



A GOVERNMENT TECHNOLOGY THOUGHT LEADERSHIP PAPER

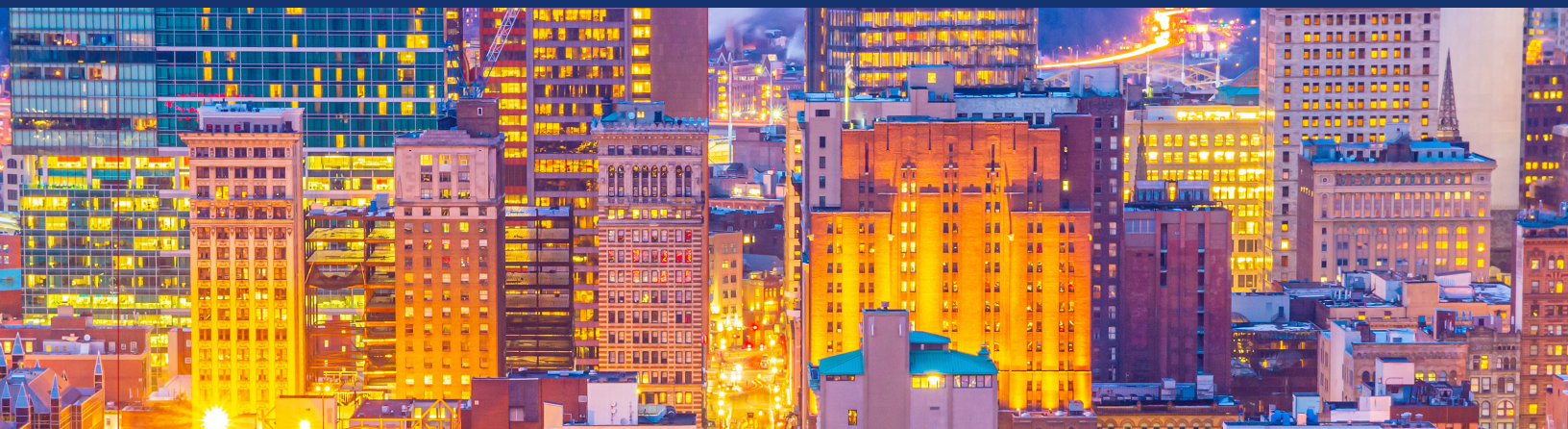
PA's Modernization Journey

How Pennsylvania State and Local Agencies
Can Use AI and the Cloud to Transform Services



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Introduction

Pennsylvania's public sector is at a critical inflection point for IT modernization. Organizations like the Pennsylvania Department of Transportation (PennDOT) and Allegheny County are demonstrating that strategic, incremental cloud and AI adoption can accelerate service delivery while managing legacy system constraints and budget limitations.

"Every CIO should have a roadmap and recognize that people will come into it at different junctures," says Center for Digital Government Senior Fellow Alan Shark, associate professor for the Schar School of Policy and Government at George Mason University.

Key Modernization Strategies for Pennsylvania Agencies

1. Focus Resources on High-Impact Outcomes.

Direct your investments toward projects that advance organizational goals and touch the most constituents. PennDOT's seven-year vehicle registration modernization demonstrates this approach. The agency is prioritizing systems that serve all Pennsylvanians by redeveloping the application process as a modern cloud experience.

2. Align Technology with Business Priorities.

Partner with business leaders to identify specific operational improvements, such as enhanced data collection, improved call center performance, and streamlined permitting. This ensures technology investments deliver measurable business value rather than technical achievements disconnected from organizational objectives.

For example, the Allegheny County Department of Human Services is standardizing its cloud environment and improving the digital employee experience to enhance public service, including introducing generative AI tools to help call center employees manage reports.

3. Demonstrate Value Through an Iterative Roadmap. Budget and operational constraints typically require projects to be built alongside existing systems. So break modernization into distinct projects

that each demonstrate measurable results rather than attempting a single large transformation.

Identify two or three high-visibility use cases to tackle first, with each discrete project building momentum and justifying the next investment.

The roadmap should include not just specific projects but also existing assets, vendor contracts, commitment levels, cloud usage, growth projections, and budget. "The roadmap should be a living document that can be adjusted as these factors change," Shark says.

4. Capitalize on AI Interest. AI's potential to reduce costs and improve outcomes is energizing business leaders to actively participate in modernization. Municipalities across Pennsylvania are piloting AI for various use cases, including chatbots for 311-like services, permitting, procurement, and navigating internal knowledge systems.

To translate interest into viable use cases like these, establish centers of excellence and sandboxes for experimentation; educate stakeholders on realistic AI capabilities; and engage legal teams, IT, constituents, and elected officials. Identify a chief AI officer or another point person to coordinate experimentation



and training for senior leadership to maintain progress across the enterprise.

5. Update Legacy Systems with Cloud and AI.

Advanced cloud-based AI tools can analyze legacy code, discover processes, and generate requirements faster than traditional methods. AI can also evaluate contracts and streamline procurement processes within technology departments.

Agentic AI is particularly valuable for managing the complexity of orchestrating new and existing systems and use cases. As AI accelerates deployment of new applications, agentic capabilities become essential for maintaining control and efficiency across your organization.

6. Build on Platform Foundations. As more applications migrate to the cloud, a common platform will help you manage and monitor discrete application lifecycles, security, and deployment. This supports long-term viability. The platform should have embedded agentic AI capabilities that reduce staff time and the cost of ongoing management, freeing up resources for experimentation and innovation.

7. Bridge Skills Gaps Through Academic Partnerships. Collaborate with university researchers to address workforce challenges and identify modernization opportunities. Allegheny County's partnership with Carnegie Mellon University on complex use cases demonstrates this model's effectiveness. Collaborations can involve both institutions and individual researchers, who can support developing applications, conduct analyses of usage and constituent demand, or serve as authoritative sources of research or focus group findings.

Pennsylvania's growing cloud and AI research infrastructure creates additional opportunities for workforce development and public-private partnerships. The University of Pittsburgh Health Sciences and Sports Analytics Cloud Innovation Center, powered

by Amazon Web Services (AWS),¹ gives students first-hand experience in cloud computing and AI while researchers accelerate breakthroughs in health sciences. The partnership also positions Pittsburgh and the commonwealth as a hub for healthcare and data science, directly supporting workforce and economic development goals.

8. Maintain a Long-Term Vision. Balance near-term wins with strategic positioning for future capabilities and constituent needs. "It's hard for agencies to think long-term, but leaders should envision how these investments are going to show benefits," says Sergio Ortega, business development and sales lead for state and local governments at AWS.

Technology leaders must help internal business leaders recognize that legacy systems are becoming more expensive to maintain and actively hinder innovation. Lawmakers and policymakers should frame the vision around constituent outcomes, supporting incremental approaches that allow government to leverage AI and cloud capabilities to empower staff.

Conclusion

Modernization is essential for Pennsylvania's public sector to meet evolving operational and service demands. "The cost of inaction is real," Ortega says. "Staying the course means falling behind."

Investments in targeted modernization projects translate directly to improved public services and organizational efficiency, as is already being demonstrated in certain government and education organizations throughout the state. By learning from those entities and scaling up their successes, Pennsylvania government organizations can create a truly modern, high-performing public sector that meets strategic objectives and addresses ever-changing constituent needs.

1. <https://aws.amazon.com/blogs/publicsector/cloud-innovation-center-launch-at-the-university-of-pittsburgh/>

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