



Smarter IT Modernization:

Why Infrastructure-as-a-Service Works for Government



Introduction

At all levels of government, legacy technology infrastructure struggles to support the data and applications that can elevate constituent service, efficiency and resilience.

As agency leaders look for a way forward, budgetary constraints make old-school rip-and-replace strategies unworkable. Those sorts of massive overhauls also tend to come with significant downtime as equipment gets swapped out. That's unacceptable in modern government, especially for agencies that deliver critical services, whether that's police departments ensuring public safety or utilities maintaining operations for water and electricity.

"Anytime you start ripping and replacing, there's change management involved," says Morgan Wright, a senior fellow at the Center for Digital Government. "There are so many dependencies: If you change a process here, how many things downstream now have to be changed because of that?"

One answer to government modernization challenges lies in infrastructure-as-a-service models, which allow agencies to modernize incrementally with a pay-as-you-go financial structure. By drawing from a catalog of infrastructure consumption services comprising hardware and software for on-premises and hybrid cloud environments, agencies can quickly access the capabilities they need without disrupting their work or breaking the bank.

Modernization Challenges

Budget limitations. Government spending on technology was projected to reach \$357 billion in 2026, up from \$343 billion in 2025, and will account for about 12% of total U.S. tech spending, according to Forrester researchers.¹

Much of that spending goes to maintain legacy systems. "That doesn't leave room for massive capital refresh projects," says Scott Lewis, a solutions consultant director at Hitachi.

All the while, agencies are under pressure to do more. "The United States is locked in a global race to capture AI advantage, and public expectations for government performance, resilience, and trust rise in parallel with accelerating private-sector capabilities," the Forrester researchers note. In many cases, however, the money for such innovation simply isn't there.

AI preparation. The rapid rise of AI is forcing government technology leaders to rethink their IT strategy. At the federal level, Executive Order 14409² encourages "AI innovation and accelerating responsible AI adoption across government." State agencies face similar pressure.

To deliver on the promise of AI, agencies need data accessibility. "Right now, agencies have data all over the place in disparate systems," Lewis says. "And what AI needs is to have all the data readily available."



Furthermore, legacy systems may not be able to apply the needed governance to ensure AI is used safely and appropriately.

Cybersecurity. Legacy systems cannot keep pace with modern cybersecurity threats. For example, conventional backups alone will not protect agencies from ransomware anymore. “The bad actors are not just encrypting data and asking for money to decrypt it,” Lewis says. “They’re exfiltrating it to the dark web and threatening to sell it, and your backup cannot get that data back inside your organization.”

Choosing a Consumption Model

The right consumption model empowers agencies to modernize and scale capacity gradually rather than replacing entire systems up front.

This powerful approach is sometimes misunderstood. “A consumption model is not necessarily an OpEx-versus-CapEx conversation,” Lewis says. In fact, the capital budget and operating budget together can help fund a pay-as-you-go model. That’s important for agencies to understand, as it maximizes their flexibility.

Paying for resources as they’re needed saves time and money. Agencies can refresh resources without having to allocate a massive, multiyear budget. For example, agencies no longer have to buy a petabyte of storage simply because their demand is projected to grow that much over the next five years. A solution

The capital budget and operating budget together can help fund a pay-as-you-go model.

like Hitachi’s Everflex can guarantee affordable access to that petabyte today, with the agency paying for only the 300 or 400 terabytes it needs now. That gives the agency much-needed budget agility.

“EverFlex has enabled us to do more, faster than we could ever have achieved with a traditional CapEx model,” says Troy Williams, chief infrastructure architect for University Information Technology Services at Indiana University. “It enables us to pay for what we need today and build on that foundation as our capacity needs increase over time.”

The right solution can deliver consumption-based access to not only storage but also compute, servers, networking, and backup and recovery.

“A good solution can supply everything an organization needs, including managed services and professional services, and give them a single invoice on a quarterly or annual basis,” Lewis says. “That is very friendly to five-year budget cycles.”

This approach is especially significant in today’s IT environment. With the AI boom, large hyperscalers and corporations are buying up all the memory, flash drives and hard drives they can find, causing prices to soar. At the same time, the major memory producers are forcing suppliers to sign three- or five-year contracts.

“That means price relief is not going to happen soon, and putting off a project for six months is only going to make your budget crisis bigger,” Lewis says. With a consumption model, an agency can begin its infrastructure refresh today at a pre-negotiated price that will hold even if prices continue to climb.



A Cloud-Smart Strategy

The cloud is an essential part of incremental transformation, but it's important for agencies to take an agile approach.

In practice, cloud-smart agility means putting data and applications where it makes the most sense on a case-by-case basis instead of storing everything in one place.

“You want on-premises, public cloud, hybrid cloud or, even better, multicloud, which is a combination of all of those places,” Lewis says. “Hitachi’s storage operating system, for instance, works for your on-premises system as well as in Google’s GCP, Amazon’s AWS and Microsoft’s Azure.”

This multicloud approach:

- ☑ Helps ensure data sovereignty
- ☑ Supports cost transparency and flexible scaling
- ☑ Allows agencies to keep existing infrastructure in place while layering on modern capabilities
- ☑ Strengthens resilience by reducing single points of failure and maintaining business continuity for mission-critical operations

Cloud-smart agility means putting data where it makes the most sense **on a case-by-case basis** instead of storing everything in one place.

As a practical example, consider the pressing need to ramp up AI-driven applications. The most computationally expensive part of building a conversational AI model is training — the operational phase in which a model is trained on either a large collection of data or a highly specialized data set. That requires a massive amount of GPU power. A government agency isn't going to use that much power every day, so it makes sense to leverage the cloud and rent GPU time as needed. Then, when it's time to launch a chatbot for end users, the agency can scale down to a fraction of the GPU power required to actually run it.

That's a smart use of cloud for incremental transformation.

Securing Your System

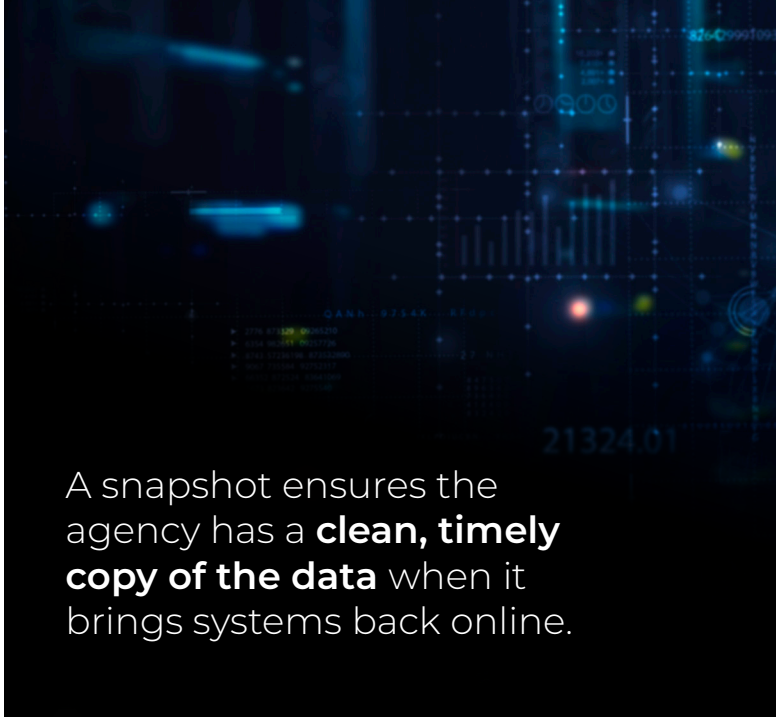
By wrapping legacy systems with modern protection, as opposed to replacing those existing components, agencies can quickly and cost-effectively mitigate risk, automate compliance and recover clean data at scale.

They can also begin realizing the benefits of a Zero-Trust cybersecurity framework that assumes all users are a threat unless they have explicit permission to access a particular part of a system. Infrastructure-as-a-service can support this access-and-verification model, no matter the setup.

“The simplest solution is to leave intact what’s already working, then simply add a layer on top of it,” Wright says. “With Zero Trust, we’re talking about being able to look at every device, every person, whether they’re in the network or outside of the network. With those capabilities layered as a service, you can have legacy systems that can take advantage of this.”

To support Zero Trust, the right solution should include:

- ☑ Robust multifactor authentication
- ☑ Role-based access controls that define user permissions according to least required privilege
- ☑ A tool to validate the integrity of software and hardware upgrades, where any anomalies will halt the system from booting and leave data encrypted



A snapshot ensures the agency has a **clean, timely copy of the data** when it brings systems back online.

As-a-service virtualized storage solutions also play an important role in cyber resilience. With these tools, if an application or system is compromised, staff can virtually move it into another walled-off environment for remediation.

“I don’t have to take everything down to fix one thing,” Wright says. “I can isolate that one thing, and everything else stays up and running.”

Policy-driven immutable snapshots further safeguard data. Each time an agency takes a protective copy of its data, that data cannot be changed or deleted outside of a pre-defined retention period.

“If the organization says, ‘I want to take a snapshot every hour, and I want that data stored for seven days,’ there is no back door. That data will sit there for seven days,” Lewis says. As with other backups, an immutable snapshot can’t claw back data that’s stolen or exfiltrated. But in cases of cyber outages or an accidental deletion, a snapshot ensures the agency has a clean, timely copy of the data when it brings systems back online.

WHY GOVERNMENTS NEED IMMUTABLE SNAPSHOTS AND ULTRA-FAST RECOVERY

An immutable snapshot platform is essential in today's cyber environment. As a modernization layer delivered as a service, such a platform strengthens old infrastructure and strengthens agencies' cyber resilience.

Traditional backups are still critical. If your data center burns down, you certainly need an offsite network backup. But restoring from that backup can take hours or days — longer than government can afford to wait with essential services and critical infrastructure.

In addition, conventional backups can be outdated. Suppose you back up nightly, and you have an incident at 4 p.m. You can go to last night's backup, but that is likely not an acceptable recovery strategy. You've lost all the data that transpired between last night and the middle of the afternoon.

Immutable snapshots offer a clearer path to resilience. "These snapshots live where the storage lives," Lewis says. "They can also be replicated to a second storage array for disaster recovery or business continuity."

In one recent case, a municipal utility discovered the operational value of Hitachi's immutable snapshot solution.

The utility had implemented an air-gapped vault, a secondary system that could not be accessed internally or externally. Its only function was to ingest immutable snapshots, managed by CyberVR and Hitachi's Ops Center Protector technology.

"Because they are native to our storage system, those snapshots can be recovered incredibly quickly. We don't have to look to tapes or to offsite facilities, where it may take hours to transfer data over a VPN or the internet," Lewis says.

When a cyber incident hit the utility, CyberVR was able to automatically create a "clean room" recovery system. *Clean* is important here: If you address a ransomware incident by restoring from a snapshot taken an hour ago, you're probably restoring the ransomware software as well. A few minutes later you're back in the same boat.

"The old method is, 'Let's try that snapshot, nope, not that one, let's try this one,' and so on," Lewis says. Hitachi's solution let the utility access clean data, with no risk of reproducing the problem.

The utility successfully brought critical systems back online right away, delivering power to homes and businesses. And as Lewis points out, the utility accomplished all of that with its existing infrastructure and data. By layering Hitachi's virtual platform on top of its legacy systems, the agency achieved true resilience where and when it mattered most, without a rip-and-replace of its IT stack.

Preparing for AI

As government agencies work to keep pace with the evolving AI landscape, an infrastructure-as-a-service strategy is a convenient and cost-effective way to prepare.

“Government AI initiatives don’t stall because of model quality. They stall because of data quality and access,” Wright says.

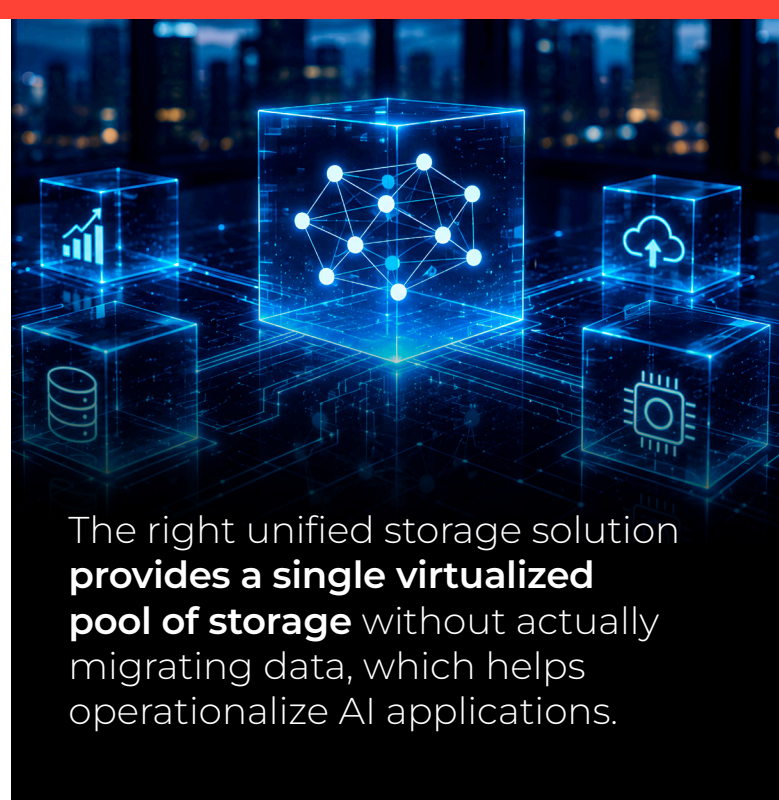
Too often, data in legacy systems is siloed and fragmented. By layering new capabilities on top of existing infrastructure, agencies can more quickly integrate their data across the enterprise.

“The simplest approach is to leave everything in place and put some kind of a federated layer on top, where AI can access it and can pull it in a uniform way,” Wright says.

For example, Hitachi’s Virtual Storage Platform One is a unified storage solution that provides a single virtualized pool of storage without actually migrating data, which helps operationalize AI applications. Bringing structured and unstructured data together creates a single source of truth. It eliminates siloes, tames data sprawl and ensures AI can access the information it needs to drive meaningful action.

Agencies should lean on the expertise of technology partners to fully realize the benefits of AI.

“AI is about more than just hardware,” Lewis says. “The right partner can offer a team of experts and workshop with the agencies to identify the quick wins that deliver real return on investment, the places where AI will actually help tilt the budget in your favor.



The right unified storage solution **provides a single virtualized pool of storage** without actually migrating data, which helps operationalize AI applications.

Conclusion

Modernization doesn’t have to mean starting over. Infrastructure-as-a-service offers a more practical path: Build on what already works, add new capabilities where they deliver the most value and scale as needs change.

That flexibility matters as agencies confront several challenges at once. They need infrastructure that can support AI and make data more accessible. They need stronger defenses against evolving cyber threats. And they need the agility to expand capacity without committing scarce budget dollars to years of infrastructure they may not yet need.

A consumption-based approach brings those priorities together. Agencies can modernize incrementally, put workloads where they make the most sense, strengthen resilience and pay for capacity as they use it — all while avoiding the cost and disruption of a wholesale technology overhaul.

The goal isn’t newer infrastructure but rather infrastructure that can keep evolving. In a technology environment where AI demands, cyber risks and costs are changing fast, that may be the most important modernization capability of all.

1. <https://www.forrester.com/blogs/the-us-government-tech-market-enters-a-new-phase-of-change>
2. <https://www.whitehouse.gov/presidential-actions/2026/06/promoting-advanced-artificial-intelligence-innovation-and-security>

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



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

Hitachi Vantara

Sponsored by Hitachi Vantara

Hitachi Vantara is transforming the way data fuels innovation. A wholly owned subsidiary of Hitachi, Ltd., we're the data foundation the world's leading innovators rely on. Through data storage, resilient infrastructure systems, intelligent data management and AI-ready hybrid cloud storage — we're the data backbone for the mission-critical.

We bring agility and stability. Flexibility and security. Working closely with customers, we understand their aspirations and architect their data infrastructure that is built for sustainable business growth. As part of the Hitachi Group, we draw upon a global network of digital (IT) and operational (OT) expertise to empower industries in advancing the next innovation.

Government, State, & Local, Education | Hitachi Vantara