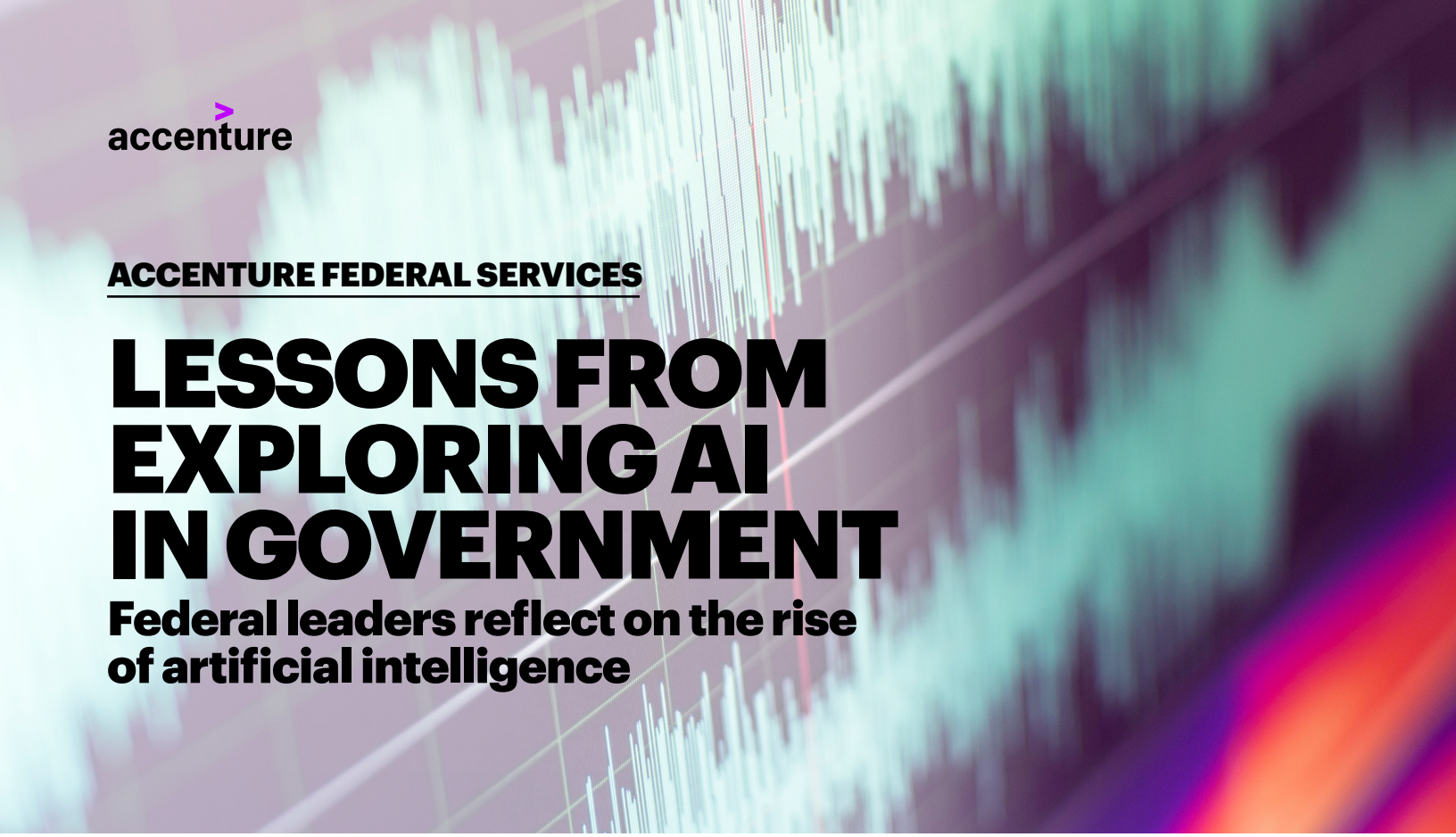

accenture

ACCENTURE FEDERAL SERVICES

LESSONS FROM EXPLORING AI IN GOVERNMENT

Federal leaders reflect on the rise of artificial intelligence

Artificial intelligence (AI) is emerging as a disruptive force within federal government. The coming of AI will bring with it new opportunities around mission realization, operational efficiency and citizen service. But AI also presents new challenges, including complex workforce issues and questions around ethics and governance.

In our recent podcast series, Exploring AI in Government, Accenture Federal Services brought together top thought leaders from within government and the technology sector to explore the impact of AI in the federal space. A number of common themes emerged around the role of AI in federal agencies; the likely impact of this transformative technology; and emerging best practices for federal agencies looking to leverage this powerful new capability.

former Chief Technology Officer
Accenture Federal Services

KEY INSIGHTS

While artificial intelligence is a multifaceted phenomenon, there are some shared perspectives among government officials. They're pondering the workforce implications of AI and the emerging role of data as a driving force for improvement. They're developing a small-steps approach to AI implementation, and they're wrangling with potential ethical issues.

Here we'll take a deep dive into some of these views.

WORKFORCE IMPACT

Despite concern among workers that AI could automate them right out of a job, federal leaders seem unified in their view that the purpose of artificial intelligence is to augment rather than displace the conventional workforce.

"We are not replacing people," notes Captain Michael Kanaan, US Air Force Enterprise Lead for Artificial Intelligence and co-chair of the US Air Force's Cross-Functional Team on Artificial Intelligence. "Any organization that starts with driving down costs or replacing people I think is creating an environment for a lot of perverse behaviors. This is about doing things better. This is about serving your customer better. This about taking care of your employees better."

At all levels of federal government, people are mired down in mundane tasks and routine work that could be offloaded onto AI. A key promise of this technology is that it will free workers to tackle higher-level work.

"If you're already a knowledge worker and your engineering team comes with solutions that automate 20 percent of your tasks, chances are you can fill that 20 percent with other tasks that are more meaningful," says Michael Karlin, Team Lead – Data Policy for the Canadian Department of National Defence.

Rather than taking jobs away from people, "I think 'job transformation' is more likely," says Presidential Innovation Fellow Jeff Starr. "If my job is going to be changed by bringing machine learning methodology into my organization, the question is: How do I adapt to that?"

Across the board, workers will need to have a better grasp of the ways in which data can be used to drive federal processes. They don't have to know the nuts-and-bolts of how AI works, but they will need a higher level of data literacy all around. "I don't think we need 10,000 data scientists to descend on government," says Presidential Innovation Fellow Justin Koufopoulos. "It's about having those critical thinking skills—some analytical ability, some understanding of data."

All our experts agreed that engagement is a key strategy here. Given widespread skepticism, neither the business nor IT can just foist AI on the workforce. There will need to be deep, meaningful conversations around the uses of AI and its potential for worker augmentation. Training will be integral to long-term success.

> **"If my job is going to be changed by bringing machine learning methodology into my organization, the question is: How do I adapt to that?"**
>
> **Jeff Starr**
> Presidential Innovation Fellow

DATA LITERACY AS A CORE COMPETENCY

Given these changes, many executives argue for the need for increased data literacy and coding skills throughout the workforce. As Congressman Will Hurd (R-TX) explains, "the only way we get to a point where this isn't a concern is if we train the future workforce. Our teachers have to prepare our kids for jobs that don't exist today. And that starts with exposing our kids to coding."

As an employer, the federal government has a role to play here as well. Kanaan notes that "as a global enterprise, the Department of Defense has a long history of recognizing the critical and significance value that employees... who have secondary non-English language proficiencies." However, he adds, none of those programs "measure or award individuals who have proficiency or fluency in any computer-based language. And I think we need to correct that hold-over from an earlier analog age."

In many cases, it appears that these skills can be self-taught. As Alex Measure, an economist with the Bureau of Labor Statistics, explains, "I was fortunate... that we now have a bunch of free online resources like Coursera and EdX, and they had some excellent machine learning classes taught by leading experts available for free. And so that's how I sort of acquired the initial skills."

Dorothy Aronson, the National Science Foundation's CIO, is working with the Federal CIO Council to determine if we can formalize this approach for bringing data literacy to non-IT audiences. As she explains, "we've offered this opportunity to people and they're just now jumping on the notion [that] we can use tools like Udacity to quickly up-skill people who are not IT necessarily... and give them the IT skills they need to, to use to leverage these intelligent tools."

ALL ABOUT THE DATA

It's impossible to overstate the centrality of data in the AI equation. As Dr. Persons explains, "you've got to get the data right. The data are the fancy Latin term sine qua non—'without which, not'." In other words, agencies need a steady flow of good, clean, reliable data in order to train the machines. Without a firm commitment to this principle, it's impossible to achieve the promise of improved efficiency and effectiveness.

"If you don't have that data, the project is much, much more difficult," adds Measure. "I've worked on some projects where we don't have that nice clean database [and] it can completely prevent you from using the tools in the first place."

When Financial Systems Branch Chief Gisele Holden helped to launch the National Science Foundation iTRAK program, a multimillion-dollar modernization initiative, this was her starting point. "We cleaned up our data several years before we even purchased a system," she says. Cleaning up data at the start enabled her to leverage the best of her agency's data stores, while utilizing only the minimal amount of data needed. This approach proved cost-effective and also helped to make data governance more manageable.

In addition to cleaning existing data repositories, agencies can also look to the AI itself as a source of data. Each customer interaction, each iteration of the AI application, generates new insights into citizen need and agency resources. That data in turn helps to fuel further improvements within these machine-driven processes.

All this will depend on having a robust data management infrastructure, one that reaches across the agency and can support a range of exploits. "It should not be on a project-by-project basis or use case by use case. It really is about building a foundation that outlasts any single endeavor," says Dr. Mona Siddiqui, Chief Data Officer for the U.S. Department of Health & Human Services.

FOCUSING ON BUSINESS CHALLENGES

Government leaders are uniform in their view that, while AI is inherently a technological process, it should be approached first and foremost as a business solution. As Federal CIO Suzette Kent notes, "there are so many things that we can do with the spectrum of automated technologies, but matching it to the right problem still means you have to understand the citizens you're serving and the mission that you're trying to accomplish."

Media coverage has helped to drive this thinking, with news stories demonstrating the powerful impact this approach is having in driving private-sector business improvements. To that extent, much of the current thinking around AI in government is in fact being driven by business-line leaders. That's as it should be, but it doesn't mean that IT can sit on the sidelines.

Even with AI built around specific business needs, there will be technical challenges when it comes to implementation. How do we manage all these AI bots? How do we make sure we're refreshing them when we deploy a new system? IT needs to engage early and often in order to ensure business leaders don't take it into their own hands to develop exquisite, siloed AI solutions. IT will work hand in glove to ensure these business-centric systems can be managed and maintained effectively.

IMPROVING CX: A COMMON PRIORITY

Using AI to improve user experience is viewed as one of the most promising aspects of AI. As Kent notes, "what's exciting about many of the newer technologies, whether it's AI or how we use data, is that we can actually leapfrog [current performance] with improvements to customer service and citizens, who set their expectations based on the way they live their everyday lives."

The low-hanging fruit here is frequently the chatbot or automated assistant. While early iterations have been limited in scope, AI promises to make the chatbot a powerful tool for citizen engagement. There's a multi-faceted benefit here. Chatbots can lighten the workload on federal employees, handling many routine questions. They can also deliver the kind of self-service environment modern consumers have come to expect in the commercial world. Finally, the interactions with chatbots can be fed into the AI application to help agencies better understand citizen needs.

For example, Courtney Winship of U.S. Citizenship and Immigration Services says, "what we're trying to do is analyze intent and try and look at things like comments, common themes that I think will allow us to kind of discern what types of questions or concerns people have. So things like case status or processing times for specific forms: We've been able to do a lot of analysis that allows us to train our backends to respond to the questions in a way that should be relevant to the users on the front end."

Early experiences with chatbots have helped to move the needle in favor of data. Federal leaders increasingly view user data as a driver of good customer experience. It's not just about having more data, although more data generally does drive better outcomes. Rather, feds recognize AI as a means for making best use of the data already in their care.

Chatbots can lighten the workload on federal employees, handling many routine questions.

START SMALL, THINK BIG

Federal leaders see themselves walking a fine line when it comes to initial AI efforts. They want to start small—with manageable projects that deliver quantifiable wins. At the same time, they want to think big, putting in place processes and systems that will support expanded AI efforts over the long haul.

Early efforts may focus on mundane tasks and routine work. Agencies may deploy a limited-scope AI application as a test case. That makes sense, but it makes even better sense to design that initial project in a way to allows for future expansion. Agencies want to take the learnings from the early AI endeavors—what worked, what didn't, and where were the sticking points—and then apply them in a broader context.

> **"You need to start small. I think you have to," says the Bureau of the Fiscal Service's Craig Fischer. "But then I think you need to think big. What happens if this does start to pick up steam and go to scale? If you haven't thought through that, you might get tripped up."**

This forward-thinking view speaks to the fundamental nature of AI as a "living" system rather than a fixed endpoint: AI is ever learning and constantly evolving. As Winship explains about USCIS's pioneering chatbot Emma, "we've had a lot of success being able to be as agile as possible... we are doing continuous integration and deployments, and that allows us to be responsive to whatever the public need may be at the moment."

In reality, these systems utilize ongoing feedback to constantly refresh their skills. That means the humans must constantly review and refine, ensuring the emerging AI-driven approach continues to align with agency goals and policies. Just as the human workforce undergoes annual training in order to stay fresh, AI systems also need ongoing attention in order to stay current.

GOOD GOVERNANCE

Thanks to perilous sci-fi films, there is some public wariness around the ethics of artificial intelligence. Will the machines behave the way we want them too? Even strong supporters of AI in government say these questions will have to be tackled head on.

Agencies need to ensure that the data feeding their AI systems does not contain inherent bias or prejudice. This requires a deep and nuanced understanding of the data we leverage to drive AI. Here again, wider data literacy across the board becomes a key driver of success.

Solid governance is likewise a significant factor here. "Often just implementing good data management practices in government departments will help reduce some of that [bias]," Karlin says. "Having good data management practices, having some contextual information about how the data was collected, having a data-quality framework in place is all super important."

At a fundamental level, it will be important to have humans serving as overseers to the AI. "My best solution is that we have a whole bunch of circuit breakers. Humans! Human groups, human connectors into these technologies that can present our values or double check our values," Daimler says. "We don't want to just be taking the output from many of these algorithms as somehow infallible, just because they came from a machine."

Ultimately, federal leaders predict that citizens and government workers will develop a new comfort level around machine-driven outputs. For example, Aronson reflects back on public skepticism around the coming of the automatic teller machine. “The bank tellers were nervous because…they really believed no one would use them. People were absolutely afraid of the ATM. They thought it would destroy their accounting because the passbook was gone,” she says. “Does anyone know what a passbook is today?”

If the process is managed thoughtfully, and implemented collaboratively rather than top down, the coming of the AI may be no more disruptive than other technological upheavals that once seemed daunting, and now are seen as commonplace. Ultimately, success requires balancing the ability to experiment and foster innovation, on the one hand, while also maintaining the necessary guardrails and supervision to avoid or minimize unintended consequences. A national strategy on AI should “make sure that we focus on a regulatory environment that doesn’t stifle innovation, that we are creating a skilled workforce prepared to thrive in an AI economy,” Congressman Hurd concludes. Such a policy would “foster norms and best practices to protect American national and economic security.”

WHY AI?

With all the recent talk about AI, it’s tempting to see this as just another high-tech trend, a buzzword that will burn brightly but briefly. In fact, the reason we’re talking about AI in such depth is because this is truly a transformative technology.

AI is going to change the way government executes the mission, manages its internal operations and it will profoundly impact the nature of the citizen experience. What will be the nature of this transformation? That’s exactly the question government is tasked to answer.

> **In order to move forward into an AI-driven era, agencies need to have a fuller understand of the impacts of machine learning, especially when it comes to augmenting the government worker.**

For the first time, computers are adapting to support human need, as compared to other tech-driven revolutions in which humans have adapted to the computer. There’s a unique opportunity here to explore the ways in which workers can be more productive, as AI empowers them to deliver more personalized services to constituents and stakeholders.

If that’s true—if we are fundamentally reshaping the relationship between the people and their machines —then it’s imperative to talk about the rules of the road. We need human-centered research around this changing relationship. We need to establish expectations for how people will interact with these systems, and for how the systems will provide feedback.

The pioneers have realized that human-centered design of these new interactions is paramount. That’s why we’re seeing such concentrated interest not just in AI, but in the human impacts of this transformative technology.

ABOUT ACCENTURE

Accenture is a leading global professional services company, providing a broad range of services and solutions in strategy, consulting, digital, technology and operations. Combining unmatched experience and specialized skills across more than 40 industries and all business functions—underpinned by the world's largest delivery network—Accenture works at the intersection of business and technology to help clients improve their performance and create sustainable value for their stakeholders. With 505,000 people serving clients in more than 120 countries, Accenture drives innovation to improve the way the world works and lives. Visit us at www.accenture.com.

ABOUT ACCENTURE FEDERAL SERVICES

Accenture Federal Services, a wholly owned subsidiary of Accenture LLP, is a U.S. company with offices in Arlington, Virginia. Accenture's federal business has served every cabinet-level department and 30 of the largest federal organizations. Accenture Federal Services transforms bold ideas into breakthrough outcomes for clients at defense, intelligence, public safety, civilian and military health organizations. Visit us at www.accenturefederal.com.