

# AI is Driving Efficiency and Innovation for Federal Agencies

*Federal leaders discuss overcoming big data challenges, applying proper standards and preparing for scaled deployments to realize the full potential of AI.*

Artificial intelligence has real-world benefits for federal agencies – from AI-powered chatbots that can answer routine questions from citizens, to optimizing resource allocation in situations like disaster recovery and relief – AI can improve efficiency and service delivery. Plus, automation frees up employee time to work on more complex issues. AI is even being used to strengthen cybersecurity practices and secure federal networks.

At a recent [FedInsider webinar](#), thought leaders from government and industry discussed how federal agencies can adopt AI tools to transform government-wide operations.

## The Digital Landscape in Government

As the government modernizes its IT infrastructure, certain outdated workflows are proving to be a burden to both federal employees and citizen-facing services. These strains are often caused by older technology, which is pricey to modernize. Other concerns include data management, which is a large undertaking to improve, and resource constraints. This is where AI comes in.

"Those all set you up for addressing AI," said Natalie Buda Smith, director of digital strategy for the Library of Congress. "It really comes down to understanding what is your core mission, and what improvements are going to give you the highest value."

With leadership support, allowing staff to think about those new processes and propose new ways to use AI to drive efficiencies could yield great ideas that turn into proof of concepts and pilots. Impacts are realized by implementing AI to change workflows – especially when the staff delivering those outcomes are the ones providing those insights, Smith said.

For example, Christian Napier, director of AI for the State of Utah Division of Technology Services, said that while his team is still exploring how to use data to move from reactive to proactive services for citizens, they've internally rolled out Google's Gemini generative AI workspace tool to 22,000 employees, and are seeing positive results.

"Instead of trying to really mandate from the top down, we let people experiment with it," Napier said. "They test it out and play around with it until they find something that works. They naturally have a desire to share that with their teams, and the use case flows upward from there. Our own employees in the state can be proactive in their use of AI."

Taking this "experimentation over mandate" approach has led to half the workforce trying the platform, and early surveys report productivity savings of nearly 12,000 hours per week, Napier said. They are finding ways to use AI to do their jobs more efficiently.

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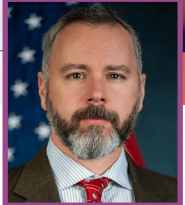
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Ethics, transparency and trust remain top of mind as agencies pilot AI programs. "There is no way to 100% guarantee the ethical use of AI," said Kevin Walsh, director of IT and cybersecurity for the Government Accountability Office. "We can put up guardrails and keep a constant eye on it. But this is a tool, and how people use it is up to them and their organizations as they think through how to set up those guardrails to ensure it is used for their purposes."

Since AI can also be used for malicious purposes, it's important that agencies are transparent about how they're using artificial intelligence, and that they have strong oversight, clear guidelines and proper standards in place. Walsh said that the GAO helps to share various AI reporting requirements and legislative acts, and is currently focused on ways to hold agencies accountable to ensure they implement AI safely.

### Overcoming Big Data Challenges

Many agencies deal with big data, making it difficult to obtain high-quality, interoperable and secure data for AI initiatives. At the Pacific Northwest National Laboratory, scientist Dr. Nancy Washton said much of science is a "sparse data regime," meaning without high throughput. Churning through petabytes of data can sometimes take months.

"This is a very complex, highly variable problem," Washton said. To address these big data challenges, frameworks and standards are in place to make big data accessible to all who use it. At the Pacific Northwest National Laboratory, since its data is more niche, Washton and her team must identify data types and databases to understand what is on people's hard drives, where this data sits scientifically and its most important attributes.

"For example, an attribute for a human could be our age, height, or hair color, depending on the

context," said Washton. "But what would you need to tell someone so that they could then sketch an image of you in their mind? Because that is what we need to do. We need to be able to provide enough information so that the data is contextualized. And it needs to have meaning beyond what the original generator was looking for."

The lab is working through that challenge now, so that vendors can access its original data to pre-train advanced reasoning models, add more value to datasets and gain more insights.

"AI is only as good as the data that feeds it," said Cecile Kellam, AI and analytics senior solution architect for U.S. Public Sector at NetApp. "The reality is that without the right data architecture, most of these projects are just not going to ever make it into production. The true value of what the data holds may never be realized."

The power of AI is going from raw to meaningful outputs, but getting there can be cumbersome. Kellam finds that public sector customers are looking for a unified data platform to solve siloed data challenges, secure data in transit, form a consistent operating model and platform, work across cloud environments, and take advantage of what AI has to offer both now and in the future.

### Moving Forward With AI Deployments

Workforce training and upskilling, applying proper governance and preparing big data are critical components of adopting AI – and so is cybersecurity. Agencies can't fully move forward with AI without adapting their defenses to stay ahead of adversaries.

Bad actors are leveraging AI as a tool to exploit network vulnerabilities – but agencies can also use automation and AI to keep pace with adversaries, said Allison Williams, vice president of Public Sector at Synack.

Each time a new vulnerability is found, it requires assessment, prioritization and remediation – then teams must retest to ensure their system is no longer vulnerable. This is currently a heavily human-in-the-loop process, but there are automations and AI processes that can help.

"We need to... utilize AI as a tool and use it to find known vulnerabilities, discover them and help with triage as much as possible," Williams said. "And then, we must leverage our human expertise to validate those vulnerabilities. This will take the manpower out of the original discovery of the attack surface and accelerate those findings, which in turn will help us to reduce our time to remediation and keep our assets safe."

And to move from AI proof-of-concept to full-scale adoption in government, Timur Nersesov, senior director of customer success at Primer.ai, said agencies must overcome two major obstacles: administrative and technological planning. Administrative challenges include restricted budgets and finding funding for the research and development of certain AI projects. If those are solved, then the main technological challenges will be related to the large-scale deployment of AI, which is oftentimes not as difficult as the funding challenges.

"It's compounded by AI being new and mostly unfamiliar tech, but the obstacles are realigned to those mid- and long-term planning horizons and being able to foresee what it looks like to implement the solution you are trying to go after," Nersesov said. Ultimately, introducing new tools should be accompanied by a plan for how to absorb them into operations and workflows.

"When you build up – especially enterprise systems – that is where scale does matter at some point. It changes the nature of things. Planning becomes all that much more important," Nersesov said. But if you can marry funding and planning, the sky is the limit when it comes to new AI programs and deployments.

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