Modern workplace transformation for state agencies

Enabling coherent, adaptable and sustainable digital workplaces within and across state and local governments

Content

State and local government agency employees, citizens, constituents and suppliers want consumer-style work and services environments. But agencies are struggling with user expectations. To address their challenges, state agency leaders must transform their operating models from legacy workplace services to a modern hybrid workplace.

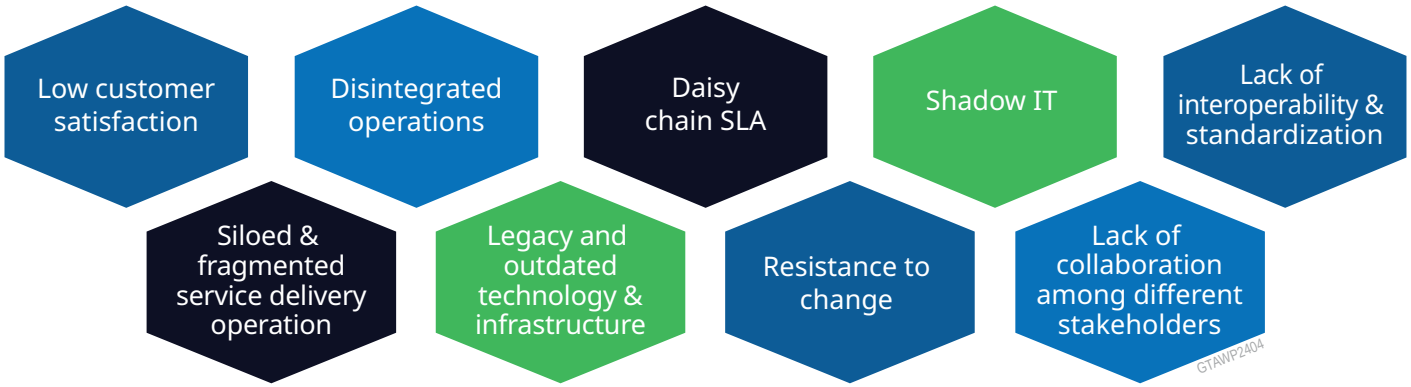
Executive summary

In modern environments, state and local government (SLG) agencies are struggling to enable the levels and types of interaction that users have come to expect. Agency employees, as well as citizens, constituents and suppliers are now accustomed to consumer-style work and services environments.

We'll discuss these challenges and provide guiding principles (north stars) to help state agency leaders transform their operating models from legacy workplace services to a modern digital workplace. To reach this transformation, we'll delve into key workplace developments and trends that leaders should be tracking, along with critical success factors and best practices with recommendations. We've synthesized research across the top analyst firms, backed by trends gleaned from NTT DATA's own SLG clients and qualified by digital workplace and SLG industry leaders.

We'll explore how the SLG sector can use modern technologies and methods to deliver consumer-like experiences and embrace a modern digital workplace that can be readily and cost-effectively extended and adapted as changes emerge.

As shown below, a range of factors are pushing the demand for workplace transformation. These include the demonstrated impact of technology adopted during the pandemic, heightened constituent expectations, permanent adoption of hybrid work, and growing attention on digital equity and inclusion.



One of the overriding struggles SLG leaders cite in research is the incongruent stacking of service integrators based on price advantage as opposed to business outcomes. Instead, we propose a best practices multi-sourcing integrator (MSI) model and the unified outcomes these practices can inspire, including the following:

360-degree visibility

- Real-time performance insight
- Accountability at all levels
- Single source of truth

Unified digital foundation

- Unified IT sustainment, enterprise-wide
- Simplified user experience
- Streamlined service provider integration
- Delivering value with velocity

Efficiency and lower costs

- Financial transparency
- Service tower rationalization
- Elimination of service redundancies
- Use economies of scale with service providers

Innovation

- Flexibility for each unique mission
- Responsiveness and adaptability
- Seamlessly use next-generation industry innovations

North stars for SLG leaders

Technology investments are not enough for state and local government without a clear vision and strategy that aligns with the needs and expectations of the citizens and the workforce. Key north stars for state and local government are:

Improving citizen experience	Increasing workforce productivity	Transparent, integrated enterprise	Technology leadership	Reducing organizational risks
Improving citizen experience is the dominant outcome SLGs expect from digital investments. These organizations aim to provide seamless, personalized and accessible services to their citizens across multiple channels and devices and to foster trust, engagement and satisfaction.	**Increasing workforce productivity** by empowering their workforce with tools, skills and culture helps SLGs collaborate, innovate and adapt to changing needs and expectations.	Creating a **transparent, integrated enterprise** where technology decisions are made with citizens in mind helps SLGs break down silos and foster interoperability and integration across their departments, agencies and systems. They also must use data and analytics to inform their decisions, measure their performance, and improve their accountability and transparency.	Providing **technology leadership** for sound IT enterprise management means establishing a clear governance structure and a dedicated team for leading and managing SLG digital transformation efforts. Organizations also need to adopt agile and flexible methodologies and practices and to foster a culture of innovation and learning.	**Reducing organizational risks** through technology investments helps SLGs ensure the security, privacy and compliance of their data and systems, as well as the resilience and continuity of their operations.

Conventional workplace challenges

In conventional workplaces, operations often function in isolated silos due to multi-tower contracts. For instance, when one vendor provides IT service desk services in a catch-and-dispatch model and assumes no responsibility for increasing the end-user experience, it limits the organization's wider ability to innovate and transform. So, when another vendor that provides, for example, centralized field services, wishes to deliver services in new ways, it will be limited by the scope and extent to which it can render services within the organization's existing framework. This results in delays and reduced support quality.

In traditional workplaces, collaboration relies on services that lack the flexibility necessary for modern work environments, hindering effective teamwork and communication. The absence of inter-agency collaboration adds another layer of complexity due to fragmented enterprise communication channels that lack a common purpose. Challenges include:

- Basic service desks with tiered support that use a catch-and-dispatch model have limited technical capabilities. This leads to difficulties scaling and managing multilingual calls across state agencies.
- Manual device provisioning and management includes depot staging, manual OS builds, and legacy tools for application packaging and device management. It involves handling multiple

SLGs need to modernize the workplace by using cutting-edge technology to dismantle silos, foster collaboration, automate and enhance the experience for citizens and agencies.

images and presents patching challenges. The rapid release of security updates and vulnerability patches by original equipment manufacturers (OEMs) adds complexity to device management for SLGs. For example:

- Microsoft ending support for Windows 10 in October 2025 poses further challenges, with research showing that 48% of workstations may not support Windows 11.[1]
- Cellular networks, the core of mobility solutions for public safety, are quickly evolving from 4G to 5G. Devising a refresh policy for mobile devices will help front-line workers, such as police officers, fire fighters and medical workers.

- Labor-intensive field and desk-side support often involves high travel times and low productivity because it does not cater to a multi-state-agencies model.
- Legacy telephony and collaboration services lack integration with modern technologies, such as cloud-based voice solutions. Enterprise telephony also struggles with scalability and agility and is complex and expensive to maintain.

Poor workforce experience and lack of citizen-centric services

SLGs face multiple challenges in delivering public services to their citizens. These include fiscal constraints, rising demand, complex regulations, technological changes and citizen dissatisfaction. Some of the common challenges they face when trying to improve total experience (TX) include:

- **Low focus on experience.** Outdated IT systems that are incompatible with newer technologies create silos of information and processes that hinder collaboration, integration, and interoperability across agencies and levels of government.
- **Resource constraints.** The public sector operates under tight budgetary and regulatory constraints, which limit the availability and flexibility of resources for both customer experience (CX) and TX initiatives. This sector often faces competing priorities and demands that require trade-offs and compromises between different goals and outcomes.
- **Complex and changing regulations.** SLG agencies must comply with various federal, state and local laws and regulations that affect their IT operations and services. These regulations may change frequently and vary across jurisdictions, creating complexity and inconsistency for IT management and governance.
- **Culture and change resistance.** The public sector has a long-standing culture and tradition of stability, hierarchy and risk-aversion that can hinder the adoption and implementation of CX and TX practices. Its workforce may resist or lack the skills and motivation for change, especially if they perceive CX and TX as a threat or a burden.

Case example: In 2019, the State of California implemented a new payroll system, called FI$Cal, to consolidate and streamline the financial operations of various state agencies. However, the system faced numerous problems, such as data errors, system crashes and user complaints, due to aging technologies and lack of skilled support personnel. These challenges affected the accuracy and timeliness of the state's payroll and accounting processes for employees and clients.

Many state and local government IT systems are obsolete, ineffective, unsecured and non-compliant with modern standards and expectations. This affects the quality and satisfaction of both service delivery and the citizen experience.

Enabling efficient, adaptable modern workplaces

SLGs can deliver efficient and effective modern workplace services to their workforce and state agencies with innovative technologies that enhance operations, improve workforce satisfaction and agency adoption, and reduce costs. Some of the technologies and best practices that can help them achieve these goals are:

- **Advanced technical service desk.** A service desk that uses artificial intelligence (AI), automation and self-service solutions to provide fast and accurate support to state agencies and the workforce reduces the need for human intervention and increases productivity.
- **Modern device management and cloud provisioning.** A cloud-based solution for managing, securing and updating end-user devices, applications and data ensures seamless patch testing and deployment. Doing so prevents disruptions and maintains uninterrupted citizen service delivery, as well as collaboration and mobility for SLGs and their agencies. SLGs should also strategize application compatibility testing and develop a Windows 11 migration plan, along with device refresh strategies to be sure of Windows 11 compatibility as Windows 10 becomes end of life.
- **Intelligent bots.** GenAI-powered virtual agents that interact with users through natural language, voice or text, and perform tasks, such as answering queries, booking appointments or processing transactions, enhance the user experience and reduce the workload of staff. They also work in emergency situations.
- **Digital humans.** Realistic and interactive avatars, deployed in kiosks, which can simulate human emotions, expressions and behaviors, as well as provide empathetic and engaging interactions with users, create more personalized service delivery.
- **Smart lockers and vending machines.** Aimed at improving operational efficiency and enhancing user experience, smart lockers and vending machines are integral components of a modern workplace. Smart lockers are designed to securely deliver IT assets and improve digital asset management. Vending machines are used primarily to dispense items such as headphones, mice and other accessories.
- **Augmented reality (AR) field support.** Using AR to provide real-time guidance with onscreen annotation, information and assistance to field workers, such as technicians, or first responders enhances their safety, performance and the quality of service they deliver to citizens.
- **UCaaS and smart meeting rooms.** By focusing on employee personas, IT leaders can deploy hybrid technologies to deliver specific functionalities exactly where they're needed. The right

SLGs should enable efficient, adaptable, modern workplace environments by adopting technologies, such as automation, generative AI (GenAI), cloud, unified communication as a service (UCaaS) and electronic Subscriber Identity Module (eSIM), along with best practices, such as boosting digital experience and enhancing productivity.

capabilities help ensure effective communication between departments and with constituents — no matter where an employee may be working. Modern collaboration platforms and smart meeting rooms that provide voice, video, chat and conferencing services, and allow SLG agencies to create and join virtual meeting rooms, facilitate communication and teamwork across departments, locations and devices.

- **e-Sim for work and personal phone portability.** e-Sim technology enables users to switch between different mobile network operators and plans without changing their SIM cards. Users have one device for both work and personal purposes, providing more flexibility, convenience and cost savings.

Combined with an innovative delivery model and led by total experience management, these technologies can cater to workforce and agency needs while keeping citizens in mind.

> "Several SLG clients have been focused on how to improve their employee experience. This has included updates ranging from improving knowledge management and the ability to self-service to making sure that employees have access to the technology they need when they need it and no longer need to wait days or weeks for new equipment. We have also seen a significant focus on collaboration tools such as [Microsoft] Teams and Teams Voice, services that improve employee experience and save the agency costs."
>
> **— Noel Hara, CTO, Public Sector, NTT DATA**

Consumer-like experience

In the ever-evolving landscape of digital transformation, SLG must meet growing citizen and stakeholder demands while enhancing efficiency and resource use. Key to this effort is service catalog management, which organizes and presents services with accessibly in mind. However, traditional on-premises infrastructure often limits the agility and scalability SLGs need for effective service delivery.

In parallel, cloud computing has transformed IT resource consumption and delivery, offering unmatched flexibility, scalability and cost efficiency through a "pay-as-you-go" model. Here are some best practices and approaches SLGs can use to deliver a consumer-like experience for citizens:

- **Digital services catalog.** Powered by case management as a service (CMaaS), a digital services catalog consolidates disparate systems and data sources across state agencies to create a unified service catalog. Having a single point of access for all services and incorporating experience feedback at every stage delivers a consumer-like experience for citizens.
- **Cloud PC environment optimization.** Cloud endpoint needs to be consolidated within SLGs with integrations across private, public and hybrid cloud. Doing so increases visibility across agencies into cost, capacity planning and budgets while enhancing service speed, accuracy and reliability. Additionally, using GenAI for analysis of signals captured from various endpoints and touchpoints empowers faster decision-making and ensures improved service delivery for citizens.

Adopt a holistic and strategic approach that integrates the environmental, social and economic dimensions of IT into SLG policies, plans and practices.

Total experience (TX) management

IT service metrics and measurements can be applied at different points in the IT service lifecycle, such as strategy, design, transition, operation and continual improvement. Additionally, SLGs can categorize them into different domains of IT service management, such as portfolio, level, capacity, availability and incident management. Here are some examples of IT service metrics and measurement:

- Number and percentage of IT services that are aligned with business goals and citizen needs.
- Number and percentage of IT service level agreements that are reviewed and updated.
- Number and percentage of incidents that are reported, logged, categorized, prioritized, assigned, escalated, resolved and closed.
- Average resolution time and the resolution rate of each IT service incident.

Examples of experience-level agreements (XLAs):

- Employee onboarding experience
- Productivity hour 1
- Employee attrition due to poor technology experience

SLGs can use various service metrics and measurements to evaluate and improve IT services in terms of inputs, outputs, outcomes, processes, quality, efficiency, effectiveness, satisfaction and value.

Delivering total experience

TX is a strategy that aims to improve the quality and outcomes of human interactions across three domains: workforce, agencies and citizens. Customer/citizen experience (CX) and workforce experience (WX) refer to the perceptions and feelings people have when interacting with their organizations. Both encompass service quality, access, responsiveness, transparency and trustworthiness. Agency experience (AX) refers to the feedback and perception of SLG agencies while consuming services from the state technology authority.

CX + WX + AX = TX

CX is important to SLGs because it affects the quality of life and well-being of their citizens, as well as the efficiency and effectiveness of their operations. SLGs can deliver high-quality public services and outcomes to their citizens, workforce and agencies by considering the following best practices:

- **Adopt a TX approach** to establish and monitor clear and relevant metrics, such as net promoter score (NPS) and task completion rate, for CX, WX and TX. SLGs should use data and evidence to understand needs, as well as service design and innovation to create and deliver customer-centric solutions. A few examples of CX metrics are customer satisfaction, NPS, task completion rate and accessibility score. WX metrics include digital friction, workforce productivity, retention, engagement and absenteeism.

  Digital experience management tools can help SLGs transform digital interactions with their citizens and workforce. It helps collect real-time feedback and data from users across different channels and devices, such as web, mobile, chat, email or voice. Agencies can analyze and visualize the data to identify user needs, preferences, pain points and satisfaction levels, and then benchmark against best practices and industry standards. This helps SLGs set up an initial baseline for experience and align the delivery organization and ecosystem of various tools. Ensuring the desired experience levels leads organizations to embrace an XLA-led delivery model.

Comprehensive digital experience management with well-defined service-level agreements (SLAs), XLAs and business-linked objectives (BLOs) will help deliver TX and align resources and processes to most critical business objectives.

- **Use digital twins for frictionless journey mapping** to overcome user friction and eliminate daisy-chain SLAs with an integrated and streamlined approach to digital twin-based service delivery.

  A digital twin is a virtual model that accurately replicates a physical object, process or system. Digital twins enable real-time monitoring, simulation and analysis to optimize performance and predict future outcomes. A digital twin can help SLG agencies improve service delivery, efficiency and engagement. They also help agencies understand and improve the user experience in business processes by providing real-time and actionable insights.

  Process digital twins use data to model and optimize real-world processes. They can be used for various public administration use cases, including:

  - Identify and eliminate bottlenecks, inefficiencies and errors in services by enabling continuous testing and optimization.
  - Innovate and adapt services to changing needs and demands by enabling rapid prototyping and experimentation.
  - Align and collaborate with stakeholders, such as citizens, employees, partners and regulators, by enabling data-driven and transparent decision-making.
  - Eliminate the daisy chain of SLAs and adopt a more integrated and streamlined approach to service delivery.

  A good example of a process digital twin is new employee onboarding. It starts with a digital twin of the entire employee onboarding process, including feedback from HR management systems (HRMS), ITSM, digital experience monitoring (DEM) tools, user surveys, feedback forms and other sources, and then provides insights into bottlenecks in the different aspects of employee onboarding. With these insights, process stakeholders can identify actions that will improve processes and address employee concerns.

Organization and change management for increased adoption

A properly planned OCM strategy can help state technology successfully adopt and adapt to changes in the modern workforce and IT services, and then deliver desired outcomes to SLGs. OCM can also help overcome common IT service change challenges, such as resistance, confusion, frustration and loss of productivity. Based on the experiences of other organizations, as well as state and local governments in the U.S., here are some best practices and tips SLGs can use to enhance end-user adoption of IT services:

- Involve agencies and their workforces throughout the project lifecycle, from needs identification, IT services selection, solution design and functionality testing to service deployment and outcome evaluation.
- Provide training and support to equip the workforce with the knowledge, skills and resources they need to use the IT service effectively and efficiently. Online courses, webinars, workshops, manuals, guides, FAQs, help desks and peer mentors deliver tailored training and support.
- Communicate and promote services about the IT service and its benefits. Promote it through different channels, including emails, websites, social media, posters, events and testimonials.
- Monitor and evaluate IT services adoption by measuring, analyzing and reporting on usage, satisfaction and impact. Use different methods to find and address the strengths and weaknesses of the IT service, as well as opportunities and challenges that arise.

Case example: OCM for the implementation of a new ITSM system that standardizes and automates IT service delivery and support across the organization involves engaging the stakeholders, communicating the vision and benefits, providing training and coaching, addressing concerns and feedback, and measuring and rewarding performance and adoption.

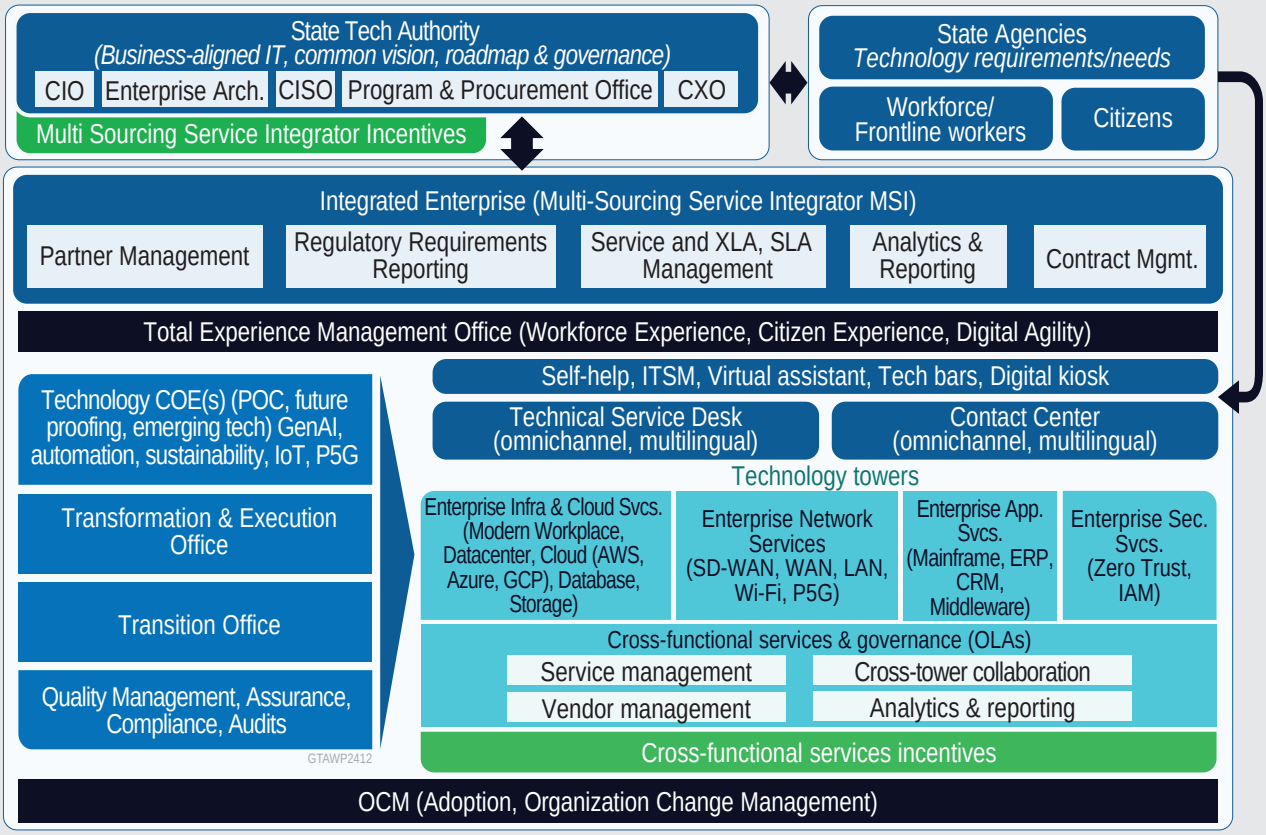
Organization and change management (OCM) helps organizations overcome challenges like resistance to service changes and influence user behavior for faster adoption and acceptance.

Recommended operating model for SLGs

SLG leaders should adopt an integrated enterprise model that prioritizes citizen and workforce experiences during technology modernization. A unified strategy and aligned vision, supported by a dedicated transformation office, are essential for executing the state's technology vision.

Additionally, SLG leaders should consider adopting an operating model that embraces TX principles to deliver integrated IT managed services. Such a model can help SLGs achieve the following benefits:

- Align IT with business goals and outcomes by focusing on delivering value-added IT services that support the mission and vision of the state.
- Capture state agency requirements early and align them to a common vision across the technology landscape.
- Follow IT enterprise architecture guidelines, making it elastic, scalable and agile to ensure it aligns with STA and state agency needs.
- Improve IT performance and reliability by using the expertise, resources and best practices of a trusted IT services provider.
- Reduce IT costs and optimize IT investments by ensuring standardization and eliminating duplicate licenses, software and other capabilities.
- Reduce IT risks by streamlining IT operations and enhancing IT security and compliance.
- Enhance IT transformation and innovation by enabling faster and easier access to new technologies, solutions and capabilities by tapping into technology centers of excellence.
- Ensure total experience while implementing newer technology and achieving faster adoption by using transition and OCM capabilities.



Additionally, a centralized OCM function should increase adoption across all service providers and technology partners. The transformation and transition office will work closely with the technology tower to incorporate the latest advancements into operations. Cross-functional services within the technology tower will ensure governance and promote cross-functional cooperation between various managed service providers for a cohesive operating ecosystem.

Recommendations for the C-suite

SLG leaders should take a strategic and tactical approach toward total experience and multi-tower service integration for state agency IT transformation. The following points summarize key approaches that will guide C-level leaders in transforming state agency IT services in ways that will enable modern, adaptable digital workplaces to improve agency, worker and citizen/constituent experiences:

- **Align vision and strategy.** Ensure technology investments align with a clear vision and strategy that meets the needs and expectations of citizens and the workforce. Establish clear, overarching goals that guide strategic direction and decision-making at the executive level.
- **Integrate the enterprise.** Foster interoperability and integration across departments and agencies, using a multilingual and omnichannel digital service desk, unified platform, single pane of glass, and data and analytics to make informed decisions and improve accountability and transparency.
- **Energize innovation and growth.** Adopt newer technologies to provide an Amazon-like experience, including chatbots and digital kiosks, and an overall improvement of the total efficiency of the agencies and their workforces.
- **Reduce costs.** Lower the expenses associated with legacy systems and modernize aging workplace systems and processes using technologies like digital twins.
- **Identify technology leadership.** Establish a dedicated team for digital transformation efforts to make it easier to adopt Agile methodologies and foster a culture of innovation and learning.
- **Future-proof.** Prepare SLG agencies for the adoption of GenAI, ensuring they are ready for future technological advancements.
- **Adopt a platform-led approach.** Use a platform-centric strategy to streamline processes and foster innovation.
- **Institute total experience management.** Establish an experience management office to oversee and enhance TX for agencies, the workforce and citizens.
- **Use sustainable IT practices.** Assist state agencies in achieving their carbon emission goals by adopting sustainable IT practices.
- **Determine agency adoption.** Use an OCM-led approach to boost adoption of modern workplace and IT infrastructure services to ensure return on investment, workforce satisfaction and organizational performance.
- **Include security and compliance.** Address security and compliance concerns by implementing a zero-trust architecture, multifactor authentication (MFA) and identity access management (IAM) to safeguard data and systems against cyberattacks, adhere to regulations and eliminate shadow IT.
- **Improve citizen experience.** Focus on improving the citizen experience as the dominant outcome of digital investments. Provide seamless, personalized and accessible services across multiple channels.

Appendix A: SLGs' unique digital challenges

SLGs must overcome unique digital challenges to enable their own viability. They must address evolving agency demands for personalized, accessible services from anywhere, on any device, amid growing complexity and limited resources. To excel, they must undertake a comprehensive digital transformation journey that addresses key business and IT challenges, including the following:

Struggles with strategy and future roadmap planning

One of the critical steps in digital transformation is developing a clear and coherent roadmap that aligns with the organization's vision, mission and goals. However, this step is often difficult. Agencies' complex and heterogeneous IT landscapes can involve multiple vendors, platforms, applications and services. SLGs must be sure that the components of the IT enterprise are well integrated and coordinated. Additionally, their people and processes must be able to adopt and adapt to the new technologies and solutions.

Planning and executing a digital transformation strategy can include the following challenges:

- **Weak multi-vendor environment.** SLG agencies often juggle multiple vendors, each of which handles different IT segments, leading to siloed operations. These segments include service desk, field service support, modern device management, ITSM support, legacy collaboration services, data center and network infrastructure, applications or security.
- **Poor service digitization.** When SLGs lack a unified ITSM instance, centralized service catalog, common knowledge base, and a single pane of service assurance and monitoring, it can hinder digital transformation for their digital workplace. This complicates service orchestration and slows down both service fulfilment and issue resolution. It also exposes gaps in change management procedures.
- **Non-inclusive workforce and citizen access.** Challenges with managing diversity, equity and inclusion (DEI), retaining talent and addressing silent sufferers can impact public service quality and employee morale. A 2023 American Foundation for the Blind study on the barriers to digital inclusion found that 75% of blind, low-vision and deaf-blind respondents faced frequent or occasional barriers when accessing government benefits like Supplemental Security Income (SSI) and the Supplemental Nutrition Assistance Program (SNAP) through agency websites.[2]
- **Inadequate sustainability efforts.** High levels of energy consumption and the disposal of electronic waste from various IT sources, including the end-user devices (such as laptops, desktops, mobile devices, tablets and sensors), data centers and network equipment government agencies use, create substantial sustainability challenges. These practices have adverse effects on environmental quality and public health standards, potentially eroding trust in governmental authorities.

These challenges often lead SLGs to create point solutions and miss the opportunity to develop a well-defined roadmap that aligns to their vision.

Case example: In 2019, the City of Baltimore, Maryland, suffered a ransomware attack that paralyzed its IT systems, including email, phone, online payments and property records. The attack also affected the city's ability to provide services such as permits. The city was compelled to spend over $18 million on system upgrades to recover from the attack, which was blamed on its outdated and susceptible IT infrastructure that depended on various vendors and legacy systems.

Untapped automation, analytics and AI capabilities

SLGs that fail to introduce or modernize automation, analytics and AI technologies will reduce the operational efficiency of their organizations, limit innovation opportunities and increase vulnerable points that affect the data-driven decision-making process and impact the citizen experience. Challenges include:

- **Data silos.** Lack of modern data management capabilities and the right set of analytics solutions and tools can result in organizations having data sources across several systems and functions. Informed decision-making is a challenge, and it may also impact cross-agency service delivery with a holistic view of citizens.

- **Inefficiency.** Lack of automation results in slower processing, higher manual workloads and error-prone practices, leading to operational inefficiencies. For example, the workforce spends hours processing applications, checking compliance and attending to basic enquiries. Using generative AI (GenAI), natural language processing (NLP) and machine learning (ML) can help automate repetitive tasks, streamline processes and handle large volumes of data more efficiently.
- **Limited data insights.** Without valuable insights gleaned from their massive amounts of data via AI, SLGs may fail to recognize trends or extract actionable information, hampering evidence-based decision-making processes. For example, failing to identify patterns and trends in citizen complaints and grievances to determine resolutions.
- **Ineffective decision-making.** The lack of representative data and transparency in data processing might lead to missed opportunities to use potentially real-time, accurate information to identify trends, patterns and actionable insights for evidence-based decision-making. For example, effectively responding to and managing situations, health crises or security threats.
- **Reduced accountability.** Without the operational insights, such as the spend and effectiveness of various programs and where improvements are required, that analytics tools can gather, SLGs may find it difficult to monitor delivery and impact, leading to a lack of accountability. For example, finance does not have visibility into the spend across multiple programs and different functions.
- **Missed opportunities for innovation.** SLGs that fail to employ automation, analytics and AI tools may not have opportunities to identify areas of improvement or streamline processes that would enable innovative services to help address complex challenges and improve service delivery. For example, the introduction of new citizen-centric programs based on the success or failure of traditional services.
- **Poor citizen experience.** Not employing AI chatbots and virtual assistants may lower service delivery quality and citizen satisfaction, causing delays and harming the citizen experience. For example, longer wait times for citizens seeking support due to workforce constraints or shortages.
- **Security breaches.** Lack of modern AI and automation security solutions that are capable of automatically detecting security threats and applying mitigation techniques increases the risks of security and data breaches. For example, failure to secure sensitive citizen information and evaluate and mitigate risks.

All these challenges, however, could be addressed through a concerted effort to incorporate technology innovation and policy reforms, as well as enhance organizational change management practices. Better decision-making in the delivery of public services is crucially dependent on the adoption of automation, data and analytics, and AI.

Limited visibility into service metrics and measurement

IT service metrics and measurement can help SLGs improve their IT performance and accountability in a challenging and dynamic environment that includes multiple workplace scenarios. However, there are many factors to consider when implementing metrics. These include scope, purpose, data sources, methods, reliability, validity, communication, reporting and feedback. Key challenges include:

- **Lack of a unified view into service performance.** SLGs that do not have a holistic view of service availability metrics, and how each service relates to other infrastructure elements and applications, may cause delays in identifying the root cause of problems. For example, if a server fails in a specific data center, which applications are affected? Which agency department is impacted? And, more importantly, which vendor owns the issue?
- **Non-standardized tools and key performance indicators (KPIs).** The absence of standardized tools can result in a proliferation of tools serving the same function. This increases costs and management complexity for SLGs. Additionally, this disparity makes it challenging to correlate data matrices and performance metrics. The result is delayed issue resolution and affected service availability to state agencies.
- **Disparate frameworks and operating models.** Lack of alignment and coordination between different IT service providers that have overlapping roles and responsibilities can result in gaps or overlaps in service coverage, as well as inefficient or ineffective resource use. This entails higher compliance and reporting requirements, more administrative and operational overhead, more layers of decision-making and approval, and, ultimately, more challenges in aligning and motivating people and teams.

Case example: In 2020, a report by the New York City Comptroller found that the city's Department of Information Technology and Telecommunications (DoITT) did not have

sufficient metrics and measures to monitor and improve the availability and reliability of the city's 911 emergency communication system. This jeopardized public safety and emergency response. The report recommended that DoITT establish and implement a robust and comprehensive framework for IT service metrics and measurement. Additionally, the department needed to ensure the timeliness and accuracy of the data it collects and reports.

Security and compliance concerns

In 2020, ransomware attacks on U.S. government organizations cost an estimated $18.9 billion. By 2025, the estimated global annual cost of cybercrime will be $10.[5] trillion.[3]

SLGs face significant challenges in securing and maintaining compliance for their data and systems. They manage sensitive information, such as personal data, tax records, health records and criminal records, all of which require robust protection against misuse or breaches.

- **The rise of shadow IT.** Unauthorized applications and systems used without IT approval further complicate an already complicated SLG landscape. Shadow IT increases agency vulnerability to cyberattacks and compliance failures when SLGs have a critical need to safeguard their data and systems. An extensive application landscape, often duplicated across agencies or departments, adds to the problem. For example, the 254 applications that El Dorado County, California, supports reduces the county's capacity to introduce new tools.
- **Inadequate security.** Traditional perimeter-based security is inadequate in the era of cloud computing, mobile devices and remote work. SLGs' mandate to adhere to numerous regulations, including HIPAA, PCI DSS and the National Institute of Standards and Technology (NIST) Cybersecurity Framework, involves complex and costly compliance measures. The task is made even more difficult by outdated systems, multiple vendors and a variety of stakeholders. It adds layers of complexity to both security and compliance efforts.

Case example: In 2021, a major ransomware attack targeted Baltimore County Public Schools. The attack disrupted operations and exposed vulnerabilities in the Maryland county's cybersecurity infrastructure. This incident highlighted the pressing need for enhanced security measures and better coordination across disparate systems to protect sensitive information and ensure continuity of services.

Low agency adoption of technology

Lack of technology adoption by SLG agencies creates a bottleneck in achieving common vision and welfare goals for citizen-centric services.

For state technology authorities (STAs), adoption of the approved IT infrastructure portfolio and services by other state agencies is a critical success factor. Doing so affects SLG return on investment, user satisfaction and organizational performance. However, the needs of other state agencies are often overlooked or neglected by IT managers and leaders, who may focus more on the technical aspects of their project or assume that users will automatically adopt the new service or solution.

Cultural barriers are the key challenge. One of the most significant is the mindset of public sector employees and managers. They may be reluctant or skeptical to adopt new ways of working, learning and collaborating. The hierarchical, bureaucratic and risk-averse culture of public sector organizations can also inhibit creativity, experimentation and innovation.

SLGs that want to boost agency adoption of IT services must not overlook the following points:

- **End-User adoption is not a one-time event.** It's a continuous process that requires planning, monitoring and evaluation.
- **User adoption is not a top-down mandate.** It's a collaborative effort that involves the participation and feedback of users, IT staff and stakeholders.
- **End-User adoption requires a tailored strategy.** It must consider the specific needs, preferences and challenges of users, the IT service itself and the organizational context.

SLGs will need better user adoption methodologies and communication strategies to improve the effectiveness and responsiveness of services to the citizens and the communities they serve.

Appendix B: CSFs, OKRs and best practices to enable core modernization

SLG IT infrastructure projects are often complex, challenging and diverse, involving multiple vendors, technologies and stakeholders. These projects aim to provide reliable, secure and efficient IT services and solutions to support public sector missions and goals. To make sure these projects deliver the desired outcomes and benefits, it is essential to identify and monitor the critical success factors (CSFs) and objective and key results (OKRs) that are relevant to a project's objectives, scope and stakeholders. Adopting and implementing best practices in the context of multi-vendor sourcing is also important.

"SLG clients considering a modern workforce are often concerned about complexity, risk and the potential impact on existing staff and processes."— Skip Stitt, Chief Strategy Officer, Public Sector, NTT DATA

Success requires understanding the following CSFs and OKRs:

Business-aligned IT for joint success

Business-aligned IT helps SLGs use IT effectively to achieve their goals and deliver value to their constituents. It also helps agencies overcome the challenges of outdated, incompatible and unsecured IT systems and processes.

Business-aligned IT correlates IT investments and capabilities with the desired outcomes and value propositions of the business. It helps SLGs optimize their IT resources, improve their service delivery, and enhance their agility and innovation. Business-aligned IT also enables SLGs to address some of the key issues they face, such as managing multi-vendor environments, as well as service integration across the enterprise, people and sustainability.

Unified and comprehensive portfolio of modern workplace services and IT

A unified and consolidated source of modern workforce and IT infrastructure portfolio services ensures integration of data, applications, end-user devices and IT.

A state technology authority (STA) must develop a single, comprehensive and consolidated portfolio of workplace and IT infrastructure services to help modernize SLG systems, integrate data and secure networks, all while saving time and money. STAs help state and local agencies deliver faster, better and more accessible services to citizens by providing:

- Data integration and sharing across IT platforms, systems and agencies for data-driven decisions and policies (for example, federated directory and messaging services).
- Secure and compliant IT and infrastructure systems that protect against cyberthreats (for example, common CVE repositories and announcements).
- Cost-effective and simplified IT and infrastructure services (for example, persona-based approved PC models) with vendor management and billing.
- Common language and standardized architecture (for example, cloud-based PC management) across agencies to enable robust services.

Automation, analytics and AI

Automation, analytics and AI are crucial to improve operational efficiency, enhance data-driven decision-making and ultimately improve the citizen experience.

Key results
- Improved operational efficiency
- Enhanced citizen services
- Increased workforce experience

"States are eager to identify practical use cases for AI. The first step is likely to be policy-driven controls in jurisdictions that are more cautious."
— **Dave Turner,** Division President, State & Local Government and Education, NTT DATA

Technology investments in automation and data analytics are crucial in modern workplace transformation initiatives at SLGs for enhanced service delivery. The initial focus should be on implementing the foundational capabilities

and aligning these investments to support emerging AI applications:

- Process automation for repetitive tasks, such as data entry, document processing and record-keeping, reduces human errors, optimizes workplace processes and improves efficiencies. The result is significant time and resource savings.
- Real-time data analysis makes it easier and faster to aid in workforce management processes, such as monitoring, forecasting and scheduling.
- Predictive analytics uses machine learning algorithms and natural language processing to examine and predict historical patterns and relevant variables in workplace dynamics. Extracting valuable insights helps create proactive approaches to strategic planning and operational efficiency that would be impractical in traditional methods.

The next wave of investments should focus on developing advanced AI capabilities:

- Data advocacy enables the workforce to promote responsible and effective use of data via data storytelling in the decision-making processes.
- Data-driven decisions combine qualitative and quantitative data to foster well-informed and evidence-based decisions.
- Decision automation in the decision-making process uses AI, operational data and business rules to help SLGs respond quickly and effectively to opportunities and challenges.
- SLGs have realized the importance of automation, data and analytics, as well as the application of AI, as part of modern workplace transformation. These solutions help direct agency policies and initiatives to improve operational efficiency, enhance service delivery, and increase citizen engagement and experience.

Here are a few best practices for successful adoption:

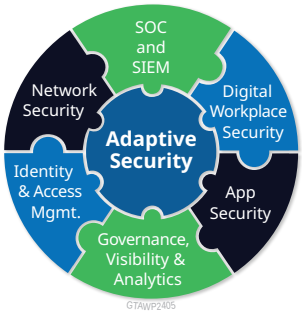
- Start with a strategic vision and an approach that focuses on the business use case and not the technology, tool or technical capabilities.
- Develop a roadmap with a multi-year plan that is adaptable to emerging needs.
- Modernize data management and analytics systems to support AI adoption.
- Automate labor-intensive tasks using AI solutions to save cost and resources.
- Establish data governance and ethical frameworks for AI applications to foster transparency and security.
- Enable the workforce to use AI and embrace change, support learning and encourage innovation.
- Assess the performance and outcomes of AI applications and revisit the strategy and approach.

Adaptive security

Cybersecurity and compliance are among SLGs' major challenges. A zero-trust approach scrutinizes every network request regardless of origin. Coupled with GenAI-powered tools like Security Copilot, zero trust can help identify unauthorized applications, develop policies based on real signal input, identify noncompliant endpoints, minimize data risk and proactively address cyberthreats. Some of the best practices for adaptive security in the modern workplace and IT operations are:

Key results
- Provide enhanced security and improved compliance
- Eliminate shadow IT
- Build a foundation for GenAI adoption

- Implement a zero-trust architecture
- Use multifactor authentication (MFA) to enable access
- Deploy just in time (JIT) access for privileged accounts
- Patch all endpoints with the latest security updates
- Implement continuous monitoring and auditing
- Deploy sandbox AI for GenAI testing



Case example: The California Department of Technology (CDT) AI sandbox initiative provides state agencies with access to a secure cloud-based environment equipped with data protection features such as encryption and access controls. This platform enables agencies to explore AI technologies while adhering to strict compliance requirements, fostering collaboration and innovation across the state's government.

Organization and change management for increased adoption

A properly planned organization and change management (OCM) strategy can help STAs successfully adopt and adapt to changes in the modern workforce and IT services, and then deliver desired outcomes to SLGs. OCM can also help STAs overcome common IT service change challenges, such as resistance, confusion, frustration and loss of productivity. Based on the experiences of other organizations, as well as state and local governments in the U.S., here are some best practices and tips SLGs can use to enhance user adoption of IT services:

- Involve agencies and their workforces throughout the project lifecycle, from needs identification, IT services selection, solution design and functionality testing to service deployment and outcome evaluation.
- Provide training and support to equip the workforce with the knowledge, skills and resources they need to use the IT service effectively and efficiently. Online courses, webinars, workshops, manuals, guides, FAQs, help desks and peer mentors deliver tailored training and support.
- Communicate and promote services about the IT service and its benefits. Promote it through different channels, including emails, websites, social media, posters, events and testimonials.
- Monitor and evaluate IT services adoption by measuring, analyzing and reporting on usage, satisfaction and impact. Use different methods to find and address the strengths and weaknesses of the IT service, as well as opportunities and challenges that arise.

Case example: OCM for the implementation of a new ITSM system that standardizes and automates IT service delivery and support across the organization involves engaging the stakeholders, communicating the vision and benefits, providing training and coaching, addressing concerns and feedback, and measuring and rewarding performance and adoption.

Vendor rationalization

The core principle of the multi-sourcing integrator (MSI) model is to provide IT services to individual agencies in a standardized manner while addressing their unique needs. An MSI ensures seamless technology integration across different technology towers so that each technology tower service provider meets their OKRs and aligns with the overarching vision and goals of the STA. To manage a multi-technology environment effectively, STAs need to adopt a vendor rationalization strategy at the technology tower level while strengthening and incentivizing the MSI with a charter that focuses on the following aspects:

- Establish a clear governance structure and processes for vendor selection, management and evaluation based on business objectives and outcomes.
- Create a common vision and roadmap for IT transformation and communicate it to all vendors and stakeholders.
- Incentivize technology towers across the enterprise with business-led objectives and underpin all contractual obligations.
- Define and enforce consistent standards and policies for IT service delivery, performance, security and compliance across all vendors.
- Integrate and orchestrate IT services and data from different vendors using a service-oriented architecture (SOA) or cloud-based platform.
- Use best practices and innovations from vendors and foster a collaborative and transparent relationship with them.

Case example: The Texas Department of Information Resources (DIR) implemented an MSI model under which it hired a single vendor to coordinate and integrate IT services from a rationalized panel of vendors.[4] DIR also established a centralized IT governance and performance management framework and aligned IT with business outcomes. The agency served as a guide to the Virginia Information Technologies Agency (VITA) in its recent migration to an IT multi-sourcing integrator model.

Digital equity

Digital equity, including diversity, equity and inclusion (DEI) initiatives, is vital to the modern workforce because it fosters innovation, creativity, collaboration and social responsibility. SLG leaders want DEI in their workforce to gain better access to talent, ensure talent retention, and foster a culture of collaboration and trust among different vendors and their employees.[5] Digital equity is very important in creating opportunities for a positive and respectful work environment.

Sustainability

Adopt a holistic and strategic approach that integrates the environmental, social and economic dimensions of IT into SLG policies, plans and practices.

To help meet state agency carbon footprint goals in their modern workplace, IT operations and procurement services, SLG leaders should consider energy consumption, greenhouse gas emissions, waste generation, resource use and social impact. Sustainability can also offer opportunities for SLGs to improve their IT efficiency, reduce costs, enhance innovation, and increase state agency and citizen satisfaction.

SLGs can adopt the following best practices:

- Create a sustainability vision and framework for IT that sets clear goals, objectives, indicators and targets.
- Assess, develop and implement a sustainability action plan for IT that specifies actions, timelines, responsibilities and resources.
- Adopt and enforce sustainability standards and criteria for IT, such as ENERGY STAR, EPEAT, e-Stewards, R2 and NIST.
- Use energy-efficient devices, extend device life and dispose of devices properly. Consider a sustainable device-as-a-service model to reuse, remanufacture or refurbish devices.
- Implement energy-efficiency measures for IT, such as virtualization, consolidation, optimization, cloud computing, green power and carbon offsets.
- Implement e-waste management practices and circular economy principles for IT, such as reuse, refurbishment, repair, recycling and recovery.

By doing so, SLGs can show their leadership and commitment to sustainable development goals and the public interest.

Appendix C: Technology, risk and people-first trends

Digital business strategy

SLGs are now emphasizing the overall social impact, in addition to business outcomes, when making IT strategy decisions.

The following are some of the top trends that are currently happening in the SLG sector, based on our understanding of various analyst reports:

- **Embed IT in business strategy.** CIOs increasingly need to demonstrate the business value of IT by tying investments in technology to quantitative mission outcomes. Planning and decision-making technologies, such as AI, data science and analytics, and business intelligence tools, help justify strategic decisions and reduce the costs late intervention causes. SLG executives increasingly measure technology-outcome-driven metrics (TODM) with business-outcome-driven metrics (BODM) to maximize social impact.
- **Implement effective enterprise IT governance.** Government initiatives can fail to achieve results if leadership does not make enterprise IT governance a priority. Specifically, implementing a mature prioritization process will prevent IT incidents from affecting mission outcomes.
- **Evolve operating models.** An all-or-nothing centralized IT operating model is no longer a requirement. Executive leaders are choosing to implement gradual centralizations or deciding to not centralize at all.
- **Support digital products and services.** Citizens' expectations of reliable digital service delivery are causing SLGs to update their digital ecosystems to match demand. CIOs are now taking on new roles in the digital ecosystem to increase technology adoption by stakeholders and citizens alike to improve mission outcomes. For example, adopting enterprise case management products can help create a more connected operating and service model.
- **Use human-centered operations.** SLG executives increasingly use human-centered designs in their service models to meet stakeholder needs. One of the top trends in government IT is analyzing the total experience (TX) for employees, users and citizens through a multi-experience lens.

Technology and innovation

With the increased focus on speed of information availability, SLGs must move beyond traditional data crunching to digital analytics, cloud modernization and hyper-automation.

Cloud legacy modernization includes:

- **AI and data analytics.** Government IT organizations are rapidly moving away from traditional data collection and reporting toward more advanced analysis and AI tools. Hyper-automation products, data-sharing programs and decision-intelligence tools help track and assess disruptive trends. SLG leaders are rapidly increasing investments in these technologies to match market expectations of their criticality in future service delivery.
- **Application delivery.** Investments in enterprise resource planning (ERP) application modernization are increasing as SLGs continue their digital transformation initiatives. Organizations currently prefer commercial products over custom-made solutions. For example, new law court case management products.

Finance and risk management

Government IT departments are prioritizing their security strategies and frameworks to handle cybersecurity threats and working closely with ecosystem partners to fulfill their core security requirements.

- **Manage risk and cybersecurity.** The major trend to counteract the increase in cyberattacks on government institutions is to implement adaptive security. SLG IT organizations are increasingly adopting the NIST Cybersecurity Framework of "identify, protect, detect, respond and recover."
- **Work with partners in the ecosystem.** SLGs can use mission goals to simplify the complexity of collaborating with multiple direct and indirect partners in an ecosystem. Analyzing their required components helps leaders identify the partners that can best deliver the outcomes their organizations need.
- **Manage technology financials.** SLGs largely perceive their IT organizations only as cost centers and not as value generators. Benchmarking IT costs can be a helpful way to find cost optimization opportunities and quantify the cost of technology debt. Consolidating data centers and reducing unit costs through a vendor procurement system are major ways to increase savings and realize value.

People and culture

Attracting technology talent through flexible work models and new training programs, along with implementing digital equity and sustainability, ensures accessible and environmentally responsible technology for all citizens.

- **Develop leadership.** Certain best practices have been seen to help CIOs boost the success of government initiatives. SLGs can increase engagement at the executive level by collaborating with IT to create a dialogue on the long-term cost and benefits of technology modernization.
- **Attract technology talent.** Pronounced trends in employment preferences, such as increased interest in accelerated training and flexible work models, have seen the public sector implement new training programs or reclassify role requirements.
- **Implement digital equity and sustainability.** Digital equity and sustainability are crucial components for ensuring that all citizens have access to technology and its benefits while fostering an environmentally responsible approach. U.S. state and local governments play an essential role in promoting equitable solutions like unified broadband access, digital literacy and inclusive technologies.

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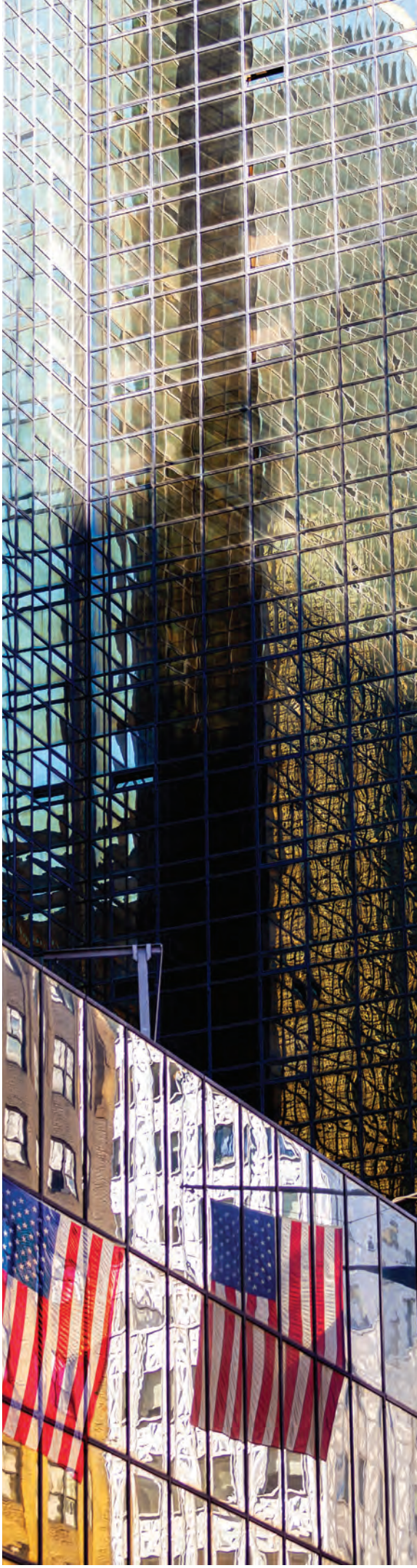
Sources

1. Nexthink Insights. "Predicting Windows 11 Upgrades in Corporate IT." https://nexthink.com/resource/predicting-windows-11-upgrades-in-corporate-it
2. Arielle M. Silverman, Sarahelizabeth J. Baguhn, Bia B. Amorosino, and Rosalba R. Carranza. "Barriers to Digital Inclusion." American Foundation for the Blind. April 2023. https://www.afb.org/sites/default/files/2023-04/AFB_Barriers_To_Digital_Inclusion_ACCESSIBLE_FINAL.pdf
3. Steve Morgan. "Cybercrime To Cost The World $10.5 Trillion Annually By 2025." Cybercrime Magazine. November 13, 2020. https://cybersecurityventures.com/hackerpocalypse-cybercrime-report-2016/
4. Theo Douglas. "Texas Continues to Seek Efficiency Through Shared Services Contracts." Government Technology. https://www.govtech.com/budget-finance/texas-continues-to-seek-efficiency-through-shared-services-contracts.html
5. Gerald Young. "Research on How Local Governments Manage Workforce DEI." ICMA. June 28, 2022. https://icma.org/blog-posts/research-how-local-governments-manage-workforce-dei



List of abbreviations

AI	Artificial intelligence
AX	Agency experience
BSC	Balanced score card
CIO	Chief information officer
COBIT	Control objectives for information and related technologies
CSF	Critical success factors
CTO	Chief technology officer
CVE	Common vulnerabilities and exposures
CX	Customer/citizen experience
DEI	Diversity, equity and inclusion
DEM	Digital experience monitoring
DHS	Department of Human Services
DJJ	Department of Juvenile Justice
DOAS	Department of Administrative Services
EPEAT	Electronic product environmental assessment tool
ERP	Enterprise resource planning
EX	Employee experience
FAQ	Frequently asked questions
GenAI	Generative AI
HIPAA	Health Insurance Portability and Accountability Act
HRMS	Human resource management system
IAM	Identity and access management
ITIL	IT Infrastructure Library
ITSM	IT service management
KPI	Key performance indicator
MSI	Multi-sourcing integrator
NIST	National Institute of Standards and Technology
OCM	Organization and change management
OEM	Original equipment manufacturer
OKR	Objective and key results
PCI DSS	Payment Card Industry Data Security Standard
SLA	Service-level agreement
SLG	State and local government
SOA	Service-oriented architecture
STA	State technology authority
TX	Total experience
XLA	Experience-level agreement

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