A **GOVERNMENT TECHNOLOGY** THOUGHT LEADERSHIP PAPER

4 Essential Steps for Building Scalable Transportation Infrastructure

SPONSORED BY Everpure™

State and local transportation agencies must support larger and more diverse data sets, strengthen cyber resilience, improve efficiency, and prepare for innovations such as AI, video analytics and connected infrastructure. Modernization is therefore not just a technology initiative but a long-term strategy.

With constrained resources and supply chain uncertainty, however, legacy IT infrastructure presents a substantial operational hurdle.

This was the reality facing the Arkansas Department of Transportation (ARDOT). When IT Infrastructure Services Manager Eric Simpson assumed his role seven years ago, ARDOT was operating in a highly fragmented environment, where a lean IT staff was tasked with supporting growing demands with fewer resources.

“We were still relying heavily on a mainframe computing system,” Simpson says. “We had gotten the first of our virtualization in place, but we still had several physical servers and some old storage systems.”

Rather than continuing to layer new technology onto an already disconnected environment, ARDOT strategically aligned infrastructure decisions with present and future business needs. Here are four steps that any transportation agency should consider when modernizing.

1 / Standardize your infrastructure

Infrastructure environments often become a tangled collection of disparate systems and inconsistent processes.

To improve manageability and resiliency, standardize your environment with infrastructure that makes the most operational and business sense. When infrastructure platforms are consistent, IT teams spend less time troubleshooting and more time improving service delivery, strengthening resilience and supporting mission-critical systems.

“When you’re working with streamlined teams and limited personnel resources, you want to create as standardized a platform as possible,” says Simpson. “That helps simplify vendor management and control costs.”

For ARDOT, that meant adopting an enterprise data cloud model. By centralizing storage and management, the enterprise data cloud gave ARDOT the flexibility, resilience and visibility needed for a modern virtualized environment.

“It was a concerted effort to move toward virtualization on the server side and support it on the back end with an enterprise data cloud,” he says. “If you’re going to have a virtualized server environment, an enterprise data cloud is what makes a difference.”

The operational improvements came quickly at ARDOT. The organization went from experiencing outages on a regular basis to having no outages.

2 / Get your data in order

Transportation agencies frequently struggle with fragmented systems spanning rail, roads, air, public safety, GIS and analytics. These data silos create inefficiencies that can compromise modernization efforts.

Tom Sells, business development principal at Everpure, says agencies increasingly need a more unified approach to data management.

"As agencies move into the AI era, it's critical to rethink how data is powered and accessed across the environment — and to break down the silos where that data resides," he says.

Agencies should also identify a solution that suits their data security and resiliency goals. They should evaluate how quickly they can recover critical applications and services, how well their backup strategies protect against ransomware, and whether their infrastructure can support everyday operations and emergency response scenarios.

ARDOT uses flash-based infrastructure and immutable backup strategies for all its data.

"If we need to restore data," Simpson says, "we're restoring from flash to flash, so we don't have to wait for spinning disks to power up and spend hours — or even days — recovering data. With flash, we can quickly rehydrate systems and get operational again."

3 / Create predictable costs

Traditionally, transportation agencies would estimate their future capacity needs, add a buffer and purchase infrastructure accordingly. Ongoing hardware shortages and price volatility have made that approach increasingly difficult to sustain. "If you overbuy capacity, you're dealing with waste," Sells says. "If you're underbuying capacity, your applications are going to fail."

For greater cost predictability and proper provisioning, ARDOT adopted Everpure's Evergreen Consumption model, which helps agencies avoid overcommitting infrastructure investments while allowing flexibility as demands evolve. Instead of undergoing periodic multimillion-dollar infrastructure replacements, the department can scale its infrastructure incrementally.

ARDOT also determined that keeping its analytics workloads on premises provides greater financial control than primarily relying on public cloud infrastructure. "We made an intentional investment in our infrastructure and virtualization to create our own cloud where we can control those costs ourselves," Simpson says.

4 / Prepare for AI and analytics demands

Infrastructure flexibility is essential as transportation agencies explore AI, sensor data and other advanced technologies.

These initiatives depend on infrastructure that can ingest, store and move data efficiently across environments. Agencies need architectures that support high-performance workloads and remain adaptable enough to accommodate future use cases, changing regulations and new service expectations.

Agencies must determine whether those workloads should run at the edge, on premises or in the cloud.

"There's no one-size-fits-all," Sells says. "It really is environment-dependent."

Preparing for innovation also requires building trust across business units and sustaining strong communication. Modernization efforts are more likely to succeed when IT leaders clearly connect infrastructure decisions to business outcomes such as reliability, service continuity and cost control.

"I probably spent more time in ARDOT's business community than I did with my technical team at times," Simpson says. "Learning the business and then communicating those ideas to the business owners was critical."

Conclusion

ARDOT's modernization experience shows the importance of standardization, data readiness, predictable costs and long-term flexibility. Transportation agencies can strengthen current operations and address future demands with this approach.

Agencies beginning modernization efforts should focus on proving the value of new solutions to the organization.

"The first practical step was moving that initial major system into a virtualized environment and demonstrating how effectively the modernization effort could work," Simpson says.

Simpson also cautions agencies against waiting for ideal conditions before moving forward.

"You cannot be afraid to fail," he says. "Technology and innovation aren't perfect, but it's building trust and communication with the business units that helps you get through that."

This piece was written and produced by the Government Technology Content Studio, with information and input from Everpure.

government technology

Produced by Government Technology

Government Technology is about solving problems in state and local government through the smart use of technology. Government Technology is a division of e.Republic, the nation's only media and research company focused exclusively on state and local government and education.

www.govtech.com

Everpure™

Sponsored by Everpure

Everpure allows organizations to take control of their data with an industry-leading, ever-evolving storage and data management platform. We help agencies and governments unleash the power of their data by ensuring it is secure, accessible, intelligent, and ready to perform in the AI era. By replacing rigid infrastructure with a platform that operates like a living system, Everpure makes data management effortless.

Learn more at Everpuredata.com.

IMAGE SOURCE: ADOBESTOCK