms have proven valuable, the loss of informal, personal day-to-day contact does limit other valuable communication that is normative in an office setting. It is increasingly obvious that many operations worked based on informal, iterative, in-person contact that now require formal check listing and process definition. Both are to the good of the organization.”

“Need to trust team to deliver but provide opportunities for collaboration/remote social hours and track performance.”

“Fear of losing control when things are remote is still a culture killer for the state to embrace the benefits of a modern hybrid work force. Not everything can be 100% remote but flexibility is here, and we should embrace it.”



The Bottom Line

We learned other valuable information from CIOs in the lessons learned section:

- A centralized IT staff helped states be more flexible and adaptable during COVID-19
- Securing remote work is more important than ever
- Broadband access must be expanded
- Legacy systems presented many challenges
- There is a potential for great savings to the state with reduced office space
- Laptops and remote work programs are critical to the success of the future state workforce
- Retirements have increased because of COVID-19—CIOs fear this may affect long term workforce

Finally, in this section we asked about what governs remote work. As stated earlier in this publication, remote work was not widespread before COVID-19 and only a handful of states had robust remote work programs. One thing that has always been a question in the state government workforce is, if remote work isn't happening, is it because its specifically banned via statute or established or understood policy? As one CIO said, *"there was never a statute that prohibited [remote work], just misinformation and fear."*

In the 2021 workforce survey, we asked CIOs if their state allows employees to live out of state. Seventy-two percent (72%) said yes, 23 percent said no and five percent said "my state does not allow this" (i.e. specifically prohibited by statute). We will also ask this question in our post-COVID survey to see how the numbers settle after the pandemic. A few good quotables from CIOs are:



"There is no state law or policy prohibiting state employees from living in another state... [however] legislators, taxpayers and other stakeholders expect state revenues to stay in the state contributing to the state's economy."

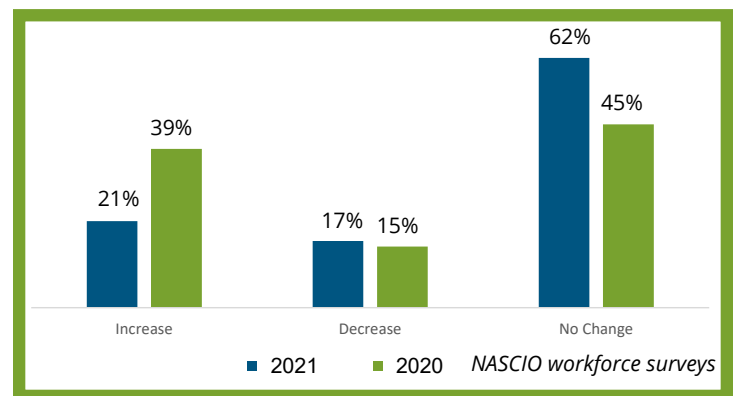
"Some have a belief that the state has a responsibility to employ or provide jobs for citizens. I do not share that belief."

What Does the Data Tell Us?

In addition to open ended questions, we also asked specific questions in several of our workforce surveys and have comparative data below:

In the next year, do you anticipate an increase, decrease or no change in the IT staff in the executive branch of your state?

Based on these numbers, most CIOs expect to maintain their current IT staff. It is interesting to point out that the number of CIOs who expected to increase staff when asked pre-pandemic was cut by nearly half when asked in 2021. States were in a generally good place fiscally pre-pandemic and, while budget shortfalls because of COVID-19 haven't



been as bad as feared, states are still being cautious. We will ask CIOs this same question in our post pandemic survey.

We also asked if COVID-19 negatively impacted competencies that will be required to meet the future of IT in states, and, if so, which ones. In the 2021 survey, 45 percent of CIOs reported that COVID had not impacted competencies. In 2020 we asked which competencies were missing from the CIO agency that will be required to meet the future of IT in their state. While we asked this question differently there are still comparisons to be drawn. When asked in 2020, nine percent of CIOs said they weren't missing any competencies.

Of the competencies that CIOs reported were impacted, here are the top five for each year:

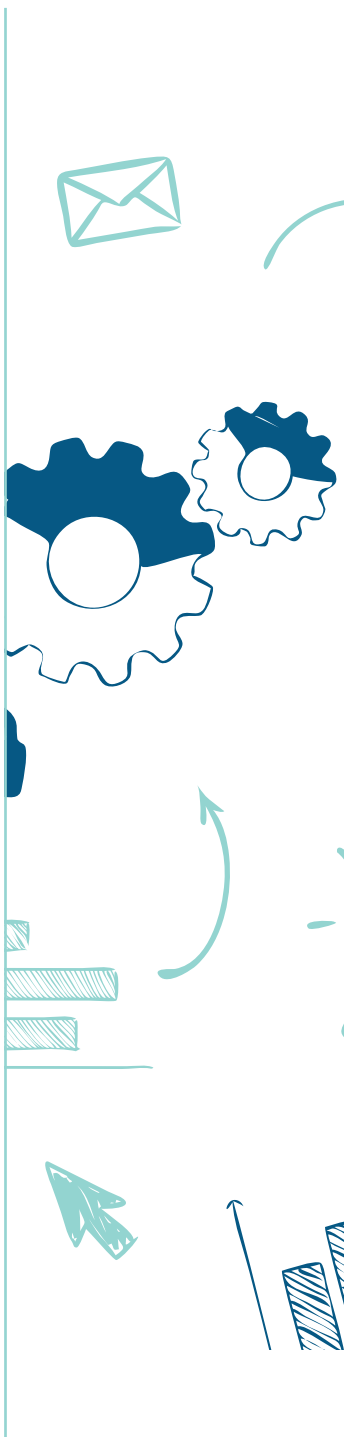
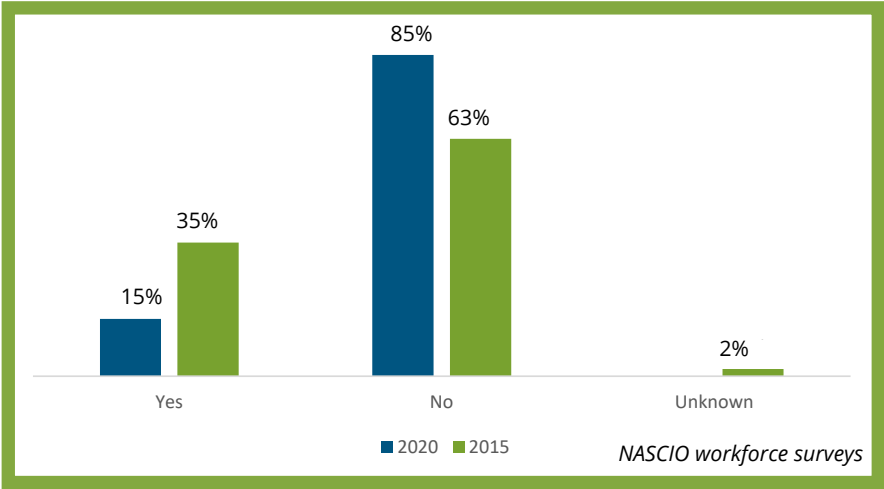
2021, impacted by COVID-19

- 1. Application development
- 2. Customer experience/relationship management
- 3. Security
- 4. Vendor relationship management
- 5. Cloud platforms and services

2020

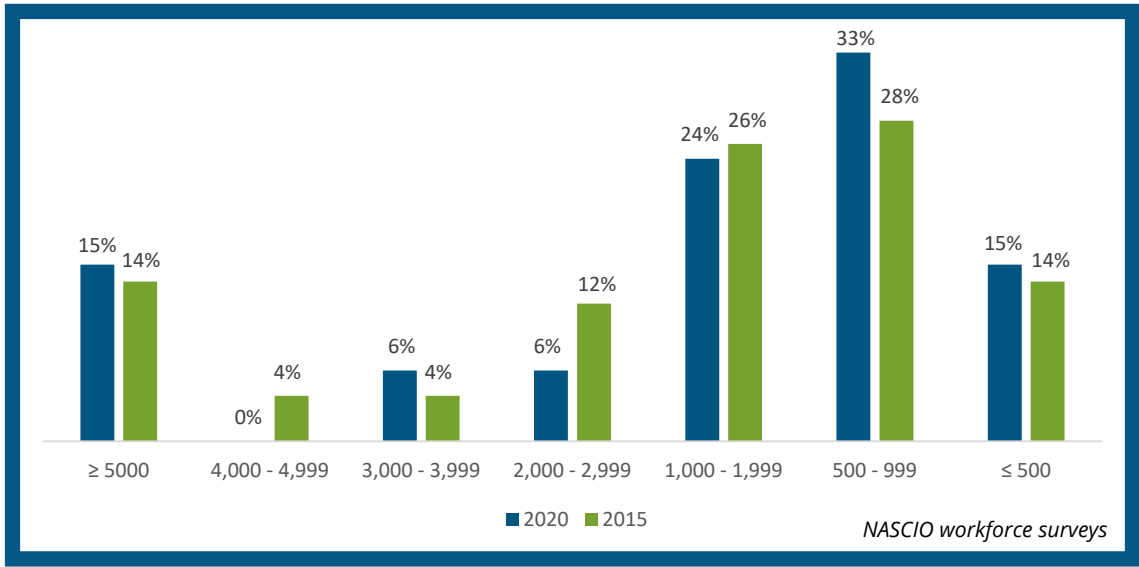
- 1. Cloud platforms and services
- 2. AI/machine learning
- 3. Business intelligence/data analytics/big data
- 4. Security
- 5. DevOps

Finally, we have comparative data between our 2015 workforce survey, [State IT Workforce: Facing Reality with Innovation](#), and the pre-pandemic workforce questions we asked in 2020. We asked states if they performed regular IT workforce assessments and the frequency greatly decreased in the five-year period from 2015 to 2020.

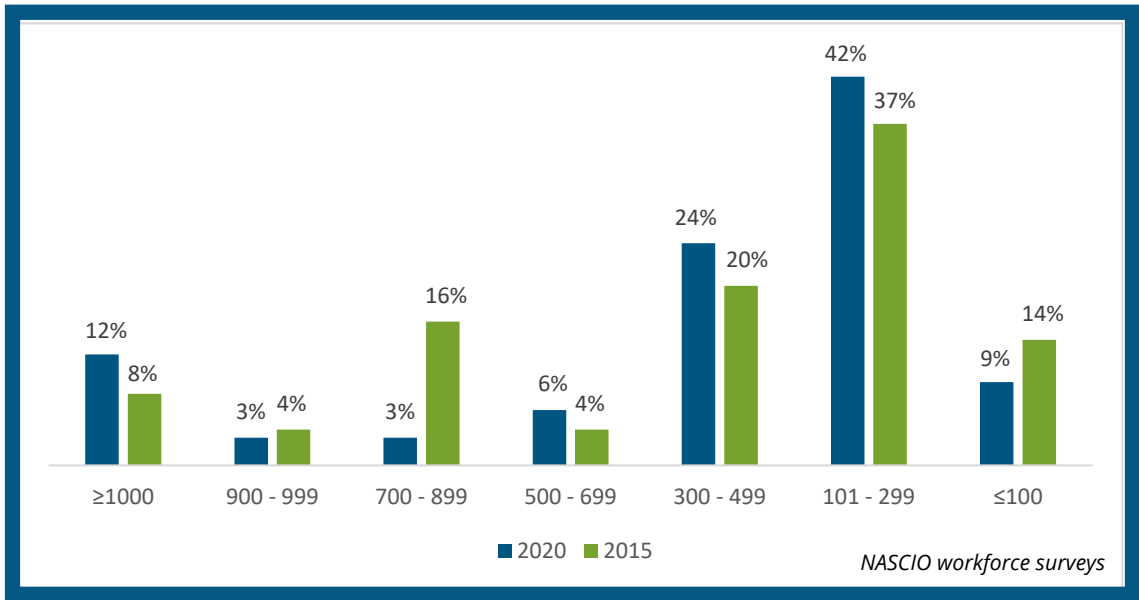


We also asked about IT employees in state government, both in the executive branch and in the CIO organization. The data is below:

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



Approximately how many total full-time state IT employees are in your CIO organization?



The Final Word

It is true that COVID-19 has upended almost everything in our lives and brought about immeasurable loss in our country and around the world. If there is good that can come of this in a post-pandemic world, perhaps a more flexible state government work environment is one of them. Here are a few recommendations to help states get there:

- There is no longer a question of whether or not remote work *works* for state government. States must embrace remote work and alternative work schedules and places to improve recruitment and retention.
- The future of the state IT workforce will look different than what it has in the past and policies, procedures and laws must be adaptable to these differences. Specifically, states must ensure workforce policies are adaptable to both remote and in person work.
- State CIOs should perform yearly or biennial IT workforce assessments including reviewing current skills and competencies, retirement timelines of critical staff and succession planning.
- State CIOs must look for ways to embrace and understand diversity, equity and inclusion by recruiting and retaining a diverse workforce.
- State CIOs should strongly consider automation, such as Artificial Intelligence, where possible and appropriate to improve staff morale and plan for the future of state IT work.
- Not every employee or job is adaptable to remote work and states should offer both remote and in-person options. States should also train supervisors and teams on how to navigate and succeed in both settings.
- States should explore the benefits of employees living out of the state to make sure they can meet the demands in critical areas, especially cybersecurity. Policies or regulations may need to change to make this a possibility.

State CIOs should also review recommendations on refocusing, recruitment, retention and retirement in NASCIO's 2015 publication, [State IT Workforce: Facing Reality with Innovation](#), as most are still relevant in the workforce of today and in the future. One CIO recently told us, "given the workforce challenges and the uncertainties still facing CIOs, we must take what we've learned over the past months to ensure tomorrow's workforce must be adaptive, agile and resilient."

About NASCIO

Founded in 1969, the National Association of State Chief Information Officers (NASCIO) represents state chief information officers (CIOs) and information technology (IT) executives and managers from the states, territories and District of Columbia. NASCIO's mission is to foster government excellence through quality business practices, information management and technology policy. NASCIO provides state CIOs and state 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. From national conferences to peer networking, research and publications, briefings and government affairs, NASCIO is the premier network and resource for state CIOs. For more information, visit www.NASCIO.org.

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