A **GOVERNMENT TECHNOLOGY** THOUGHT LEADERSHIP PAPER

Applied Intelligence: How High-Performance Workstations Are Driving Public Innovation

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The public sector is ready to apply intelligence to real-world challenges. But too many agencies rely on cloud-based infrastructure to process sensitive or time-critical workloads, which may introduce latency, unpredictable costs and potential security gaps.

To move from pilots to mission-driven innovation, organizations must turn to AI-ready workstations that provide local compute and optimized performance.

The Power of Local Compute

Whether agencies are modeling emergency responses, planning transportation or analyzing public health data, delays in processing can slow decision-making and reduce the effectiveness of interventions. This is especially true in urgent situations where the health and safety of the public are at risk.

High-performance workstations allow teams to handle complex datasets, visualize outcomes and deploy solutions without the delays or unpredictability of cloud-based workloads.

By collecting, storing and processing data at the endpoint, workstations with local compute power enable faster iterations, allowing agencies to explore multiple scenarios and compare potential outcomes.

“In critical government activities, you need to process at the endpoint,” says Tommy Gardner, CTO for HP Federal. “Otherwise, you’re going to get outdated data and make decisions that are already irrelevant.”

Although cloud computing offers scalability and accessibility, it is not always the best fit for agencies handling health records, defense intelligence, or other sensitive and regulated data.

“When you have a local workstation, you can control who has access to that data and how they have access to it,” says Leonard Isler, global SME for data science, AI and machine learning at HP.

Local control also simplifies policy enforcement and human-in-the-loop oversight. Data management policies and auditing are easier to implement when computation is local. Attempting to enforce policy controls in third-party infrastructures complicates compliance.

Cost is another consideration. Running intensive workloads in the cloud can become expensive due to ongoing charges for storage, compute and data transfers.

Local workstations, on the other hand, help agencies predictably manage costs while still improving performance and security.

“Who knows how much it’s going to cost to train a model in the cloud?” Isler asks. “I know how much it’s going to cost on the workstation because I already paid for it.”

With fewer unknowns to budget for, agencies can experiment more freely without the pressure of ensuring every initiative pays off.

High-Performance in Action

High-performance workstations reshape how organizations respond to real-world demands where time, accuracy and security are critical. However, realizing this value also requires overcoming challenges such as data silos, legacy infrastructure and increasing data volumes.

Here's where high-performance workstations are making the biggest impact:

Computer vision: Analyze video feeds in near real time to identify anomalies, detect threats and improve situational awareness without sending sensitive footage off site.

Document processing: Rapidly review permits, case files, contracts and other records to extract insights, reduce manual effort and accelerate decision-making.

Public health emergencies: Model disease outbreaks, test intervention strategies and allocate resources faster when every hour counts.

Traffic planning: Simulate traffic patterns, evaluate infrastructure investments and identify congestion-reduction strategies before breaking ground.

Geospatial analytics: Turn massive geospatial data sets into actionable insights for urban planning, disaster response and infrastructure management.

Public services: Power faster, more responsive digital services — from permitting and benefits applications to virtual assistants and constituent portals.

Advice for Leaders

Successfully deploying AI-ready workstations requires more than purchasing powerful hardware. Leaders should take a deliberate approach to workforce needs, infrastructure planning and long-term scalability.

1. **Create user tiers.** Not everyone requires the same devices and capabilities. Identify who will be using AI for basic workflows and who will need more resources for work such as running large simulations.

2. **Match hardware to each segment.** Make sure GPU, CPU, memory and storage align with their respective tiers.

3. **Standardize configurations.** For easier manageability, limit approved workstation configurations for each user category.

4. **Split work when needed.** Not every workload is suited for local compute. "If you try to do everything on a workstation, you're going to run into issues," says Isler. "And if you try to do everything in the cloud, you're going to run into issues."

   Instead, agencies should consider a mix of local, cloud and hybrid solutions to balance performance, security and cost.

5. **Plan for the future.** When onboarding new workstations, consider how agency needs will evolve. "Look at your workflow today and add 25%," Isler says. "That's the machine you should build because you need to account for what will be done in the next three years."

Up Next

Leaders must balance performance, security, cost, governance and workforce needs to create an infrastructure strategy that supports both today's priorities and tomorrow's demands.

For many public sector organizations, success will depend on building a flexible foundation that aligns technology investments with mission outcomes — enabling teams to process data faster, generate insights sooner and adapt as requirements evolve.

The organizations that make these decisions with a long-term view will be better positioned to innovate with confidence while maintaining the trust, resilience and responsiveness their communities expect.

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