

A woman with blonde hair and glasses, wearing a blue denim shirt, is smiling and talking to two men in a modern office setting. The man on the left has dark hair and glasses, and the man on the right has a beard and glasses. They are in a bright, open-plan office with large windows and track lighting.

2022 CompTIA Public
Technology Institute (PTI)
State of City and County
IT National Survey

EXECUTIVE SUMMARY

Cybersecurity / data loss prevention continues to rank as the number one priority for tech executives – the ninth year that it has held this position in this survey. In fact, 97% of respondents cited cybersecurity as their top priority. The increased risks posed by the war between Russia and Ukraine have elevated concerns for tech executives. The good news: New federal funding and state collaboration efforts are helping local governments improve their cybersecurity resiliency.

Modernizing outdated IT systems moved to the number two position in 2022, up from number four in 2021, due likely to COVID-related business disruptions that for some organizations inhibited remote flexibility.

Expectations for budget increases soared in this year's survey with 51% anticipating an increase of 1% to 4% and another 33% anticipating an increase of 5% or more.

Regarding the impact of COVID, 97% expanded the use of collaboration platforms / remote meetings in 2021.

Several new technologies are finding their way into the operations of cities and counties. Those technologies with the most readily identifiable ROI—UAVs, automation, IoT, 5G, and AI—are seeing widespread uptake.

Top City/County CIO Technology Priorities Over Next 2 Years

1. Cybersecurity / data loss prevention
2. Modernizing outdated IT systems
3. Innovation
4. Launching or updating digital services for citizens
5. Migrating systems / applications to the cloud
6. Addressing integrating disparate systems
7. Addressing data silos
8. Streamlining procurement processes
9. COVID-specific initiatives

Foreword

On behalf of the local government CIO membership of CompTIA Public Technology Institute (PTI) I am pleased to present the findings of the 2022 State of City and County IT National Survey. With the COVID-driven mode of activity receding, now is the opportune time to take a step back and review what worked, what didn't, and what still needs to be done for IT to make a continued positive impact government operations and service delivery.

As we consider how far IT organizations have progressed in terms of managing increasingly expanding and complex portfolios, it is also time to learn from tech executives who are raising the profile of IT with elected leaders and management, moving from the concept of IT as service provider to IT as a strategic business partner.

This re-positioning of IT - a new concept for some organizations, while already in place for others - is a priority of CompTIA Public Technology Institute as we work with our member technology executives to ensure that the expertise and the voice of IT is heard as these partners plan for future tech-related initiatives across the entire enterprise. This is particularly important as federally-funded initiatives are being implemented, for managing expectations of elected leaders and department partners, and that initiatives are sustainable when the federal funding runs out.

Technology executives have demonstrated the vital role the IT organization plays within the local government. As you review the following survey analysis, I hope you will note some of the findings and how they compare with your IT organization's priorities and needs.

For the development of this analysis report, we collaborated with research partner Deltek, a research partner of CompTIA Public Technology Institute. I would like to thank Chris Dixon, Senior Manager, SLED Market Analysis, for his analysis of the results and input into the development of our survey instrument. Chris has assisted in our research reports and other programs for the past 10 years for which we are grateful.

Dr. Alan Shark
Vice President Public Sector and Executive Director,
CompTIA Public Technology Institute (PTI)

Introduction

This survey report is designed to provide an overview of the technology landscape in local government, highlighting current priority issues and needs and shining the spotlight on future opportunities.

Topics this survey explores include:

- CIO Technology Priorities Over Next 2 Years
- Technology Budget Expectations
- CIOs Acknowledge the Need to Improve Cybersecurity
- Impact of COVID Situation
- CIOs Mostly Satisfied with ROI of IT
- CIOs Continue to Refine Their Cloud Strategies
- IT Management and Evaluation Tactics
- Smart City/County Strategies
- Emerging Tech
- State of IT Skills

Throughout this report, we cite how 2022 findings compare to those cited in last year's survey, thus providing additional understanding of the constantly shifting world of local government IT.

The survey was conducted between February and March 2022. The survey instrument was provided to CompTIA Public Technology Institute member officials and technology leaders participating in the CompTIA Public Technology Institute /Rutgers University CGCIO program. Thirty-eight local government technology executives participated in this survey.

CIO TECHNOLOGY PRIORITIES OVER NEXT 2 YEARS

Last year “Cybersecurity / data loss prevention” was a top priority for 88% of respondents. For 2022 this concern continued to hold the top spot with nearly unanimous (97%) support. IT leadership—if not other operational leaders— have long since come to terms with the fact that this will be an ongoing priority in all times and circumstances. However, last year’s high-profile attack on the Colonial Pipeline and the increased risks posed by the war between Russia and Ukraine have elevated concerns to the highest level as evidenced by the state of New York and New York launching a \$30 million Joint Security Operations Center (JSOC) to serve as “the nerve center for joint local, state and federal cyber efforts, including data collection, response efforts and information sharing.” This initiative builds on funding provided by the Biden administration as part of the American Rescue Plan Act (ARPA), which allows for state and local cybersecurity investments for critical infrastructure protection.

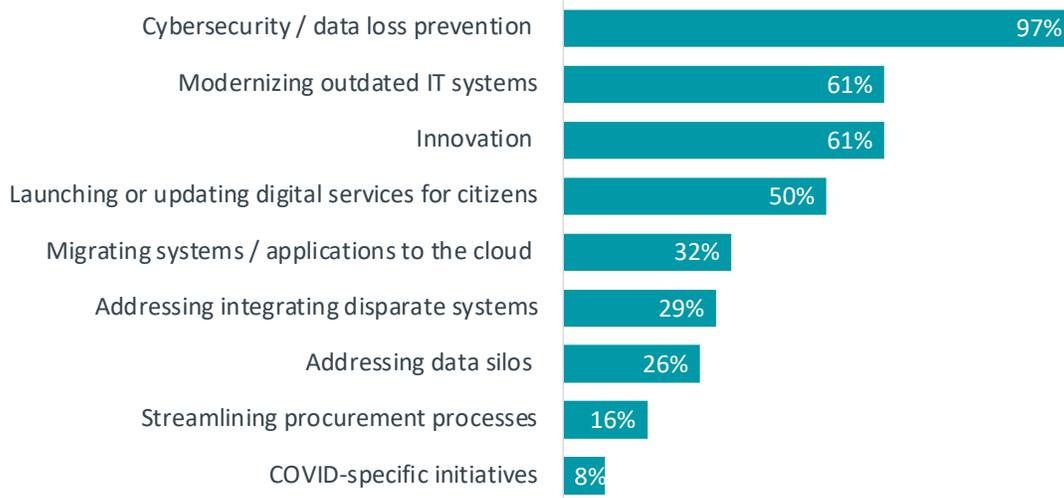
Last year, no investment area outside of cybersecurity garnered 50% or better support from respondents. However, as part of the post-COVID outlook, three priority areas hit the 50% mark or better. “Modernizing outdated IT systems” leaped to #2 as COVID business disruptions likely exposed the brittle platforms that inhibited remote flexibility. It also comes as no surprise that IT leaders would have a lot of pent-up desire to revisit “innovation” after two years of being in reactive mode.

“Addressing data silos” is the only other category that saw a noticeable bump (+6%) from 2021. In reality, all of the items ranked #2 through #7 could be seen as a family of related upgrade efforts where, in many cases, “launching or upgrading digital services for citizens” serves as the ultimate goal. IT investment often requires a leapfrog approach where backend improvements, driven by reactive needs such as COVID response, unlock follow-on phase of public-facing improvements.

“Streamlining procurement processes” still lag the other priorities due to the fact that IT leaders have little sway in this area. Procurement offices are overburdened but also cautious and routinized by nature, making it difficult to streamline. In the end, automation of convoluted processes and increased use of cooperative purchasing remain the primary means of expediting, if not “streamlining,” actual procurement processes. While the response to COVID allowed for emergency orders to circumvent the usual processes, it remains to be seen if any lessons learned from these emergency periods will point toward permanent efficiencies that could be captured for regular procurement processes.

The set of priorities for the next two years provides additional granularity to the COVID impacts assessed throughout this survey analysis.

City/County CIO Technology Priorities Over Next 2 Years

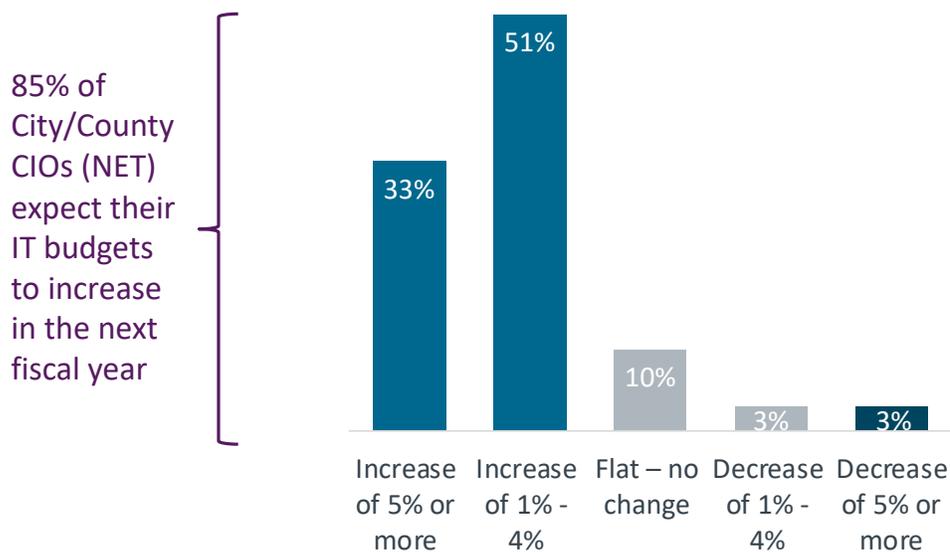


While the list above focuses on technology priorities, CIOs are also prioritizing the human side of IT; specifically, what many are calling the Great “R’s”: Retention, retirement, resignation, and recruitment. Technology executives are finding it increasingly difficult to retain current staff and find new employees to maintain IT operations at an effective level. This includes the issues of IT employee burnout, a hot IT job market, and changing technical and professional skills that are required as IT expands its profile and capabilities. CIOs are finding it necessary to develop new strategies to retain and motivate current staff , to include providing increased opportunities for professional growth and training.

TECHNOLOGY BUDGET EXPECTATIONS

Expectations for budget increases soared in this year's survey with a slim majority (51%, up 19% from 2021) anticipating an increase of 1% to 4% and another 33% (up 16% vs. 2021) anticipating an increase of 5% or more. This can be attributed in part to the Biden administration's American Rescue Plan Act (ARPA) which has been funneling an unprecedented amount of federal fiscal relief to cities and counties—\$45.6 billion to metropolitan cities and \$65.1 billion to counties—in two separate distributions in 2021 and 2022. IT agencies might not be direct recipients of these funds; however, the fiscal relief provided to the rest of the enterprise can be enough to unlock budget increases for IT investments in new and projects previously on the back burner.

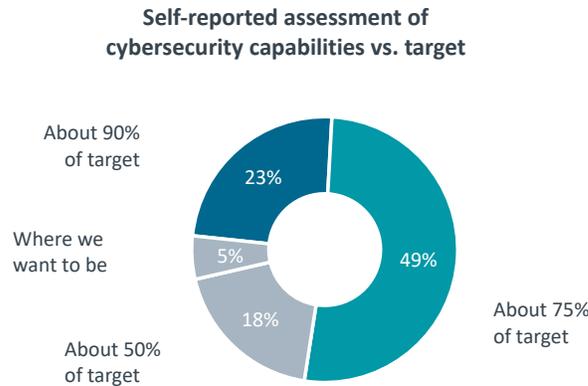
City/County Technology Budget Expectations



CIOs ACKNOWLEDGE THE NEED TO IMPROVE CYBERSECURITY

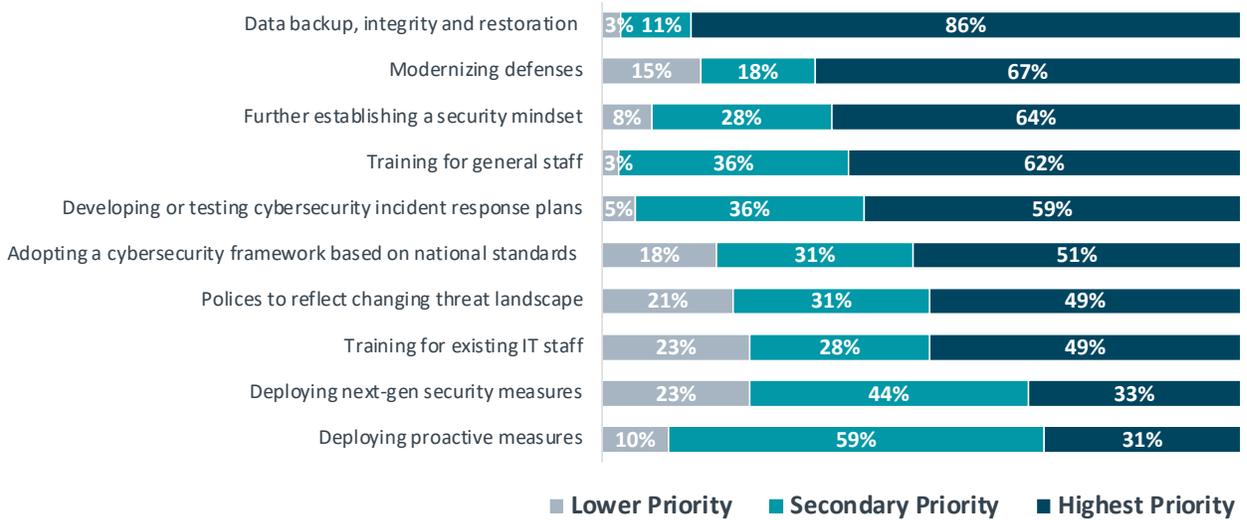
Results are very comparable to the previous iteration of this study. CIO assessment of cybersecurity capabilities is not far off from the general assessment of capabilities reported earlier in this report, with the vast majority reporting between 75% and 90% attainment. Cybersecurity has ranked at or near the top of this and various other public sector CIO priorities lists for roughly the last decade. Perhaps this emphasis has borne fruit in terms of capabilities. However, when looking at the cybersecurity priorities list, the inability to prioritize proactive and next-gen security measures could what’s holding some many IT shops below their desired capabilities levels.

CIOs Acknowledge the Need to Improve Cybersecurity



When addressing cybersecurity priorities, compared to last year, each priority has seen an increase in the aggregate total of those reporting it to be a highest or secondary priority. “Data backup, integrity, and restoration” alone saw an increase in highest priority from 54% last year to 86% this year. The next three categories saw increases of 20% or better. These findings are opportune, given that the bipartisan infrastructure bill passed last made \$1 billion available to states and localities for cybersecurity planning. Annual allotments will be \$200 million in 2022, \$400 million in 2023, \$300 million in 2024, and \$100 million in 2025. States will receive and allocate the funds with 80% reserved for localities and \$250 million of that reserved for rural areas. This funding could serve as the spark that launches a great leap forward in state and local cybersecurity investment nationwide.

City/County Cybersecurity Priorities on Many Fronts



In response to the increased cyber threats to U.S. critical infrastructure resulting from the Russian invasion of Ukraine, the governors of New York and Texas have launched formative efforts to protect statewide critical infrastructure. More states are likely to follow in the coming weeks. These efforts dovetail well with programs launched as part of the 2021 federal Infrastructure Investment and Jobs Act (IIJA).

IMPACT OF COVID SITUATION

Fortunately, as this is written, 68% of respondents say that they are returning to “standard”—that is, non-COVID-driven—planning, upgrading, and spending for technology. Only 8% (down from 36% in 2021) report that they see ongoing COVID initiatives as part of the two-year priorities outlook. Thus, with the COVID-driven mode of activity receding, it’s time to look back at how pandemic response has shifted city and county IT portfolios in positive ways.

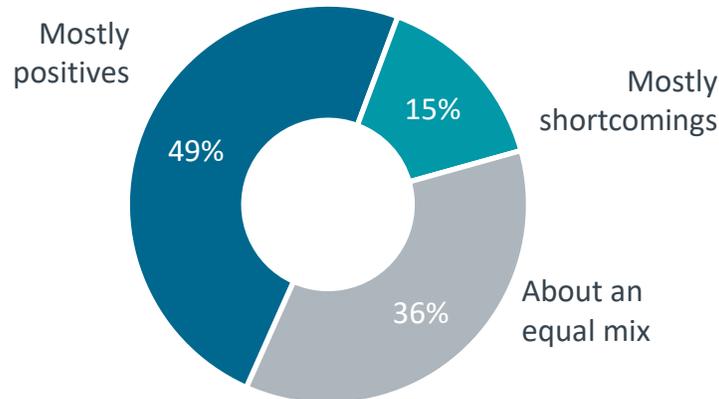
Not every IT leader can look back fondly on the pandemic period; however, nearly half (49%) of respondents stated that they saw mostly positive impacts with regards to IT infrastructure, digitization efforts, or agility. When it came to actions influenced by COVID, 97% of respondents stated that they had expanded the use of collaboration platforms and remote meetings and 92% stated that their organizations expanded remote work/work from home (WFH) options. Just over half (54%) of respondents stated that they had made investments in virtual/digital services for citizens with the same percentage of 54% (+12% vs. 2021) stating that they made investments in business continuity and resilience.

While 32% of respondents claim to be in a “mixed” COVID-driven/post-COVID mode of doing business, a significant percentage (62%) report making investments to improve readiness for the next potential crisis. So, it is likely safe to assume that increased flexibility and resilience for IT systems and services will remain integral parts of current and future initiatives, regardless of whether IT leaders see these goals as driving by the recent pandemic experience or not.

Another sign of the receding impact of COVID on operations is the shift in training formats. In 2021 nearly 60% of respondents had moved to virtual-only training with only 5% pursuing “hybrid” virtual/in-person approaches. However, this year, the virtual-only approach has thawed to 46% with a surge to 26% using the hybrid model.

Impact of COVID Situation

Revelations from COVID



Impact of COVID Situation

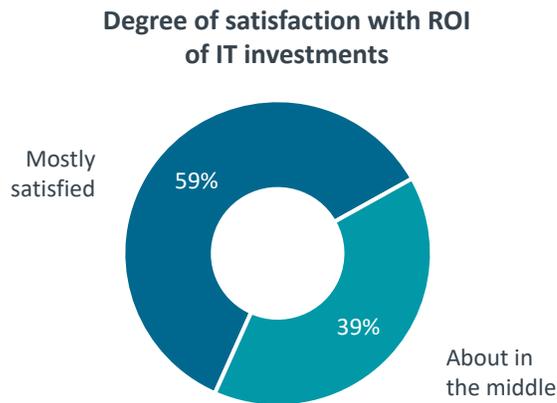
Actions influenced by COVID

1. Expanded use of collaboration platforms / remote meetings (97%)
2. Expanded remote work / WFH options (92%)
3. Investments in infrastructure to improve readiness for next potential crisis (62%)
4. Investments in virtual / digital services for citizens (54%)
5. Investments in business continuity and operational resilience (54%)

CIOs MOSTLY SATISFIED WITH ROI OF IT

Local government CIOs continue to show roughly 60/40 satisfaction with the return on investment (ROI) of IT investments. The top reasons for dissatisfaction fell in the same order as last year. It is hard to believe that 2021 would be the year that provided much opportunity for CIOs to address these concerns. In the age of XaaS, it's no surprise that features, upfront costs, and reliability are lesser concerns. Many agencies have found that transitioning to the cloud has become a fairly routine endeavor. Yet, many agencies have been unable to capture savings in the operations and maintenance (O&M) aspects of their systems outlay. More investigation is needed to determine whether the lack of ROI in O&M is more the result of juggling continuous system updates and/or the result of client's demand for new services, features, and integrations from increasingly flexible cloud-based systems.

City/County CIOs Mostly Satisfied with ROI of IT



City/County CIOs Mostly Satisfied with ROI of IT

Top reasons for dissatisfaction with ROI of IT investments

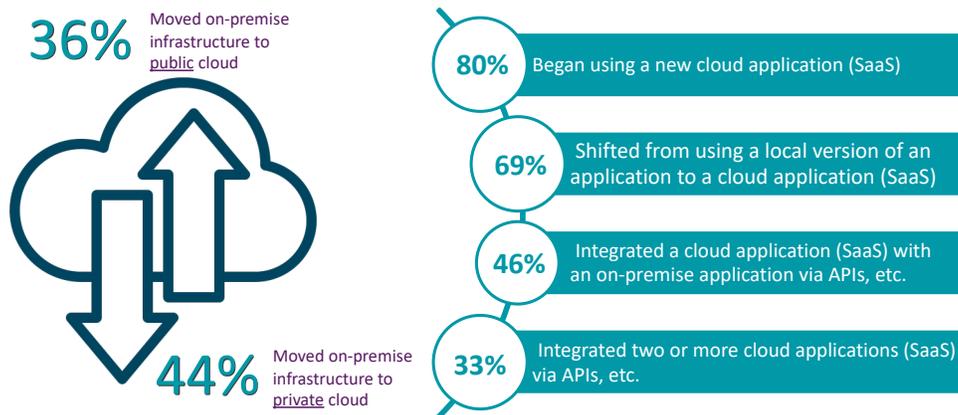
1. On-going maintenance costs / support fees / upgrades
2. Staff time requirements to operate and maintain
3. Complexity / poor user experience
4. Features/capabilities don't meet needs
5. Upfront cost / too expensive for return
6. Unreliable /doesn't work as expected

CIOs CONTINUE TO REFINE THEIR CLOUD STRATEGIES

This year's survey saw a small surge in those reporting that they had begun using a new cloud application (up 14% from 2021). This should come as no surprise, considering that new cloud applications are flooding into the enterprise. This was down from 93% in 2020, which might be due to COVID diversions. Fewer respondents (36%, down 7% from 2021) indicated that moving on-premises infrastructure to the public cloud. This is likely due to a couple of factors: 1) fewer on-premises systems remain in need of migration and 2) SaaS providers rely on the major global PaaS providers for their solutions. This means that buyers can tap into the global-scale flexibility and security of the major platform services and not the chancy homegrown servers of niche software providers. Thus, hybrid and private cloud implementations can be had at nearly the same price from smaller providers as the larger one.

With significant minorities of respondents indicating that they have integrated cloud and on-premises systems (46%) or multiple cloud-based applications (33%, up 8% vs. 2021), we can see what lies behind the drive to adopt agile development processes to support the never-ending client demand for more and better features.

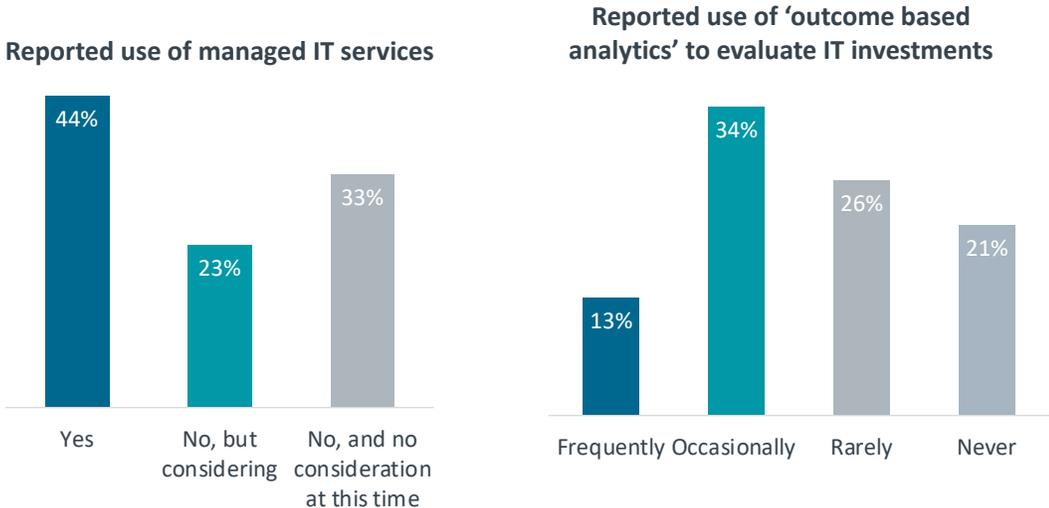
City/County CIOs Continue to Refine Their Cloud Strategies



IT MANAGEMENT AND EVALUATION TACTICS

The transition of city and county enterprise CIOs into managed services providers (MSPs) has been long discussed and the data here shows that a majority of city and county CIOs could be using or considering this approach. However, the use of outcomes-based analytics lags with only 13% of respondents fully committed to it as compared to 44% using managed services. Determining the proper goals for outcome-based analytics can resemble the process whereby a camel is the result of a horse designed by committee. IT providers can build analytics around service level agreements (SLAs). Budget directors are looking for hard savings. Mission-oriented agencies seek increased customer satisfaction and the sponsorship of elected officials. Connecting these dots from backend IT system to citizen-facing process is complex and requires savvy leadership by senior executives and elected officials to structure incentives that foster genuine collaboration at each link in the chain. With the XaaS transition still underway, it will take some time for IT managers to master the new outlays and advise clients as to how increasingly flexible and reliable solutions can be matched to their operational and service goals.

City/County IT Management and Evaluation Tactics

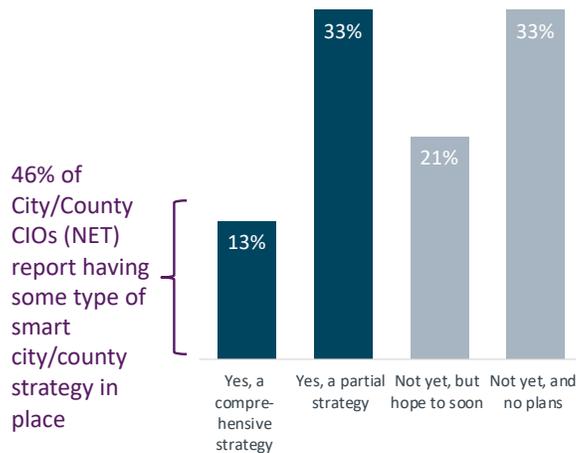


SMART CITY/COUNTY STRATEGIES

Last year’s smart city/county findings were somewhat discouraging, but 2022 data provide reason for optimism with nearly half of respondents reporting some type of strategy in place. This could be a surprising result of COVID response. Localities were at the forefront of the response, being guided by state and federal authorities—and sometime blazing their own trail based on local conditions. However, it could be that the rapid collaboration among agencies has laid the groundwork for smart government advances.

It is clear that senior leadership still struggle to determine the ROI for smart city/county efforts, which can seem nebulous and open-ended. The United States has no single “smart” mega-city (e.g., Barcelona, Singapore, etc.) to showcase on the world stage. Smart initiatives are most likely to emerge from dozens of highly particular needs such as water conservation, crime prevention, or traffic management. Smart advances will spread horizontally among cities and counties will similar concerns. Eventually, these smart layers will begin to integrate vertically, resulting in more comprehensive smart operations over time.

Smart City/County Strategies Still in Early Stages for Many



Top reasons for not having a smart city/county strategy in place

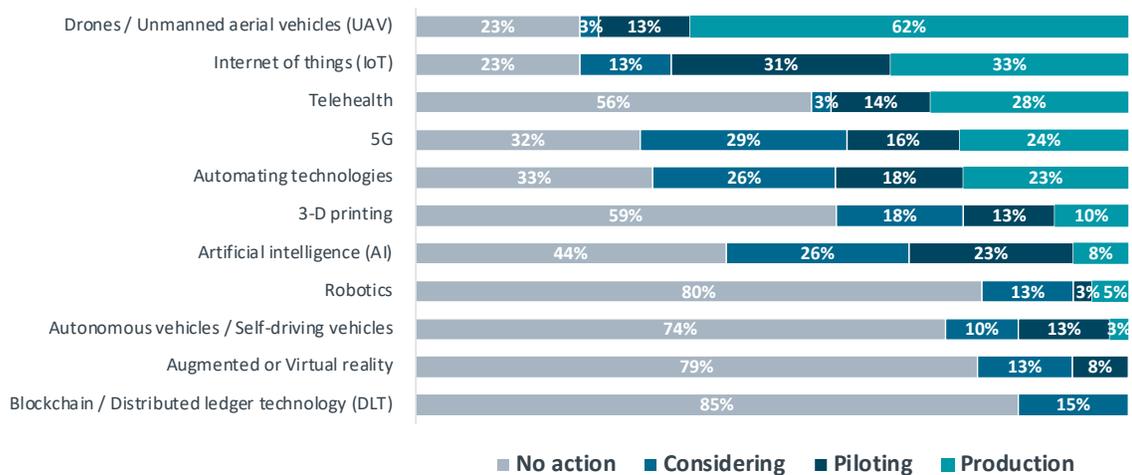
1. Not a high enough priority / other more pressing issues
2. Unclear business case / ROI of smart city/county investments
3. Lack of resources to develop a smart city/county strategy
4. Lack of internal expertise to develop a smart city/county strategy

EMERGING TECH

Several new technologies are finding their way into the operations of cities and counties. Those technologies with the most readily identifiable ROI—UAVs, automation, IoT, 5G, and AI—are seeing widespread uptake. In some cases (e.g., telehealth, 3-D printing, etc.) it could be that agencies are implementing some of these solutions independent of the IT agency, which is providing only the platforms or the “rails,” for these to run on.

A few technologies stand out for 2022 as they move up their maturity curve toward universal implementation. Internet of Things (IoT) moved up to #2 with a 15% increase in those taking action. 5G saw an increase of 18%, which is no surprise as enterprises look for the most capable wireless networks for voice/video/data for first response and to connect an ever-expanding outlay of connected devices (e.g., sensors, drones, etc.). 5G also promises to play a large role in national initiatives as the Biden administration ramps up infrastructure (e.g., smart grid, pipelines, etc.) modernization and security as well as utilization of 5G to close broadband gaps.

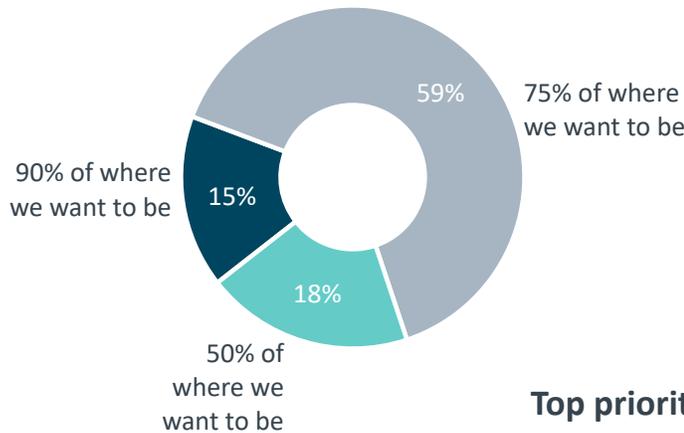
Emerging Technologies Start to Impact Cities/Counties



STATE OF IT SKILLS

IT leaders show slightly more satisfaction with team capabilities/skills versus last year, and their top three priorities for learning match up to other areas of prominent dissatisfaction (as identified by this survey), such as cybersecurity, capturing cloud ROI, and implementing outcome-based evaluation. These gaps speak to the need for routine, affordable, and practical training for staff in operational areas that see rapid evolution with technology advances, particularly migration to cloud solutions.

Assessment of IT team capabilities/skills



Top priorities for bridging skills gaps

#1	Cybersecurity
#2	Cloud, i.e. infrastructure migration, application or platform deployment
#3	Infrastructure, i.e. improvements to network/systems reliability, performance
#4	Soft skills, i.e. improvements to communications, collaboration, team IQ
#5	Crisis management, e.g. readiness, response, recovery
#6	Data, i.e. management, analytics, 'big data'
#7	Digital transformation, i.e. modernizing systems, embracing digital government

Conclusion

This survey report provides a snapshot of the issues impacting the local government technology community. With the severity of the COVID pandemic, hopefully, behind us, new challenges lie ahead.

Now is the time to strengthen relationships with your organization's leadership – appointed and elected – and to build on the lessons-learned over the past two years to better position IT as a trusted partner within the organization.

Now is the time to explore collaboration with your state government, a neighboring jurisdiction and your private sector partners to not only address IT needs but identify opportunities for IT growth.

Now is *not* the time for a let up in your cybersecurity efforts. Prepare, educate and practice for any situation that may impact your organization's cyber resiliency.

Remember that your IT organization is not alone. Even if you are an IT staff of one, you are part of an important and vibrant community of government leaders and professionals committed to enhancing service delivery and community engagement through the effective use of technology.

About CompTIA Public Technology Institute (PTI)

Established in 1971 by several major national associations representing state and local governments, CompTIA Public Technology Institute has been viewed as the focal point for thought leaders who have a passion for the furtherance and wise deployment of technology. CompTIA Public Technology Institute actively supports local government officials through research, leadership certification, and the sharing of leading practices.

For more information visit:

[Connect.CompTIA.org/connect/public-sector/public-technology-institute](https://connect.comptia.org/connect/public-sector/public-technology-institute)

RESOURCES AVAILABLE FROM CompTIA PUBLIC TECHNOLOGY INSTITUTE

The CompTIA Public Technology Institute **Cyber Awareness for Public Managers** works with IT leadership to develop a virtual exercise specific to your community that provides management and other departments the experience of a cybersecurity incident. The goal is to clarify among participants the roles, responsibilities, and key considerations for their respective departments and functions. PTI members receive a discount.

Best Practice Briefs provide quick reads on pressing issues identified by CompTIA Public Technology Institute's CIO leadership. Recent issues address:

- Elevating the Role of the IT Organization
- Cybersecurity and Elected Leaders
- The Human Side of IT: Building a Positive Impact on Local Government Service Delivery
- Building your Cyber Infrastructure Roadmap
- State and Local Collaboration
- Broadband and Digital Inclusion



CompTIA
Public Technology Institute

BEST PRACTICE BRIEF

The Human Side of IT:

BUILDING A POSITIVE IMPACT ON LOCAL GOVERNMENT SERVICE DELIVERY

With federal funding from ARPA and the infrastructure bill streaming into local government, agencies are able to procure more IT tools, applications and solutions. But city and county technology executives are finding it increasingly difficult to retain current staff and find new employees to maintain IT operations at an effective level.

The CompTIA Public Technology Institute conducted interviews with technology executives regarding the human side of information technology operations, specifically on the issue of IT staffing. The following is a picture of the local government IT workforce landscape—what executives are experiencing today with IT personnel.