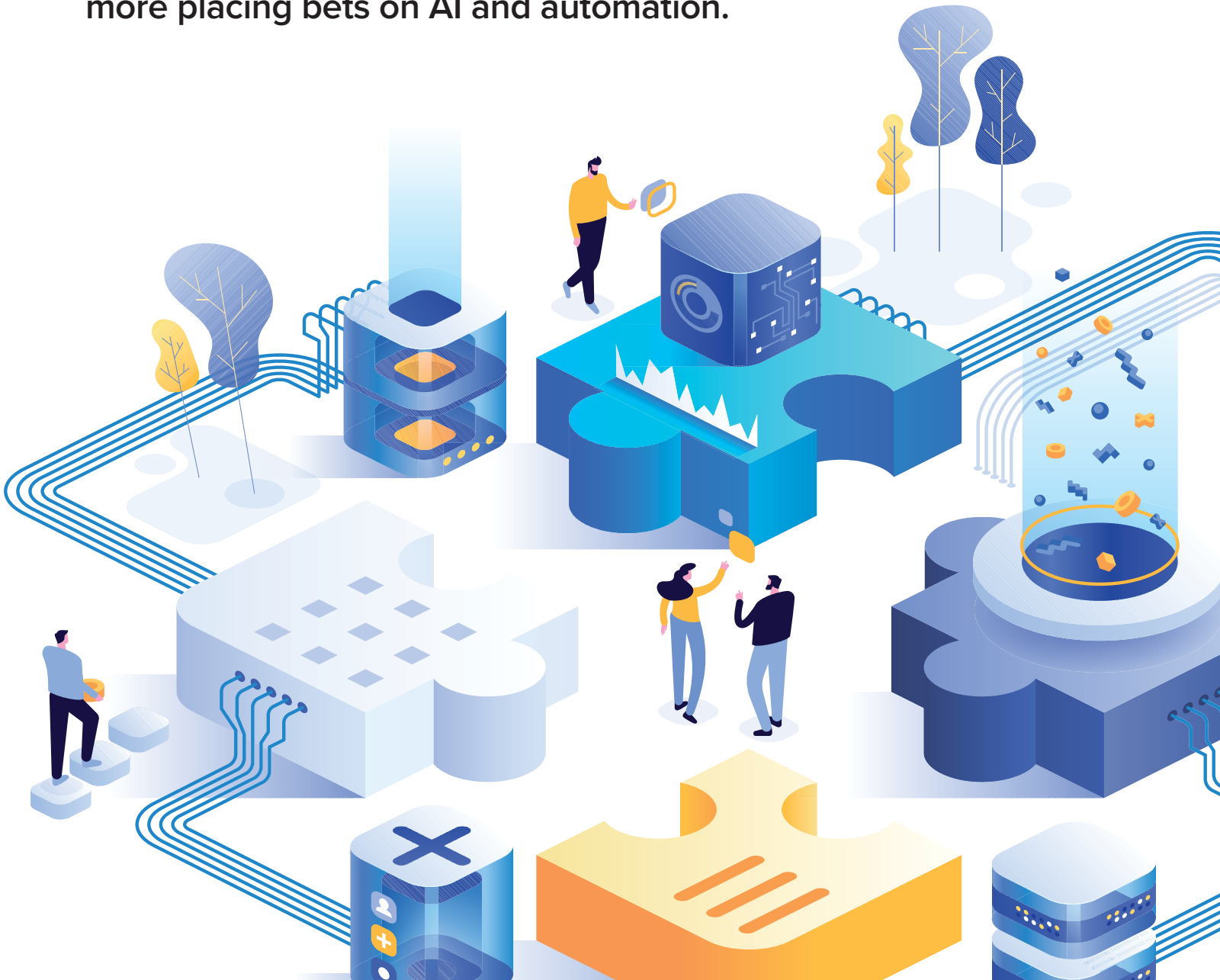


Government Agencies are Transforming Physical Operations to Gain Efficiency and Resilience

National survey shows acceleration in technology investments by 2025, with more placing bets on AI and automation.



Introduction

Government agencies are modernizing operational technologies — the systems that manage infrastructure, vehicle fleets, machinery and facilities — to boost efficiency, cope with severe weather events and meet increasing constituent demands.

A national survey of 100 state and local government leaders by the Center for Digital Government (CDG) found that most respondents have already invested in new technologies to improve the safety, efficiency and resilience of their physical operations — and additional investments are on the way. Conducted in partnership with Samsara, the survey found that more than half of respondents plan to further upgrade operational technologies in the next three years.

But the survey results also show room for improvement. Just one in five respondents said their organization is implementing emerging technologies such as artificial intelligence (AI) and automation or plans to do so in the next 12 months.

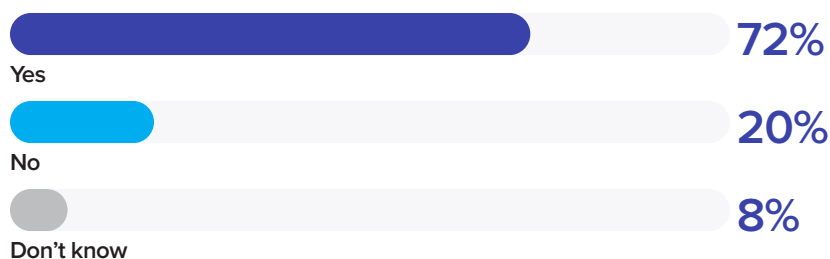
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Modernization Drivers and Direction

Nearly three-quarters of survey respondents said their organization had already made some investments in technology to modernize physical operations, but that more improvements were needed. Only 13% of respondents said their organization had made substantial modernization investments but more than half (56%) plan to upgrade operational technology by 2025.

Another 16% of respondents said they needed to upgrade, but had no plans to do so yet. Modernization activity varied by region. Survey respondents in the western U.S. were most likely to have upgrade plans and respondents from the Midwest were least likely.

Does your organization need to upgrade its technology to meet goals for physical operations?



Modernization drivers: Boosting productivity and saving money were the top reasons to modernize. Almost three-quarters of respondents said new technology investments were aimed at improving efficiency, and half cited lower costs.

The survey findings also reflect growing concern about climate-driven emergencies and other unpredictable events. Forty-one percent of respondents said they're seeking better resilience and continuity of operations. And nearly half said the rise in severe weather events and natural disasters has increased the need for new technology investments.

What are your top drivers for using digital technology to modernize?



Adoption of AI, automation and other emerging technologies is poised to grow. About half of respondents said their organization will deploy those tools within three years, although only around 10% are implementing them today.

Will your organization implement emerging technologies like AI or automation?



Modernization direction: Many of the survey's findings track with broader post-pandemic trends in government around eliminating technical debt and becoming more data driven. The pandemic exposed risks associated with outdated technology and created more urgency among government leaders around modernization. Similarly, AI and automation demonstrated their ability to augment human workforces — especially in overwhelmed social services agencies — leading to more interest in these tools.

Issues such as the flexibility, usability and resilience of technology systems are top of mind for technology decision-makers. CDG's benchmark surveys of state, city and county governments show that replacing legacy systems (often with cloud-based technologies), delivering better experiences to internal and external constituents, and adopting modern data and analytics tools dominate CIO priority lists.

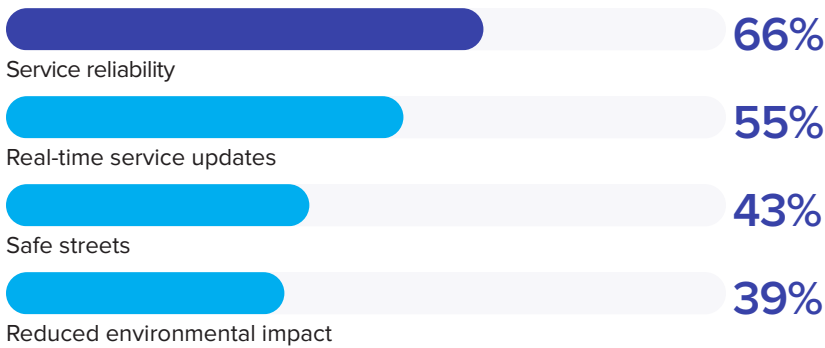
Adoption of AI and automation is poised to grow significantly in the next three years.

Meeting New Constituent Expectations

Higher constituent expectations are another post-pandemic reality for state and local government leaders. Agencies of all types are under pressure to expand digital services and improve user experience.

Constituent demands were a key modernization driver in this survey. Respondents said they anticipate higher expectations around service reliability, responsiveness and safety — which may require new tools to provide timely data, better visibility around fleets and infrastructure, and enhanced analytics for planning and predictive maintenance.

Respondents anticipate higher constituent expectations in these areas over the next three years:



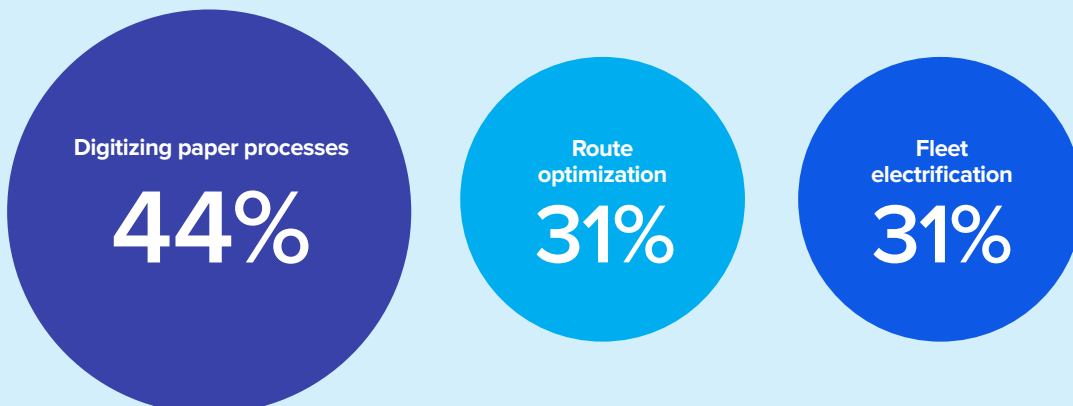
Higher constituent expectations around digital services and user experience are a post-pandemic reality for state and local government leaders.

Modernizing for Sustainability

Rising constituent expectations around environmental sustainability — along with growing state and federal mandates — are driving deployment of digital solutions to eliminate paper, route-optimization tools and electric commercial vehicles.

Most respondents have targets around environmental sustainability — just 16% said their organization lacked such goals — and more than two-thirds of respondents said their agency was increasing technology investments to improve sustainability.

Top three investment areas to improve environmental sustainability:



Modernization Hurdles and Opportunities

Securing adequate funding was the biggest modernization challenge for survey respondents — but the short- and mid-term budget environment appears favorable for technology modernization. Survey respondents also said they face significant issues around IT staff bandwidth and skills. They are considering multiple technologies to address these workforce pressures.

Top three barriers to modernization:



Funding outlook: CDG estimates total state and local government IT spending will grow between 3% and 5% for 2023 — totaling more than \$137 billion — and continue to increase over the next five years. In addition, funding from the federal Infrastructure Investment and Jobs Act is just beginning to flow to states and localities. These dollars can support infrastructure and technology modernization in transportation/transit, utilities and other operational areas.

Closing talent gaps: The survey indicates respondents view technology as a tool to address their workforce challenges. Adopting collaboration platforms and mobile technologies to support more flexible and efficient work environments are top priorities. Many respondents also want to use automation to reduce staff workloads and implement new tools to support employee education and upskilling.

CDG estimates state and local government IT spending will exceed **\$137 billion** in 2023.

Respondents said these investments could improve employee efficiency and productivity:




Survey respondents see technology modernization as a way to **reduce workforce pressures.**

Survey respondents were asked to select all responses that apply.

The Way Forward

The tools for modernizing physical operations have become more capable and affordable thanks to advances in Internet of Things (IoT) technology. Cameras and sensors are cheaper and more portable. High-bandwidth cellular networks can stream incredible volumes of data in real time. Efficient cloud computing and storage pave the way for AI and automation.

Organizations can now connect their physical operations to the cloud for end-to-end visibility across previously siloed departments to be more efficient, sustainable and safe. Consider these factors as you plan for modernization:

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Connected operations are more resilient and efficient — Public sector decision-makers need the right information at their fingertips. Unprecedented natural disasters, supply chain disruptions and volatile fuel prices make operational agility more critical than ever. Digitization enables organizations to assess and respond based on real-time data.
- 
The new and future workforce demands intelligent tools — Government leaders who prioritize workforce technology will be ahead of the pack. Today, employees expect modern tools that improve safety, automate daily tasks and are easy to use.
- 
Environmental sustainability is critical to success — To thrive, organizations must become more sustainable. Data is key to moving the needle. Increasing fuel prices, shifting customer expectations and the growing availability of commercial electric vehicles are driving attention on — and investment in — technology to improve sustainability.

This piece was written and produced by the Center for Digital Government Content Studio, with information and input from Samsara.

1. CDG Digital Transformation of Physical Operations Survey of 100 state and local government officials in IT, engineering, operations and administrative roles conducted in November and December 2022.

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