The Business of Government
Conversations with Government Leaders

2024
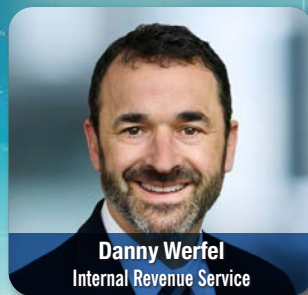
Lt. General Telita Crosland, M.D.
Defense Health Agency

Vice Admiral Frank Morley
U.S. Navy

Danny Werfel
Internal Revenue Service

Alexis Bonnell
Air Force Research Laboratory

Ramesh Menon
Defense Intelligence Agency

Andrea Fletcher
Ctrs. for Medicare & Medicaid Services

Melinda Rogers
U.S. Department of Justice

John Boerstler
U.S. Department of Veterans Affairs

Corey Nickens
U.S. General Services Administration

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Forum

Viewpoints

Management

Helping Government Navigate Through Times of Change

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As has occurred every four or eight years since George Washington turned the presidency over to John Adams, new leaders have begun to arrive to support a new administration.

Major current activities include new leaders working to develop information and game plans for agencies, review a large and growing number of resumes to fill political appointee jobs, and Office of Management and Budget planning for the budget that will be proposed in the spring. At the same time, current leaders are finalizing existing policy and program actions.

Many members of the federal workforce sit at the fulcrum of these two collections of activity: supporting the work of outgoing leaders while developing information and preparing to help implement the ideas of the incoming team. A large network of outside groups—"good government" organizations, associations representing issues and industries, schools of public affairs, and more—help to provide context that can influence how this changing of the guard proceeds. In Congress and across many state and local governments, new leaders are engaging in similar actions.

Since our founding in 1998, the IBM Center for The Business of Government has provided perspective to support and inform the leaders who seek to drive effective presidential and other leadership transitions. Our book *Getting It Done* has been used by White House Presidential Personnel Office (PPO), and third parties like the Partnership for Public Service, to help transition teams and new appointees understand how to succeed in the often unfamiliar world of Washington and governance. For several years, we have advanced a similar set of consideration for new state and local leaders, through our IBM report, *Off to a Running State Capital Start: A Transition Guide for New Governors and Their Teams*.

With this edition of *The Business of Government* magazine, we draw on recent research to share insights that can help today's new leaders build on the successful delivery of current government programs, while also gaining knowledge of how to develop and implement their own policy priorities. As always, we profile people whose work has strengthened the foundation of government service.

We summarize key recommendations from recent Center reports, authored by academic experts and informed by government leaders and stakeholders. We also draw on a significant body of research over the last several years to highlight how the public sector can best move forward in light of two major trends impacting agencies and the people they serve:

- The advance of artificial intelligence and how best to leverage its benefits while mitigating risks

- The need to incorporate lessons learned on how best to prepare for and respond to "future shocks" like the pandemic, supply chain disruptions, climate events, cyber incidents, and other crises that have increased in both frequency and magnitude

With a keen eye for content that can help the public sector move forward effectively during times of change, editor Michael J. Keegan has coalesced a series of articles and viewpoints into an asset that can help government leaders and stakeholders frame decisions and take actions to drive a government that best serves the people and the nation. We hope this edition of *The Business of Government* magazine provides another compass for navigating through complexity and achieving success in that journey.

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A Singular, Enduring Purpose: Serving the Public

Government is a tapestry of diverse missions united by a singular, enduring purpose: serving the public. Whether it's advancing federal management practices, delivering healthcare to military service members and their families, ensuring operational readiness, improving service to taxpayers, driving digital transformation, or balancing innovation and integration—public service is at the heart of it all. This edition of *The Business of Government* magazine profiles government leaders driving these efforts while also tackling some of the most complex public management challenges of our time.

As we anticipate the upcoming presidential transition, it has become clear that strong leadership is a cornerstone of effective public administration, serving as the driving force behind innovation, accountability, and the delivery of public value. In an environment often characterized by complex challenges, competing priorities, and resource constraints, strong leadership ensures that public organizations remain focused on their missions while adapting to emerging needs. Effective public leaders can inspire trust, foster collaboration, and make strategic decisions that balance immediate demands with long-term objectives. They navigate volatility and uncertainty with clarity, turning challenges into opportunities and setting a vision that mobilizes teams toward collective goals. In doing so, public leaders not only enhance organizational performance but also strengthen the public's confidence in government institutions, ensuring that policies and programs meet the needs of citizens.

The next administration and senior-level appointees need to be ready to lead and manage the government effectively when they step into the office on day one. Since its inception, the IBM Center has always complemented its rigorous public management research by offering government executives a platform to tell their leadership stories on its weekly interview program, *The Business of Government Hour*—convening engaging conversations with frontline practitioners and thought leaders. From these conversations, I have gleaned eight practical insights for leaders.

1. **Start with self-awareness:** Before embarking on any change initiative, leaders should engage in self-reflection to understand their values, strengths, and motivations.

2. **Create urgency and coalition:** Recognize the need for change and build a team that can support and drive the change.

3. **Develop a vision aligned with values:** Craft a compelling vision for the future that aligns with both organizational goals and personal values.

4. **Communicate authentically:** Use effective communication to articulate the vision in a way that resonates emotionally and intellectually with stakeholders.

5. **Empower and inspire action:** Remove barriers to enable action while fostering a culture of empowerment and inspiration.

6. **Achieve and celebrate wins:** Focus on achieving short-term successes and celebrate them to build confidence and momentum.

7. **Continuously learn and adapt:** Embrace a mindset of continuous learning and adaptability to respond to changing circumstances and new insights.

8. **Anchor changes in culture:** Ensure that new practices are deeply embedded in the organizational culture for lasting impact.

The following are summaries of what you will find in this edition of *The Business of Government* magazine.

Conversations with Leaders

Throughout the year, I have the privilege of engaging with influential government executives and public sector leaders, delving into their agencies' missions, accomplishments, and visions for governance in the twenty-first century. These three leaders highlighted in this edition exemplify a dedication to innovative thinking, demonstrating the strategic foresight and leadership necessary to achieve their diverse objectives.

- **Lt. General Telita Crosland, M.D., Director, Defense Health Agency (DHA)** shares her forward-looking vision for military healthcare, emphasizing a transformative approach that integrates operational excellence, innovative technology, and resilient healthcare delivery. Our conversation focuses on the importance of adaptability, data-driven decision making, and patient-centered care, positioning DHA to address current needs while preparing for future challenges.

- **Vice Admiral Frank Morley, Principal Military Deputy Assistant Secretary of the Navy for Research, Development and Acquisition** discusses the Navy's key strategic initiatives and modernization efforts. As the senior uniformed acquisition officer, he plays a crucial role in advancing the Navy's technological edge and operational readiness. Our conversation explores the challenges and strategies involved in maintaining superiority in a dynamic threat environment.

- **Danny Werfel, Commissioner, Internal Revenue Service (IRS)** outlines the agency's strategic direction, emphasizing the importance of modernization, enhanced customer service, technology-driven transformation, and a well-trained workforce as essential components of its evolution. Our conversation provides valuable insights into how these priorities are shaping the IRS's long-term vision and ongoing initiatives.

Insights from Leaders

From my interviews with a range of government executives, I've gained valuable insights on the leadership and dedication required to accomplish their diverse missions. In this edition, six government leaders share their insights on the work they are doing and the initiatives they lead. While each faces unique challenges in their respective fields, they are united by a common focus on looking ahead and finding effective solutions to drive transformative change and make a difference.

- **Alexis Bonnell, Chief Information Officer and Director of the Digital Capabilities Directorate, Air Force Research Laboratory (AFRL)** develops and executes the AFRL information technology strategy, leading the strategic development of highly advanced next generation technologies and platforms for AFRL. She shares her insights catalyzing the discovery, development, and integration of warfighting technologies for air, space, and cyberspace forces via digital capabilities, IT infrastructure and technological innovation across the lab's operations.

- **Ramesh Menon, Chief Technology Officer and Chief Artificial Intelligence Officer, Defense Intelligence Agency (DIA)** leads the agency's technology and AI strategy planning, experimentation, emerging technology solutions architecture supporting DIA and intelligence community (IC) priorities. He offers his insights into how DIA leverages AI, the strategic implementation of AI, the challenges faced, and the evolving landscape of intelligence and national security.

- **Andrea Fletcher, Chief Digital Strategy Officer and Director of the Digital Service, Centers for Medicare & Medicaid Services (CMS)** focuses on improving the user experience and delivering better digital services to CMS beneficiaries, leading digital transformation and modernization efforts at CMS. She details her insights into promoting interoperability and public access to health data and recruiting the next generation of technical talent into federal service.

- **Melinda Rogers, Chief Information Officer, U.S. Department of Justice (DOJ)** oversees the department's $3.5 billion information technology (IT) investment portfolio, providing strategic direction and directly supporting mission operations through IT service delivery and the department's cybersecurity program. She puts forth her insights on DOJ's strategic IT modernization, cybersecurity enhancements, and the adoption and use of emerging technologies.

- **John Boerstler, Former Chief Experience Officer, U.S. Department of Veterans Affairs (VA)** led the department customer experience office for the last three years and was instrumental in raising its trust among the country's veterans. He provides his insights into the VA's journey to improve veteran services, the challenges faced, and the progress made under his leadership.

- **Corey Nickens, Client Executive of the Innovation Business Unit, Office of Assisted Acquisition Services, U.S. General Services Administration (GSA)** works to deliver efficient, effective, and innovative acquisition solutions that meet the diverse needs of government agencies. He describes the strategic priorities for AAS's innovation portfolio and articulates a vision grounded in collaboration, emerging technologies, and a deep commitment to understanding customer needs.

Perspectives on Pursuing IT and Digital Transformation at the U.S. Social Security Administration

Marcela Escobar-Alava, Chief Information Officer, and Betsy Beaumon, Chief Transformation Officer from the U.S. Social Security Administration (SSA) shared their perspectives on the agency's ongoing digital transformation efforts, how they are working together to shape a new operating model delivering innovative digital services to the public. The discussion provides valuable insights into the challenges and strategies associated with transforming a large, traditionally paper-based federal agency into a more agile and customer centric organization.

Forum on Integrating AI in Government: Lessons, Applications, and Innovations

AI has become an integral part of modern governance, reshaping how the U.S. federal government operates and delivers services. From safeguarding national security to streamlining routine processes, AI technologies are transforming the public sector at an unprecedented pace. This forum is dedicated to exploring the dynamic intersection of AI and government operations, focusing on its current applications, potential, and the critical questions it raises about trust, ethics, and effective implementation. The adaptability of AI offers enormous promise—but it also demands careful oversight and strategic governance.

We continue a conversation initiated in the 2020 The Business of Government magazine forum dedicated to the evolving use of artificial intelligence in government. Four years later so much has changed in the application and use of AI in government. To that end, this forum highlights a sampling of recent IBM Center reports further exploring the operation and use of emerging technologies like AI and documenting lessons learned, recommendations, and next steps.

Viewpoints

Dan Chenok, drawing on recent publications and other IBM Center research, demonstrates how secure implementation of advanced technologies, such as cloud computing, artificial intelligence (AI), and quantum computing, can help government leaders use data to make more informed decisions, promote transparency, and improve outcomes in an increasingly complex and uncertain world. Margie Graves ponders the challenges and opportunities of the use of AI and quantum computing for business and mission results. She counsels that by staying abreast of this evolving landscape and remaining vigilant, organizations can better protect themselves against unintended consequences and chart the right path forward. I close the viewpoints with an article exploring how to apply, within a government context, leadership insights from NFL great Tom Brady—emphasizing the importance of teamwork and how great leaders bring out the best in their teams.

Wrap Up

I wrap this edition with a management section highlighting several IBM Center reports that tackle topics such as preventing fraud and improper payments, building cyber resilience for critical infrastructure protection, and the role of risk leadership in defining enterprise risk management (ERM) readiness in government. If you have not read these reports, we encourage you to do so by going to businessofgovernment.org/reports.

There are approximately 75 days between a presidential election and the inauguration of a new president. This is considered the presidential transition period. It is a time of opportunity for an incoming administration. The transition from campaign to governing requires that presidential policies be transformed from rhetoric into an actionable agenda and then into concrete results. Neither good policies nor sound investments are likely to work, let along succeed, if undermined by poor implementation. Managing the federal government remains a complex and difficult assignment, both technically and politically. Failures underscore the need to pay attention not only to policy, but also to whether and how policies and programs are executed.

Many of the leadership stories, insights, recommendations, best practices, and lessons learned presented throughout this edition of *The Business of Government* magazine can help government executives do the business of government. The Center also has a wealth of other presidential transition resources available at businessofgovernment.org/presidential-transition. We invite government leaders to use these resources in pursuit of that singular, enduring purpose: to serve the public.

I hope enjoy this edition of *The Business of Government* magazine. Please let us know what you think by contacting me at michael.j.keegan@us.ibm.com.

Patient-Centered and Mission-Ready

A Conversation with Lt. General Telita Crosland, M.D., Director, Defense Health Agency

By Michael J. Keegan

Created in 2013, the Defense Health Agency (DHA) celebrated its 11th anniversary this year. It started as an agency focused on shared services across the enterprise for such functions as health IT, medical logistics, pharmacy operations, TRICARE, and acquisition. In 2017, Congress expanded the DHA's responsibilities to include management responsibilities of the military hospitals and clinics worldwide. Such a significant effort took some time with all responsibilities migrated from the military departments to the DHA completed in 2022.

Throughout its evolution, the DHA's mission has stayed consistent: To support the nation by improving health and building readiness. Today, the DHA delivers health care to almost 10 million Americans—service members, families, and retirees, and manages the TRICARE program, when care is delivered outside of our direct care system. It does all this while managing a $60-billion healthcare budget with a staff of 130,000 across the agency and its medical facilities.

Lt. General Telita Crosland, M.D., director of the DHA joined me on *The Business of Government Hour* to share her vision for the agency and the future of military healthcare. With a transformative approach that balances operational excellence, innovative technology, and resilient healthcare delivery, Lt. General Crosland is steering DHA to meet both current needs and future challenges. The following summarizes the key themes and insights from our discussion.

Defining the Role and Responsibilities of DHA Director

"My job," explains Lt. General Crosland, "is to make sure the department meets its healthcare mission by ensuring our service members are ready to go; and to ensure our healthcare providers are getting the training and experience in our Military Treatment Facilities (MTFs)." She underscores the importance of being there for the people DHA serves— "Anytime, Anywhere, Always."

This is no small feat given the size and scope of the agency's operations and the importance of its mission. "DHA is a combat support agency, and what that means is as an agency, we provide support to our combatant commands across the globe . . . to focus and make sure our nation is ready across the continuum of crisis," explains Crosland. With a global mission, that means DHA needs technology support to ensure it can serve individuals in the most far-flung locations. It also means the agency needs to give its patients and providers the tools they need to better manage their health. "When I arrived, there was some under-investment in those capabilities," she admits, "but our team has done an amazing job of getting after that."

Aligning Mission with Innovation and Efficiency

At the core of Lt. General Crosland's strategy is an alignment of DHA's mission with the values of innovation, efficiency, and responsiveness. DHA's primary objective remains ensuring high-quality, accessible healthcare for all who serve, but the agency is now placing increased emphasis on achieving this through systems that are not only efficient but adaptable to future demands. Crosland envisions DHA as a "learning organization," meaning one that constantly evaluates and improves upon its systems to maintain peak performance across all aspects of healthcare delivery.

One strategic priority is the integration of advanced data and analytics into decision-making processes. By fostering a data-driven culture, DHA can optimize patient care, streamline operations, and anticipate emerging health trends. For Crosland, building a foundation on data analytics is essential not only for tracking health outcomes but also for creating a proactive, rather than reactive, approach to military healthcare. She is keen on implementing tools that provide DHA leadership with real-time insights, enhancing the agency's ability to allocate resources strategically and optimize patient care outcomes. "Most important is the criticality . . . to have to pivot," notes Crosland. "I'm not planning for everything. I'm planning for anything."

Navigating Complex Operations and Strengthening Workforce Resilience

One of the primary challenges Lt. General Crosland acknowledges is the sheer scale and complexity of DHA's operational landscape. Serving a global, highly mobile population means that DHA must maintain continuity of care across diverse environments, including domestic bases, overseas postings, and deployed settings. Managing resources across this vast network requires robust infrastructure but also a streamlined operational framework capable of responding to shifting demands and emergencies. Crosland's approach includes leveraging scalable systems and adopting flexible staffing solutions to ensure continuity and quality across DHA's service points.

Equally challenging is the issue of workforce resilience. Healthcare workers in DHA face intense pressures that stem from both military operational demands and the high-stakes nature of military healthcare. The general's vision includes robust support systems designed specifically for DHA's healthcare providers, such as counseling resources, mental health services, and stress management training. She underscores the importance of building a culture that

values the well-being of its workforce as a key component of sustainable healthcare delivery, noting that resilient staff are better positioned to provide compassionate, effective care.

Further, Crosland's workforce strategy involves equipping healthcare workers with the tools they need to stay agile in an ever-evolving field. Through ongoing training and professional development, DHA's staff are better prepared to handle new technologies and adjust to protocol changes. "One of my key initiatives is organizational well-being," notes Crosland. By investing in workforce resilience and training, she seeks to enhance not only morale but also the quality of patient care.

Advancing Health IT and Expanding Telemedicine Access

To drive her strategic vision forward, Lt. General Crosland is spearheading several initiatives aimed at strengthening DHA's foundational capabilities, particularly in health IT and telemedicine. The agency's efforts to modernize its electronic health records (EHR) are central to this strategy. A unified, interoperable EHR system is expected to drastically improve care continuity, making patient information accessible to authorized providers across military branches and facilities. This interoperability reduces administrative burden and enhances DHA's capacity to deliver patient-centered care, regardless of where service members are stationed or deployed.

The expansion of telemedicine services represents another key initiative under Crosland's leadership. Telemedicine proved essential during the COVID-19 pandemic, and DHA plans to make it a core element of its service model. Crosland emphasizes that telemedicine offers flexibility and access to

empowers patients and enhances their engagement with DHA services. "Our focus is on integrating telemedicine seamlessly into the care we provide, so patients can get the care they need without unnecessary delays or travel," she says.

Leveraging AI, Wearables, and Predictive Analytics

Innovation is a cornerstone of Lt. General Crosland's leadership at DHA. "Innovation is essential to keeping our military health system agile and effective, especially as we face new challenges in both technology and patient care," declares Crosland. She is actively advancing DHA's adoption of artificial intelligence (AI) and machine learning (ML) to improve clinical outcomes and streamline operations. "We're looking at AI applications in diagnostics, predictive analytics, and even in administrative functions to streamline workflows, but our emphasis is always on safety and efficacy," describes Crosland. AI-driven diagnostics and patient triage solutions, for instance, have the potential to transform the way DHA approaches preventive care, by identifying risk factors early and enabling timely interventions. Through predictive analytics, DHA can monitor patient trends, anticipate surges in demand, and allocate resources more effectively.

Additionally, wearable health devices and remote monitoring tools play a crucial role in Crosland's vision for DHA's future. "Wearable technology offers us a unique opportunity to monitor patient health in real-time, which is especially valuable for our service members in remote or operational environments," she explains. These devices enable real-time health data collection, making it possible to track vital signs and health metrics for deployed service members. By allowing for continuous monitoring, DHA can intervene proactively if health concerns arise, even in remote or austere settings. Wearables also support DHA's efforts to prioritize preventive care, as they offer a noninvasive way to keep track of patient health status and alert providers to early signs of potential health issues. "The data from wearables could inform preventative care and allow us to be proactive, addressing potential health issues before they become critical," notes Crosland.

Beyond clinical innovations, DHA is also investing in operational improvements through technology. For example, AI-powered supply chain management can help DHA reduce

care, particularly for those in remote locations or deployed environments. By reducing physical constraints on healthcare delivery, telemedicine allows DHA to overcome geographical and logistical barriers, enhancing service accessibility and reducing strain on physical facilities.

This telemedicine expansion is part of a broader shift towards virtual care options that increase accessibility and convenience for military personnel and their families. "Telemedicine is absolutely a key component of how we expand access and improve the patient experience across the DHA," acknowledges Crosland. This vision for telehealth includes not only video consultations but also remote diagnostic capabilities and mobile applications that allow patients to access their health data and communicate with providers easily.

"It's about meeting our service members and their families where they are, even if that's in remote or hard-to-reach locations. Telemedicine allows us to do that effectively," Crosland admits. This integrated approach to virtual care

"Our focus on patient-centered care is about driving quality, safety, and a personalized approach that respects the individual needs of each patient."

Lt. General Telita Crosland, M.D., Director, Defense Health Agency

waste and ensure that resources are directed where they are most needed. By optimizing these logistical processes, DHA can increase efficiency and reduce costs, which ultimately contributes to better care delivery and resource availability. "The way we are approaching artificial intelligence is to ensure it amplifies our capability rather than replaces human judgment," asserts Crosland.

Vision for the Future: A Resilient, Adaptive, and Patient-Centered DHA

Lt. General Crosland envisions DHA as an adaptable, resilient organization capable of meeting current demands and prepared for future healthcare challenges. Her vision emphasizes a shift from a reactive model to one that is proactive, data-informed, and patient-centered. By fostering an integrated healthcare network that is responsive and resilient, she aims to ensure that DHA is always ready to serve its patients effectively, whether in peacetime or during high-stress operational periods.

Patient-centered care is central to this vision. "We're putting the patient at the center of everything we do," says Crosland. This prioritizes a healthcare experience that truly meets the needs of service members and their families. "Our focus on patient-centered care," she explains, "is about driving quality, safety, and a personalized approach that respects the individual needs of each patient." This approach includes gathering patient feedback to refine DHA's services continually and tailoring care to individual needs. It emphasizes that a responsive DHA listens to and learns from the experiences of those it serves, ultimately building a healthcare system that feels personal, accessible, and reliable.

Additionally, Crosland's vision includes expanding DHA's focus on mental and behavioral health services. Recognizing that physical health is deeply interconnected with mental well-being, she advocates for increased support for mental health programs, particularly in addressing issues related to PTSD, anxiety, and stress among military personnel. This holistic approach seeks to address the full spectrum of healthcare needs, supporting not just physical wellness but mental resilience and overall quality of life.

Integral to the success of these efforts also includes having a robust TRICARE program available to service members and their families. TRICARE is a cornerstone of the military health system, providing essential healthcare coverage for service

members, their families, and retirees. "We're focused on making TRICARE more accessible, giving beneficiaries more choices and making sure they have the support they need to navigate their options," details Crosland. Flexibility within TRICARE is key—its beneficiaries have different needs, and TRICARE must be adaptable to meet those needs effectively. Our goal with TRICARE is not only to maintain its quality and reliability but also to continuously improve it to serve our community better."

A Strategy for Long-Term Success

To achieve these ambitious goals, Lt. General Crosland places a high value on partnerships and collaboration across both military and civilian healthcare sectors. She recognizes that many of DHA's challenges, such as workforce shortages and technological adaptation, are shared by other healthcare organizations. By fostering close ties with civilian healthcare institutions, academic partners, and industry innovators, DHA can accelerate the implementation of best practices and benefit from shared knowledge.

As we closed our conversation, Lt. General Crosland identified three core values that guide and inform the work being done at DHA. "I'm proud to see us living up to these values," says Crosland. "They are dependability, humility, and agility. Regarding dependability, our patients and colleagues know we will be there for them when they need us. On humility, my goodness, the talent of people in military medicine are amazing; and yet there is very little chest-pounding, or use of the word 'I' . . . everyone gets the team approach. As for agility, I'm so proud of the agility of this team to pivot to a new approach to healthcare, and to be the people who ask 'Why not' rather than 'Why.'"

Conclusion

Lt. General Telita Crosland's appearance on The Business of Government Hour offered a compelling look into her leadership at the Defense Health Agency, highlighting a balanced approach of strategic foresight and operational practicality. Her initiatives prioritize data-driven decision making, patient-centered care, and an integrated healthcare network that is resilient and responsive.

By focusing on technology, workforce resilience, and collaborative partnerships, she is steering DHA toward a future where it serves as a resilient and responsive healthcare organization, fully equipped to meet the needs of those who serve. This holistic approach demonstrates a profound commitment to both the present and future of DHA, laying the groundwork for a healthcare system that not only supports military readiness but also enhances the overall well-being of its community.

Resources

To learn more about the Defense Health Agency, go to health.mil.

To hear the interviews from *The Business of Government Hour*, go to businessofgovernment.org/interviews.

To download, listen, and subscribe to the show, go to Apple Podcast, Spotify or Audible.

To view excerpts of the show, go to youtube.com/businessofgovernment.

Navigating Technological Frontiers

A Conversation with Vice Admiral Frank Morley, Principal Military Deputy Assistant Secretary of the Navy for Research, Development and Acquisition

Editors Note: Since this interview, VADM Morley retired from military service.

By Michael J. Keegan

The mission of the Office of the Assistant Secretary of the Navy for Research, Development and Acquisition (RDA) is to provide weapons, systems, and platforms for the U.S. Navy/Marine Corps that support their missions and give them a technological edge over our adversaries. The assistant secretary establishes policies and procedures and manages the Navy's RDA activities in accordance with Department of Defense (DoD) 5000 Series Directives.

I had the pleasure of hosting Vice Admiral Frank Morley, the principal military deputy assistant secretary of the Navy for Research, Development and Acquisition (RDA) as my guest on *The Business of Government Hour*. We delved into the strategic initiatives and challenges facing the U.S. Navy. As the senior uniformed acquisition officer, Vice Admiral Morley plays a pivotal role in steering the Navy's modernization efforts. The following highlights key themes from our discussion, which focuses on the Navy's approach to maintaining a technological edge and ensuring operational readiness in an ever-evolving threat landscape.

On the Mission of the Assistant Secretary of the Navy for RDA

Vice Admiral Morley provided a comprehensive overview of the mission and organizational structure of the RDA office. This office is essentially the cradle-to-grave steward of the Navy's material needs. It manages the research, development to the procurement, production, and sustainment of the Navy and Marine Corps' vast array of assets, including ships, aircraft, and submarines.

Morley emphasized the importance of his role in bridging the gap between the secretary and the service staff. This is crucial for translating operational requirements into actionable acquisition strategies and ensuring alignment with broader Department of Defense priorities.

On Addressing Strategic Challenges

During our conversation, we discussed some of the core strategic challenges facing the service in the area of acquisition.

1. **Expanding the industrial base:** One of the foremost challenges highlighted by Morley is the state of the defense industrial base. Over the past few decades, the defense industry has contracted significantly, driven by the post-Cold War environment where the perceived threat level was lower. This has shifted with the rise of near-peer competitors. This contraction has impacted the capacity for scaling up production, when necessary, as seen in efforts to increase submarine and munitions production.

Morley discussed the long lead times and the need for steady investments to strengthen the supply chains, particularly for critical components that extend down to third-, fourth-, and fifth-tier suppliers. This expansion is vital for supporting the Navy's goal to ramp up production and meet current and future operational demands. "We've expanded the industrial base over the past few years to ensure that we've got the capacity and the resilience to support our needs. . . . It's about making sure that we have enough suppliers and enough capacity to meet the demand, especially in times of crisis or conflict," VADM Morley explains.

2. **Leveraging technological advancements:** The rapid pace of technological advancement, especially in software-driven systems, presents both opportunities and challenges. Morley spoke about the Navy's need to improve its ability to quickly integrate commercially available technologies into operational platforms. This requires a shift in acquisition processes to accommodate faster tech insertion and deployment.

   The Navy is increasingly focusing on model-based systems engineering and digital design tools to manage the complexity of modern systems. These tools help streamline the development process and enhance the Navy's ability to build and deploy more mature systems more efficiently. "Certainly, we're going to see more of that hybrid fleet of manned and unmanned teaming. . . . We're also looking at high-energy non-kinetic solutions, like lasers and microwave systems, which will start to come in more as we aim for greater flexibility and cost-effective defense of our systems," the vice admiral points out.

3. **Bending the cost and time curve:** Morley also addressed the ongoing effort to reduce the cost and development time for new systems. Traditional systems engineering processes, which have served well since the ballistic missile developments of the 1950s, are becoming less effective in the face of modern, highly software-dependent systems.

   The Navy is adopting new tools and methods, such as model-based testing and evaluation, to shorten development timelines and reduce costs while maintaining high standards of operational readiness. "Today we see," describes VADM Morley, "tools are maturing mostly in the form of model-based systems engineering, digital design, digital manufacturing, model-based testing and evaluation. These tools are now mature enough to shorten the timeline for that development [test, and deployment cycle.]"

On the Evolving Acquisition Strategies

To stay ahead in the rapidly changing landscape of modern warfare and technological advancements, the Navy's acquisition strategies are continuously evolving. Morley discussed how the Navy is adapting its processes to be more agile and responsive to the demands of contemporary and future combat scenarios.

Key to this evolution is the integration of advanced technologies and the enhancement of digital tools that support the Navy's operational and strategic goals. By focusing on these areas, the Navy aims to ensure that it can maintain its technological superiority and provide sailors and Marines with the best possible resources to execute their missions.

The Navy's approach is characterized by a balance between continuity and necessary adjustments. The current chief of naval operations (CNO), Admiral Franchetti, builds on the initiatives of her predecessor, Admiral Gilday. The strategy focuses on long-term goals rather than rapid changes, recognizing the Navy's role as a large and steady-moving entity. The strategic aim is towards expansion ("getting bigger") and increasing readiness, rather than fixating on specific ship counts. This broad, directional focus is driven by multiple studies indicating the need for growth.

"Readiness is the cornerstone of everything that we do, and so making sure that we have our forces ready to respond to any potential threat or crisis is absolutely critical."

Vice Admiral Frank Morley

On Key Strategic Priorities

VADM Morley identified a set of key strategic priorities outlined below:

Nuclear deterrence: Reconstitution of the nuclear deterrent force, particularly through the Columbia-class submarine, is paramount. "The nuclear deterrence and the posture that we have with our strategic forces is a very, very important element," acknowledges VADM Morley, "and we have to ensure we have the proper posture to deter any potential adversaries."

Readiness: Emphasis on improving the operational readiness of current assets, ensuring more ships and equipment are available and operational. "Readiness is the cornerstone of everything that we do, and so making sure that we have our forces ready to respond to any potential threat or crisis is absolutely critical," he explains.

Capability and capacity development: Investments in enhancing technological capabilities and expanding fleet capacity, with a significant focus on integrating emerging technologies from the commercial sector. "Expanding our capability and capacity is a key focus area, as it directly impacts our ability to maintain a competitive edge and respond to various challenges," VADM Morley adds. "We need to ensure that we not only have the right capabilities but also the capacity to deploy them as needed."

Hybrid fleet development: Moving towards a more hybrid fleet, incorporating both manned and unmanned systems in the air and at sea, is critical. The vice admiral notes, "A hybrid fleet gives us the flexibility to adapt to different operational environments and requirements, enhancing our overall strategic posture."

On Shaping the Navy's Strategic Vision for Acquisition

We also discussed the trends and drivers that influence and shape the Navy's strategic vision for acquisition and development.

China as the pacing threat: China is identified as the primary strategic competitor, guiding much of the Navy's focus on preparedness. However, the Navy also maintains readiness for a variety of global missions beyond direct conflict scenarios, including deterrence and maintaining international maritime communication lines.

Economic and infrastructure vulnerabilities: Recognizing the vulnerabilities in the U.S.'s open economy, the Navy is addressing economic threats that could impact its supply chains and operational readiness. This includes monitoring and mitigating risks from foreign ownership of critical companies and protecting technological advancements from espionage and cyber threats.

On the Maritime Economic Deterrence Executive Council

The Council aims to address and mitigate economic threats by coordinating efforts within the Navy and with other entities. It consolidates various initiatives under a single umbrella to strengthen the Navy's economic defenses. This includes monitoring foreign investments in key industries (such as through CFIUS, the Committee on Foreign Investment in the United States), safeguarding science and technology (S&T) and research and development (R&D) efforts, and protecting against counterfeit parts and cyber threats.

By bringing together different efforts within the Navy and collaborating with external entities like the Air Force and Indo-Pacific Command, the Council enhances the Navy's capability to identify and respond to economic threats. The Council's initiatives also support broader governmental strategies for economic deterrence, contributing to the national dialogue on protecting economic interests and supply chains.

"We're working very closely with the Maritime Economic Deterrence Executive Council," VADM Morley explains. "We stand up for how we protect those key components, those key segments of the economy. We work closely with the interagency community and through DoD to make sure we're playing our part to protect that economic base, and it's all of it—it's undersea cables, it's key shipping lanes, its key choke points, all those things that the Navy traditionally does."

On Improving Acquisition Processes

We discussed the following elements to improve acquisition processes:

Flexibility and tailoring: The Navy's acquisition process is designed to be adaptable, allowing program managers to tailor their approaches to specific needs rather than following a rigid script. This flexibility is formalized through multiple acquisition pathways, as outlined in the DoD's policy. "Ellen Lord, the former Under Secretary of Defense for Acquisition and Sustainment (A&S), did a really good job in revising DoD Instruction (DoDI) 5000.02, which restructures defense acquisition guidance to improve process effectiveness and implement the Adaptive Acquisition Framework (AAF). . . . It provided an opportunity for program managers to tailor what they're bringing along and not try to follow a single script. You need to be flexible. You need to understand what the needs are. You need to think, don't just follow," admits VADM Morley.

Rapid prototyping and deployment: Efforts such as the Mid-Tier Acquisition (MTA) pathway enable faster development and deployment of technologies, particularly those with manageable technical risks and lower capital expenses. These pathways allow for more agile responses to emerging needs without extensive bureaucratic delays. "MTA was created . . . as a way to, within five years, try to bring either a prototyping of something or actually field something and take away some of the requirements," explains VADM Morley.
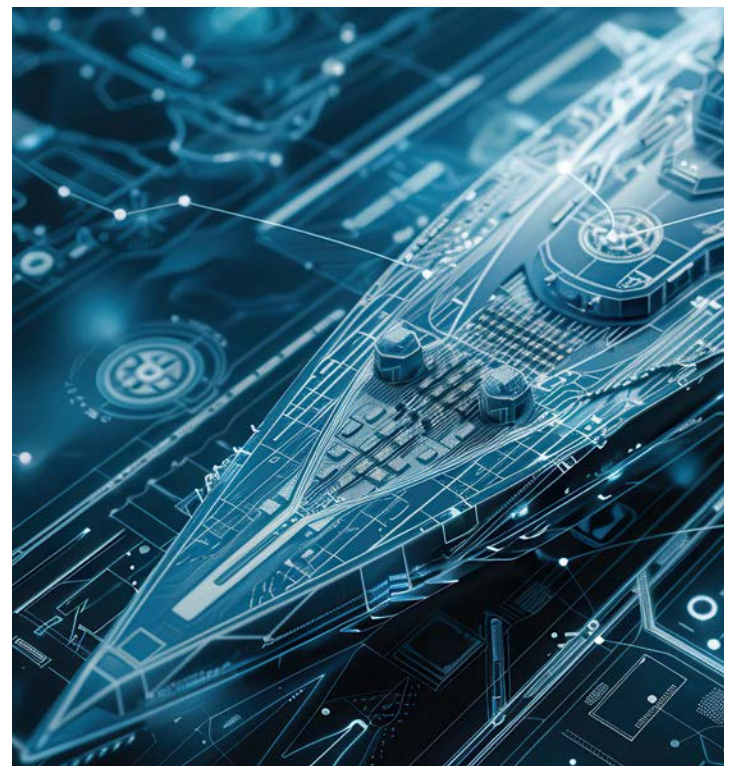
Bridging Organizations: Various bridging organizations (like the Defense Innovation Unit, AFWERX, and NavalX) are designed to accelerate the integration of commercially developed technologies into military applications. These organizations focus on quickly delivering solutions that address operational challenges. They operate under a model that emphasizes the rapid insertion of mature technologies into deployable systems, bridging the gap between commercial innovation and military application. "We see a series of bridging organizations created . . . to really address the seam in our normal structure . . . and get that thing into something deployable in the operators' hands in a relatively rapid fashion," says VADM Morley.

On Supply Chain Resiliency

The U.S. Navy is also actively working to strengthen its supply chain resilience by securing access to critical technologies and materials. This includes protecting the supply chain from economic and cybersecurity threats and ensuring the integrity of the components used in Navy systems. Measures to enhance supply chain resilience include increasing domestic production capabilities, diversifying suppliers, and implementing rigorous monitoring and control mechanisms to prevent vulnerabilities. The Navy also collaborates with other branches and government agencies to identify and mitigate potential threats to its supply chain, ensuring it can sustain and develop critical technologies effectively.

"Supply chains pose a significant challenge. We streamlined our supply chain during the downsizing of the industrial base, prioritizing efficiency and cost. Surprisingly, when tracing the suppliers for an aircraft, up to 80 percent could be single-source suppliers. Often, these are small, family-run businesses at the lower tiers. This lack of visibility and reliance on few suppliers complicates our operations," notes VADM Morley.

To understand supply chain management better, VADM Morley spent a few days with General Motors. Despite their sophisticated operations and just-in-time supply chain management, they, too, encounter fuzzy visibility beyond the second or third tier. In the Navy, they need to tackle this uncertainty by focusing on known issues. "For example, in munitions," he explains, "we've been taking risks for decades but now face a significant demand. We need a deliberate, sequential approach to address this, which will gradually improve our industrial base over several years."

VADM Morley notes that they started about a year and a half ago by signaling the Navy's commitment to industry through multiyear contracts, increasing budget submissions, and investing in organic capabilities. The Navy also identified

critical supply chain constraints, like rocket motors and specific chips, which impact multiple weapons systems across services. By targeting these known shortfalls with focused funding, the Navy can start to address these constraints effectively.

To truly expand the industrial base, he noted the need for the U.S. government to maintain consistent support over several years. This will enable the free enterprise system to respond to the market needs, gearing up production as they see a sustained demand.

On Modernizing the Fleet

Modernization is crucial and generally takes the form of evolutionary rather than revolutionary development. Evolutionary upgrades carry lower technical risks, offering more reliable schedules and costs, while delivering new capabilities quicker.

"Our modern systems, heavily driven by software, are well-suited for continuous upgrades. Whether it's platforms like the F-18 or F-35, or our weapon systems, we push significant capability enhancements through software updates," admits VADM Morley. For instance, improving weapon lethality can significantly boost the effectiveness of existing platforms. We're also exploring new tools like digital twins, which can speed up the deployment of new capabilities."

On Navigating the Complexities of Technological Integration

As the U.S. Navy looks to the future, the integration of advanced technologies such as unmanned systems, hypersonic weapons, and high-energy non-kinetic solutions becomes increasingly critical. Morley envisions a hybrid fleet where manned and unmanned systems operate in tandem across air, sea, and undersea domains.

This strategic shift is aimed at enhancing the Navy's operational flexibility, expanding its reach, and presenting multiple axes of potential threat to adversaries. The introduction of hypersonic weapons and long-range strike capabilities further underscores the Navy's commitment to maintaining a technological edge. These advancements promise to significantly extend the range and lethality of naval forces, enabling them to project power and respond to threats more effectively. Additionally, the exploration of high-energy non-kinetic solutions reflects a broader trend towards diversifying defensive capabilities and improving cost-effectiveness in missile defense and other critical areas.

Integrating unmanned systems: The future of naval operations involves a hybrid force combining manned and unmanned systems. This is essential for addressing the vast engagement zones and modern near-peer threats the nation faces. Unmanned systems help extend the operational reach and provide additional capabilities without risking human lives. In the air domain, unmanned systems can serve as tankers or advance further into contested zones, launching long-range weapons. This layered approach enhances our tactical flexibility. Undersea, there are various classified applications, while on the surface, unmanned systems can serve as sensors or force multipliers, providing coverage and reducing the risk to manned platforms.

The Navy strategy follows a phased approach outlined by the U.S. Department of Defense, focusing first on experimentation and prototyping. "As we move into the next fiscal planning periods, we will establish these technologies as programs of record, aiming to achieve significant deployment in the subsequent fit-ups. Currently, we're in the latter stages of this initial phase, with considerable prototyping and concept of operations (CONOPS)

development. In a few years, we anticipate formalizing these systems into operational roles," notes VADM Morley.

Integrating emerging technologies: "Our ships, despite their space and power limitations, are generally better suited than aircraft for integrating new hardware technologies. For example, we're enhancing our Littoral Combat Ships (LCS) with newer missile systems to increase their lethality. Hypersonic technologies are crucial for addressing the long-range engagement challenges we face, allowing us to deliver mass on target rapidly. We're targeting specific platforms for these capabilities," describes VADM Morley.

In non-kinetic defense, high-energy alternatives like lasers and microwave systems are promising but face technical hurdles, such as generating sufficient power. "We have already deployed a laser defense system and are installing a prototype microwave system to understand its operational viability," VADM Morley notes. "Our goal is to extend the range and effectiveness of these systems beyond terminal defense to provide more robust, layered defense options."

On Embracing a Culture of Continuous Improvement and Innovation

At the heart of the U.S. Navy's approach to maintaining and enhancing its capabilities is a commitment to continuous improvement and innovation. Morley's "Get Real, Get Better" initiative epitomizes this ethos, advocating for a cultural revolution that focuses on rigorous accountability and sustained performance improvements. This initiative encourages all stakeholders, from shipyards to acquisition teams, to engage in a unified effort to identify inefficiencies, streamline processes, and adopt best practices from world-class performance standards.

The admiral highlights the integration of advanced data analytics and predictive maintenance as pivotal to this effort. By leveraging the vast amounts of data generated by sensors embedded in ships and aircraft, the Navy can anticipate maintenance needs, reduce downtime, and enhance the overall readiness of its fleet. This predictive approach not only optimizes operational efficiency but also extends the life cycle of naval assets, ensuring that they remain combat-ready and technologically relevant in the face of evolving threats. "We put a big effort into [predictive maintenance]. We started collecting the data, measuring our performance, and started to gain real measurable benefits from that. And then we've now scaled that across multiple type model series aircraft and then more of the surface fleet and the submarine fleet," explains Morley.

On Ensuring Robust Maintenance and Sustainment

Effective life cycle management of Navy assets is another cornerstone of Morley's vision. He details the Navy's comprehensive approach to sustainment, which involves not only maintaining existing capabilities but also modernizing and upgrading them to meet future challenges. This approach encompasses everything from routine maintenance and repair to the digitization of shipyard operations and the implementation of sophisticated IT systems that enhance logistical efficiency.

Morley points out that the U.S. Navy is actively working to reduce inefficiencies in shipyard operations, drawing lessons from the highly optimized processes used in aircraft production. By minimizing non-value-added activities and ensuring that workers have immediate access to the tools and materials they need, the Navy aims to increase the time spent on productive tasks and reduce overall maintenance times. This focus on operational efficiency is crucial in a context where readiness and rapid deployment can be the difference between success and failure.

On the Ethical and Inspirational Dimensions of Military Service

Beyond the operational and technological aspects, Morley offers profound insights into the ethical and motivational dimensions of military service. He describes service to the nation as a "high calling" that offers deep personal fulfillment and a sense of contributing to something larger than oneself. This perspective is not just about duty but also about finding joy and purpose in one's work, a theme that resonates with many who have served in the military.

Morley advises those considering a career in public service to seek roles that they find genuinely interesting and fulfilling. He encourages a broad exploration of opportunities early on, suggesting that a diverse range of experiences can lead to greater success and satisfaction. This advice underscores the importance of passion and commitment in achieving long-term career goals and making meaningful contributions to national security.

Conclusion

The insights shared by Vice Admiral Frank Morley underscore the dynamic and complex nature of the U.S. Navy's modernization efforts. As the Navy continues to navigate the challenges of a competitive global environment, its focus on strengthening the industrial base, leveraging technological advancements, and optimizing acquisition processes will be crucial. Through strategic leadership and innovative approaches, the U.S. Navy aims to sustain its edge and fulfill its mission in safeguarding national security. As the Navy continues to evolve in response to new challenges and opportunities, Morley's perspectives will undoubtedly serve as a guiding beacon for future generations of naval leaders.

Resources

To learn more about the assistant secretary of the navy for rda, go to secnav.navy.mil/RDA.

To hear the interviews from *The Business of Government Hour*, go to businessofgovernment.org/interviews.

To download, listen, and subscribe to the show, go to Apple Podcast, Spotify or Audible.

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Leading the U.S. Internal Revenue Service

A Conversation with Danny Werfel, Commissioner, U.S. Internal Revenue Service

By Michael J. Keegan

The IRS has a unique opportunity to envision and realize a future of tax administration that meets the evolving needs of taxpayers and the nation. The agency remains focused on improving service to taxpayers, offering them more in-person and online resources while pursuing the most effective way to ensure tax compliance. In realizing this vision, it is important that the agency has the right size workforce, with the right training and tools as well as a modern technology infrastructure, with increasingly modern web-enabled tools for taxpayers. These are needed to ensure the IRS is ready to implement the tax system of today and the future.

Danny Werfel, commissioner of the IRS, joined me on *The Business of Government Hour* to explore the agency's strategic priorities, current initiatives, and long-term vision. During our conversation, Commissioner Werfel emphasizes modernization, enhanced customer service, technology-driven transformation, and the necessity of a well-trained workforce as central themes that will shape the IRS's evolution. The following highlights the key themes and insights derived from our discussion.

Vision and Strategic Direction of the IRS

Commissioner Werfel articulates a clear vision for the IRS, emphasizing its role in providing a robust and user-centric service that meets the varied needs of taxpayers. This vision is driven by a commitment to offer a broad range of filing options, improve taxpayer experience, and ensure compliance with tax laws. "If taxpayers want to submit in paper, they should have the choice to do it," Werfel states, underscoring the IRS's approach to meeting taxpayers where they are, while also advocating for expanded digital filing options. He envisions a seamless menu of choices so taxpayers can decide on the filing method that works best for them—whether it's paper, digital, or through an accountant. Werfel's vision aims at transforming the agency to better serve taxpayers and enhance operational efficiency. Here's a summary of the main components of his vision:

- **Enhanced taxpayer service:** Werfel emphasizes the importance of improving the taxpayer experience. He envisions an IRS that is more accessible and responsive to taxpayer needs. "We want to be a service organization first and foremost," he states. This involves not only improving communication but also ensuring that taxpayers have better access to the information and resources they need.

- **Modernization and technological advancement:** A significant part of his strategic vision includes modernizing the IRS's technology infrastructure and transforming the IRS into a "truly digital agency." Werfel highlights the need to move away from outdated legacy systems to more advanced, efficient solutions that allow for real-time processing. He notes, "We need to create a truly digital agency" to streamline operations and enhance the speed of service delivery.

- **Integration of AI and data analytics:** Werfel sees the potential of artificial intelligence and data analytics as transformative tools for the IRS. He discusses plans to leverage AI to improve efficiency and decision-making processes, stating, "AI can help us to fundamentally change the way we work." By harnessing advanced technologies, the IRS can better manage data and improve compliance efforts.

- **Investment in workforce development:** Recognizing that people are essential to the agency's success, Werfel stresses the need for ongoing training and professional development for IRS employees. He notes the importance of equipping staff with the skills necessary to handle complex tax issues and improve service quality, saying, "We have to invest in our people."

- **Long-term sustainability and funding:** Werfel acknowledges the necessity for sustained investment in IRS modernization efforts. He points out that achieving his vision requires a long-term commitment to funding and resources, noting, "This isn't something that's going to happen overnight."

During our conversation, Commissioner Werfel uses the analogy of being a train operator to illustrate the importance of focus and clarity in leadership. He states, "If you are the train operator, you have to know where the train is going." This analogy highlights the necessity for leaders to have a clear vision and direction for their organizations. He emphasizes that understanding the destination is crucial for making informed decisions and effectively guiding the agency forward, particularly in the context of the IRS's modernization efforts and service improvements.

Overall, Werfel's strategic vision for the IRS is comprehensive, focusing on enhancing taxpayer services, modernizing technology, leveraging AI, investing in the workforce, and securing long-term funding to create a more effective and responsive agency.

Impact of the Inflation Reduction Act

Prior to delving into specific initiatives, we discuss the Inflation Reduction Act (IRA) and its impact on the IRS. Commission Werfel explains that the IRA provides the agency with significant, multiyear funding that will enable the agency to make substantial improvements and investments in several key areas. Werfel emphasizes that the IRA is not just about funding day-to-day operations but is designed to support transformative changes that will modernize the IRS and enhance its capacity to serve taxpayers effectively. "This act provides the agency with sustained funding over multiple

years, which allows us to plan and execute modernization projects in a more comprehensive and strategic manner," says Werfel.

He notes that the IRA funding is being strategically allocated to support long-term investments in technology, taxpayer services, and enforcement capabilities. This approach will allow the agency to make substantial progress in areas that have traditionally faced resource constraints. He points out that one of the critical aspects of the IRA funding is its role in modernizing the IRS's aging technology infrastructure. With this funding, the IRS can accelerate the replacement of legacy systems and implement new technologies that will improve the efficiency of operations and provide better service to taxpayers. Werfel highlights the opportunity the IRA presents for a more stable and secure technology environment: "For the first time in many years, we have the resources to make the needed technology upgrades that will allow us to operate more effectively and securely," he says.

IRA funds are also being used to strengthen the agency's enforcement efforts, providing resources that will allow the agency to close the tax gap and ensure that all taxpayers meet their obligations under the law. Werfel points out that this focus on enforcement is essential for maintaining the integrity of the tax system and ensuring that the IRS can effectively address complex tax issues. According to Werfel, the ultimate

INFLATION REDUCTION ACT

"Artificial intelligence is a big part of our strategy going forward."

Danny Werfel, IRS Commissioner

goal is to create a more responsive and effective agency that can better serve the American public. He states, "This is about creating a system that is going to have more integrity, that is going to be more efficient, and that will help us fulfill our mission more effectively."

Modernizing the IRS's Technology Infrastructure

The modernization of the IRS's technology infrastructure is a recurring theme in our conversation. He acknowledges that while hardware and software updates are relatively straightforward, the real challenge lies in upgrading the foundational technology—the "millions and millions of lines of code" that need to be reworked. He compares the IRS's situation to banking infrastructure, where transactions are updated in real-time, noting, "If you were to leave here and stop at an ATM machine on your way and take out $100, it

would already present that you took out $100." This is not yet the case at the IRS, where transactions like tax payments take time to reflect on online accounts due to legacy systems.

The modernization effort, however, is not just about updating systems, but also about achieving better data exchanges, standardization, and real-time processing capabilities. Werfel believes that the IRS must invest in modern infrastructure to "ensure that all taxpayers can interact digitally, if they choose," and have a comparable customer experience to other financial services. He emphasizes that this transformation cannot be rushed, given the complexity and criticality of the systems involved. Even a minor error in this code could disrupt the entire system, halting critical processes like payment submissions or refunds. "I would rather be accused of it taking a long time than have the lights going out," Werfel says.

Leveraging Technology and Innovation

In addition to modernizing existing systems, Werfel highlights the potential of new technologies like artificial intelligence (AI) to help accelerate modernization and improve operations. "Artificial intelligence," he explains, "is a big part of our strategy going forward." He mentions that AI tools are being developed and integrated into various functions within the agency, which aims to increase efficiency and accuracy in IRS operations. He explains that AI is being used to improve decision-making processes, streamline operations, and enhance customer service.

Werfel highlights the potential of AI to analyze large volumes of data quickly and accurately, which can help the IRS identify trends, detect fraud, and provide better insights into taxpayer needs. He also underscores that AI has the capacity to assist with translating legacy coding into modern programming languages, speeding up a process that would otherwise take years. This use of AI is not only cost-effective but also a strategic way to overcome the technical debt the IRS has accumulated over decades.

Expanding Omnichannel Customer Experience and Service Delivery

Customer service is at the heart of Werfel's vision for the IRS. He envisions a taxpayer experience that is as seamless and user-friendly as possible, akin to how people interact with their banks or other service providers. A significant aspect of the modernization strategy is improving the taxpayer experience through a more integrated and omnichannel service model. The IRS aims to offer multiple channels through which taxpayers can interact with the agency—whether through phone, in-person visits, online portals, or mobile applications. This will require the development of a unified digital interface that allows taxpayers to access their accounts, file returns, and communicate with IRS representatives seamlessly.

Werfel mentions plans to improve walk-in services and reduce wait times, particularly in high-demand areas. The IRS is also investing in better call center technology and expanding online self-service options, enabling taxpayers to resolve issues without needing to speak to an agent. By enhancing service delivery through multiple channels, the IRS aims to provide a more responsive and user-friendly experience for all taxpayers.

The Direct File Pilot is central to this initiative, aiming to provide a direct, electronic, and free filing option with the IRS. This program complements existing methods like paper filing, use of professional accountants, or commercial tax software providers. This pilot, initially rolled out in roughly a dozen states, attracted more than 140,000 users who provided overwhelmingly positive feedback. Consequently, the IRS plans to expand this service nationwide, working closely with states to integrate their tax systems seamlessly. Werfel likens the expansion of Direct File to adding an item on a restaurant menu and then inviting reviews to ensure quality and satisfaction. The IRS now aims to make this a permanent offering, reflecting its responsiveness to taxpayer preferences.

Strengthening Human Capital and Workforce Development

The IRS's transformation hinges not only on technology but also on its workforce. Werfel stresses the need for skilled personnel to support various IRS functions, including direct taxpayer services, compliance, and technological operations.

Werfel addresses misconceptions about the IRS's staffing strategy, noting that calls to "supersize" the agency with armed agents are misleading. Instead, the agency's real need is for more staff to handle the increased demand for taxpayer assistance. The need for a skilled workforce capable of implementing and maintaining these ambitious initiatives is another central theme in Werfel's narrative. "Our workforce is absolutely essential because we interact," Werfel states, likening the IRS to other government agencies that have significant human interactions, such as the TSA or the Postal Service.

Werfel also emphasizes the importance of training and development, ensuring that new hires are not only technically proficient but also equipped with soft skills like empathy and customer service. He highlights the agency's efforts to bring in individuals who can understand the taxpayer's perspective and help them navigate complex tax situations. This holistic approach to workforce development is critical to building a responsive and resilient IRS that can meet the challenges of the future.

Enhancing Data Security and Cybersecurity Measures

As the IRS modernizes its systems and processes, data security, and cybersecurity will remain top priorities, especially given the sensitive nature of the information it handles. Werfel highlights the need for robust cybersecurity measures to safeguard sensitive information in an increasingly digital environment. The next steps involve implementing advanced cybersecurity protocols, continuously monitoring for threats, and ensuring that all new systems adhere to the applicable federal guidelines for data security.

He underscores the need to stay ahead of potential threats by continuously investing in cybersecurity capabilities. This entails not only hiring experts in the field but also deploying cutting-edge technologies to protect taxpayer data and ensure the resilience of IRS systems against cyberattacks. This focus on security has enabled the IRS to significantly improve its security posture and sharply reduce risks for taxpayers and the tax system.

Conclusion

Werfel's overarching vision is to make the IRS a digitally-enabled agency. His candid discussion of the challenges and opportunities ahead reflects a pragmatic yet optimistic outlook. This vision will take time to realize, given the complexities of modernizing legacy systems and the scale of the IRS's operations. However, the commitment to this transformation is evident in the agency's strategic investments in technology and people. "You need funding in order to do all of this," he asserts. The recent funding boost for the IRS has enabled the agency to embark on its modernization journey, but Werfel remains cautious about balancing speed and security, acknowledging that the complexity of the task requires a methodical approach.

Resources

To learn more about the U.S. Internal Revenue Service, go to irs.gov.

To hear the interviews from *The Business of Government Hour*, go to businessofgovernment.org/interviews.

To download, listen, and subscribe to the show, go to Apple Podcast, Spotify or Audible.

To view excerpts of the show, go to youtube.com/businessofgovernment.

Driving Digital Transformation

Insights from Alexis Bonnell, Chief Information Officer and Director of the Digital Capabilities Directorate, Air Force Research Laboratory

By Michael J. Keegan

I had the pleasure of hosting Alexis Bonnell, chief information officer (CIO) and director of the Digital Capabilities Directorate at the Air Force Research Laboratory (AFRL) on *The Business of Government Hour*. She develops and executes the AFRL information technology strategy, leading the strategic development of highly advanced next generation technologies and platforms for AFRL. This also includes catalyzing the discovery, development, and integration of warfighting technologies via digital capabilities, IT infrastructure, and technological innovation.

Bonnell's perspective is rooted in her extensive experience in both the public and private sectors, and she brings a unique and refreshing approach to digital transformation within the government. The following delves into the main themes discussed during the interview, including her strategic IT vision, the significance of understanding the relationship with knowledge, the concept of digital transformation, the five deadly sins of digital transformation, and the role of emerging technologies.

Mission of the AFRL

The Air Force Research Laboratory is the primary scientific research and development center for the U.S. Department of the Air Force and Space Force. "AFRL plays an integral role in leading the discovery, development, and integration of affordable warfighting technologies for our air, space, and cyber forces. . . . We provide a diverse portfolio of science and technology ranging from fundamental to advanced research and tech development," explains Bonnell.

The agency, headquartered at Wright-Patterson Air Force Base in Ohio, meets this mission with a workforce of more than 12,500 people in 10 states across nine different technology areas and over 40 operations around the globe. "Our goal is really to defend America by unleashing the power of innovative air, space, and cyber tech," she underscores. "While our heritage dates back to 1917, we officially launched in 1997, consolidating the four former Air Force Laboratories and the Air Force Office of Scientific Research." The laboratory and its predecessors have overseen more than 100 years of critical research efforts for the U.S. Department of the Air Force, Space Force, and the U.S. Department of Defense.

Strategic IT Vision at AFRL

Bonnell's strategic IT vision for the AFRL is not only forward-thinking but also deeply rooted in enhancing human capabilities. Rather than focusing solely on technological advancements and platforms, she emphasizes the importance of the relationship with knowledge. She advocates for a shift away from an obsession with specific

"*AFRL plays an integral role in leading the discovery, development, and integration of affordable warfighting technologies for our air, space, and cyber forces.*"

Alexis Bonnell, CIO, Air Force Research Laboratory

01 SCIENCE & TECHNOLOGY STRATEGY

02 AIR FORCE VANGUARDS

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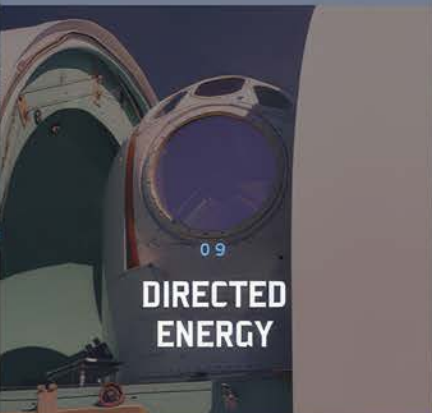
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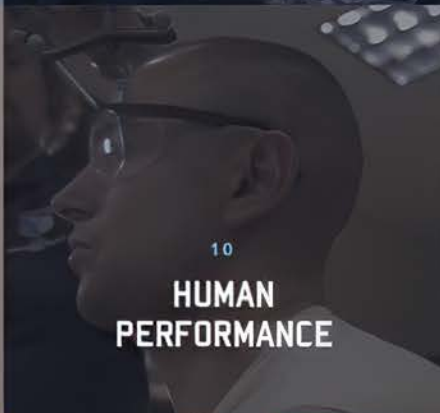
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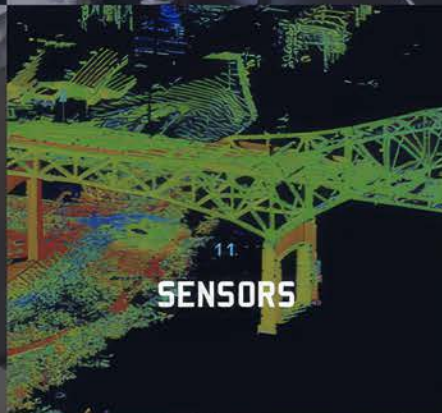
11 SENSORS

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13 QUANTUM

14 HYPERSONICS

15 DIGITAL CAPABILITIES

16 INTEGRATED CAPABILITIES

tools and platforms towards a more holistic understanding of how knowledge is created, accessed, and utilized. "Our IT vision is about transforming how we think about and use technology to accelerate our scientific research, optimize our operations, and ultimately provide advanced capabilities to our warfighters," explains Bonnell. "We need to ensure that we're not only keeping pace with the rapid technological changes in the world but setting the pace."

At the core of her strategic vision is this idea of enabling and empowering the researchers. "IT isn't just a support function—it's a critical enabler of mission success," according to Bonnell. "We are heavily focused on providing the right tools, platforms, and infrastructure that allow our scientists and engineers to work faster, collaborate better, and innovate more efficiently."

Her first priority is to encourage a change in how people think about and interact with technology. She stresses the need to move beyond the identity tied to particular tools or vendors and instead focus on the relationship with knowledge. This approach is crucial because it addresses the core purpose of technology: to facilitate the right information reaching the right source at the right time for informed decision making.

Another critical aspect of her strategy is ensuring that technological tools are useful at all levels, especially for the information originators. Bonnell points out that in many large organizations, including government entities, IT systems are often designed to improve leader confidence through dashboards and reporting tools. However, this can overlook the needs of the working-level personnel, such as scientists and researchers, who generate the initial data. By prioritizing tools that are beneficial to these information originators, the overall effectiveness and timeliness of data flow can be significantly improved.

Finally, she emphasizes that technology should reflect and reinforce organizational culture and values. She argues that technology should not only be evaluated on its technical merits but also on its ability to drive desired behaviors and relationships with knowledge within the organization. This perspective ensures that technological investments align with and support the broader mission and goals of the AFRL. "We're investing heavily in IT modernization efforts to ensure we are agile, resilient, and secure," Bonnell explains. "That means everything from leveraging cloud solutions, enhancing our data analytics capabilities, ensuring robust cybersecurity measures, and embracing emerging technologies like artificial intelligence and machine learning to solve problems at scale."

The Relationship with Knowledge

One of the most profound insights from the interview is Bonnell's emphasis on the relationship with knowledge. "At AFRL, we see knowledge as a critical enabler of innovation," she explains. "It's not just about having access to data or information—it's about how we share and use that knowledge to drive meaningful advancements." She highlights that the ultimate goal of IT is to enhance this relationship by ensuring that the right information is available to the right people at the right time. This approach moves beyond the traditional focus on data and platforms and instead centers on how knowledge is curated, accessed, and applied. "We are committed to ensuring that the knowledge we generate through research and development doesn't stay siloed. Our goal is to create pathways where that knowledge can be shared across teams, departments, and even external partners to maximize impact," asserts Bonnell.

Bonnell illustrates this point with a compelling example from her experience at Google. She describes a scenario where data from various sources seamlessly converges on a web page, providing a rich, decision-supportive environment without requiring extensive manual integration. This capability, powered by application programming interfaces (APIs), transforms how information is accessed and utilized. "How we capture, manage, and apply that knowledge can be the difference between being reactive and being truly innovative in the defense space," Bonnell notes. The key takeaway is that effective digital transformation should enable similar fluidity and accessibility of information within the AFRL. This shift towards a knowledge-centric approach also involves recognizing the importance of both human and machine knowledge.

Bonnell stresses that future IT strategies must facilitate the integration of these two forms of knowledge, enabling humans to leverage the computational power of machines while retaining the critical thinking and contextual

understanding that humans provide. This balanced approach ensures that technology enhances rather than replaces human capabilities. "Going forward," she explains, "we're looking at new ways to enhance our relationship with knowledge—whether through AI, better data management systems, or more collaborative platforms—so that we can not only generate but also apply knowledge more efficiently across the organization."

Defining Digital Transformation

Bonnell provides a refreshingly simple yet profound definition of digital transformation: the ability for people to be more successfully curious than they were before. In her view, digital transformation is not just about implementing new technologies but about fostering a culture of curiosity and continuous learning. "For us, digital transformation," she explains, "isn't just about adopting new technologies—it's about fundamentally changing how we operate, how we innovate, and how we deliver outcomes to the warfighter. Digital transformation is more than just an IT initiative; it's a mindset shift. It's about rethinking processes, data, and systems to be more agile, responsive, and integrated in everything we do."

This perspective aligns with the broader goal of enhancing the relationship with knowledge and underscores the importance of a people-centric approach to digital transformation. Bonnell posits that digital transformation should unleash and amplify curiosity within the organization, particularly in a research-focused entity like the AFRL. By making it easier for people to explore, discover, and connect information, digital transformation can drive innovation and advance the organization's mission. "We have to enable our workforce to be comfortable with change, experimentation, and leveraging digital tools to solve problems in new ways," she acknowledges.

The real value of digital transformation is how it enhances AFRL's decision-making capabilities. "When you have real-time access to data, paired with AI and machine learning tools, it allows us to make faster, more informed decisions, which is critical in defense," says Bonnell, who also sees the value of digital transformation as breaking down silos. "We can create a more collaborative environment where data flows seamlessly across teams, making it easier to innovate and deliver better solutions faster."

The Five Deadly Sins of Digital Transformation

Bonnell identifies five critical pitfalls, or "deadly sins," that organizations must avoid to achieve successful digital transformation. These insights are particularly valuable for leaders and practitioners involved in managing IT and digital initiatives.

1. **Not knowing who you're trying to become:** Bonnell emphasizes the importance of having a clear North Star or guiding vision for digital transformation. Without a well-defined goal, organizations can become reactive, constantly shifting priorities based on the latest trends or challenges. A clear vision provides a stable reference point for making decisions and prioritizing initiatives. "One of the biggest mistakes organizations make is not being clear on what they want from digital transformation. If you don't define the end state clearly, you end up chasing technology for technology's sake rather than creating real value," she explains.

2. **Assuming there is a technological destination:** Digital transformation is not a one-time project with a definitive endpoint. Bonnell underscores that it is an ongoing journey of continuous improvement and adaptation. This mindset encourages organizations to remain agile and open to new opportunities and challenges rather than becoming complacent once initial goals are achieved. "The real danger is thinking that a shiny new tool will solve all your problems. It's about aligning technology with strategy, processes, and people," she notes.

3. **Underestimating toil:** The complexity and effort required to implement and sustain digital transformation initiatives are often underestimated. She highlights the importance of acknowledging and addressing the toil involved, from managing legacy systems to navigating bureaucratic processes. Recognizing and planning for these challenges is crucial for maintaining momentum and achieving long-term success.

4. **Assuming doing differently is enough:** Simply changing processes or adopting new technologies is not sufficient for true transformation. Bonnell argues that organizations

must also focus on changing how people think and feel about their work. This involves cultivating a culture that embraces change, encourages curiosity, and supports continuous learning.

5. **Incentivizing the critic over the doer:** Bonnell warns against creating environments where criticism and analysis are valued over action and experimentation. While critical thinking is essential, it should not stifle innovation and progress. Organizations must strike a balance, encouraging thoughtful analysis while also empowering individuals to take risks and drive initiatives forward.

Emerging Technologies and Their Impact

Bonnell expresses excitement about a number of emerging technologies and their potential impact on the Air Force and Space Force. The future of IT at AFRL is about harnessing the power of data, artificial intelligence (AI), and advanced computing to push the boundaries of what's possible. It is about creating a digital ecosystem that's adaptable, secure, and able to leverage emerging technologies like quantum computing and AI, not just to solve today's problems, but tomorrow's as well. Her insights provide a glimpse into the future of IT and digital capabilities within the AFRL.

- **Artificial intelligence and machine learning:** She highlights the transformative potential of AI, not just in the context of generative AI but also in physics-based modeling and digital twins. These technologies can significantly enhance the AFRL's research and operational capabilities by providing advanced simulation and predictive analytics. For example, by creating digital replicas of physical assets, AFRL can run simulations, predict outcomes, and make more informed decisions before anything is physically built or changed. Digital twins offer a way to test hypotheses in a controlled, virtual environment. This means researchers can explore multiple pathways, adjust, and see the impact without having to build physical prototypes. It's a game-changer for reducing time and cost.

- **Fully homomorphic encryption:** This technology allows data to be processed in its encrypted form, enhancing security and privacy. Bonnell sees significant potential in its application within the AFRL, particularly in safeguarding sensitive information while enabling advanced data analysis.

- **Quantum computing:** Although still in its early stages, quantum computing holds promise for solving complex problems that are currently beyond the reach of classical computers. Bonnell views quantum computing as a critical area of exploration for future capabilities. The fundamental nature of quantum computing is really going to change

the way we do things, so she advises us to be prepared for that new reality. With quantum computing, we're going to have to rethink everything we know about encryption and security.

- **Result augmented generation (RAG):** One of the most intriguing technologies Bonnell discusses is RAG, which enables users to curate and interact with personalized knowledge sets. This technology represents a significant shift in how information is structured and accessed, allowing individuals to create customized knowledge environments that align with their specific needs and missions.

Bonnell's enthusiasm for these technologies is tempered by a practical understanding of their implementation challenges. She emphasizes the importance of staying informed about technological advancements while also being realistic about the time and effort required to integrate them effectively.

Conclusion

My conversation with Alexis Bonnell provides valuable insights into the strategic vision and approach to digital transformation at the Air Force Research Laboratory. Her emphasis on the relationship with knowledge, the importance of a people-centric approach, and the identification of common pitfalls in digital transformation offers a framework for understanding and navigating the complexities of IT and digital initiatives.

Bonnell's perspective is particularly relevant in the context of government and large organizations, where the challenges of bureaucracy, legacy systems, and cultural inertia can hinder progress. By focusing on clear goals, acknowledging the ongoing nature of digital transformation, and fostering a culture of curiosity and continuous learning, organizations can overcome these challenges and harness the full potential of emerging technologies.

Resources

To learn more about the Air Force Research Laboratory, go to afrl.af.mil.

To hear the interviews from *The Business of Government Hour*, go to businessofgovernment.org/interviews.

To download, listen, and subscribe to the show, go to Apple Podcast, Spotify or Audible.

To view excerpts of the show, go to youtube.com/businessofgovernment.

Emerging Technologies in Defense Intelligence-Balancing Innovation and Integration

Insights from Ramesh Menon, Chief Technology Officer and Chief Artificial Intelligence Officer, Defense Intelligence Agency

By Michael J. Keegan

Artificial intelligence (AI) has become a critical and strategic capability for defense organizations around the world, offering immense benefits such as improved efficiency, accuracy, and decision making. It has the potential to revolutionize military operations to improve mission outcomes and gain decision advantage.

Ramesh Menon, chief technology officer (CTO) and chief artificial intelligence officer (CAIO) at the U.S. Defense Intelligence Agency (DIA), joined me on *The Business of Government Hour* to discuss the agency's AI strategy, the strategic implementation of AI, the challenges faced, and the evolving landscape of intelligence and national security. We explored how the DIA is harnessing AI to enhance its mission of providing military intelligence. The following is an edited excerpt of our discussion, complemented with updated and additional research.

Understanding the Mission of the DIA and the Roles of CTO and CAIO

As a combat support agency, DIA operates at the intersection of the U.S. Department of Defense (DoD) and the Intelligence Community (IC). Its primary mission is to deliver intelligence on foreign military capabilities to ensure U.S. national security.

This involves a fusion of intelligence sources to provide actionable recommendations to top-level decision makers, including the secretary of defense, the Joint Chiefs of Staff, and combatant commands. Menon's dual roles as CTO and CAIO span technology strategy, governance, and the implementation of AI in line with national security directives. He chairs the Technology Leadership Council for the agency

and notes that a significant aspect of being CAIO is to comply with requirements in the White House Executive Order 14110 on Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence.

In his capacity with the DIA, Menon's responsibilities include overseeing the agency's technological and artificial intelligence initiatives to ensure effective data integration, driving innovation, and maintaining security. He focuses on advancing digital platforms and algorithms to enhance intelligence processes, building governance frameworks for the safe and ethical use of AI, and developing an AI-ready workforce to lead the cultural and technological transformation at the DIA.

Strategic Implementation of AI

Menon outlines a multifaceted strategy to integrate AI within the DIA, emphasizing the need to bridge the gap between AI development and deployment. Key components of this strategy include:

- **Platforms and tools:** Establishing robust platforms and toolchains is fundamental. This includes creating a model exchange and machine learning operations (MLOps) capabilities that integrate with existing compliance frameworks. "We are beefing up our digital platforms and algorithms to make sure the exquisite data we have is extracted effectively to be integrated into our intelligence processes," notes Menon.

- **Data utilization:** The DIA focuses on extracting maximum value from data to gain a strategic edge. This involves developing platforms that can process vast amounts of data efficiently and securely. "Data is essential for us. We are a data company in a sense," Menon admits.

- **Tradecraft evolution:** Integrating AI seamlessly into existing intelligence gathering and analysis methods is key. This involves adapting traditional techniques to leverage the capabilities of AI without sacrificing human expertise. "We definitely see a strong human-machine teaming in the future," acknowledges Menon.

- **Experimentation:** To keep pace with rapid technological advancements, fostering a culture of experimentation and innovation is crucial. This means challenging assumptions and encouraging a growth mindset within the organization. "The culture of innovation is required for an adaptive workforce," Menon assures. "We need to provide a development environment for people to experiment."

- **Adaptive workforce:** Investing in the workforce to ensure they possess the necessary skills to leverage new and cutting edge technologies is vital. Menon highlights the importance of upskilling and reskilling current employees rather than replacing them, which is a practical approach within the constraints of federal employment.

- **Partnerships and collaboration:** Operationalizing partnerships with allies and other stakeholders, including private sector partners, enhances the DIA's capabilities. Sharing intelligence and collaborating on technological advancements ensure a unified approach to national security. "We have very sophisticated national labs and a scientist ecosystem, and everybody's willing to help you if you reach out, including the industry. . . . most industry partners are very committed and will step up to support as required," Menon notes.

- **Ethical and secure:** Ethical AI is a significant concern, with a strong emphasis on compliance with the U.S. Constitution and regulatory framework. Menon refers to President Biden's AI Bill of Rights and the responsible AI framework laid out by the Deputy Secretary of Defense. He believes that adhering to these principles will strengthen national security rather than hinder it. "We want to ensure a governance framework for safe, secure, and ethical use of AI," explains Menon. "We'll be standing up a centralized governance team to ensure we support a federated execution. We don't want to slow down innovation, but we still need to understand what is happening where."

Challenges in AI Integration

He identifies two primary challenges in integrating AI into the DIA's operations: cultural resistance and technological scalability.

- **Technological scalability:** The rapid evolution of AI technologies, such as large language models and generative AI, poses significant challenges. The infrastructure required to support these technologies is often beyond the current capabilities of federal agencies. Menon points out the financial pressures and the need for scalable digital platforms to accommodate AI advancements.

> *"The most important (asset) is talent and skills. If I have an AI-ready workforce, the cultural transition becomes a lot easier."*
>
> Ramesh Menon, CTO and CAIO, U.S. Defense Intelligence Agency

- **Cultural resistance:** Shifting the mindset within a large and complex organization like the DIA can be daunting. He emphasizes the need for a growth mindset and openness to change, which are essential for successful AI integration.

Menon acknowledges that cultural transition becomes a lot easier if you have an AI-ready workforce. "Integrating into operations requires us to be more intentional; it is a deliberate activity." says Menon. "The challenge is to take technology from a TRL 7 to TRL 9 and integrate it into operational environments." Finding skilled AI professionals, such as principal AI security scientists, is not easy. There are caps on what can be done with current talent pools. During our conversation, Menon underscores the complex interplay of cultural readiness, operational integration, talent acquisition, and policy compliance as significant hurdles to effectively implementing AI.

Effective Data Management and Scaling AI

Effective data management practices are essential for AI scaling. This includes handling large volumes of data efficiently and ensuring data quality and relevance. Strategic investment in AI infrastructure, including hardware and software, supports scaling efforts. This includes investing in scalable cloud solutions and other technologies that facilitate AI deployment. In summary, scaling AI involves a combination of operational integration, workforce adaptation, governance, collaboration, and strategic investment. Addressing these factors holistically ensures that AI technologies can be deployed effectively and scaled to meet organizational needs.

Opportunities and Challenges

We explored the various opportunities and challenges Menon and his agency faces in its digital transformation and AI journey. Here's a brief summary of some of what we discussed.

- **Cybersecurity and AI:** In the realm of cybersecurity, AI plays a crucial role in incident response and log analysis, enhancing the ability to detect and respond to threats. The implementation of National Security Memoranda (NSM) 8 and 10, focusing on zero trust and quantum-safe encryption, respectively, are key initiatives. AI's ability to generate comprehensible reports for operational leaders and correlate different types of logs makes it a valuable tool in the cybersecurity arsenal.

- **Toolchain automation and AI integration:** One significant point raised was the importance of toolchain automation within the development lifecycle. Automating controls within the DevOps process can streamline operations and enhance efficiency. This principle extends to AI and machine learning (ML) operations (MLOps), especially when deploying applications on the edge in various locations. The integration of such technologies into platforms highlights the shift towards a platform-based operating model and mission framework.

- **Acquisition and interoperability:** The discussion also highlighted issues in acquisition processes, particularly the need for interoperability in joint missions. A suggestion was made to develop a common reference architecture or stack to ensure seamless integration and cost savings across different agencies. This approach could prevent multiple, incompatible implementations of similar technologies, fostering more efficient joint operations.

- **Requirements and architecture:** While requirements are paramount, architecture plays a crucial role in translating these requirements into actionable solutions. The modernization of networks, AI integration, and the adoption of advanced technologies like quantum networks and edge AI are all pivotal. However, the challenge lies in transitioning these technologies from laboratory readiness (TRL 7) to operational readiness (TRL 9) and integrating them into existing frameworks.

- **Cultural impediments to technological adoption:** The cultural aspect again surfaced as a significant impediment. Government agencies often have a more mature workforce with less turnover compared to the private sector, making process changes difficult. As noted, embracing new technologies usually necessitates new processes, a transition that many agencies find challenging. This resistance can slow down the adoption of cutting-edge solutions and hinder overall progress.

Evolving Landscape of Intelligence and National Security

Menon observes that the landscape of intelligence and national security has evolved significantly, particularly with the rise of open-source intelligence and the proliferation of AI technologies. The Russian-Ukrainian conflict exemplifies the increasing importance of open-source intelligence in modern warfare. Additionally, the rapid development of generative AI models presents both opportunities and challenges. The financial and infrastructural demands of these technologies necessitate careful planning and collaboration with industry partners to ensure sustainable integration.

Industry and Government Synergy

He advocates for strong industry-government partnerships, particularly through collaborative research and development, the transition of mature technologies, and openness to innovative proposals. He also stresses the importance of maintaining a balance between technological progress and ethical standards.

Menon acknowledges the gap between industry and government, noting that while the commercial sector moves quickly and focuses on sales and revenues, the government is mission driven. Bridging this gap requires large systems integrators who can translate commercial technologies into mission-specific applications. The rapid pace of AI development in the commercial sector, fueled by substantial venture investments, underscores the need for a strong technological and economic ecosystem to support national capabilities.

Leadership in Technology and AI

Effective leadership, according to Menon, hinges on three principles: listening, leading with courage and conviction, and maintaining humility. Listening to diverse perspectives within the organization helps in understanding the unique needs of different intelligence services and combatant commands. Leading with courage ensures that necessary but potentially uncomfortable changes are implemented. Humility can foster a more collaborative environment where all voices are heard and respected.

Moving Forward

The DIA is committed to leveraging AI as a transformative technology. The future will see AI becoming increasingly integral to DIA operations, influencing various functions and advancing the agency's capabilities. The strategy will evolve with AI continuing to drive innovation and improvement in intelligence processes.

"The most important is talent and skills," admits Menon. "If I have an AI-ready workforce, the cultural transition becomes a lot easier." Developing an AI-ready workforce is a priority. The agency is focused on building skills and competencies in AI, which will facilitate smoother transitions and better adoption of new technologies within the organization.

Collaboration with industry and academic partners is also key to advancing technology. The DIA will continue to leverage external expertise and create partnerships to drive innovation and integrate new solutions effectively.

Menon also emphasized the need for continuous improvement and adaptation to stay ahead of technological advancements. Organizations must be flexible and responsive to changes in technology trends and emerging challenges. From getting the right people to funding efforts, he acknowledges the importance of the strategic allocation of resources to address budget constraints. By optimizing the portfolio and making informed decisions about where to invest, organizations can balance core system maintenance with innovation. This approach helps manage financial limitations while supporting technological advancements.

Menon's strategy for the future at the DIA involves a comprehensive approach to adopting and integrating advanced technologies, with a strong emphasis on governance, workforce development, and collaboration. The aim is to ensure that the DIA remains at the forefront of technological innovation while maintaining ethical standards and operational efficiency.

Conclusion

Our discussion describes the multifaceted nature of leveraging AI in defense intelligence, from technological integration to cultural transformation and strategic partnerships. The DIA's strategic focus on data utilization, innovation, adaptive workforce, and partnerships, combined with its efforts to overcome cultural and technological challenges, underscores its commitment to maintaining a strategic intelligence advantage.

Resources

To learn more about the Defense Intelligence Agency, go to dia.mil/.

To hear the interviews from *The Business of Government Hour*, go to businessofgovernment.org/interviews.

To download, listen, and subscribe to the show, go to Apple Podcast, Spotify or Audible.

To view excerpts of the show, go to youtube.com/businessofgovernment.

Bridging Innovation and Access

Insights from Andrea Fletcher, Chief Digital Strategy Officer and Director of the Digital Service, Centers for Medicare & Medicaid Services

By Michael J. Keegan

Andrea Fletcher serves as the chief digital strategy officer (CDSO) and director of the Digital Service at the Centers for Medicare & Medicaid Services (CMS). She explains that her office was established to address the need for talent and expertise in a variety of skills to tackle complex problems at the intersection of technology, innovation, and service design and delivery. The CMS digital transformation strategy focuses on improving the user experience and delivering better digital services to its beneficiaries.

Fletcher joined me on *The Business of Government Hour* to discuss the intricate landscape of digital transformation and delve into the innovative strategies and initiatives driving digital transformation across CMS, offering key insights into the future of healthcare service delivery. The following is an edited excerpt of our discussion, complemented with updated and additional research.

On Being the Chief Digital Strategy Officer and Director of the Digital Service

As its director of the Digital Service at CMS, she leads a team of technical experts who work on both the public-facing and program-facing technology at CMS. This includes addressing complex problems with a technology lens and working on systems that interact directly with beneficiaries. In her role as chief digital strategy officer, she is charged with shaping the overall digital strategy for CMS.

Her focus is on improving customer experience, advancing digital services, and pushing for a digital-first approach. She emphasizes the need for her team to act as a "translation service," bridging the gap between government, healthcare,

and technology languages. This involves understanding and integrating the different vocabularies and processes of these domains to effectively solve problems.

Fletcher's role involves deploying talented individuals to tackle challenging problems. Her team is tasked with forming quick-response teams to address issues with a technology focus and develop innovative solutions. She notes that part of her job is to attract and retain skilled professionals and to foster a culture where they can effectively contribute to the agency's goals. This includes mentoring team members and facilitating their growth within the government.

"My team," explains Fletcher, "sits in the office of the administrator at CMS. Our job is to take hard problems that people are thinking through that might have a technology lens and deploy smart people who have backgrounds in technology to try to understand and solve those problems."

Accessibility and User-Centric Design

A key aspect of the CMS digital strategy is to ensure that the technology and digital services provided are user-friendly and meet the needs of beneficiaries. Fletcher's team prioritizes designing systems and interfaces that are intuitive and accessible to users, advocating for their needs and ensuring that technology serves them effectively.

"Our job," notes Fletcher, "is to be the champion of 'can a real person use this?' Do they understand the language? Is it simple? Does it make sense for the people who need to use a CMS tool and/or platform?" It is about enhancing accessibility and user experience across its digital platforms, pursuing a digital first approach. Fletcher emphasized the importance of viewing accessibility beyond mere compliance, recognizing that true accessibility entails designing experiences that cater to diverse user needs, including those with visual and cognitive disabilities. Through rigorous user testing and adherence to accessibility standards, such as the U.S. Web Design System, CMS strives to ensure that its digital services are inclusive and user-friendly for all beneficiaries.

Furthermore, Fletcher sheds light on the broader customer experience strategy, extending beyond digital interfaces to encompass all touchpoints with CMS services. From call centers to online interactions, CMS is dedicated to delivering seamless and empathetic service experiences, acknowledging the diverse backgrounds and technological literacy levels of its beneficiaries.

"We exist to pilot and prototype. Before we spend a bunch of money building a thing, we ask: are we building the right thing? We run a lot of discovery and design sprints. . . . We must think about how these beneficiaries experience our services," she explains.

Given the complexities of government bureaucracy, CMS's digital strategy also involves navigating numerous regulations and compliance requirements. Fletcher discusses the challenges of working within these constraints, such as dealing with lengthy approval processes and adhering to cybersecurity and data protection standards.

Challenges to Pursuing Digital Transformation

Fletcher notes that CMS has legacy systems. Modernizing these systems while maintaining operations is a huge challenge. She also understands there is significant levels of bureaucracy involved in government agencies, and that can make it challenging to move quickly. Getting buy-in for new ideas requires navigating complex approval processes.

"We must balance being innovative with staying compliant," admits Fletcher. "In government, you can't just roll out changes quickly; there are regulations and security concerns that we have to carefully navigate." Another significant challenge she identifies involves breaking down data silos. "We have vast amounts of data, but it's scattered across different systems and teams, which makes it harder to leverage effectively," she adds.

Tackling many challenges requires changing culture, which can be one of the biggest hurdles. "People are used to doing things a certain way," Fletcher explains, "and it takes time to shift that mindset and get people comfortable with experimentation and failure." These challenges reflect the complexity of implementing a digital strategy in a large and regulated government organization like CMS, where modernization efforts must be balanced with operational stability and regulatory compliance.

"I hope our future is about making some waves, doing things differently, and thinking about how we can provide the best healthcare and the best services."

Andrea Fletcher, CDSO, Centers for Medicare & Medicaid Services

Harnessing Data

Central to CMS's digital strategy is the strategic use of data analytics to drive decision making and improve service delivery. Fletcher highlighted the challenges of navigating data silos and emphasized the importance of asking the right questions to guide data analysis effectively.

Despite the inherent complexities of accessing and integrating disparate data sources within a government agency, CMS remains committed to leveraging data insights to inform policy decisions and enhance operational efficiency. "When I think about analytics and using data," notes Fletcher. "I think about what questions are we asking.It is not about using some new tools just for the sake of it. It's about knowing what data we have, what questions we need answered, and whether that data can be used to answer those questions."

Modernizing Medicare

One significant revelation from the conversation was the evolving landscape of Medicare and Medicaid, especially concerning the expansion of coverage to address dental care needs. Fletcher highlighted how CMS is adapting to meet the changing demands of patient care, notably through updates in the Medicare Physician Fee Schedule. Medicare can pay under Part A and Part B, when dental services are inextricably linked to the clinical success of other Medicare-covered procedures or services. This expansion, for example, includes coverage for dental care related to heart valve replacements and kidney transplants. Thus, recognizing the crucial link between dental health and overall health outcomes in such cases.

The endeavor to integrate dental coverage for specific healthcare scenarios into traditional Medicare posed unique challenges, considering the historical segregation of dental insurance from health insurance. As Fletcher explained, the absence of dental coverage in Medicare Parts A and B necessitated the development of new infrastructure to process dental claims—a monumental task not undertaken since the 1960s. This initiative underscores CMS's commitment to modernization, leveraging contemporary technology stacks to revamp outdated systems and workflows.

Overcoming Challenges and Embracing Emerging Technologies

Despite progress in digital transformation, CMS faces multifaceted challenges in bridging the digital divide among its beneficiaries. Fletcher emphasized the need to reconcile legacy processes designed for a paper-based world with the digital realities of the present, acknowledging the inherent complexities of modernizing entrenched systems.

Looking ahead, Fletcher expressed optimism about the transformative potential of emerging technologies, particularly artificial intelligence (AI), in revolutionizing healthcare delivery. While acknowledging the regulatory constraints and bureaucratic hurdles inherent in government innovation, she underscored the importance of pragmatic, user-centric approaches to technology adoption. Rather than chasing flashy innovations, CMS prioritizes practical solutions that streamline processes and enhance the user experience for beneficiaries. "I think with AI it is going be a wild 10 years, particularly in the healthcare sector with nurse chat bots, etc.," she notes. "How we leverage AI to improve healthcare is going to be fascinating to watch and be a part of."

Embracing Transformative Thinking and Experimentation

CMS embraces transformative thinking and experimentation to push boundaries and drive innovation. Fletcher discussed the significance of piloting and prototyping before full-scale implementation, emphasizing the value of being willing to be wrong and taking calculated risks. By fostering a culture of experimentation, CMS seeks to pilot new solutions, gather real-world feedback, and refine digital services iteratively. The agency employs various tools, including discovery sprints and

design sprints, to identify pain points and iterate on solutions effectively. For Fletcher, the key is experimentation. "If we try something and it fails, we learn from that. It's about being agile, iterating, and improving along the way. We can't be afraid to test and try new things."

Adopting agile development methodologies allows CMS to quickly iterate on digital solutions, respond to user feedback, and continuously improve the quality of services. Fletcher discusses how this iterative approach enables the agency to remain flexible and adaptive in a rapidly evolving healthcare landscape. "One of the things I've been most passionate about," declares Fletcher, "is encouraging teams to think beyond just compliance. How do we move from checking boxes to truly transforming the way we operate?"

Fletcher acknowledges the need to create space for innovation. "It's not just about the technology—it's the people and the processes behind it that matter. Transformation comes when we're willing to rethink the entire system. With AI, it is going be a wild 10 years, particularly in the healthcare sector of, you know, nurse chat bots and really how we leverage AI to improve healthcare is going to be fascinating to watch and be a part of," she explains.

Building a Skilled Workforce

Recruiting and retaining top talent are essential components of CMS's digital strategy. Fletcher highlighted efforts to attract technical talent from diverse backgrounds, including high school interns and seasoned professionals from leading tech companies. By building a diverse team with expertise in engineering, design, and product management, CMS aims to drive innovation and deliver cutting-edge digital solutions. The agency also focuses on workforce development, supporting initiatives to upskill existing staff and cultivate a culture of continuous learning. "That's why I'm talking with you today, Michael," Fletcher acknowledges. "It's about getting our message out and recruiting talent. A most significant impact I can have today involves the hiring of specific talent and new skills that we've never had before and perhaps that we didn't even know we needed."

Looking Ahead

CMS envisions a future focused on driving innovation and improving healthcare delivery. Fletcher emphasized the agency's role as a leader in healthcare technology, striving to build the best software solutions tailored to the needs of beneficiaries and healthcare providers. By leveraging

emerging technologies like artificial intelligence and prioritizing user-centric design, CMS aims to create a more open and transparent healthcare system. The agency remains committed to advancing digital transformation efforts to enhance the quality and accessibility of healthcare services nationwide. "I hope our future is about making some waves," exclaims Fletcher, "doing things differently, and thinking about how we can provide the best healthcare and the best services."

Conclusion

Andrea Fletcher's insights offer a compelling glimpse into the ongoing digital transformation journey at CMS, underscored by a commitment to accessibility, user-centric design, and data-driven decision making. As CMS continues to navigate the evolving landscape of healthcare delivery, its innovative approaches to technology adoption and service design offer promise to shape the future of healthcare for millions of Americans.

Leveraging IT to Enhance Mission Operations

*Insights from Melinda Rogers, Chief Information Officer,
U.S. Department of Justice*

By Michael J. Keegan

Technology and information management are key enablers helping U.S. government agencies to meet their varied missions. As the boundaries of technology continue to be pushed, it is imperative that technology services enable agencies to navigate effectively the dynamic pace of technological change and data proliferation. In an era marked by rapid technological advancement and increasing cybersecurity threats, the role of chief information officers (CIOs) has evolved significantly.

Melinda Rogers, the CIO at the U.S. Department of Justice (DOJ), illustrates this shift, focusing on strategic IT modernization, cybersecurity enhancement, and the adoption of emerging technologies. She joined me on *The Business of Government Hour* to provide valuable insights into the department's IT strategy and painted a comprehensive picture of the department's IT landscape. The following is a summary of our discussion, complemented by additional research.

The Role of IT at the Department of Justice

Rogers begins by describing the mission of the Office of the Chief Information Officer (OCIO) at DOJ, which is to deliver innovative, secure, and high-quality IT capabilities that enable the department to uphold the law and public safety. In line with this mission, Rogers emphasizes the significance of providing technological tools that support DOJ employees in performing their duties faster and smarter.

"The mission of the OCIO," explains Rogers, "is to support the department and its components by providing technology solutions and services that enable our people to carry out their roles and responsibilities effectively." A notable aspect of her approach is the careful balance she maintains between optimizing IT services and ensuring that cybersecurity measures are robust enough to protect the sensitive information DOJ handles. "We focus on ensuring that our IT infrastructure and services are not just reliable, but that they truly enable the mission-critical operations of the department, whether it's in law enforcement, litigation, or administrative functions," she emphasized.

Her office is organized around three core components: service delivery, cybersecurity, and policy and planning. This tripartite structure allows the department to not only maintain operational efficiency but also ensure IT security, manage resources effectively, and provide mission-enabling technologies. The analogy of a "three-legged stool" used by Rogers highlights how these divisions are interconnected and essential for the successful execution of the department's wide-ranging responsibilities, which include law enforcement, civil rights, and national security.

Management Challenges

Rogers identifies funding, major incidents, and people as some of the top management challenges. Each presents unique hurdles, but they also offer insight into the complexities of managing IT at a large federal agency.

1. **Funding constraints:** The ongoing challenge of securing sufficient resources for critical IT and cybersecurity initiatives is at the forefront of Rogers' concerns. As she explains, educating stakeholders and policymakers about the intricate and interconnected nature of IT security and modernization is essential to obtaining the necessary budget. The scale and mission of the DOJ require significant investment in IT, which must constantly evolve to safeguard national security and sensitive data.

2. **Major incidents:** With an understanding that cyber incidents are inevitable, Rogers focuses on the need for a robust response plan. Her approach emphasizes the importance of having playbooks ready for immediate response, isolation of threats, and the remediation of issues, followed by thorough lessons-learned processes to prevent future breaches. This proactive and comprehensive response is vital to ensuring that the DOJ can recover quickly from any attack or disruption.

3. **People:** Retaining and motivating a talented workforce remains a priority for Rogers. She acknowledges the critical role that people play in driving IT innovation and maintaining security, yet financial constraints often pose challenges to retaining top talent. Her leadership philosophy underscores the importance of clear communication, ensuring that team members understand how their work contributes to the organization's overall success. Rogers also emphasizes the need to provide constructive feedback and mentorship, recognizing that motivation is often driven by feeling appreciated and seen for one's efforts.

IT Strategic Vision

"My vision," Rogers describes, "is to create a unified IT strategy that aligns technology investments with the department's mission priorities, ensuring that all components have the technology they need to carry out their work effectively." Her strategic vision for DOJ IT is grounded in five core pillars that collectively aim to deliver exceptional technology services while transforming the workforce to adapt to accelerating technological change.

1. **Enhancing service delivery:** Central to Rogers' vision is improving the DOJ's service delivery to its internal customers, ensuring that IT tools and services help mission staff increase their productivity. This priority centers around establishing a customer-centric culture and improving communication to keep stakeholders informed about IT operations. "I envision a culture of continuous improvement within the OCIO, where we are always looking for opportunities to optimize our systems and processes and stay ahead of evolving threats and challenges," she says.

2. **Elevating cybersecurity:** In a time when cybersecurity threats are rapidly evolving, Rogers prioritizes positioning the DOJ as a standard of excellence in cybersecurity. The department focuses on reinforcing its cybersecurity foundation, implementing zero-trust principles, enhancing cloud security, and managing IT supply chain risks. "We are continuously evaluating our security posture," Rogers notes, "adopting advanced technologies, and refining our strategies to safeguard our systems and data. Given the nature of the mission and the sensitivity of the information we protect, we must stay ahead of evolving threats."

3. **Expanding innovation:** Rogers is keen on encouraging collaboration and removing barriers to technology adoption within the DOJ. Her goal is to leverage new technologies to support DOJ's law enforcement and

"My vision is to create a unified IT strategy that aligns technology investments with the department's mission priorities, ensuring that all components have the technology they need to carry out their work effectively."

Melinda Rogers, CIO, U.S. Department of Justice

mission operations, ensuring that the department stays at the forefront of technological advancements. "We want to leverage innovative technologies," she underscores, "to drive mission outcomes, enhance operational efficiencies, and enable our workforce to work smarter and more securely."

4. **Advancing the workforce:** Recognizing the rapid pace of technological change, Rogers emphasizes the importance of having a diverse and well-trained workforce. This priority focuses on continuously enhancing recruitment and retention strategies while providing opportunities for current staff to upskill in response to evolving IT demands. "We need to invest in upskilling our workforce," says Rogers, "so that they can effectively leverage emerging technologies. It's not just about bringing in new talent but also ensuring that our current

employees have the skills and tools they need to succeed in a modern IT environment."

5. **Increasing financial transparency:** Lastly, Rogers stresses the need for financial transparency in IT spending. With IT becoming ubiquitous in every aspect of DOJ's operations, it is crucial to implement effective financial management practices that maximize the value of technology investments while identifying opportunities for cost optimization.

IT Governance and the Importance of Communication

One of the key themes Rogers emphasized during the conversation was the ongoing challenge and opportunity of managing IT governance across the DOJ's federated model. With fluctuating funding and evolving mission

requirements, Rogers underscores the critical need for consistent communication and collaboration. She notes that regular meetings with the CIOs of the department's largest components have been instrumental in maintaining oversight and driving cohesive governance. These meetings, which have been going on for some time, are a cornerstone of the department's governance structure. "These sessions are vital for us to share information, address challenges, and align our technology initiatives," acknowledges Rogers. "It's a collaborative approach that allows us to ensure that the solutions we implement are not only strategic but also meet the operational needs of each component."

Despite the large and complex nature of DOJ's IT infrastructure, Rogers highlights the importance of leveraging each component's strengths and shared learnings. This federated approach enables the department to maintain a dynamic and responsive IT governance framework, while still allowing individual offices to retain some autonomy. This governance system, supported by a structured process for capital planning and IT procurement reviews, ensures that the department can align its technological resources with long-term mission needs.

Data as a Strategic Asset

Rogers also provides insight into how the DOJ is transforming data into a strategic asset. "We continue to prioritize our data as a strategic asset around which we build systems and services," explains Rogers. With the implementation of a comprehensive data strategy, the department is optimizing its data assets to enhance decision making, encourage openness, and drive better outcomes. According to Rogers, it's not just about collecting data, but about using it in a way that supports decision making, enhances transparency, and improves our overall efficiency. The strategy builds on several federal mandates, including the President's Management Agenda and the Federal Data Strategy, aiming to foster a data-driven culture across the DOJ. "The long-term objective of the strategy," admits Rogers, "remains to optimize the value of DOJ data assets for use in our missions."

The department's incremental and iterative approach to data capabilities allows it to continuously improve its data management and analytics tools. Timely access to reliable data is essential for the successful execution of DOJ's missions, and Rogers is keenly aware of the importance of data governance in enhancing decision-making processes. This approach aligns with broader federal efforts, such as the Foundations for Evidence-Based Policymaking Act, reinforcing DOJ's commitment to leveraging data to meet its objectives efficiently.

Emerging Technologies and Automation

In line with the broader government push to adopt emerging technologies, the DOJ has also been exploring the potential of robotic process automation (RPA) and other innovations. Rogers highlights that RPA has already been employed to automate various business processes, particularly in integrating legacy systems and optimizing workflows. "We have been leveraging the benefits of RPA for some time now," notes Rogers. "We use it in automating business processes, especially when dealing with integrating processes and data between disparate legacy systems." This automation has allowed the DOJ to streamline operations without the need for massive investments in new systems.

Rogers also emphasizes the importance of assessing emerging technologies based on their readiness and their ability to solve clearly defined business problems. Rather than pursuing every new technology that appears, the department takes a deliberate approach to determine whether a particular innovation is suitable for its needs. This disciplined focus on problem-solving ensures that emerging technologies are adopted only when they can provide real value.

Addressing IT Skills Gaps and Retention

In discussing workforce development, Rogers offered a candid view of the challenges involved in recruiting and retaining IT talent in a highly competitive environment. Particularly in the Washington, D.C. area, the competition for skilled workers is fierce, and the DOJ has had to rely on its mission-driven culture to attract and retain talent. Rogers stresses the importance of giving employees opportunities for professional growth, which is key to fostering loyalty and commitment to the organization.

The CIO also addresses the challenge of bridging the gap between technical expertise and leadership. She highlights the need to develop mid-level managers into future leaders, noting that being a good "doer" does not automatically translate into being a good manager or leader. This focus on leadership development is critical to ensuring that the department can cultivate a strong pipeline of future executives who can navigate the complex landscape of public sector IT management.

Leadership Principles and Personal Reflections

When asked about her leadership style, Rogers highlights the importance of leading by example, maintaining integrity, and being adaptable. "Being adaptable and able to pivot quickly is a hallmark of good leadership." Her emphasis on being direct, providing constructive feedback, and maintaining high standards reflects her deep commitment to both the mission of the DOJ and the people she leads. Moreover, her career path, which zigzagged from banking to consumer goods and finally to federal service, equipped her with a unique perspective that has proven invaluable in her role at DOJ.

In her reflection on leadership, Rogers underscores the importance of continuous improvement and delivering value to the American people, principles that have been central to her career, both in the private sector and at the DOJ. "You have to be a servant leader and really listen to your workforce and understand their needs," says Roger. "One of the biggest responsibilities is to ensure that we're providing our workforce with the tools and the resources they need to be successful."

On the Future

Looking to the future, Rogers laid out several key objectives for the DOJ's IT strategy. First and foremost, she aims to continue advancing and innovating in ways that directly support the department's mission. Rogers is particularly focused on ensuring that any new technological initiatives are tied to solving specific business problems, rather than being pursued simply because they are new or trendy.

Additionally, she plans to prioritize the optimization of the DOJ's infrastructure, applications, and platforms, ensuring they are aligned with mission operations. Workforce development will also remain a critical focus, with an emphasis on taking care of the people who drive the department's technological capabilities. Finally, Rogers is committed to increasing financial transparency and ensuring that taxpayer dollars are spent wisely and efficiently.

Conclusion

Melinda Rogers's IT strategy paints a picture of a department committed to leveraging technology as a force multiplier for its mission. By focusing on modernization, cybersecurity, workforce enablement, and data-driven decision making, DOJ is building a resilient and agile IT ecosystem that can support its operational needs today and into the future. Her insights provide a valuable blueprint for navigating the complexities of IT leadership in the public sector, where the stakes are as high as the mission is critical.

Resources

To learn more about the U.S. Department of Justice, go to justice.gov.

To hear the interviews from *The Business of Government Hour*, go to businessofgovernment.org/interviews.

To download, listen, and subscribe to the show, go to Apple Podcast, Spotify or Audible.

To view excerpts of the show, go to youtube.com/businessofgovernment.

Putting Veterans First

Insights from John Boerstler, Former Chief Experience Officer,
U.S. Department of Veterans Affairs

By Michael J. Keegan

Editor's Note: Since this conversation, John Boerstler has transitioned back to the private sector from government service.

In an era where customer experience (CX) is becoming a critical measure of institutional success, government agencies like the U.S. Department of Veterans Affairs (VA) are taking decisive steps to overhaul how they interact with their key constituencies. From slow service delivery to fragmented systems, the VA has struggled to provide timely and efficient services to the veteran community in the past.

John Boerstler, the then chief experience officer (CXO) at the VA, joined me on *The Business of Government Hour* to share his insights into the transformative journey the department has undertaken to improve veteran services, the challenges faced, and the progress they have made under his leadership. Boerstler, a veteran himself, brings a passion for service and a personal understanding of the difficulties veterans face, fueling his commitment to creating a veteran-centered VA. The following is a summary of our discussion, complemented by additional and updated research.

Customer Experience Strategy and Priorities

Boerstler leads efforts that enhance the overall experience of veterans, their families, caregivers, and survivors when they interact with the VA. The primary objective is to ensure that veterans have a seamless, positive, and consistent experience across all touchpoints of VA services, from health care to benefits and memorial services. "Our mission," explains Boerstler, "is about creating a system where veterans feel seen, heard, and understood. It's about transforming their experiences across every touchpoint they have with the VA."

He defines customer experience as the cumulative effect of interactions between the VA and veterans over the course of their relationship and measures overall experience focusing on three key metrics: ease, effectiveness, and emotion:

- **Ease:** How simple it is for veterans to navigate the VA system, such as finding parking or reaching specific service points.

- **Effectiveness:** Whether veterans understand the information provided by their service representatives or health care providers.

- **Emotion:** The emotional resonance, respect, and trust veterans feel during their interactions with VA staff.

Boerstler emphasizes the need to enhance the VA's customer acquisition funnel, aiming to reach the 50 percent of veterans who currently do not access VA benefits or services. This involves improving outreach and simplifying processes to make the VA more approachable. Another core focus is on fostering trust among existing veterans and ensuring they feel supported and valued. This entails empowering VA staff

with the tools, data, and training needed to effectively serve veterans and their families. Ultimately, the VA aims to ensure that veterans can access services across multiple channels. This involves broadening communication strategies and service delivery methods to meet veterans where they are, both physically and digitally.

For Boerstler, his office ensures that the voices of veterans are heard and reflected in the way the VA delivers its services. Doing this involves instilling a customer-first mindset within the VA workforce. Boerstler recognizes the need to promote a culture where VA employees prioritize the needs and expectations of veterans in their daily operations, with an emphasis on empathy, transparency, and respect. "We're dedicated to improving the overall experience for veterans by focusing on their needs and ensuring that our services are accessible, efficient, and empathetic," declares Boerstler.

Part of the mission of his office is to ensure that veterans can access VA services easily, whether online, in person, or over the phone. This involves optimizing digital platforms, streamlining processes, and removing unnecessary bureaucracy. The CXO collaborates with various VA departments, including health care, benefits, and memorial services, to ensure that the experience is consistent and integrated. This collaboration is key to breaking down silos and ensuring that veterans experience a unified VA system. "We aim to integrate our efforts across different departments and services to ensure a cohesive and seamless experience for veterans. It's about breaking down silos and working together to improve every aspect of their interaction with the VA," outlines Boerstler.

Understanding Veterans' Needs: A Data-Driven Approach

In 2016, the trust level with the VA was measured at 55 percent, which was considered low. Over the last nine years, trust has risen to 80.4 percent, reflecting the office's success in improving veterans' experiences. Boerstler emphasizes

that the foundation of the VA's customer experience transformation is a data-driven understanding of veteran needs. "Our approach is fundamentally driven by data," notes Boerstler. "We leverage data to understand where the gaps are in our services and to identify specific areas where we need to make improvements." Through extensive feedback mechanisms, such as surveys, the VA collects millions of data points annually, which help the department gain insights into veterans' pain points and areas needing improvement. These insights are vital in identifying gaps in service and ensuring that every program or initiative the VA rolls out is designed with veterans' needs at the forefront.

A significant part of this process is the use of the Veterans Signals (V-Signals) platform, which gathers real-time feedback from veterans across the country. By asking veterans directly about their experiences with VA services, the department can address issues as they arise, allowing for a more proactive approach to service improvement. Boerstler highlights the importance of leveraging this kind of data not just to respond to problems but to anticipate them, ensuring that veterans have a seamless and efficient experience. "We systematically collect and analyze feedback from veterans to guide our initiatives," Boerstler explains. "This data helps us pinpoint exactly what veterans are experiencing and where we need to adjust our strategies." VA uses a range of metrics to evaluate the effectiveness of its our programs. These include satisfaction scores, service utilization patterns, and other key performance indicators that give us a clear picture of how well we're meeting veterans' needs. "Our data-driven approach," Boerstler underscores, "is all about continuous improvement. By regularly reviewing data and performance metrics, we can make iterative changes and ensure that our services evolve to better serve veterans over time."

Overview of Customer Experience Tools

Customer experience is measured using a combination of quantitative and qualitative methods that capture the customer's perception of their interactions with an organization. In the case of the Department of Veterans Affairs, as explained by John Berstler, the VA uses several tools and strategies to measure and improve CX. These tools help capture feedback, streamline services, and improve the overall interaction between veterans and the VA.

Journey mapping is used to visualize and understand the end-to-end experience of veterans as they interact with various VA services. This tool helps identify key touchpoints, barriers, and emotions associated with each phase of the veteran's journey. By mapping out the veteran's journey, the VA can pinpoint specific moments where friction or confusion occurs.

> *"Our mission is about creating a system where veterans feel seen, heard, and understood. It's about transforming their experiences across every touchpoint they have with the VA."*

John Boerstler, CXO, U.S. Department of Veterans Affairs
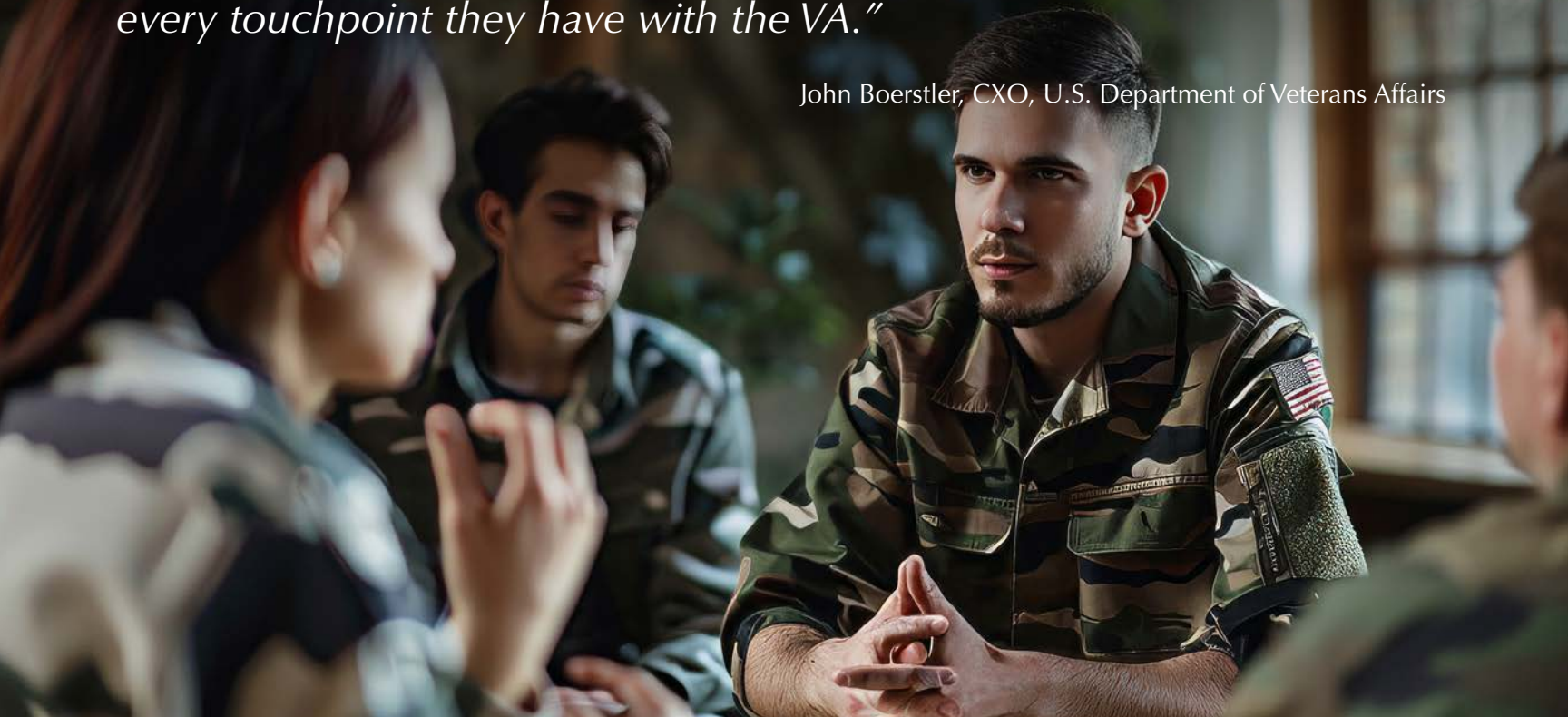
This insight allows the VA to design solutions that streamline processes, improve communication, and ensure veterans receive the support they need at critical stages.

Human-centered design (HCD) is a methodology that the VA uses to design services, policies, and products around the actual needs and experiences of veterans. It involves deep engagement with veterans to co-create solutions that directly address their pain points. HCD ensures that the services the VA provides are intuitive and aligned with what veterans truly need. By involving veterans in the design process, the VA creates more relevant and user-friendly solutions, leading to a better overall experience.

Prioritizing Accessibility and Streamlining Services

One of the key areas where the VA has focused its efforts is in simplifying access to services. The VA serves a diverse veteran population, many of whom live in rural areas or have limited access to technology. In response, the VA has been working on several fronts to improve accessibility. This includes expanding telehealth services, which were especially crucial during the COVID-19 pandemic and streamlining the VA's digital interfaces to make it easier for veterans to navigate the department's many offerings. He notes that telehealth has improved patient satisfaction by providing more convenient

access to care. This is particularly important for veterans who may have difficulty traveling to VA facilities.

Boerstler explains that the VA is also working to reduce redundancy and fragmentation in its services. The department is notorious for having multiple systems for handling different types of claims or services, which often forces veterans to navigate complex bureaucratic processes. By integrating these systems and ensuring that veterans only need to provide their information once, the VA is moving toward a more unified and efficient model of service delivery.

Putting Veterans First

A core principle guiding Boerstler's approach is human-centered design, which means involving veterans directly in the design of services and solutions. This approach is evident in the way the VA has redesigned its website and mobile app, ensuring that they are intuitive and easy to use. Veterans can now access their benefits, health care appointments, and personal information through a more user-friendly interface, significantly reducing the frustration that many had previously experienced with VA technology.

Boerstler also emphasized the importance of a multichannel or omni-channel approach to increasing access to VA services. This involves integrating customer experience, employee experience (EX), and user experience (UX) through various access points such as mobile apps, chatbots, and phone lines like the Veteran Crisis Line. The focus is on meeting veterans where they are and offering 24/7 self-service access.

The VA also recognizes that not all veterans are tech-savvy or have access to reliable internet. In response, Boerstler stresses the importance of maintaining robust in-person services while simultaneously expanding digital options. This hybrid approach ensures that veterans can choose the method of service that best suits their needs, whether that's walking into a VA office, making a phone call, or managing their affairs online. "One example" Boerstler describes," we always go back to the patient experience journey map, which is laser focused on outpatient services and primary care visits. . . .We created a program called the Redcoat Ambassadors who are volunteers . . . that greet patients, similar to Walmart greeters, and helps you find your way and will actually take you by the hand or, you know, or lead you to the clinic or to the section of the facility that you need to get to so that that ease the piece of the journey is solved."

Increasing Trust Amongst Veterans

Rebuilding trust with veterans is a central theme in Boerstler's vision for the VA. "Trust is always our north star in everything we do," he declares. For many years, the VA has faced criticism for inefficiency, long wait times, and subpar care. Boerstler acknowledges this history but is optimistic about the changes underway. He believes that improving CX at the VA is not just about improving services but about fostering a culture of accountability at every level of the organization.

Boerstler also highlights the importance of transparency in building trust. The VA has made efforts to increase transparency by publishing key performance data and openly communicating with veterans about the steps the department is taking to improve. This openness helps veterans feel more confident that the VA is working in their best interest and is committed to rectifying past mistakes.

These efforts are leading to results. For example, veteran trust in VA outpatient care has increased to 91.8 percent—up from 85.4 percent in 2017. Veteran trust has increased during each of the past seven years. This finding is based on a survey of more than 480,000 Veteran patients. This survey mirrors the findings of independent studies. According to a Medicare's nationwide survey of patients, VA hospitals outperformed non-VA hospitals on all 10 core patient satisfaction metrics.

"We're now seeing trust scores increase among veterans, their families, caregivers, and survivors," explains Boerstler, "where they're starting to believe that we are building a VA that can deliver on their needs. . . . That increase in trust has been very encouraging, and it's motivating us to continue pushing forward with these improvements."

Boerstler attributes the overall increase in trust among veterans to several factors related to improving customer experience, access, and engagement. "We've learned so much on quantitative and qualitative measurement on the customer experience side. . . . We're taking all that information and using it to improve how we deliver care and benefits to veterans." He also notes making strides in personalizing the veteran experience, particularly through digital and mobile access points. "Veterans, within the palm of their hand, using biometric identification, can message their providers, refill prescriptions, and check the status of their claims." As outlined earlier, the VA has worked to better assist veterans in their transition from military to civilian life. "We're making sure that we're improving our customer acquisition and funnel, getting in front of these folks much further upstream before they leave active duty." These initiatives contributed to making the VA more responsive, accessible, and aligned with veterans' needs, driving the increase in trust.

Transition from Military to Civilian Life

A critical focus of Boerstler's work is improving the transition process for veterans moving to civilian life. "The first [pain point]," explains Boerstler, "was focused on the process itself—the transition process." He outlined four key pain points:

- **Process standardization:** The current transition process lacks clarity and consistency across organizations. "It's opaque," admits Boerstler, "the process lacks standardization across different organizations and installations, and it's confusing in terms of how we can align individual personal goals with the process itself."

- **Life planning:** Veterans don't have sufficient time to plan for life after service. "They don't have time to develop comprehensive plans for life after the military, so how do we design an experience that meets their most immediate and priority needs during that life transition?" poses Boerstler.

- **Information overload:** Transition seminars often overwhelm veterans with too much information. "There's information overload," he asserts. "We are giving them 'death by PowerPoint' in a very compressed time frame during that transition process, which as you can imagine prevents understanding and actionability."

- **Service connection:** Veterans face challenges navigating the various programs available to them. "The fourth [pain point] is really program and service connection. There's a huge navigation challenge when becoming aware of the numerous resources and programs available to veterans," Boerstler says.

Boerstler notes that the VA aims to address these issues by providing personalized digital tools, such as a checklist tailored to individual needs and goals and ensuring access for spouses and caregivers. "We're rethinking how we can develop a personalized checklist for lack of a better term, in a digital experience, that is presented to them much further upstream . . . so that it's not so overwhelming and confusing," he says.

Looking Ahead

Boerstler is optimistic about the future of the VA and the continued evolution of veteran experience. He envisions a VA that not only meets veterans' needs but exceeds their expectations. The ongoing modernization of the VA's systems, the expansion of telehealth and digital services, and the commitment to human-centered design are all steps toward that goal.

Boerstler's vision for the VA is one where veterans feel truly valued and supported by the institution that was created to serve them. By focusing on empathy, accountability, and continuous improvement, the VA is gradually transforming from an organization burdened by its past to one that is prepared to meet the challenges of the future.

Conclusion

John Boerstler's tenure as chief experience officer at the U.S. Department of Veterans Affairs marks a turning point in how the VA approaches service delivery. While challenges remain, the progress made under Boerstler's leadership provides a strong foundation for the VA's continued evolution, ensuring that veterans receive the care, respect, and services they deserve.

Resources

To learn more about the U.S. Department of Veterans Affairs, go to va.gov.

To hear the interviews from *The Business of Government Hour*, go to businessofgovernment.org/interviews.

To download, listen, and subscribe to the show, go to Apple Podcast, Spotify or Audible.

To view excerpts of the show, go to youtube.com/businessofgovernment.

Enhancing Assisted Acquisition Services

Insights from Corey Nickens, Client Executive of the Innovation Business Unit, Office of Assisted Acquisition Services, U.S. General Services Administration

By Michael J. Keegan

In a dynamic landscape where government agencies strive to deliver better services, foster innovation, and support small businesses, agility and efficiency are paramount. Agencies are looking for more effectives ways to procure essential goods and services by using the best contract vehicles available. The U.S. General Services Administration's (GSA) Office of Assisted Acquisition Services (AAS) plays an integral role in helping federal agencies do just that. Situated within GSA's Federal Acquisition Service, AAS is a full spectrum, cradle-to-grave acquisition, project, and financial management service provider to federal agencies.

Corey Nickens, client executive for AAS' Innovation Business Unit, joined me on *The Business of Government Hour* to discuss the strategic priorities of his portfolio, challenges faced, and innovative approaches taken that defines AAS's mission. As AAS seeks to modernize its processes and enhance user experiences, Nickens articulates a vision grounded in collaboration, emerging technologies, and a deep commitment to understanding customer needs. The following is a summary of our discussion, complemented with updated and additional research.

The Mission of AAS and its Innovation Portfolio

At the heart of AAS's mission is the commitment to deliver efficient, effective, and innovative acquisition solutions that meet the diverse needs of government agencies. Nickens emphasizes, "Our primary focus is to expand our capabilities in areas that directly impact the customer experience." This customer-centric approach is complemented by an innovation portfolio that seeks to streamline processes, making it easier for agencies to procure what they require. AAS is increasingly

focused on leveraging emerging technologies, which Nickens describes as pivotal in enhancing acquisition processes. "We are leveraging innovative acquisition practices," he explains, "to help our partners meet their mission needs in a way that's efficient, effective, and forward-thinking. Our innovation portfolio includes initiatives like promoting agile methodologies, advancing category management, and exploring ways to incorporate emerging technologies into the acquisition process."

AAS offers customized acquisition, project, and financial management support services to federal agencies on a fee-for-service basis.

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>
> Corey Nickens, Client Executive, Innovation Business Unit, Assisted Acquisition Services, U.S. General Services Administration
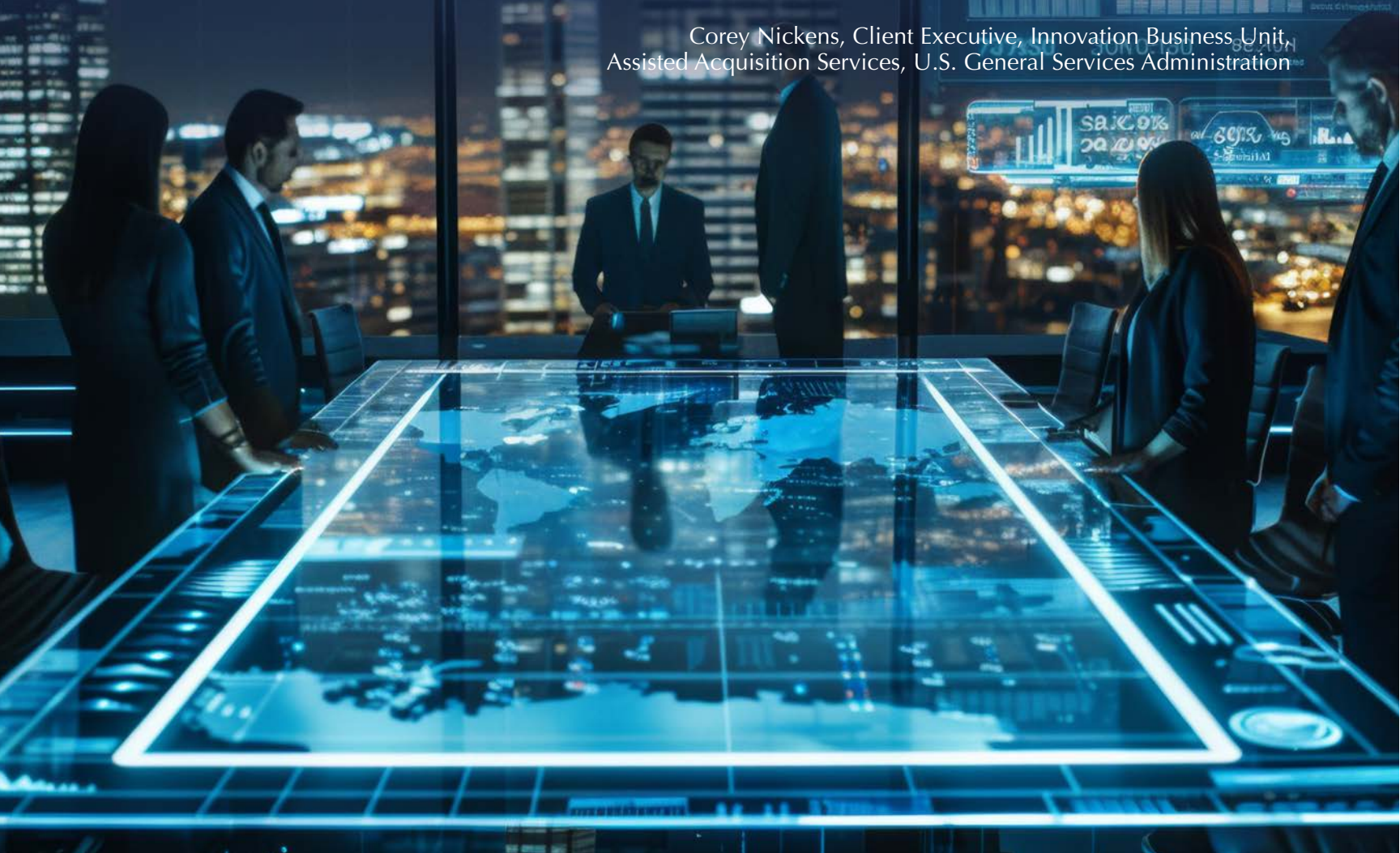
Organizational Realignment

AAS has undergone a significant realignment. Previously, AAS supported federal clients out of 12 Client Support Centers (CSCs) based in the 11 GSA regional offices as well as GSA's central office, then known as FEDSIM. Under this model, AAS provided assisted acquisition services for Small Business Innovation Research (SBIR) Phases I, II and III in four of the AAS CSCs during the period of 2018-2023. SBIR is a competitive program that encourages domestic technology-focused small businesses to engage in federal research and development.

With the realignment, AAS consolidated its 12 CSCs into client-centric groups. In this new structure, there will be three different Service Delivery Models (SDM), which we discuss in more detail later. Nickens explains, "One

of the benefits of realignment has been the ability to scale . . . previously we had this capability in pockets of the organization, most notably our legacy FEDSIM office. . . . With the realignment, it was very important for us to create what we keep saying is a consistent stakeholder experience. At the same time, it was crucial . . . that standardization is not a one-size-fits-all solution for AAS." The three service delivery models achieve that right balance of brand awareness, productivity, and efficiencies for our employees and our external partners, according to Nickens. He described the realignment as a critical step that allowed AAS to streamline its operations, enhance its engagement with stakeholders, and improve the overall consistency and scalability of its services across the organization.

AAS Pipeline Review

Please select the appropriate business unit logo to find specific Pipeline Review information.

| AAS ARMY | AAS AIR FORCE/NAVY SPACE FORCE | AAS CIVILIAN | AAS INNOVATION | AAS DEFENSE |

AAS Army Pipeline Reviews will occur on the Second Tuesday of every month effective 07/09/2024 from 2:00 PM to 3:00 PM, Eastern Time.

Event attendees will be responsible for managing calendar invites for this standing event. For the latest updates, please register for the AAS Second Tuesday GSA Interact Forum by selecting the "Request to Join" button.

Reimagining the Acquisition Pipeline

One of the standout initiatives highlighted by Nickens was the transformation of AAS's acquisition pipeline review process. "We launched a brand-new industry page," he explains, "with the forecasting dashboard. Through this new industry page, we share information and data . . . with industry at one time than we ever have before." Also, AAS expanded pipeline reviews and the new model mirrors the "Industry Day" events, providing opportunities for industry partners to interact directly with AAS business units and gain insights into upcoming procurements.

Nickens emphasizes that these revamped pipeline reviews are pivotal for building trust and transparency with industry partners. "The pipeline data is gathered through consistent processes across all business units," he notes. "It has estimated dollar values and ranges. It has information about upcoming engagement dates." By sharing critical information, such as the expected contract type and upcoming milestones, AAS enables industry partners to plan more effectively and align their resources with upcoming opportunities. This expanded model has been met with positive feedback from industry participants, with attendance ranging from 150 to 200 participants for each session across different business units. These sessions—branded with unique themes such as "First Fridays" and "Third Thursdays"—have become a cornerstone for AAS' engagement with industry, fostering a collaborative environment that benefits both the agency and its partners. These acquisition pipeline reviews illustrate the importance in industry collaboration, and the structured communication channels established for better engagement with industry partners. "We want to ensure that the pipeline," he says, "is visible to our stakeholders, so they can see how their needs are being addressed."

Service Delivery Models

To better cater to the diverse needs of its federal customers, AAS has introduced three distinct service delivery models—FEDSIM, FLEX, and INNOVATE—each tailored to specific contract types and focus areas. Nickens explains that these models were created to provide a consistent stakeholder experience while recognizing that a one-size-fits-all solution is not feasible given the breadth of AAS's $18 billion portfolio.

FEDSIM: This model is dedicated to handling noncommercial acquisitions, specifically cost-type acquisitions like cost-plus fixed fee or incentive fee contracts. By reimagining FEDSIM as a process rather than an organization, GSA aims to streamline complex projects typically associated with cost-type contracts, ensuring they are executed with the necessary rigor and infrastructure. "From a dollar value perspective, this SDM [service delivery model] represents the predominance of AAS business," says Nickens.

FLEX: The FLEX model is designed to accommodate both commercial and noncommercial acquisitions, excluding cost-type contracts. This service delivery model, which focuses on firm fixed-price, time and material, and labor hour contracts, represents the bulk of AAS's business by contract count. "Not looking at dollars, but looking more at just contract actions," explains Nickens," this service delivery model represents the predominance of our AAS business overall." It offers a more agile and streamlined process, making it ideal for projects that require flexibility and speed.

INNOVATE: As the name suggests, the INNOVATE model, "which is in my business unit," notes Nickens, is centered around driving innovation through SBIR, technology transfer research, and commercial solutions openings. This model standardizes the way AAS engages with emerging technologies and innovation-focused projects, making it the go-to for nontraditional contracts that require a more forward-thinking approach. By segmenting its services into these three

models, AAS ensures that it can cater to the unique needs of each project while maintaining operational efficiency and brand consistency across the board.

Nickens highlights that these three models were developed to provide a structured and effective approach for addressing a wide range of acquisition needs, while also ensuring a balance of standardization and flexibility to meet client and stakeholder expectations. By segmenting its services into these three models, AAS ensures that it can cater to the unique needs of each project while maintaining operational efficiency and brand consistency across the board.

Promoting Small Business Innovation

GSA's role in supporting small businesses, particularly through the Small Business Innovation Research (SBIR) program, has been a key success story. He elaborated on how GSA has consolidated its support for SBIR under a single business unit, creating a center of excellence that facilitates the transition from early-stage research and development to commercialization.

According to Nickens, the consolidation of SBIR under the Innovation Business Unit has resulted in a streamlined approach that allows GSA to better serve participating agencies while also providing small businesses with greater visibility and opportunities within the federal market. Since its inception, GSA has awarded contracts to over 90 unique contractors across 29 states and the District of Columbia. This success is a testament to GSA's ability to nurture small businesses and help them scale their innovative solutions.

iP3 Contract Vehicle

One of the most significant developments in AAS's innovation strategy is the introduction of the Innovation in Phase Three (iP3) contract vehicle. Nickens described iP3 as a groundbreaking vehicle designed to address the "valley of death" often experienced by small businesses transitioning from early-stage research and development to full-scale commercialization. iP3 aims to provide small businesses with the visibility and access they need to bridge this gap, enabling them to scale their solutions effectively. "We established," explains Nickens, "the iP3 contract vehicle, which stands for Innovation in Phase III, for the kinds of SBIR and tech transfer requirements that we manage within the INNOVATE service delivery model."

The iP3 contract vehicle would offer a governmentwide contract opportunity, featuring both direct order capabilities and the ability for AAS to order off the vehicle. This will

enable small businesses to tap into phase three opportunities, positioning iP3 as a vital tool for agencies seeking to leverage innovative solutions developed through the SBIR program.

ASTRO Contract Vehicle

Nickens also delved into AAS's ASTRO contract vehicle, which extends the professional services capabilities initially established under the OASIS contract. It is a family of 10 individual Multiple Award (MA) Indefinite Delivery/Indefinite Quantity (IDIQ) Contract vehicles. This vehicle provides a wide range of professional services, from program management and engineering to operations and logistics. "This includes," Nickens describes, "operations, maintenance, readiness, research, development, systems integration, and support for manned, unmanned, and optionally manned platformed and/or robotics, as well as the services that support those platforms and robotics." ASTRO's value proposition lies in its ability to provide a streamlined acquisition platform for leveraged buying of platform related services.

Leveraging Data and Technology

GSA's AAS is not only focused on improving service delivery models and fostering innovation but also on leveraging data and technology to drive better acquisition outcomes. Nickens highlighted how AAS uses data analytics to monitor acquisition performance and identify areas for improvement. This data-driven approach allows AAS to make informed decisions, optimize its service delivery models, and ultimately provide better value to its federal customers. AAS uses data to provide visibility into new opportunities, recompetes, and procurement activities on its AAS Industry Page. He mentions that the "data is gathered through consistent processes across all of our units," and this helps industry partners access detailed information such as estimated dollar values, engagement dates, and milestones. "This transparency allows

ASSISTED ACQUISITION SERVICES (AAS) IS A FULL SPECTRUM, CRADLE-TO-GRAVE ACQUISITION, PROJECT, AND FINANCIAL MANAGEMENT SERVICE PROVIDER.

customers to clearly communicate their objectives. It allows our industry partners to plan and effectively utilize bid and proposal dollar[s]. And it also allows AAS to reduce overall risk in the acquisition process and the acquisition system," he says.

Building a Culture of Collaboration and Excellence

Throughout the interview, Nickens emphasized the importance of building a culture of collaboration and excellence within AAS. The alignment of the service delivery models, the consolidation of the SBIR program, and the introduction of contract vehicles like iP3 and ASTRO are all part of a broader strategy to create a consistent stakeholder experience while fostering a sense of purpose and accountability within the organization.

AAS's efforts to engage industry partners through open pipeline reviews and transparent communication channels are crucial to building trust and credibility. These initiatives have not only improved stakeholder engagement but have also positioned AAS as a preferred partner for both federal agencies and industry participants.

Adoption Strategy and Future Priorities

As AAS navigates its innovation journey, the adoption strategy plays a crucial role. Nickens emphasizes the importance of a user-centered design approach, stating, "We're committed to understanding user needs better and designing solutions that truly work for them." This commitment to user feedback is integral to developing solutions that resonate with agency requirements. Looking ahead, Nickens outlines expanding capabilities in customer experience, strengthening industry partnerships, and integrating the latest technological advancements. These forward-looking strategies are indicative of AAS's readiness to adapt and evolve, ensuring that government procurement remains responsive to the needs of its stakeholders.

Conclusion

In conclusion, the insights shared by Corey Nickens illuminate the transformative journey of AAS within the realm of government acquisition. By prioritizing innovation, customer experience, and collaboration, AAS is not just adapting to change; it is actively shaping the future of procurement in the public sector. As AAS continues to navigate the complexities of acquisition, the focus on emerging technologies and user-centered solutions will be pivotal in driving a more efficient and effective government, ultimately benefitting both agencies and the citizens they serve.

Resources

To learn more about the U.S. General Services Administration, go to gsa.gov.

To hear the interviews from *The Business of Government Hour*, go to businessofgovernment.org/interviews.

To download, listen, and subscribe to the show, go to Apple Podcast, Spotify or Audible.

To view excerpts of the show, go to youtube.com/businessofgovernment.

On Pursuing IT and Digital Transformation at the U.S. Social Security Administration

Perspectives from Marcela Escobar-Alava, SSA Chief Information Officer and Betsy Beaumon, SSA Chief Transformation Officer

By Michael J. Keegan

Marcela Escobar-Alava, chief information officer, and Betsy Beaumon, chief transformation officer from the U.S. Social Security Administration (SSA) joined me on *The Business of Government Hour* to discuss the agency's ongoing transformation efforts, how they are working together to shape a new operating model delivering innovative digital services to the public. Our conversation covers topics topics such as digital modernization, process improvement, cultural change, customer experience, and employee engagement. The discussion provides valuable insights into the challenges and strategies associated with transforming a large, traditionally paper-based federal agency into a more agile and customer-centric organization.

The following is summary of the key themes and insights from our exchange, offering their perspectives on the work they do and the mission they support.

IT Strategy

Escobar-Alava outlines the agency's IT strategy, emphasizing the digital modernization strategy as a "North Star" to guide transformation. The approach aims to expand service options, streamline internal processes, and modernize legacy systems. "Our IT strategy," explains Escobar-Alava, "is about modernizing our systems to improve service delivery, reduce technical debt, and enhance the customer experience."

A significant focus is on adopting a product operating model, using modular service principles, and leveraging artificial intelligence (AI) as an enabler for better customer service.

Marcela Escobar-Alava
Chief Information Officer
U.S. Social Security Administration

Betsy Beaumon
Chief Transformation Officer
U.S. Social Security Administration

SSA also aims to adopt cloud solutions strategically, with a focus on business processes and off-the-shelf tools that can simplify operations, particularly in areas like human capital management. "We're also working very actively with the U.S. Digital Services with Office of Management and Budget to leverage the Technology Modernization Fund," says Escobar-Alava.

Challenges in IT Modernization

Escobar-Alava discusses the issues faced since she took on the role, including a proliferation of applications resulting from a historically siloed, paper-based organizational structure. She refers to "Conway's Law," which suggests that the design of systems mirrors the organizational structure of the organization, as an apt description of SSA's situation. Challenges also include "shadow IT" where decentralized teams have developed their own solutions, and as noted, substantial technical debt caused by decades-old systems. Addressing these challenges involves rethinking the organizational approach and implementing principles that prioritize customer and employee experience.

Digital Modernization and Process Improvement

Our discussion touched on SSA's journey from a paper-based environment to a data-rich digital organization. One of the central goals is to move away from a paper-based environment and fully embrace digital processes. This includes reducing reliance on physical documents, enabling electronic signatures, and allowing customers to upload documents digitally.

By shifting to a digital-first approach, the SSA aims to streamline operations, speed up service delivery, and reduce the administrative burden associated with processing physical documents.

This transformation is driven by the need to simplify and standardize business processes, which had previously varied across different regions. "The strategic vision of

transformation," describes Beaumon, "is really about how we can think differently about how we deliver services, how we engage with the public, and how we can use technology as an enabler." Simplifying and standardizing processes across the organization requires significant effort, as it involves reevaluating existing workflows, consolidating systems, and ensuring that changes do not disrupt the agency's ability to serve the public effectively.

For example, having disparate document management systems and processes designed around paper and wet signatures led to inefficiencies, requiring customers to submit documents in person or via mail, and introduced inefficiencies in processing. This created a fragmented experience for users and made process improvements imperative. A significant aspect of digital modernization is the focus on consolidating document management systems into a unified service that can provide seamless access to customer information.

The SSA's efforts to streamline document submission and classification aim to enhance efficiency and reduce the burden on customers by allowing them to provide documents via their preferred channel. This shift will not only improve customer satisfaction but also reduce operational complexities

for employees. "We have a vision . . . it's about putting the customer at the center of everything we do and also make sure that our employees feel equipped and empowered to do their jobs," notes Beaumon.

Cultural Change and Shifting Mindsets

Transforming an organization as large as the SSA requires more than just technological updates; it demands a cultural shift towards innovation and agility. Both Escobar-Alava and Beaumon discussed the importance of instilling a mindset of continuous improvement and encouraging employees to "embrace new digital tools and processes."

Beaumon provided an example of the SSA's approach to rethinking traditional processes, such as the need for signatures on forms. By reevaluating the risk associated with signature requirements, the agency was able to remove signatures from some forms, thus speeding up processes and reducing the "time tax" on customers. This change not only streamlines workflows but also demonstrates a commitment to considering the customer experience alongside legal and procedural requirements.

Escobar-Alava highlighted the agency's efforts to train employees, foster open communication, and repeatedly share the vision for transformation. This approach is aimed at building understanding and support for the agency's goals. While she acknowledged that shifting from a legacy mindset to a digital-first approach would take time, the steps being taken are setting a solid foundation for long-term cultural change.

> *"Our IT strategy is about modernizing our systems to improve service delivery, reduce technical debt, and enhance the customer experience."*
>
> Marcela Escobar-Alava
> SSA Chief Information Officer

Balancing Innovation with Compliance and Risk Management

As a federal agency, SSA operates in a highly regulated environment with strict compliance and security requirements. Beaumon highlighted the challenge of balancing the need for innovation with ensuring that changes comply with regulations and do not introduce undue risk. For example, eliminating certain signature requirements sped up processes but also required careful assessment of the associated risks and compliance considerations. The need to adhere to federal regulations, such as data security standards, often adds complexity to implementing new digital tools and services, slowing down the pace of transformation.

Vision for the Future: Simplicity, Agility, and Customer Delight

Looking ahead, Escobar-Alava and Beaumon shared a vision of an SSA that is simpler, more agile, and increasingly customer-centric. Escobar-Alava described a future where the agency has a smaller data center footprint towards a more cloud-based infrastructure, which would enable greater flexibility and faster responses to changing needs. She stressed the importance of shifting the IT budget from maintaining legacy systems to investing in growth and transformation initiatives. This shift would allow the agency to innovate more rapidly and deliver better services to its customers.

Both also outlined a future operating model where IT teams could be dynamically assembled to address emerging problems, thereby creating a more adaptable organization. This approach would ensure that the SSA remains capable of meeting new challenges and evolving its service delivery in line with the changing needs of its customers.

Beaumon added that her goal is for customers to feel delighted when interacting with the SSA, experiencing a sense of ease and empathy in every encounter. While acknowledging that not all processes can be made entirely seamless, she emphasized the importance of continuously striving to improve the customer

"Engaging with our customers and staff is critical; we want to ensure their voices are heard in the transformation process."

Betsy Beaumon
SSA Chief Transformation Officer

experience. Beaumon's vision aligns with the broader goals of digital transformation, aiming to make the SSA a model of efficiency and customer satisfaction in the federal government.

Employee Involvement and Input

Involving employees in the transformation process is a key strategy for reducing resistance. The SSA is engaging staff at various levels to gather their input on new processes and systems. By including employees in discussions about changes, the agency helps them feel valued and invested in the outcome.

This approach not only helps to identify potential pain points early on but also allows employees to suggest improvements and take ownership of the transformation. Both guests mentioned a focus on listening to employee concerns and incorporating their feedback into the planning and implementation process. "Engaging with our customers and staff is critical; we want to ensure their voices are heard in the transformation process," Beaumon says.

Training and Upskilling Initiatives

To reduce resistance stemming from fear of new technology or processes, the SSA is providing training and upskilling opportunities for employees. Ensuring that staff members have the skills and knowledge they need to use new systems effectively can help alleviate concerns about job security or role changes. The SSA is also coaching staff on new digital tools and workflows to build confidence and competence. This investment in employee development helps foster a culture of continuous learning and adaptation.

Emphasizing Benefits for Both Employees and Customers

Another key strategy is to emphasize how transformation initiatives will not only improve customer experiences but also make employees' jobs easier. For instance, reducing the number of signature requirements on forms can streamline workflows and reduce the administrative burden on staff,

making their work less tedious. By showing employees the direct benefits of changes to their daily tasks, the SSA can foster more enthusiasm and willingness to adopt new practices. The focus is on creating a win-win scenario where both customers and staff experience the positive impact of transformation.

Phased Implementation and Pilot Programs

The SSA is taking a phased approach to implementing changes, which helps to reduce resistance by allowing time for adjustment. By rolling out new initiatives gradually or starting with pilot programs, the agency can test and refine solutions before scaling them organization-wide.

This approach provides a lower-risk environment for introducing change and allows the SSA to gather feedback, address issues, and make improvements based on real-world experiences.

Conclusion

The interview with Marcela Escobar-Alava and Betsy Beaumon showcases SSA's commitment to transforming into a more efficient, customer-centric organization through digital modernization and cultural change. Their insights highlight the complexities of overhauling legacy systems, the importance of collaboration across the federal landscape, and the need to balance internal process improvements with a focus on user experience. By fostering a culture of innovation and agility, the SSA aims to deliver simpler, more effective experiences for its customers and employees alike, shaping a new model for service delivery within this agency.

> You can listen to the complete version of my interview with Marcela Escobar-Alava and Betsy Beaumon, from the U.S. Social Security Administration at businessofgovernment.org/interviews.

Integrating AI in Government: Lessons, Applications, and Innovations

Michael J. Keegan, Forum Editor

Artificial and augmented intelligence (AI) have proliferated across all sectors of society. With the adoption of AI in government expanding as these technologies evolve and their applications broaden, this is no futuristic concept. It has become an integral part of modern governance, reshaping how the U.S. federal government operates and delivers services. From safeguarding national security to streamlining routine processes, AI technologies are transforming the public sector at an unprecedented pace. This forum is dedicated to exploring the dynamic intersection of AI and government operations, focusing on its current applications, potential, and the critical questions it raises about trust, ethics, and effective implementation.

The U.S. federal government has embraced AI across a spectrum of mission-critical activities. Tax agencies use AI to enhance compliance and detect fraud, while defense agencies rely on it for mission planning and insider threat detection. Generative AI tools are beginning to revolutionize communication, augment decision making, and unlock new efficiencies in public procurement and service delivery. The adaptability of AI offers enormous promise—but it also demands careful oversight and strategic governance.

In recent years, significant strides have been made to institutionalize AI within government frameworks. The American AI Initiative, launched in 2019, underscores a national commitment to AI innovation. Since 2020, the U.S. federal government has taken several steps to address and regulate the use and application of artificial intelligence as well as the burgeoning impact of generative AI (genAI) from the advent of the National Artificial Intelligence Initiative Act of 2020 to the E.O. 14110 on the Safe, Secure, and Trustworthy Development and Use of AI. This executive order builds on prior work to support the development of responsible AI technologies and policies, including the Office of Science and Technology Policy's (OSTP) Blueprint for an AI Bill of Rights and the National Institute of Standards and Technology's (NIST) AI Risk Management. Taken together, these efforts focus on promoting innovation, ensuring ethical standards, managing risks, and safeguarding national security while addressing issues like privacy, bias, and accountability.

The 2020 *The Business of Government* magazine dedicated a forum on the evolving use of artificial intelligence in government, which highlighted the insights, findings, and recommendations derived from three collaborative report on AI and its early evolution published by the IBM Center and Partnership for Public Service. It aimed to spark a conversation on the use of AI, help prepare federal leaders to assess the inevitable changes coming and provide government leaders with insights to navigate this transformative time. This forum continues that conversation bringing together perspectives from a sampling of recent IBM Center reports further exploring the operation and use of emerging technologies like AI and documenting lessons learned, recommendations, and next steps.

- *AI and the Modern Tax Agency: Adopting and Deploying AI to Improve Tax Administration.* This report provides analysis and makes recommendations for the IRS and tax agencies around the world to leverage AI to improve customer service and education, compliance and enforcement, and risk management—and to do so while mitigating risk and building trust using AI.

- *Pathways to Trusted Progress with Artificial Intelligence.* This report examines the governance and applications of AI and how governments need to develop and communicate a framework for the public to understand why AI is being used; what has been done to ensure that the AI is fair, transparent, and accurate; what experiments were done to ensure that the output is reliable; and how public value from AI is being measured and created.

- *Navigating Generative AI in Government.* This report highlights a practical set of considerations and potential actions that can help government agencies to capture benefits and minimize risks from the use and application of generative AI.

- *Government Procurement and Acquisition: Opportunities and Challenges Presented by Artificial Intelligence and Machine Learning.* This report addresses using AI to transform public procurement, analyzing challenges and recommending ways to capitalize on opportunities. It makes recommendations about how to use AI to transform public procurement, which can increase speed, efficiency, and effectiveness in acquiring goods and services that serve public needs by fostering facilitating intelligent automation across the federal acquisition system.

- *Artificial Intelligence in the Public Sector: A Maturity Model.* This report offers public sector leaders a view into the "art of the possible" by emphasizing how AI programs can accelerate the transformation of government programs to better serve the public and do this by offering them framework for establishing a successful AI program. The challenge has always been to design and implement an AI program that has all the critical elements in place to successfully achieve the goal of improved mission delivery and citizen services.

These reports highlight the opportunities and challenges AI presents to federal agencies and offer frameworks for its responsible use. By synthesizing insights from these resources, this forum aims to foster a deeper understanding of how AI can enable smarter, more efficient governance while maintaining the public's trust.

The conversation around AI in government is not just about technology—it is about people, processes, and the policies that shape its use. As we navigate the evolving role of AI, this forum provides a platform to examine how federal agencies can balance innovation with accountability, adapt to emerging trends, and deliver on their mission in a rapidly changing world. Together, we will explore how AI can empower government to serve its citizens better while upholding the principles of transparency, equity, and ethical stewardship.

This technology will remain front and center. The curated insights offered in this forum can help those leading the upcoming presidential transition as they begin to think about what's next and how best to develop safeguards and guardrails for this technology as it continues to expand and evolve.

AI and the Modern Tax Agency

Adopting and Deploying AI to Improve Tax Administration

Edited by Michael J. Keegan

The first contribution to this forum focuses on how artificial intelligence could improve tax administration while minimizing some of the risks. Driven by common access to AI and the potential benefits of generative AI, the U.S. Internal Revenue Service (IRS) and tax agencies around the world are now in the mist of calibrating the right balance for the use and application of this technology. To better understand opportunities and considerations, the IBM Center, in collaboration with the Kogod Tax Policy Center at American University, hosted a global discussion on *AI and the Modern Tax Agency*.

What follows are insights, analysis, and recommendations for the IRS and tax agencies around the world to leverage AI to improve customer service and education, compliance and enforcement, and risk management—and to do so while mitigating risk and building trust using AI. These are excerpted from the IBM Center report *AI and the Modern Tax Agency: Adopting and Deploying AI to Improve Tax Administration* by Caroline Bruckner and Collin Coil.

Opportunities for Tax Administration in the U.S.

The U.S. Internal Revenue Service is embarking on a transformative IT overhaul to modernize the taxpayer experience, made possible by a substantial funding boost from the Inflation Reduction Act (IRA) in August 2022. This funding enables the IRS to invest in new technology and integrate AI across operations, targeting areas like taxpayer filing, enforcement, and internal processes. Despite collecting over $4.9 trillion and processing about 260 million tax returns in FY 2022, the IRS faces challenges due to outdated technology and a budget reduction since 2010. Its responsibilities have also expanded, including administering programs from significant legislative acts.

To manage the growing demands, AI adoption is crucial for the IRS. The IRA funding allocated $45.6 billion for enforcement, $25.3 billion for operational support, $4.8 billion for systems modernization, and $3.2 billion for taxpayer services. AI is already used in some IRS functions, like audit selection and call redirection, but more widespread deployment faces challenges. These include ensuring security, privacy, and compliance with a complex tax code, which AI cannot fully simplify due to statutory intricacies.

International tax agencies, such as those in Australia and Singapore, have successfully implemented AI-driven tools like virtual assistants, which streamline user support. The IRS, however, has yet to deploy a similar accessible AI system, though potential exists. The IRS's extensive digital framework and tax law complexity present unique hurdles to AI deployment, which differs from the seamless user experiences seen in the private sector. For the IRS, these challenges stem from both the extensive existing IRS digital footprint and the overwhelming (and increasing) complexity of U.S. tax laws.

## AI in Customer Service, Outreach, and Education to Support Tax Agencies

Taxpayers in the U.S. often struggle with filing compliance, particularly those with nontraditional income like gig work, which lacks tax withholding, contributing to the tax gap (estimated at $688 billion in 2021). Compliance challenges also stem from low tax literacy; many taxpayers lack the knowledge to navigate complex tax rules. Despite the importance of refunds, especially for low-income individuals, education around tax obligations is limited. Research shows that only a small portion of U.S. taxpayers receive tax education, contributing to errors in filings and unintentional non-compliance.

AI could play a significant role in assisting tax agencies by improving customer service, education, and outreach. AI chatbots and virtual assistants can provide 24/7 help with routine tax queries, allowing human agents to focus on complex cases. AI tools can scan forms, offer guidance in real-time, and personalize assistance based on taxpayer data, reducing filing errors and improving the taxpayer experience. Personalization, facilitated by AI, could make tax agencies more responsive and encourage voluntary compliance, ultimately leading to better outcomes for both taxpayers and tax authorities. Additionally, targeted information campaigns using AI can educate taxpayers on benefits and free assistance programs, further enhancing compliance and satisfaction.

AI in Tax Compliance and Enforcement

When deciding which AI tools to use to improve tax compliance activities, tax agencies should consider which AI implementations have the highest return on investment, weighing factors such as increasing accuracy of tax filings, enhancing the taxpayer experience, and improving compliance with the ever-evolving complex tax rules. One area where AI is likely to have an immediate impact is efforts to combat tax scams.

Disrupting Emerging Tax Scams: AI could provide the "night vision googles" that enable the IRS to detect tax scams and tax cheats shielding income. Recent research advancements on AI anomaly detection can facilitate development of tools that identify filings involving fake W-2 forms, Employee Retention Credit schemes, fraudulent claims for unemployment compensation, or detection of ghost preparers. Using automated AI detection tools can greatly enhance the speed of detecting these scams. AI tools can also help to disrupt scams impacting taxpayers that do not directly appear in annual tax filings. For example, telephone or mail scams use generative AI (e.g., ChatGPT) to design fake IRS correspondence and target elderly populations with "notices" of fines or penalties. Tax agencies will need to deploy AI systems to counter and mitigate the effects of the growing use of generative AI in tax scams.
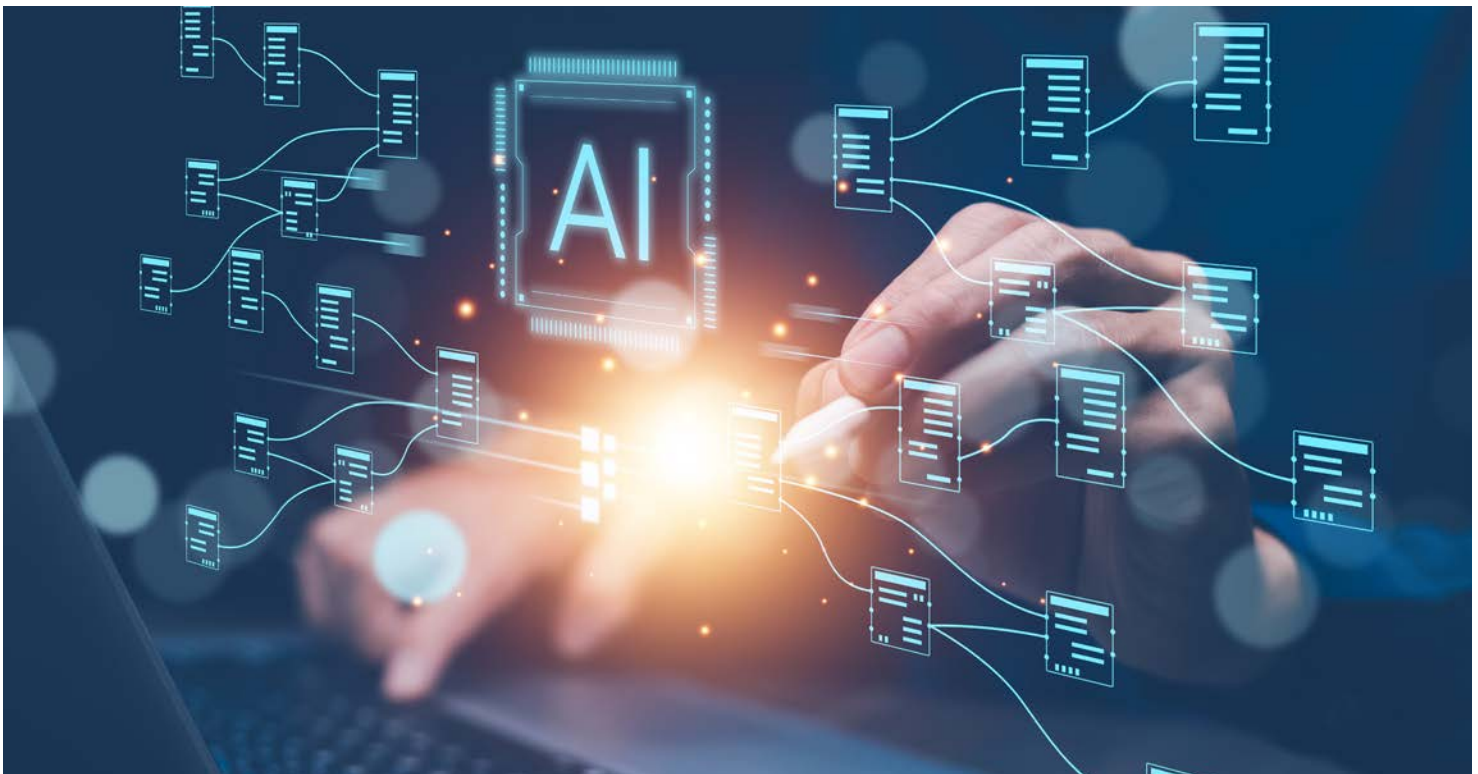
Audit Selection and Process: Audits represent one of the most common reasons taxpayers interact with tax agencies and are often stressful experiences for taxpayers. The IRS recognizes the utility of incorporating AI to help IRS compliance teams better detect tax cheating, identify emerging compliance threats and improve case selection tools to avoid burdening taxpayers with needless 'no-change' audits. Recent AI advances in task-agnostic anomaly detection may also help with managing audit selection processes by reducing the need to train new detection models from scratch every filing season. During the audit process, AI tools may provide invaluable assistance tackling intentional tax evasion schemes, which grow more complex every year.

Going forward, AI will enable tax authorities to identify these schemes and assist auditors during the review process. The IRS has already initiated the rollout of AI models to help identify risk of noncompliance in large partnerships. Overall, AI tools have the potential to enhance the speed and accuracy of audits. This can increase efficiency and enforcement effectiveness. Deploying AI can allow for more audits of highly complex evasion schemes at a lower burden to the public. This will—with compliance and reducing the tax gap—help to restore the public's trust in the IRS' ability to conduct audits expeditiously and fairly.

AI in Governance, Risk, and Authentication for Tax Agencies

Even with many benefits from incorporating AI across tax agency functions, the risks are real. In the U.S., leaders recognize the issues and opportunities widespread adoption of AI across agencies present and have endeavored to lead on AI governance issues and risk mitigation.

Following the Artificial Intelligence in Government Act of 2020 and Advancing American AI Act, President Biden's Executive Order 14110 (EO 14110), issued on October 30, 2023, outlines over 100 actions for safe and responsible AI development, with eight main focus areas:

1. **Safety and Security:** Ensuring AI does not compromise biosecurity, cybersecurity, or infrastructure

2. **Innovation and Competition:** Attracting AI talent, protecting intellectual property, and supporting small business innovation

3. **Worker Support:** Addressing potential workforce disruptions from AI

4. **AI Bias and Civil Rights:** Mitigating biases in AI, especially in criminal justice and federal programs

5. **Consumer Protection:** Enforcing regulations to protect consumers

6. **Privacy:** Safeguarding personal data against AI-related privacy risks

7. **Federal Use of AI:** Creating an interagency AI council to coordinate federal AI use and provide risk management guidance, with a focus on secure generative AI (GenAI) adoption

8. **International Leadership:** Collaborating internationally to establish responsible AI standards

Subsequent guidance from the Office of Management and Budget (OMB) includes strategies for Treasury and IRS implementation of EO 14110, such as designating a Chief AI Officer, establishing AI governance boards, and performing periodic AI risk assessments. This governance framework aims to foster transparency, accountability, and a balanced approach to adopting AI within tax agencies and other federal entities.

How Can Tax Agencies Work to Mitigate AI Risks?

To mitigate AI risks in tax agencies, several strategies have been proposed, focusing on data quality, model fine-tuning, architecture, and human oversight:

1. **Robust Training Data:** Quality data is essential, as biased or erroneous data can lead to unreliable models. Tax agencies should ensure data accuracy, completeness, and representation. Using labeled data from audits and judicial cases can help improve model reliability. Additionally, diversity in the data is critical to avoid perpetuating biases, especially given past concerns with IRS algorithms.

2. **Fine-Tuning Foundation Models:** Using general foundation models, which are initially trained on massive datasets, tax agencies can fine-tune these models with tax-specific data to boost accuracy and relevance, potentially reducing errors in AI outputs.

3. **Model Architectures:** Choosing appropriate AI architectures, such as adversarial AI, can help mitigate biases and enhance performance. An "adversary" model that critiques the main model's outputs can be effective for bias reduction, among other risks.

4. **Human Role in AI Systems:** Human oversight is crucial, particularly in complex or novel tax situations where AI may struggle. Strategies like red-teaming (testing for system weaknesses) and deploying AI as an advisory tool rather than a replacement allow humans to use critical reasoning to verify and interpret AI outputs, which is essential for minimizing risks in tax administration.

These approaches, with a strong emphasis on human involvement, aim to improve AI reliability, prevent errors, and safeguard against unintended biases or privacy violations.

How Can AI Be Used to Build Trust in the Modern Tax Agency?

To build trust in AI, tax agencies need to improve the taxpayer experience and prioritize accuracy, transparency, inclusivity, education, and continuous monitoring:

1. **Transparency and Interpretability:** Tax agencies can increase trust by being open about where and how AI is used, especially in data handling. Clear, interpretable AI models help users understand AI's decisions, making it easier to interact with and trust these systems.

2. **Inclusive Development:** Creating AI tools based on taxpayer needs and ensuring accessibility for all, including those with disabilities or limited digital literacy, enhances trust. Building diverse development teams fosters inclusivity and ensures tools address a broad range of perspectives.

3. **AI Education:** Educating taxpayers on using AI tools and understanding their limitations increases confidence and uptake. Walkthroughs, guides, and transparency about AI's capabilities and limitations can prevent misunderstandings that may erode trust.

4. **Continuous Monitoring and Evaluation:** Tax agencies should regularly update AI models to reflect changes in tax laws, track and address errors, and respond to taxpayer feedback. Publishing reports on AI performance, including benefits and error rates, demonstrates accountability and commitment to accuracy.

These strategies help tax agencies ensure AI tools are reliable, fair, and accessible, reinforcing taxpayer trust.

Pathways to Trusted Progress with Artificial Intelligence

Edited by Michael J. Keegan

The second contribution in this forum examines the governance and applications of AI and how governments need to develop and communicate a framework for the public to understand why AI is being used; what has been done to ensure that the AI is fair, transparent, and accurate; what experiments were done to ensure that the output is reliable; and how public value from AI is being measured and created.

What follows is an excerpt from the IBM Center report *Pathways to Trusted Progress with Artificial Intelligence* by Professors Kevin DeSouza and Greg Dawson that distills findings and recommendations from an expert roundtable of leaders in Australia that address the needs, security, and progress of delivering AI services that benefit citizens and industry. Though this report may offer perspectives from leaders in Australia, the insights present in the report and summarized here are applicable across the world. By addressing the growth and management of AI, and the governance of data aligned to AI strategies, government can take full advantage of the power of AI.

Digital Transformation Initiatives are Revolutionizing All Aspects of the Public Sector.

AI systems will play an important role in transforming government as well as the national economy. Realizing AI's potential will only occur if there is a concerted effort to ensure that citizens trust AI systems, the government, and the government use of AI.

There is a wide assortment of AI systems, and each class of AI systems has their own characteristics. However, at their core, these systems ingest vast swaths of data, employ either supervised or unsupervised learning techniques or both, and can be deployed autonomously, semiautonomously, or in an advisory capacity to augment human decision makers. Consider the following three examples of AI systems successfully deployed in the public sector:

- **Fully Autonomous:** In North Carolina, AI-powered chatbots independently manage simple, repetitive customer service tasks, such as password resets. By automating these interactions without human oversight, the system frees up human agents to handle more complex inquiries.

- **Semiautonomous:** Semiautonomous robots deliver food on college campuses, where students initiate orders via an app. Humans set initial parameters (restaurant and delivery location), but the robots independently navigate routes and avoid obstacles. This technology may expand to roles in search and rescue.

- **Augmented Decision Making:** In African wildlife conservation, AI assists rangers by predicting poaching locations and recommending patrol routes. Here, the AI provides data-driven insights, while humans make final decisions on the patrol plan.

Each of these examples illustrates how AI operates across a spectrum of autonomy, from fully independent systems to those that support human decision making.

While there have been plenty of successful deployments of AI systems, there have also been challenges. For example, an error in the AI for Britain's Universal Credit program caused underpayments for individuals paid multiple times a month, a common situation for lower-wage earners. This oversight placed affected recipients at financial risk, highlighting the need for rigorous testing and oversight in AI systems handling sensitive data. Given such challenges, how can government generate and maintain public trust when it comes to the design, development, and deployment of AI systems?

The Problem of Trust

Trust is a multidimensional concept that can be broken down into three components—ability, integrity, and benevolence. See Table. Trust Elements

Trust Elements

Trust Element Definition	Example in Government	Example in AI
Ability—Belief in the competency of the trust target	Belief that government can provide national security	Belief that the AI can correctly and consistently give the correct answer
Integrity—Belief in trustee's ability to adhere to a set of ethical principles	Belief that government will treat all people equally regardless of their gender or ethnicity	Belief that the AI will mirror society's view of ethical principles
Benevolence— Belief that the trustee wants to do good to the trustor	Belief that government will act in the best interests of the citizen	Belief that the AI has good intentions (or not negative intentions) in its functioning and outcomes

Trust in government in general has seen as steady decline over the last few years, including in Australia. According to the 2022 Edelman Trust Barometer, only 52 percent of Australians trust government to do the right thing (down 9 points from the previous year. Interestingly, 55 percent of Australians say that their default tendency is to distrust something until they see evidence that it is trustworthy. Factors attributable to the declining trust mirror trends around the world, and include decreasing interpersonal trust, perceptions of corruption, and

deeply seated economic worries stemming from COVID-era policies. However, few of these distrust factors appear to directly involve the design or use of information systems, including AI systems.

Trust in AI, particularly in government applications, depends on whether citizens believe the government has the integrity and capability to deploy AI that serves the public interest. Examples illustrate successful AI implementations that foster trust:

1. **Dubai Electricity and Water Authority (DEWA):** The chatbot "Rammas," which responds to residents' queries in English and Arabic, reduced physical visits by 80 percent, showing effectiveness and responsiveness.

2. **Australian Tax Office:** This AI-enabled tax filing tool helps users verify work-related expense claims, ensuring transparency and accuracy.

Despite declining trust in government globally, studies show people regularly use AI in their private lives, with global AI adoption rising to 35 percent, according to IBM. Noteworthy private-sector AI uses include:

- **Zzapp Malaria:** Using AI to identify malaria risk areas to prevent outbreaks

- **Vistra (U.S. power producer):** An AI-powered tool improved monitoring of power plant indicators, optimizing efficiency and reducing emissions

- **Wayfair:** AI-supported logistics changes reduced inbound costs during the pandemic

These examples highlight how AI can boost efficiency and trustworthiness, especially when governments demonstrate responsible and beneficial AI use, potentially reversing trust decline trends.

Identifying Major Themes of AI in Government— Findings from the Workshop

The decline in trust in government directly impacts how much citizens are willing to trust it in the implementation of any powerful new technology. How can public sector leaders create trust in AI, given declining trust overall in government? To address this challenge, the IBM Center for The Business of Government hosted a forum of senior Australian government officials. This meeting provided a first-hand perspective from these officials on the status of AI, issues associated with AI, and the roadblocks and accelerators to implementing, culminating in the identification of five major themes of AI in government:

Theme 1—Government is in the business of providing services, and AI is simply a tool to facilitate that.
Government should remain focused on providing government services, and not get "techno dazzled" by AI.

Theme 2—Government is held to a higher standard of performance regarding AI versus private companies, making explainability and transparency of utmost importance.
Citizens expect government to get things right, and the services facilitated by AI should be sufficiently transparent and fully explained to the citizen.

Theme 3—Government needs to work holistically in terms of defining AI standard practices, operating models, etc. There is too much work and too many risks in implementing AI for standards development to happen only at the departmental level. Rather, this work needs to be coordinated at the highest level of government.

Theme 4—Adequate governance is necessary not only for AI technology, but also for the people who build AI systems and the processes used to build them. Issues emerge not only from the technology itself but also from the people and processes that implement AI.

Theme 5—There is a need to distinguish between different types of AI (fully autonomous, semiautonomous, and augmented) in establishing guidelines and approaches. Not all AI is the same, and costs, benefits, and risks differ for each type of AI. Discussing AI at a more granular can ensure optimal uses.

Recommendations Recommendations for Building Trusted AI in the Public Sector

These themes, coupled with background work done by the authors, gave rise to a list of recommendations to support building trusted AI in the public sector:

Recommendation 1—Promote AI-human collaboration when appropriate. Different kinds of AI call for different levels of human involvement, and citizens are generally more comfortable with a human being involved in providing direct services.

Recommendation 2—Focus on justifiability. Justifiability can be thought of as an outwards-facing business case, and with citizens as a primary audience. The government needs to article why an AI system needs to be developed, the amount of human involvement, and execution strategies.

Recommendation 3—Insist on explainability. Government must be able to explain why the AI came to a proposed decision, including the data that was used for the decision. This becomes increasingly important with decision making for high-stakes outcomes.

Recommendation 4—Build in contestability. Just as citizens can appeal to a person in government about the fairness of a decision, they also need to be able to contest the decisions made with AI. This feedback loop helps ensure that decisions are reasonable and not prone to bias.

Recommendation 5—Build in safety. While AI is deployed, risks can arise that make a safety feedback loop important. Government needs to either create or join an incidents-tracking database to capture and act upon feedback.

Recommendation 6—Ensure stability. The machine learning function in AI means that supporting algorithms will be constantly tweaked in response to new information. Not only does the AI system need auditing prior to implementation; regular examinations will ensure that AI provides stable results.

The emergence of AI in the world, and specifically in the public sector, makes this an exciting era. Given the frantic pace of AI development, government has a responsibility to be more proactive around the design, development, and deployment of AI systems to advance national goals. Government leaders can act now to implement fundamental recommendations to ensure successful AI delivery and that that adequate guardrails are in place to protect their citizens.
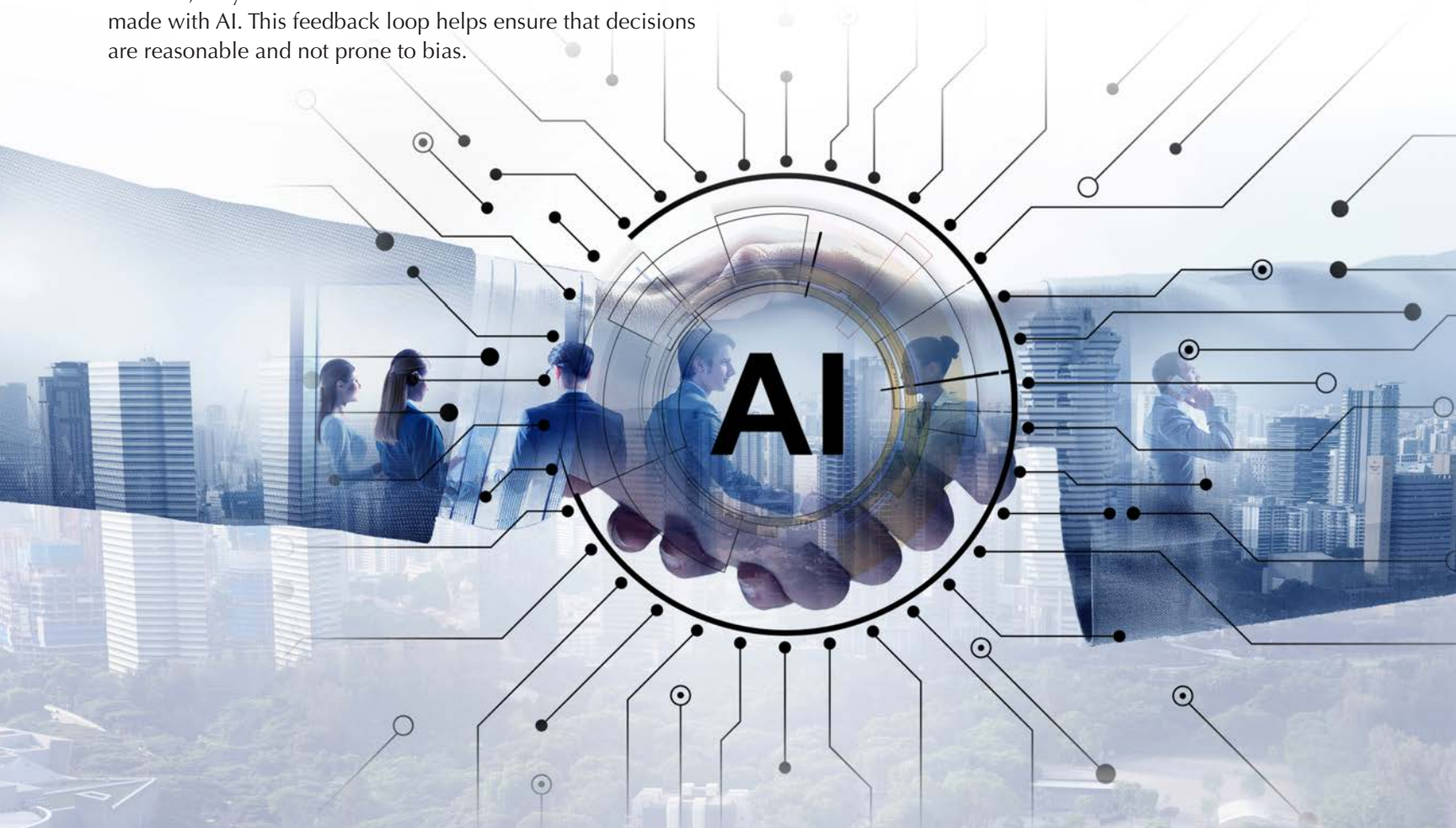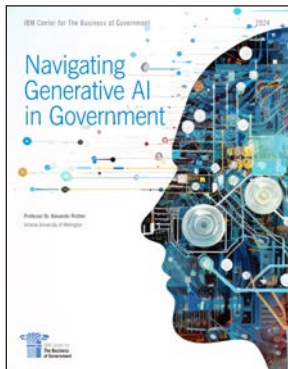
Navigating Generative AI in Government

Edited by Michael J. Keegan

The third contribution to this forum highlights a practical set of considerations and potential actions that can help government agencies to capture benefits and minimize risks from the use and application of generative AI. Generative AI refers to algorithms that can create realistic content such as images, text, music, and videos by learning from existing data patterns. Gen AI does more than just create content, it also serves as a user-friendly interface for other AI tools, making complex results easy to understand and use. Generative AI transforms analysis and prediction results into personalized formats, improving explainability by converting complicated data into understandable content.

It has the potential to revolutionize government agencies by enhancing efficiency, improving decision making, and delivering better services to citizens, while maintaining agility and scalability. However, in order to implement generative AI solutions effectively, government agencies must address key questions—such as what problems AI can solve, data governance frameworks, and scaling strategies, to ensure a thoughtful and effective AI strategy.

What follows is an excerpt from the IBM Center report, *Navigating Generative AI in Government* by Dr. Alexander Richter that captures perspectives from two expert roundtables of leaders in Australia and presents 11 strategies for integrating generative AI in government. Though this report is based on the insights from leaders in Australia, the perspectives shared and summarized here are applicable to leaders around the globe.

Navigating Generative AI in Government— Nine Key Themes

Nine key themes essential for navigating generative AI in government are outlined in this report. These themes are based on insights from two roundtable discussions conducted in May and July 2024. These sessions convened leaders and experts from government agencies alongside generative AI professionals, whose contributions helped identify the critical themes for successful generative AI adoption in government contexts, providing a whole-of-government perspective.

1. **Digital Transformation:** Generative AI supports digital transformation by optimizing workflows and resources, driving efficiency while encouraging innovation and learning—rather than focusing solely on new technology adoption. Successful AI adoption in government requires strong leadership, a clear strategic vision, and an environment supportive of experimentation. Agencies must identify specific use cases where AI can add value and effective AI implementation depends on both technological readiness and rigorous data governance.
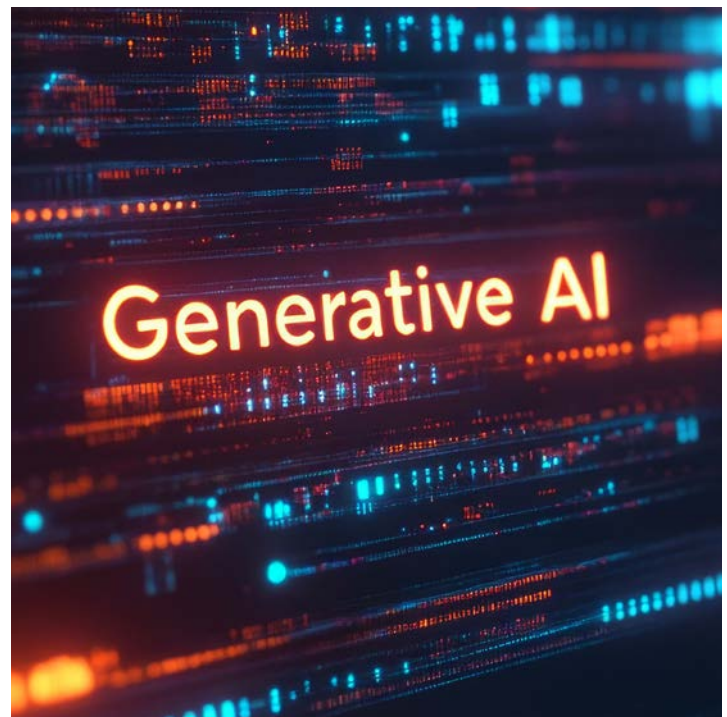
2.   **Use Cases and ROI:** Demonstrating tangible returns on investment through use cases such as automated IT support can justify AI investments and guide future strategies. Communicating the benefits and risks effectively is essential, supported by real-world examples of success. Learning from past successes and failures can guide future strategies.

3.   **Data Foundation:** The effectiveness of generative AI relies on the quality and volume of data including dealing with legacy systems. Robust data management strategies are necessary to ensure data accuracy, relevance, and compliance with regulations. Leveraging high-quality data enables AI models to produce accurate and valuable outputs.

4.   **Ethical Considerations:** Ensuring fairness, transparency, and accountability in AI practices is vital for maintaining public trust and avoiding biases. Recognizing AI as a collaborator rather than just a tool requires governance that aligns AI's actions with human values and societal norms.

5.   **Balancing Experimentation with Risk Management:** Government agencies must balance the need for innovation with robust risk management, updating policies to allow safe experimentation while protecting against real risks.

6.   **Shifting the Cultural Mindset:** Overcoming risk aversion is key to AI adoption. Leadership should foster a culture that encourages safe experimentation and views failure as a learning opportunity. A culture that actively encourages innovation and calculated risk-taking, rather than simply tolerating it, can help overcome risk aversion.

7.   **Skills Development:** Continuous education and training programs are essential to equip the workforce with the necessary expertise to implement and manage AI technologies.

8.   **Diversity of AI Tools:** Leveraging a variety of AI tools tailored to specific government needs ensures effective and secure deployments. The presence of multiple AI tools allows agencies to address a broader spectrum of challenges by selecting the most suitable technology for each specific task.

9.   **Human-AI Collaboration:** Designing flexible AI systems that complement human roles enhances collaboration and decision making. These dualities highlight the need for a nuanced understanding of how AI is integrated— ensuring that the collaboration between AI and humans is both productive and contextually appropriate.

Obstacles to Adopting Generative AI

The adoption of generative AI is hindered by obstacles related to knowledge, skills, and attitudes.

- **Knowledge:** Many organizations lack a clear AI strategy, leading to confusion in defining roles for humans and AI, along with inadequate AI literacy. This results in misunderstandings, unrealistic expectations, and reluctance to collaborate with AI.

- **Skills:** Effective AI adoption requires new communication skills and role adaptations. Challenges in natural language processing and insufficient digital infrastructure make integration difficult, fueling mistrust and fear.

- **Attitude:** Cultural and ethical concerns, fears about job security, and inadequate leadership support create resistance to AI. Trust in AI is fragile, especially regarding ethical concerns, biases, and complex decision-making areas.

These obstacles collectively slow generative AI adoption and integration within organizations.
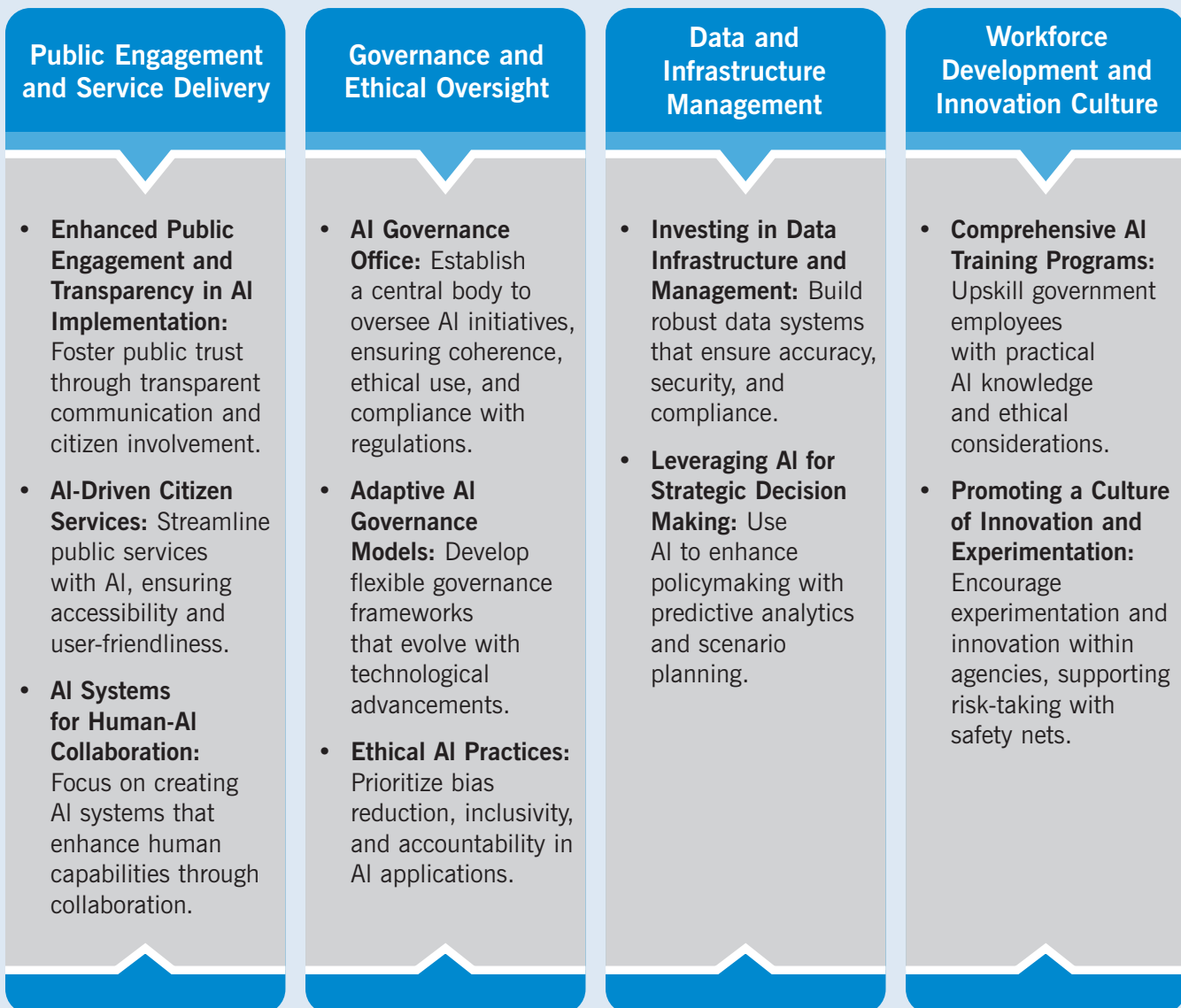
Strategic Pathways for Integrating Generative AI in Government

Along with identifying these themes, key strategic actions for responsibly integrating generative AI into government operations were curated from the roundtable discussion. To successfully integrate generative AI, government agencies should consider establishing a AI governance office to oversee initiatives and ensure ethical standards and set clear guidelines for data governance. In addition, empowering solution owners with governance capabilities will enhance model transparency and ensure agility, while maintaining coherence across government AI strategies.

Developing adaptive governance models, investing in robust data infrastructure, promoting a culture of innovation, and implementing comprehensive training programs are critical steps. Additionally, expanding AI-driven citizen services and enhancing public engagement and transparency will build trust and ensure that AI initiatives align with public values.

Figure: Strategic Pathways for Integrating Generative AI in Government summarizes the preceding recommendations.

Public Engagement and Service Delivery

- **Enhanced Public Engagement and Transparency in AI Implementation:** Foster public trust through transparent communication and citizen involvement.

- **AI-Driven Citizen Services:** Streamline public services with AI, ensuring accessibility and user-friendliness.

- **AI Systems for Human-AI Collaboration:** Focus on creating AI systems that enhance human capabilities through collaboration.

Governance and Ethical Oversight

- **AI Governance Office:** Establish a central body to oversee AI initiatives, ensuring coherence, ethical use, and compliance with regulations.

- **Adaptive AI Governance Models:** Develop flexible governance frameworks that evolve with technological advancements.

- **Ethical AI Practices:** Prioritize bias reduction, inclusivity, and accountability in AI applications.

Data and Infrastructure Management

- **Investing in Data Infrastructure and Management:** Build robust data systems that ensure accuracy, security, and compliance.

- **Leveraging AI for Strategic Decision Making:** Use AI to enhance policymaking with predictive analytics and scenario planning.

Workforce Development and Innovation Culture

- **Comprehensive AI Training Programs:** Upskill government employees with practical AI knowledge and ethical considerations.

- **Promoting a Culture of Innovation and Experimentation:** Encourage experimentation and innovation within agencies, supporting risk-taking with safety nets.

As government agencies increasingly embrace digital transformation, the integration of AI is not just an opportunity but a necessity for staying ahead in a rapidly evolving technological landscape.

This report has identified key themes and obstacles that government agencies must navigate to fully harness the benefits of generative AI. From ensuring robust data governance and ethical AI practices to fostering a culture of innovation and continuous learning, the path to successful AI integration is complex but achievable. By addressing these challenges with a strategic and thoughtful approach, government agencies can leverage AI to deliver public value in ways that were previously unimaginable.

Moreover, the adoption of AI in government must be underpinned by a commitment to transparency, public engagement, and ethical accountability. As AI systems take on more significant roles in public administration, it is crucial that they are designed and implemented with the public's trust and confidence in mind. This includes not only mitigating biases and ensuring fairness but also actively involving citizens in the AI journey through open communication and opportunities for feedback.

The insights provided in this report offer a roadmap for government agencies to navigate the complexities of AI integration. Establishing an AI Governance Office, investing in data infrastructure, promoting a culture of experimentation, and enhancing public engagement are all critical steps toward realizing the full potential of AI in government. As government agencies move forward with AI adoption, it is important to remember that the success of these initiatives hinges not just on the technology itself but on the people, processes, and principles that guide its use. AI should be seen as a tool that, when combined with human ingenuity, can drive meaningful improvements in public service delivery and policymaking.
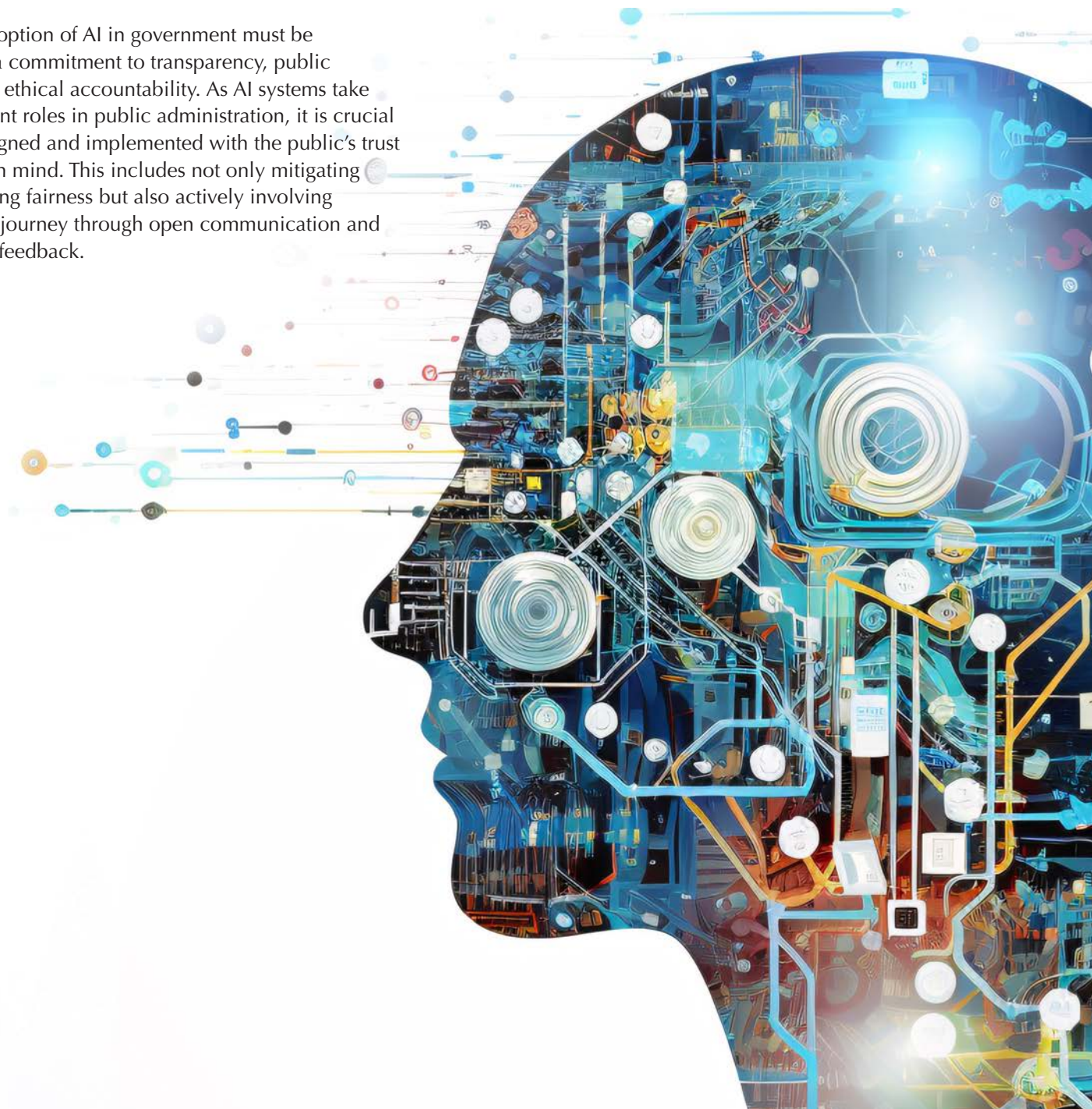
Government Procurement and Acquisition

Opportunities and Challenges Presented by Artificial Intelligence and Machine Learning

Edited by Michael J. Keegan

The fourth contribution in this forum addresses using AI to transform public procurement, analyzing challenges and recommending ways to capitalize on opportunities. It makes recommendations about how to use AI to transform public procurement, which can increase speed, efficiency, and effectiveness in acquiring goods and services that serve public needs by fostering facilitating intelligent automation across the federal acquisition system.

What follows is an excerpt from the IBM Center report *Government Procurement and Acquisition: Opportunities and Challenges Presented by Artificial Intelligence and Machine Learning* by Mohammad Ahmadi and Dr. Justin B. Bullock, which recommendations about how to use AI to transform public procurement. This can increase speed, efficiency, and effectiveness in acquiring goods and services that serve public needs by fostering facilitating intelligent automation across the federal acquisition system.

Challenges Facing Modern Government Procurement

To serve the public, governments procure a wide variety of goods and services. The acquisition process lies at the heart of agencies' abilities to provide goods and services in an effective, efficient, and equitable manner Given high agency investments—annual procurement spend exceeds $500 billion—and the complexity of government processes, procurement is an extremely challenging task to perform well. This impacts governments worldwide, and particularly large federal governments such as that of the United States.

Indeed, congressional panels and executive reports often highlight the challenges of procurement and acquisition, including prominent GAO reports addressed in this report in more detail. A 2018 GAO report in particular highlights a number of important challenges for improving federal procurement practice:

1. Requirements definition

2. Competition and pricing

3. Contractor oversight

4. Federal procurement data

5. Acquisition workforce

While these challenges do not represent the only hurdles facing procurement reform, they are challenges that AI and machine learning tools can help to address. AI applications can help improve effectiveness and efficiency across the U.S. federal procurement process. Recent studies in public administration and public management reflect a growing consensus that AI and ML tools, if carefully constructed and deployed, can help agencies complete certain types of tasks for governments. Opportunities exist for AI and ML tools to improve the functioning of procurement, but these opportunities will come with their own challenges that need to be carefully manage.

Connecting Procurement Challenges with AI Opportunities

This section highlights the AI use cases outlined in this report connecting them to a specific procurement related challenge facing U.S. federal government agencies.

Requirements definition challenge. Government procurement requires well-defined, achievable, and verifiable requirements to ensure successful contract outcomes. However, defining these requirements is often challenging due to workforce shortages, frequent turnover, and the complexity of the process, which can lead to vague or unrealistic specifications. This problem is evident in certain Department of Defense contracts, where unclear definitions have caused delays and increased costs, despite years of reforms aimed at improving procurement practices. Artificial intelligence offers promising tools to aid in specifying requirements.

AI Procurement Opportunity 1: Specification Definition. AI offers a valuable solution to improve specification accuracy. By analyzing data from past contracts, machine learning algorithms, such as recommender engines and ranking systems, can help procurement teams define requirements that are clearer, feasible, and verifiable. These tools assist by suggesting similar specifications from historical data, enabling more accurate predictions of required goods and services, especially for repeat procurements.

AI Use Case 1: Recommendation Algorithms. Additionally, deep learning models trained on historical data can help assess if specifications are realistic, providing agency staff with an added layer of verification. However, AI should complement rather than replace human expertise, enhancing efficiency in defining needs while relying on human judgment for final decisions. This approach aligns with the recommendation algorithms used by platforms like Amazon or Netflix, which effectively anticipate user preferences based on past behavior, and can similarly support procurement agents in aligning contract specifications with agency requirements.

Competition and pricing challenge. Federal procurement regulations mandate fair and reasonable pricing through competitive bidding, though agencies sometimes use sole-source contracts with only one supplier. Ensuring fair prices remains challenging, despite efforts like broadening competition, conducting market research, adopting private sector practices, and using interagency contracts. GAO reports little change in competitive versus non-competitive contract rates, with reasons including vendor preference, restrictive policies, and inadequate planning.

AI Procurement Opportunity 2: Improving Market Knowledge. AI offers promising solutions to support market research, acquisition planning, and price assessment. Machine learning can improve market knowledge by aiding acquisition teams in performing market research, planning acquisitions, and checking price fairness. For instance, virtual assistants powered by natural language processing (NLP) could search datasets and archives to provide answers and references for market questions, potentially saving time and resources. Deep learning can help identify patterns in acquisition planning issues, ensuring timely and cost-effective procurement.

AI Use Case 2: Natural Language Processing. NLP technologies, such as those in virtual assistants like Siri and Alexa, could be trained to assist with specific acquisition tasks, making market research faster and more efficient. Language models like ChatGPT can also summarize feedback, draft reports, answer complex questions, and conduct document searches. However, while AI tools offer efficiency, they should enhance human decision making rather than replace it, and ethical, privacy, and security concerns must be managed carefully as AI adoption grows in federal procurement.

Contractor oversight challenge. Contractor oversight ensures vendors deliver goods or services according to contract terms, but this process poses challenges. Uncertainty about the extent of oversight needed, combined with the technical expertise required to inspect deliveries, creates oversight gaps—exacerbated during COVID by staffing shortages and remote work environments.

AI Procurement Opportunity 3: Oversight. AI presents solutions for enhancing oversight through image and video analysis. Machine learning algorithms can detect defects, assess risks, and improve quality control efficiently and at

lower cost. Computer vision, paired with drones or robotics, could support quality inspections in diverse areas such as construction, vehicle maintenance, and product evaluation. However, sufficient training data is essential to make these systems effective.

AI Use Case 3: Some Market Offerings for Computer Vision and Machine Learning. Several AI tools showcase how image processing aids oversight. Amazon Lookout for Vision detects defects by analyzing images and generating a dashboard for process monitoring. Crowd AI uses visual inspection to reduce manual inspection time, boost defect detection accuracy, and increase equipment life across various industries. Google's Visual Inspection AI simplifies defect detection in manufacturing with minimal training data.

Federal procurement data challenge. The Federal Procurement Data System-Next Generation (FPDS-NG), the main repository for federal procurement data, faces challenges with data reliability and validation. Despite initiatives to improve data quality, GAO found FPDS-NG data to be unreliable at detailed levels and lacking in adequate validation processes.

AI Procurement Opportunity 4: Data Acquisition, Capture, and Storage. AI offers an opportunity to enhance data acquisition, capture, and storage in procurement. Automated data capturing can reduce manual data entry time, cut costs, and minimize errors. Techniques used by social media and e-businesses to track platform activity could be adapted to streamline federal acquisition data collection.

AI Use Application 4: Automated Data Capturing. Tools such as Optical Character Recognition (OCR) and Intelligent Document Recognition (IDR) leverage machine learning to digitize and extract data from physical documents, such as invoices and reports. Software like IBM Datacap combines natural language processing, text analytics, and machine learning to automate data capture from printed sources, supporting accurate, efficient data handling for procurement processes.

Acquisition workforce challenge. The federal acquisition workforce, responsible for managing billions in contracts, faces persistent challenges like understaffing, high workloads, and insufficient training. Although efforts like the Defense Acquisition Workforce Development Fund (DAWDF) support recruitment and training within the Department of Defense, ongoing gaps highlight the need for improved training and early planning.

AI Procurement Opportunity 5: Improving Task Performance. AI can play a significant role in enhancing task efficiency for federal acquisition employees by automating repetitive and time-consuming tasks, allowing personnel to focus on more complex and engaging work. Intelligent automation can speed up document processing and data interpretation, which are essential for efficient planning and decision-making.

AI Use Application 5: HHS and Grant Funding. For instance, the Department of Health and Human Services (HHS), which oversees about 70 percent of federal grant funding, has applied AI to streamline its grant administration processes. By using AI and blockchain technology in its Grant Recipient Digital Dossier, HHS consolidates and summarizes data about prospective grantees from various sources, cutting down risk assessment time from hours to minutes. This approach not only saves time but also improves risk identification, helping administrators focus on high-priority issues. With this AI-driven efficiency, HHS could save approximately $142 million annually.

Managing the Use of AI for Overcoming Procurement and Acquisition Challenges

Using AI in federal acquisitions requires long-term investment and constant improvement, best tackled through an artificial intelligence strategy. Indeed, creating value by using AI for acquisition requires a well-managed and coordinated long-term strategy. The strategy may begin with executing small AI projects, for example by using recommendation engines or knowledge graphs for training on existing acquisition data, to help the acquisition workforce define specifications for new needs. Appropriate training will allow the acquisition workforce to know the latest AI breakthroughs and their potential applications in the acquisition process.

- **Building a Maturity Model:** The adoption of AI technologies in procurement agencies requires a structured maturity model to manage technical requirements, long-term functionality, and continuous improvement. A maturity model offers a roadmap for enhancing organizational performance, meeting objectives, and assessing capacity to avoid issues such as AI decay and bias. The model's levels vary, with frameworks like the AI Maturity Playbook and the IBM Center's maturity model for public agencies suggesting stages from entry-level to mastery, alongside six key dimensions for success: data, computational systems, analytical capacity, innovation, ethics, and strategic vision.

- **Leveraging Power of Data:** Data is foundational, with structured, unstructured, and semi-structured forms all necessary for building reliable AI solutions, although unstructured data remains underutilized. Automating data collection is also recommended for efficiency and accuracy, enabling insights throughout the acquisition process.

- **Capacity Building:** Building in-house AI capabilities is a competitive advantage, enabling agencies to collaborate across departments, develop specialized solutions, test algorithms, and maintain an effective feedback loop for continuous improvement. However, this requires financial support, as resources are essential for developing the workforce, infrastructure, and tools for effective AI integration. Managers should also establish performance indicators to measure AI adoption progress.

- **Getting Financial Support:** Financial support is essential for AI adoption. Adequate resources and performance indicators for measuring AI integration can help transition agencies toward an AI-driven future.

- **Task management:** It is critical, requiring agencies to determine which procurement tasks AI should automate, augment, or leave to humans based on task complexity and uncertainty. For example, the Social Security Administration (SSA) uses AI to streamline data organization for judges in disability benefit decisions, preserving human judgment where complexity and nuance are needed. This approach aligns with the literature, which advocates using AI for straightforward tasks and reserving complex decisions for human intervention.

- **Avoiding Automation Bias:** Finally, risks like automation bias and "administrative evil" must be mitigated. Automation bias, the over-reliance on AI, can impair judgment, while "administrative evil" refers to potential ethical harms if AI systems lack oversight, leading to dehumanization or misalignment with public values. Overall, maturity models, ethical guidelines, and ongoing research provide frameworks to balance AI's benefits and risks in government procurement.

This report reflects an optimism that, if properly deployed and managed, AI tools could significantly improve the effectiveness and efficiency of government procurement. However, significant risks are involved with these tools and their deployment, so management needs to deploy them carefully.
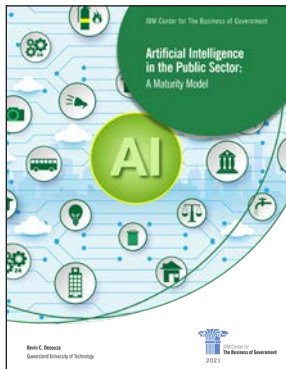
Artificial Intelligence in the Public Sector

A Maturity Model

Edited by Michael J. Keegan

The fifth and final contribution to this forum provides public sector leaders a view into the "art of the possible" by emphasizing how AI programs can accelerate the transformation of government programs to better serve the public and do this by offering them framework for establishing a successful AI program. The challenge has always been to design and implement an AI program that has all the critical elements in place to successfully achieve the goal of improved mission delivery and citizen services.

Recognizing the need to address this challenge, the IBM Center commissioned a report in 2018 by Professor Kevin DeSouza, *Delivering Artificial Intelligence in Government: Challenges and Opportunities*, which proposed an initial maturity model that gave public agencies a starting point for developing an AI capability.

Since that time much has changed in the use and application of this technology, and as such, an opportunity arose to fine tune this model, based on extensive research on how the public sector was deploying AI, documenting successful use cases and highlighting pitfalls and lessons learned. Professor DeSouza offers this revised maturity model with significant input from frontline practitioners and academic in a follow up report, *Artificial Intelligence in the Public Sector: A Maturity Model*. What follows is an excerpt from that updated report highlighting aspects of the maturity model and insights that may help government agencies get the highest value from their efforts and investments in AI.

A Maturity Model for Designing, Developing, And Deploying AI

Maturity models are popular in a wide assortment of fields from quality management to software engineering, education and learning, organizational design, and even information systems. While each maturity model has its own peculiarities, they all provide an evolutionary framework to guide improvements and/or advancements on one or more domains.

The domain of interest in this report is AI design, development, and deployment efforts in the public sector. The maturity model has two dimensions. The first dimension represents the critical elements that need to be managed as AI projects are designed, developed, and deployed in the public sector. The model indicates that agencies must show proficiency on six core elements and those elements can be divided into two domains: technical and organizational.

- Technical domain includes big data, AI systems, and analytical capacity.

- Organizational domain includes innovation climate, governance and ethical frameworks, and strategic visioning.

The second dimension outlines the maturity levels that begin with ad hoc, followed by experimentation, planning, and deployment, scaling and learning, and finally, enterprisewide transformation.

Exploring Dimensions of the Maturity Model

The proposed maturity model outlines six core elements and five maturity levels for guiding AI initiatives in the public sector. Public agencies need to start small and be aware of the required upfront financial and time investment for data governance, computational systems, and analytical capacity.

- **Big Data:** AI relies on big data for its design and development, but once deployed, enables organizations to make sense of large data reservoirs through the application of machine learning algorithms. In an ideal world, public agencies should be able to access, integrate, and leverage data of interest in an effective and efficient manner. The COVID-19 pandemic is cited as a case study where AI-enabled data tools were quickly mobilized for public health, specifically in contact tracing and risk assessment.

- **AI Systems:** Computational systems are the engines that transform data into actionable insights and outcomes. As discussed earlier, AI applications leverage a range of computational techniques to ingest, analyze, visualize, and even act on data. AI can fully or partially automate tasks through the power of predictive data analytics, fed by multiple sources of historical and real-time data; learn from previous interactions and self-decide though the power of machine learning; and in some cases, such as chatbots, interact with users through natural language processing.

- **Analytical Capacity:** AI systems are only as good as the human analytical capacity that support them and refers to the human element related to designing, developing, and deploying AI. Organizations need a well-trained workforce that is analytically aware and has the aptitude to leverage data to derive evidence-driven insights. Public agencies face numerous challenges when it comes to recruiting, developing, and retaining analytical talent, including the general lack of analytic-savvy people in both government and in the general recruiting pool. Moreover, regardless of existing analytical talent, the need for the presence of deliberate mechanisms to leverage that talent to create organizational value is pivotal.

- **Innovation Climate:** Public agencies need to innovate if they are to deliver on their objectives given the ever-evolving environmental pressures. While innovation in the public sector continues to garner interest, we still see agencies struggle when it comes to digital transformation efforts. Experimentation is critical to the ability to innovate. Yet in public agencies, experimentation is often shunned upon due to the perception of being deemed a failure and wastage of public resources. Data challenges such as incomplete and siloed datasets and a lack of
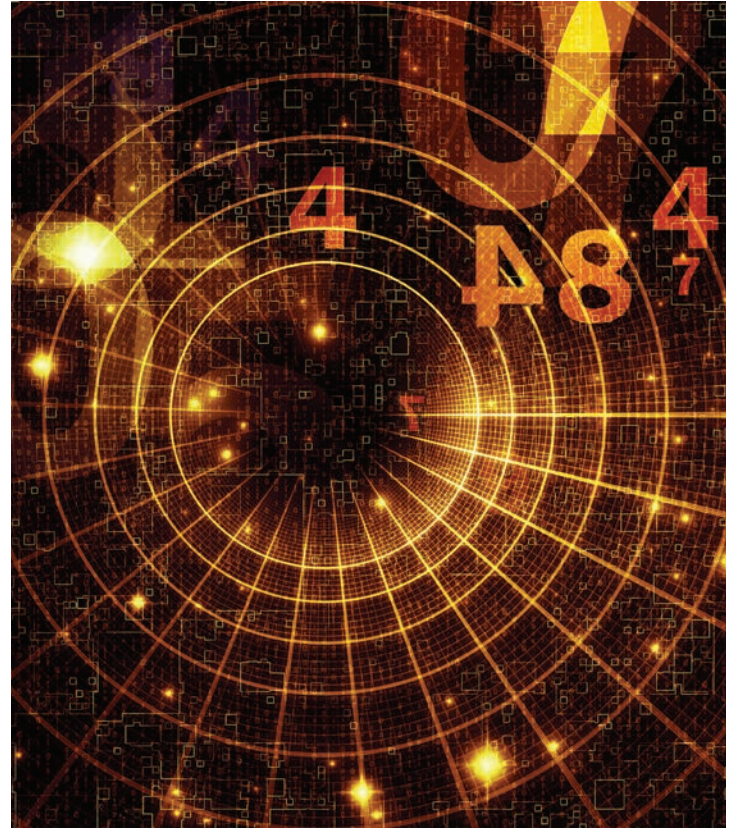
investment necessary to upgrade legacy computational systems can significantly impact the ability of public agencies to innovate.

- **Governance and Ethical Frameworks:** Governance and ethical frameworks are vital as oversight mechanisms to ensure that AI is deployed in a responsible manner and advance public value. Governance frameworks establish accountability and assign responsibility when it comes to AI design, development, and deployment. They serve as critical coordinating mechanisms to ensure that agencywide economies of scale, learning, and value can be secured. Ethical frameworks ensure that AI mitigates issues such as bias, discrimination, and harm. When AI fails or causes harm, these frameworks can assist in providing recourse mechanisms to compensate victims.

- **Strategic Visioning:** Leadership at public agencies needs to play an active role in creating environments that are supportive of the development of AI. How they are designed, developed, deployed, and regularly enhanced need to be incorporated into the long-term strategic plans of agencies. A good strategic visioning also considers the important fact that deploying AI can change the function and design of agencies given the affordances of AI for changing work processes and engaging citizens.

Accessing Levels of Maturity

The six elements described above need to be assessed both individually and collectively in terms of their maturity. The maturity levels are noted below and go in increasing order of sophistication.

- **Ad Hoc:** The public agency does not have a plan in place to design, develop, and deploy AI. Datasets remain an underutilized asset, computational systems lack

necessary capabilities, and analytical capacity is limited or unavailable. There is limited appetite to innovate with AI, and this inertia also plays out with the absence of governance and ethical frameworks for AI.

- **Experimentation:** The public agency is actively experimenting with AI. Experimental projects leverage datasets, computational systems are being designed and/or upgraded, and analytical capacity is being mobilized around these projects. There is a growing interest in learning from early experimental efforts, and there is a recognition to invest in designing ethical and governance frameworks that support responsible experimentation and innovation.

- **Planning and Deployment:** The public agency has put in a place a plan to design, develop, and deploy its first set of AI projects. Datasets for the initial set of AI projects are of sufficient quality, investments into computational systems necessary for AI are in place, and an initiative to attract, mobilize, and retain analytical talent is underway. Senior leadership is supportive of AI efforts and initial visioning efforts are underway to incorporate AI into strategic plans of the agency. An initial set of metrics are created and agreed upon to track investments and performance of the AI.

- **Scaling and Learning:** The public agency is enacting thoughtful and repeatable processes to select and implement AI and these processes encompass all aspects of AI implementation including technical, governance, and staffing. AI projects are viewed as a critical part of the agency; a concerted effort is being made to measure efforts against the metric developed in prior maturity levels.

- **Enterprisewide Transformation:** The public agency has successfully integrated AI into a routine part of the environment and agencies can move quickly to implement additional AI projects as necessary into the environment. Because the necessary technical, governance and staffing infrastructures are in-place, design and deployment can proceed rapidly across the agency and these efforts are managed using a portfolio approach.

Going Forward

Moving up a level requires a) successfully overcoming the limitations of prior level, and b) evaluating an organization's readiness for the next level. The evaluation requires knowing what limitations public agencies need to overcome at the current level and at the next level. Therefore, the elements and levels of the proposed maturity model are intertwined and inextricably linked, rather than operating in isolation.

At the ad hoc level, some individuals who have some personal interest in AI initiatives often start talking about their ideas, which can quickly grow if a suitable innovation climate exists. Showing organizational interest in establishing analytical capacity and computational systems can greatly contribute to creating the required level of competency to prepare for moving to the next level. External pressures—for example, efforts at other countries or peer public agencies deploying AI and seeing promising results—can often act as additional stimulants for agencies to move from the ad hoc level to the experimentation level. Public agencies, however, need to start with strategic plans that consider the cost and benefit of initiating an AI initiative, particularly in terms of potential risks and harm to citizens.

Managers in charge of AI experimentations often express that the ability to share learnings from experiments with peers can effectively facilitate learning and refinements to AI initiatives. Some even believe that this enables them to do rough benchmarking across different classes of AI. Using knowledge sharing networks can support sharing of lessons learned and can therefore facilitate collaboration with both internal (e.g., middle-range managers and staff in relevant departments that contribute to AI initiatives) and external stakeholders (e.g., academia, third parties, and other relevant public agencies). These efforts are paramount for public agencies to make the leap from the experimentation level to the planning and deployment level.

At both the planning and deployment level and the scaling and learning level, ongoing collaborations between program leaders and the IT department are of paramount importance. Detailed business cases need to be developed to clearly articulate how AI initiatives advance public value and engage citizens. Thoughtful medium-range plans are required to outline how efforts on AI projects are aligned to near-term priorities. While technical infrastructure and analytical capacity are low at this level, an organization that is interested in initiating an AI initiative would benefit from developing governance and ethical frameworks and assigning key personnel to plan for recruiting or upskilling analytical capacity. This allows the agency to build a solid base for moving to the highest level of maturity—i.e., the enterprisewide level.

At any level of the model, public agencies are advised to regularly reflect on and share lessons learned and the costs and benefits of moving up a level. Metrics on AI projects should be developed and used for each level. Lack of such mechanism can lead to scaling of prior ineffective practices and poor strategies.

Check out the complete report for more details on specific steps that can enable government agencies move from one level to the next.
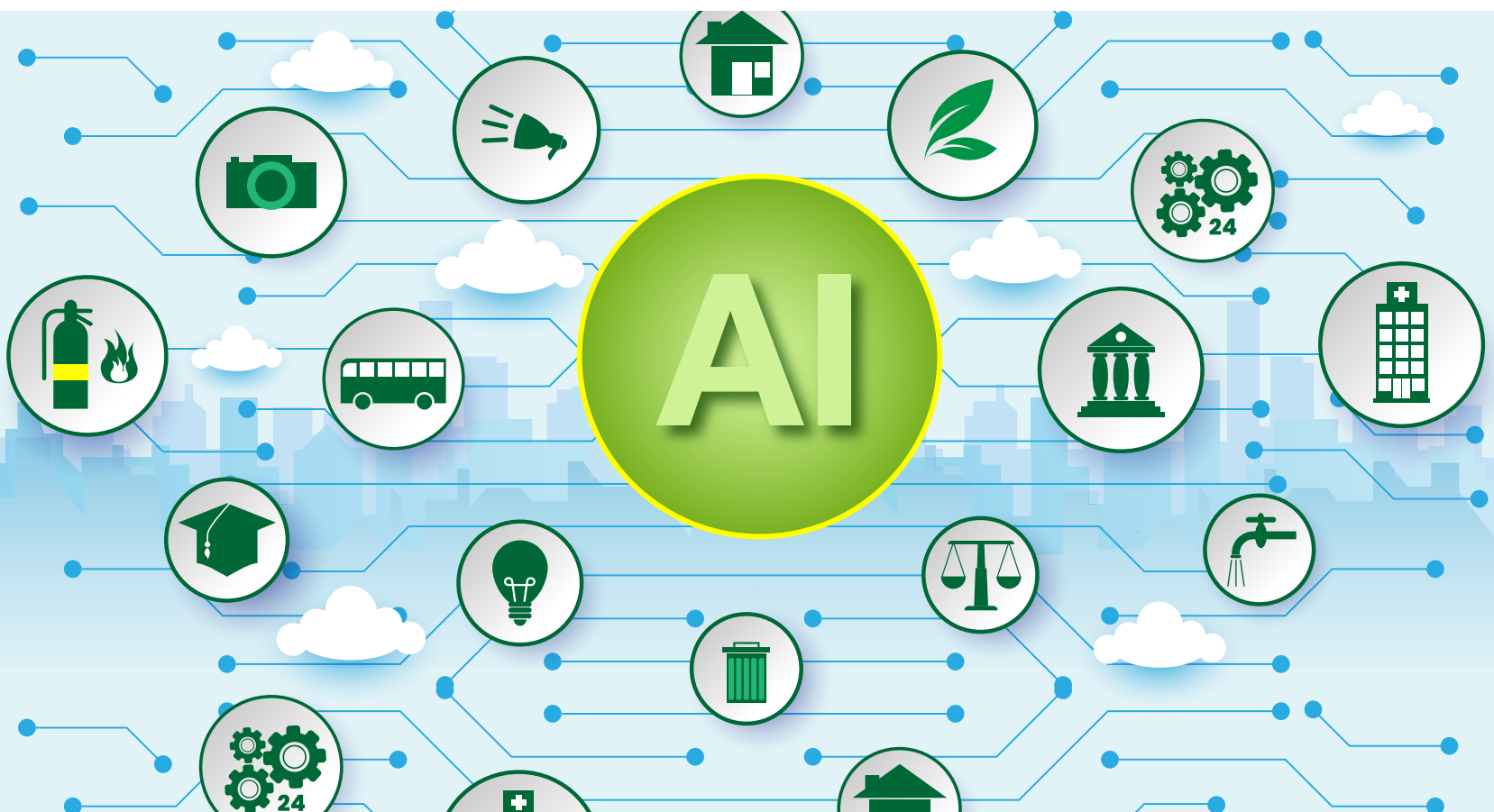
Envisioning the Future of Government

How Emerging, Secure Technologies and Data Flows Can Enable Anticipation and Action that Improve Performance

By Daniel Chenok

How can governments secure implementation of advanced technologies and enable government to use data to make more informed decisions, promote transparency, and improve outcomes in an increasingly complex and uncertain world?

This article draws on recent publications and other IBM Center research to demonstrate how secure implementation of advanced technologies, such as cloud computing, artificial intelligence (AI), and quantum computing, can enable government to use data to make more informed decisions, promote transparency, and improve outcomes in an increasingly complex and uncertain world. Such capabilities support greater transparency through which the public can understand and engage with government, and ultimately increase performance and public trust.

Key Technologies: Cloud, AI, and Quantum Computing

Public and private organizations are moving through a significant period of inflexion given the rapid evolution of a suite of technologies. Artificial intelligence, and more recently generative AI and the development of initial quantum capabilities, all gain strength when building on a foundation of cross-boundary networking enabled by cloud platforms. Implemented properly, these technologies can transform how people work. Each of these emerging intelligent technologies offers a set of capabilities that can enable government to improve anticipatory governance and resilience in the face of change.

"By leveraging innovation responsibly, governments can act with agility to anticipate the future and make choices that best serve the public."

Daniel Chenok, Executive Director, IBM Center for The Business of Government.

Cloud Computing

Cloud computing has long been defined by the U.S. National Institute of Standards and Technologies[1] (NIST) as "ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction."

Agencies can adopt secure, scalable cloud solutions to transform government operations and deliver effective digital public services. Cloud networks can provide the building blocks for technology-enabled service improvement in agencies anticipating and addressing a wide range of issues, including weather prediction, agricultural development, veterans benefits, emergency management, federal personnel, and national defense.

Three stages of cloud computing can strengthen agency capabilities:[2]

Stage 1: Cloud infrastructure for mission-specific needs: In this first stage, early adopters and innovators within subagencies and offices independently move to the cloud to support their mission-specific needs.

Stage 2: Agencywide cloud enablement: To handle everyday essential processes like billing, data-sharing and collaboration, agencies often move towards centralized platforms, applications and infrastructure, in a process known as cloud enablement.

Stage 3: Cloud technology for future transformation: The stability and security provided by cloud services and business-oriented solutions allow agency innovators to focus their efforts on developing more ambitious programs and ideas.

In moving through these stages, governments should strengthen cloud networks against security threats, and operate cloud networks to optimize planning and performance.

Cloud Security. Threats to federal data, software applications, and digital infrastructure, including cloud-based technologies, are growing exponentially. NIST reports on new cyber vulnerabilities daily[3] that, if unaddressed, could result in large-scale security breaches that can weaken government resilience. To safeguard the systems and services agencies rely on to serve the public, government must adopt a security-first mindset, maintain a responsive, agile approach, and implement cybersecurity best practices.

Cloud Optimization. As agencies implement best practices to maintain accountability while exploring and expanding cloud use, they can implement multiple strategies:

- **Build cloud financial operations into cloud planning:** Cloud migration projects, like any complex IT initiatives, can experience excess costs and time lags. Agencies can track their cloud usage and spending so that cloud operating decisions are data-driven and outcomes-based.

- **Develop flexible and scalable partnerships with an ecosystem of mission-aligned cloud service providers:** Pay-as-you-use cloud computing, runs counter to the annual and often multiyear government budgeting cycles. Agencies can strengthen resilience through multi-cloud ecosystems that leverage diverse services and platforms.

- **Account for ROI:** Agencies can quantify the dollar value of migrating workloads to the cloud for transparency and accountability.

Artificial Intelligence

The advent of artificial intelligence has moved rapidly in government. As agency use of AI evolves, leaders will look for pathways to capitalize on opportunities, and the workforce will need new technical and social skills to assess AI-based data for improved anticipatory governance and decision making.

More specifically, AI could enable agencies to fulfill numerous roles efficiently and effectively by reducing or eliminating repetitive tasks, revealing new insights from data, driving analytically-based actions, improving service, and enhancing agencies' ability to achieve their missions.

As a series of reports[4] from the IBM Center and the Partnership have described, AI can help government employees focus on core responsibilities related to their agencies' missions and spend fewer hours on administrative duties. They are likely to have more time to plan for multiple scenarios, make choices among complex options, deliver services, and perform other mission-related tasks. Specific strategies for implementation that these reports cite include efficient decision making, risk management, and AI literacy.

AI can increase efficiency and improve decision making. Automating administrative tasks has been one of AI's initial benefits. Over time, federal employees are spending less time on repetitive administrative work and more of their workday on tasks that are core to their agencies' missions,

from mitigating hazards in workplaces to following through on complicated applications for grants or other government services.

AI can adapt to address risks in a changing world. Questions about effects AI technologies may have include concerns about data privacy, security, and safety. Similar risk factors have affected public perceptions when other technologies were introduced; and similarly, today's leaders need to address these concerns to foster trust as agencies rely more on AI to carry out missions. As governments adopt AI, they should enable agencies to buy tested and trusted AI products, and create effective ways to identify and manage potential risks,

AI can increase focus on technical and data skills. Agencies need to enhance their digital and data literacy and learn how best to use AI and related technologies. As AI becomes more ubiquitous, government employees need new skills to succeed in an AI-enabled world, emphasizing expertise in technical, digital, and data skills. Indeed, governments cannot implement AI to improve foresight and anticipate future events in a world of risks without a skilled workforce that can implement strategies such as those listed above.

Quantum Computing

As defined by IBM, "quantum computing is a rapidly-emerging technology that harnesses the laws of quantum mechanics to solve problems too complex for classical computers."[5] Quantum has significant potential to driven improvements in operational efficiency across government, and the capacity to address previously intractable problems. The technology can foster immense potential benefits for the public. As a tool to enhance anticipatory government, agencies must protect against risk in using quantum computing, Developing "quantum-safe" capabilities is crucial to maintaining data security and integrity for critical applications.

In the U.S., the National Quantum Initiative[6] brings together "a whole-of-government approach to ensuring the continued leadership of the U.S. in QIS [quantum information science] and its technology applications." Such an enterprise strategy is key to enabling government to tap into the potential for quantum to improve performance across a range of issues and use cases, including materials science, pharmaceuticals, finance, and energy.

Paula Ganga, a Stanford University fellow, notes that quantum computing has significant potential for improving agility and analysis across government, as well as enabling more sustainable computing environments given quantum's efficiency relative to traditional computing.[7] However, quantum introduces a number of risks that must be addressed in order for government to best capitalize on its potential, including cybersecurity. Quantum-safe cryptography is a burgeoning area to stay ahead of quantum-based attacks from adversary, and its integration with AI.

Recommendations for Quantum Adoption by Government

1. Outline the quantum computing possibilities and the ambition appetite.

2. Design platforms to orchestrate the quantum computing ecosystem to advance public value.

3. Leverage strategic international partnerships to accelerate and scale quantum computing discoveries and capabilities.

4. Invest in creating a public workforce that is quantum computing literate and skilled.

5. Establish an office to coordinate quantum computing initiatives across the public sector.

6. Publicize use cases on quantum computing in the public sector.

7. Identify risks and disruptions to digital systems across the public sector.

Source: Desouza, & Fatima (2023).
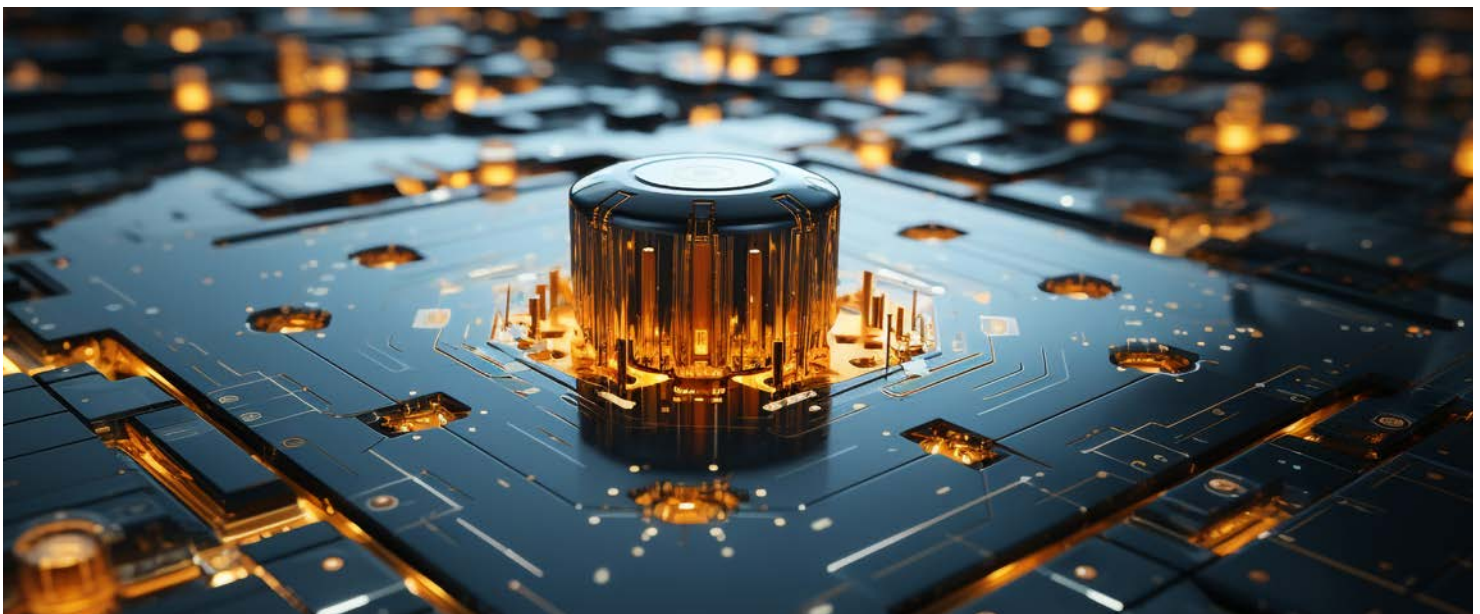
How Can Agencies Tap Emerging Technologies to Use Data for Greater Anticipation and Improved Performance?

Governments face an enormous and increasing barrage of information that drives content to enable anticipation and inform choices, in areas ranging from citizen interactions and business regulation to law enforcement, national security, and responding to major national and cross-border threats.

Technologies such as those discussed here enable governments to tap into data stores with previously unimaginable speed, scale, and accuracy. In anticipating future complexities, cloud, AI, quantum, and related intelligent automation technologies provide decision makers with tools to view the state of the world today, scenarios and probabilities for what may come tomorrow, and opportunities to redefine how governments can take action and improve outcomes for the public. Box A summarizes the kinds of mission capabilities that these technologies can support to help government build readiness for future shocks, leveraging these and similar technologies.

Box A: What practical steps can governments take in the near term to better prepare for and respond to future shocks?

Since the turn of the millennium, pandemics, heat waves, wildfires, floods, cyberattacks, supply chain interruptions, and other crises have deeply stressed governments, communities, businesses, and individuals around the world. This cascade of catastrophic events raises fundamental questions about how governments can anticipate, prepare for, and respond to these and other shocks yet to come.

The IBM Center for The Business of Government, IBM Institute for Business Value, and National Academy of Public Administration have launched an initiative to help governments identify core capabilities critical to building resilience.

Based on the common themes that emerged from the roundtable discussions, the following recommendations can assist governments at all levels to anticipate, prepare for, and respond to shocks of virtually any origin.

1. **Steer clear of complacency.** Many governments made great strides toward building resilience during the COVID-19 pandemic. However, it is risky to pull back on these investments, especially as the probability of major disruptive events in the future remains high.

2. **Identify risks inclusively, with systemwide thinking.** The greatest threat isn't the unknown crisis—it's failing to recognize that interlinked and compounded risks could destabilize the entire system. Government leaders and stakeholders should adopt holistic risk identification approaches, including diverse stakeholder inputs that capture a wide range of perspectives.

3. **Explore and strategically invest in data-driven technologies.** With the importance of making data-driven decisions growing every day, it is vital for governments to transition beyond maintaining legacy systems and invest strategically in more advanced cloud, AI, automation, and other platforms to protect government assets, boost workforce productivity, and take advantage of new opportunities to connect with and serve constituents. Technology investments should support this goal.

4. **Leverage cybersecurity as a capability multiplier.** Bolstering the security of all government platforms can improve the performance of these systems and boost confidence in their operations, an especially important consideration as generative AI takes on more functions and powers more workflows.

5. **Collaborate with and expand cross-sector partnerships.** Government can leverage the expertise and resources of private industry, academia, and other sectors to source and share best practices and avoid reinventing the wheel. Government leaders and stakeholders can work with industry to invest in technology-driven platforms and solutions that enable remote collaboration across public and private sectors.

6. **Build trust with citizens and employees.** Governments can use transparency and inclusiveness to address the trust deficits incurred by many governments, recognizing that trust is foundational for building and maintaining organizational resilience.

7. **Plan for human-centric resilience.** Infrastructure may survive a disaster, but how will constituents fare? Resilience plans that don't accommodate human needs will fail. Government leaders and stakeholders can invest in localized models to simulate the real-time impact of disasters on communities to inform targeted interventions.

To learn more about the Future Shocks initiative, please read the compendium report: https://www.businessofgovernment.org/report/future-shocks-roadmap.

Conclusion

Cloud computing provides significant scalability, and cloud platfoms provide for flexible and cost-efficient ways to store, process, and share data across computing siloes and organizations. AI, which strengthens cognitive understanding, can help public sector officials examine large datasets, and find patterns quickly and reliably to draw key insights, foster predictive analytics and optimize resource allocation. Quantum networks support using data to make findings and reach decisions at previously unthinkable speeds, holding immense promise for solving problems once considered insurmountable. By leveraging innovation responsibly, governments can act with agility to anticipate the future and make choices that best serve the public.

3. For more information see: https://nvd.nist.gov/vuln.

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Nation-State Activity in the Age of Artificial Intelligence and Quantum Computing

By Margaret Graves
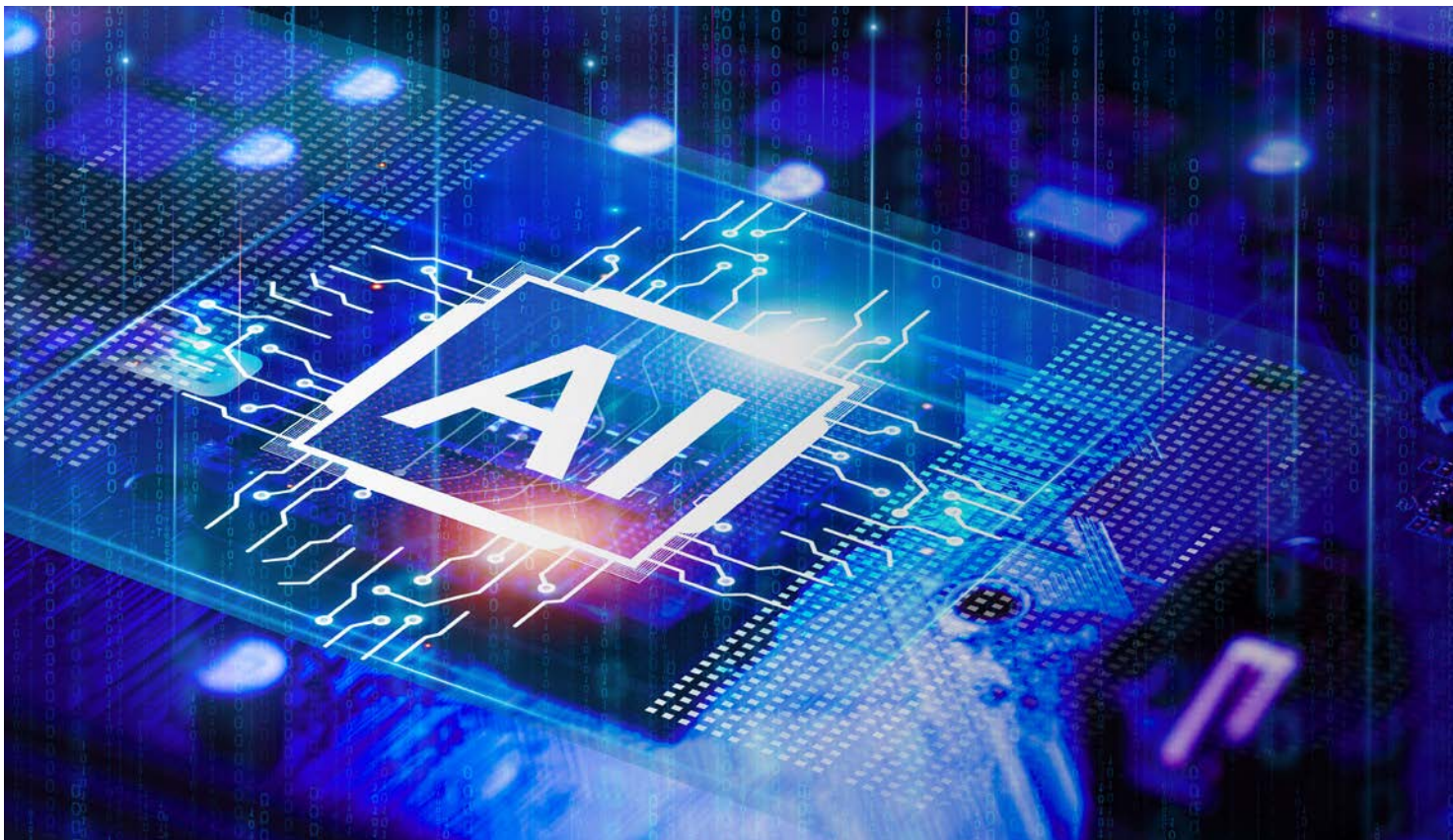
Seldom has there been a simultaneous evolution of two powerful and complementary technologies—artificial intelligence (AI) and quantum computing (QC).

AI refers to machines programmed to mimic human intelligence. These systems use algorithms to analyze data, recognize patterns, and make decisions. Generative AI is a subset of AI that creates new content from learned data. It generates original material across various mediums (text, images, audio, etc.). Traditional AI analyzes existing data, but generative AI goes beyond by generating new content.

QC involves specialized technology, including computer hardware and algorithms, that harnesses the unique properties of quantum mechanics. Unlike classical computers or supercomputers, quantum computers can solve problems that are either impossible for classical machines to solve or would take an impractical amount of time.

Nation states are in a race to harness the power of these technologies for social good, economic advantage and growth, geopolitical influence, and cybersecurity. Many countries, whether allies or enemies, are investing in AI and QC capabilities and highlighting the adoption and use of these technologies in policies, legislation, and strategic imperatives.

"Staying abreast of the evolving landscape and remaining vigilant will ensure that organizations protect against unintended consequences and take the right pathway into the future."

Margaret Graves, Senior Fellow with the IBM Center for The Business of Government.

For example, in 2015, China published its "Made-in-China" strategy, which states the strategic objective of becoming dominant in specific technology markets, including AI and machine learning, the Internet of Things, and chip manufacturing. The U.S. and its allies have considered this objective to be a threat not only to economic growth but also to national security. The U.S. has responded by using trade policy to limit the incorporation of products from China and other unfriendly nation states in the national technology ecosystem.

The CHIPS Act legislation addresses some of these challenges by offering approaches to reduce supply chain risk and investing in AI and QC technologies to increase the country's competitive edge. There also is an emphasis on strengthening the protection of intellectual property created in research and development centers. Aside from these measures, significant policies solidify the importance of effective adoption, appropriate use, and vigilant cyber protection of AI technology, as evidenced by a comprehensive executive order.

Benefits of AI and QC

AI and QC offer significant benefits for executing private-sector business and government missions. The combination of AI and QC gives companies and governments the ability to curate large amounts of unstructured data, find the "signal in the noise," and perform pattern recognition in such rapid computational timeframes that the outputs from the algorithmic analyses can help make strategic and operational decisions in real-time. In addition to providing powerful analytic support for decisions, AI and QC also offer organizations the ability to use predictive analytics to continuously improve resilience, especially during a crisis. A few of the most powerful use cases include:

Medical research—AI and QC can assist in medical diagnostics for rare or critical illnesses, biomedical and genetic research, and pharmaceutical development. During the first phases of the COVID-19 pandemic, the Organization for Economic Cooperation and Development (OECD) tracked and published on its website the use of AI in addressing the crisis. More recently, the Cleveland Clinic has deployed a QC capability, the first of its kind solely dedicated to biomedical research.

- **Climate resiliency and emergency preparedness**—According to the National Oceanic and Atmospheric Administration (NOAA) Center for Artificial Intelligence (NCAI) website, "NOAA has a long history of using AI in weather forecasting, climate modeling, and environmental monitoring," and the NCAI is its "conduit for artificial intelligence and machine learning for mission science initiatives." The Federal Emergency Management Agency (FEMA) is using AI to conduct geospatial damage assessments after a natural disaster relief suppliers of goods and services use AI to optimize their supply chain and transportation networks to ensure rapid delivery.

- **Fraud risk reduction**—AI can identify patterns of fraud in benefit transactions. The Department of Health and Human Services uses AI to identify fraudulent pharmaceuticals and Medicare or Medicaid fraud. FEMA is using AI to identify fraudulent disaster relief applications.

- **Cybersecurity**—AI can enhance the effectiveness of cybersecurity operations and defense by identifying attack patterns, recognizing anomalous activity, performing predictive risk analysis that can help expand defenses and train cyber defenders, and automating a matching response based on defense approaches that have worked against past cyberattacks.

Dual-Use Technologies

Unfortunately, knowledge of these technologies leads to a point-counterpoint argument in which each capability that can be used for good can also be used by criminals or nation-state actors for nefarious purposes. Nowhere is this point-counterpoint phenomenon more evident than in the national security realm. For example, there is understandable excitement about the ability of AI to accelerate and enhance the development of valuable computer code. However, at the same time, an attacker could use this capability to create stronger self-healing malware in which multiple strains of malware are fed to an algorithm, thus creating strains that are harder to detect. This malware could subsequently be used in disruption or exfiltration of sensitive national security data.

Another risk arises by the very nature of AI's fundamental principles. AI uses massive amounts of data to feed machine learning. Having such a large amount of data in one system could present an attractive attack surface to adversaries. Designing and building these systems with that risk in mind is imperative. Generative AI also poses an emerging threat as it enables adversaries to create more dangerous phishing attacks by creating emails that are convincing in their content. Finally, developing deep fake identities provides an opportunity to create civil unrest and influence political outcomes.

Protective Steps That Organizations Should Take

Organizations should define practical steps that private- or public-sector organizations can take to ensure they derive the most good from these technologies while protecting their vulnerabilities. To that end, in the 2022-23 timeframe, the National Academy of Public Administration and the IBM Center for The Business of Government conducted a series of roundtables with eminent executives from government, industry, and academia to openly discuss strategies for improving nation-state government resiliency in the face of "future shocks" in the areas of emergency management, cybersecurity, supply chain, climate resilience, and workforce development. These roundtables helped produce individual reports, a compendium, and a book with recommended actions for executives. These publications were released in November of 2023 and are referenced in this article.

- **AI literacy and workforce development**—All levels of the organization should know how to leverage these technologies to improve the mission and what risks they present. Role-based training is critical, from C-suite executives to practitioners.

- **Public, private, and academic partnerships**—There should be a constant exchange of information regarding the risk and threat landscape, successful use cases and implementations, and evolving research and development.

- **Investment in innovation and transformation**—Chief information officers, chief data officers, and AI executives must work together to address all elements of quality AI implementations, including infrastructure, tools, and data strategies supporting mission- or business-driven use cases.

Conclusion

Using AI and QC for business and mission results presents promise and peril. Critical missions such as national defense and public health and safety will benefit from real-time enhanced situational awareness and the ability to optimize predictive analysis, defense, response, and recovery. Additional benefits include the support of fair trade and commerce by creating economic stability in global markets to reduce the possibility of geopolitical destabilization. A business result is providing services to the population that are delivered in a more transparent and accelerated fashion, thereby enhancing the customer experience. Staying abreast of the evolving landscape and remaining vigilant will ensure that organizations protect against unintended consequences and take the right pathway into the future.

Several reports indicated that thoughtful implementation and appropriate use of AI and QC can bring tremendous benefits. However, those implementations must be underpinned by a structure that at least recognizes the importance of the following elements:

- **Governance structure**—There should be recognition that AI and cybersecurity are risk factors to include in C-suite discussions. They are not simply technology issues. The appropriate implementation of AI includes ensuring that it is comprehensive, inclusive, unbiased, and secure. Proper use is the responsibility of the highest level of the organization.

From the Gridiron to Government

How Tom Brady's Leadership Insights Can Transform Government Teams

By Michael J. Keegan

NFL great Tom Brady and Nitin Nohria of the Harvard Business School have collaborated on a compelling and timely article, for the September-October 2024 *Harvard Business Review*, which focuses on the often-overlooked aspect of leadership: the importance of teamwork and how great leaders bring out the best in their teams.

"When our society talks about success, we tend to focus on individual success. We obsess about who is the 'greatest of all time,' who is most responsible for a win, or what players or coaches a team might add next season to become even

better. What can get lost in this way of thinking is that leaders don't accomplish anything by themselves," explains Brady and Nohria.

Drawing from Brady's experiences in football, the authors present a set of principles that people in any realm can apply to help teams successfully work together toward common goals. As I read the article, I thought it would be worthwhile to show how these leadership insights can be applied in a government context as part of my "The Art of Leadership" series.

*"We obsess about who is the 'greatest of all time' . . .
[but] leaders don't accomplish anything by themselves."*

Tom Brady, co-author with Nitin Nohria, in the article "Tom Brady and the Art of
Leading Teammates." *Harvard Business Review*

Brady's Key Leadership Behaviors

To set the context, I'll provide a summary of the seven
leadership behaviors identified by Brady and Nohria:

Put the team first: Leadership is about prioritizing the
team's success over individual achievements, even in the
face of personal adversity. Brady shares how he supported
his teammates and put the team first, even when it meant
sacrificing his own playing time.

Show appreciation for unsung colleagues: Recognizing and
valuing the contributions of those who may not receive the
spotlight, such as blockers in football or support staff in an
organization, is crucial for maintaining morale and motivating
the entire team.

**Set the standard and create a culture of 100 percent
effort:** Leaders should model hard work and hold everyone,
including themselves, to high standards. Brady emphasizes
the importance of pushing oneself and others to go beyond
what is required.

**Recognize teammates' individual psychology and the best
ways to motivate them:** Understanding what motivates each
individual on the team allows a leader to tailor their approach
to bring out the best in everyone, whether through tough love
or encouragement.

Understand and complement the style of the formal leader:
Brady discusses how he complemented the coaching style of
Bill Belichick by providing emotional support and connecting
with teammates on a personal level, thus creating a balanced
leadership approach.

**Recognize and counteract external forces that can cause
selfish behavior:** Leaders must be aware of external pressures
on team members, such as those from agents or family, and
work to reinforce a team-first mentality.

Create opportunities to connect as people outside the office:
Building relationships and trust outside of the regular work
environment is essential. Shared experiences, even outside
the professional setting, can strengthen the bonds within a
team and improve overall performance.

Applying Brady's Insights for Government Leaders

Leaders in government can draw valuable lessons from Tom
Brady's leadership insights by focusing on team cohesion,
recognizing individual contributions, and fostering a culture
of accountability and mutual support. Here's how they can
effectively apply these principles:

1. **Emphasize team-centric leadership.**

   Application: Government leaders should prioritize the
   success of the team over individual achievements. This
   means making decisions that benefit the organization as
   a whole, even if it means personal sacrifices.

   Example: In times of crisis or when facing significant
   challenges, leaders can set an example by taking on
   additional responsibilities or stepping aside to allow
   others to lead if it's in the best interest of the mission.
   For example, during the 2008 financial crisis, President
   Obama assembled a diverse team of economic advisors
   with different perspectives. He emphasized the
   importance of collaboration and made decisions that
   sought to stabilize the economy, showing how team-
   centric leadership can steer through crises.

2. **Show appreciation for unsung heroes.**

   Application: Public sector organizations often have
   employees who work behind the scenes, such as
   administrative staff, IT support, or field workers, who
   don't always receive recognition. Leaders should actively
   acknowledge these contributions.

Example: Regularly highlight the work of these individuals in meetings, newsletters, or awards ceremonies to boost morale and reinforce the value of every team member's work. For example, U.S. Treasury Secretary Janet Yellen's recognition of unsung heroes came during the implementation of the American Rescue Plan (ARP) in 2021. The ARP was a massive economic relief package in response to the COVID-19 pandemic. The execution of this plan required the coordinated efforts of thousands of Treasury Department employees who ensured the timely distribution of relief funds, unemployment benefits, and economic impact payments.

Yellen consistently highlighted the contributions of these employees, emphasizing that their hard work was critical to the success of the ARP. In public statements and internal communications, she made it a point to recognize the dedication of Treasury staff, including those in administrative roles, data analysts, and IT specialists who worked behind the scenes. By acknowledging the work of every team member, she fostered a sense of unity and purpose within the department.

3. **Set high standards and lead by example.**

Application: Leaders should model the behavior they expect from their teams. By setting high standards for themselves, they can inspire their teams to do the same.

Example: If a government leader wants to foster a culture of innovation, they should actively engage in creative problem-solving and encourage others to take calculated risks. For example, former U.S. Secretary of Defense Robert Gates was known for setting high expectations, demanding accountability, and leading by example. One of his key actions was the overhaul of the leadership responsible for managing the wars when in 2007, Gates removed General Peter Pace as chairman of the Joint Chiefs of Staff. This decision was not easy or popular but was driven by Gates' belief that fresh leadership was needed to address the evolving challenges in the Middle East. His approach to the budget is another example of leading by example. Recognizing the need for fiscal responsibility, Gates proposed significant cuts to defense spending and sought to redirect resources from expensive, less critical programs to more urgent needs like equipment and support for soldiers on the front lines. Gates tenure at Department of Defense (DoD) is a

solid example of how setting high standards and leading by example can drive significant, positive change in government, even in the most challenging circumstances.

4. **Understand individual motivations.**

   Application: Just as Brady identified what motivated his teammates, government leaders should understand what drives each member of their team. This requires getting to know employees on a personal level and tailoring leadership approaches to fit their needs.

   Example: For one employee, public recognition might be a powerful motivator, while another might be more driven by opportunities for professional development. For example, Robert Wilkie, former Secretary of the U.S. Department of Veterans Affairs work centered on improving services for veterans. By aligning the department's goals with the mission to support those who have served, he tapped into the motivations of employees who are dedicated to this cause. Wilkie emphasized the importance of recognizing the contributions of VA staff. By acknowledging their hard work and dedication, he addressed the intrinsic motivation of employees who seek validation for their efforts. He sought to improve the work environment within the VA, understanding that job satisfaction and a supportive culture are crucial for maintaining high levels of motivation among employees.

5. **Complement the leadership style of formal authorities.**

   Application: In government, leaders often work within a structure where authority is shared or where they must support elected officials or higher-level administrators. Understanding and complementing these leaders' styles is crucial.

   Example: If a senior official is detail-oriented but not as strong in interpersonal relationships, a leader might focus on team building and communication to ensure the team remains cohesive and motivated. For example, Admiral Michael M. Gilday, who served as the chief of Naval Operations from 2019-2023, worked closely with then Secretary of the Navy Kenneth Braithwaite and his predecessors, aligning Navy strategies and initiatives with the Secretary's vision and priorities. This alignment ensured a unified approach to naval strategy, fleet modernization, and operational readiness. Gilday's complementary leadership style has helped shape a coherent and effective naval strategy that aligned with broader defense goals and policy directives.

6. **Counteract external pressures.**

   Application: Government employees, like athletes, face external pressures—political influences, public scrutiny, or personal ambitions—that can sometimes conflict with team goals. Leaders should recognize these pressures and work to align individual and team objectives.

   Example: When political pressures arise that may lead to self-serving behavior or superficial compromises, a leader can reinforce the importance of the public good and the organization's mission to ensure the team stays focused. For example, Robert Lighthizer, the United States Trade Representative (USTR) from 2017 to 2021, was a government leader who during his tenure effectively countered external pressures while upholding U.S. trade interests. He focused on making structural changes to trade practices, rather than merely addressing the trade deficit. His leadership in negotiating trade deals, particularly the U.S.-China Phase One trade agreement, demonstrated his ability to resist external pressures from foreign governments, international organizations, and even domestic stakeholders to achieve meaningful results rather than settling for superficial compromises.

7. **Create opportunities for team bonding.**

   Application: Building trust and camaraderie is as important in government as it is in sports. Leaders should facilitate opportunities for team members to connect outside of formal work settings.

   Example: Organizing team-building events, offsite retreats, or informal gatherings can strengthen relationships and improve collaboration when back in the office. For example, General Stanley McChrystal, former commander of the Joint Special Operations Command (JSOC), introduced the "Team of Teams" concept that emphasized breaking down silos and fostering cross-functional collaboration. He believed that small, agile teams could be more effective if they were deeply connected and aligned with a shared mission. McChrystal encouraged regular communication and interaction among teams that traditionally operated independently. He used daily video conferences to connect teams across different locations, ensuring that everyone had access to the same information and could contribute to decision making. McChrystal's approach to leadership transformed the JSOC. His focus on team bonding, communication, and a shared mission allowed for more agile and effective operations in a complex and rapidly changing environment.

By focusing on team dynamics, recognizing individual contributions, and setting high standards, government leaders can achieve remarkable results even in the most challenging circumstances.

Implementing Brady's Leadership Insights in Government Settings

Implementing Tom Brady's leadership insights in government settings can be effective regardless of team size. Here's how government leaders can apply these principles universally:

Emphasize teamwork and trust.

- **Action**: Create an environment where trust and collaboration are the foundations of your team.

- **Implementation**: Encourage open communication, where team members feel safe to express ideas and concerns. Build trust by being transparent and consistent in your actions.

- **Scalability**: In small teams, foster personal connections through regular team-building activities. In larger teams, develop systems where trust and teamwork are reinforced through clear roles, responsibilities, and regular feedback.

Focus on preparation and discipline.

- **Action**: Prioritize thorough preparation and maintain high standards of discipline within the team.

- **Implementation**: Set clear expectations for performance and preparation. Lead by example by being consistently well-prepared and disciplined in your approach.

- **Scalability**: For smaller teams, this might involve more direct coaching and personalized preparation plans. In larger teams, create standardized procedures and protocols that ensure everyone is aligned and ready for challenges.

Cultivate adaptability and resilience.

- **Action**: Cultivate a mindset that is adaptable and resilient in the face of challenges.

- **Implementation**: Encourage your team to embrace change and view challenges as opportunities for growth. Provide support and resources to help them navigate difficult situations.

- **Scalability**: In small teams, offer personalized support and mentorship. For larger teams, establish a culture of resilience through training programs and by sharing stories of overcoming adversity.

Lead with passion and purpose.
- **Action**: Instill a sense of purpose and passion in your team's work.

- **Implementation**: Clearly articulate the mission and vision of your team or organization. Connect individual tasks to the larger goals and encourage enthusiasm in pursuing them.

- **Scalability**: In small teams, engage directly with each member to understand their motivations. In larger teams, use internal communications and regular updates to keep everyone connected to the mission.

Encourage accountability.
- **Action**: Hold yourself and your team accountable for achieving results.

- **Implementation**: Set measurable goals and regularly review progress. Encourage self-reflection and continuous improvement.

- **Scalability**: For smaller teams, this might involve frequent check-ins and personal feedback. In larger teams, establish accountability systems like performance reviews and peer evaluations.

Celebrate success and learn from failure.
- **Action**: Recognize achievements and use failures as learning opportunities.

- **Implementation**: Celebrate both small and large successes to boost morale. When things don't go as planned, analyze what happened and share lessons learned with the team.

- **Scalability**: In small teams, this could be informal celebrations and direct feedback. In larger teams, establish recognition programs and formal debrief sessions.

Begin by applying these principles in manageable areas or pilot projects. Engage your team in the process of implementing these insights. Solicit their feedback and make them part of the change. Regularly assess the impact of these

leadership practices and adjust as needed. As the leader, embody these principles in your daily actions to set a strong example for your team.

Conclusion

By using these insights, government leaders can create more cohesive, motivated, and high-performing teams. By focusing on team success, recognizing individual contributions, and fostering a culture of mutual respect and accountability leaders can navigate the complexities of public service more effectively.

A Prepared Federal Government: Preventing Fraud and Improper Payments in Emergency Funding

By Steve Goodrich and Bob Westbrooks

When the government distributes supplemental funding to address various national emergencies such as the global pandemic, time is of the essence. Putting money quickly in the hands of Americans in need benefits vulnerable segments of the American population and stabilizes the nation in a time of crisis. At the same time, transparency and accountability mechanisms are essential to safeguard these taxpayer dollars and maintain public trust.

Rapid program delivery and program integrity are not mutually exclusive, but it can be difficult to establish the appropriate controls and checks and balances and produce the desired outcome in a fast-moving crisis. With a combination of new programs, additional funding, and broader program eligibility, the risk of waste, fraud, and improper payments increases significantly.

This report began with a roundtable discussion of experts in government fraud and improper payments in December 2023. Leaders and experts from the budget, financial management, data and oversight communities came together with those with experience in implementing efficient, effective, and lawful tracking and safeguarding of taxpayer dollars during emergency situations. These roundtable discussions generated insights on how the government can ensure integrity while meeting policy and programmatic goals in increasingly frequent emergency situations.

The report documents the challenges that governments experience with fraud and improper payments, especially during a national emergency. It also profiles the many collaborative initiatives currently underway to create lasting solutions to reduce fraud and improper payments. It includes 27 recommendations that Congress and federal agencies can use to ensure the integrity, efficacy, and protection of funds distributed in increasingly frequent emergency situations.

Introduction

When an emergency has subsided, the federal government typically goes back to business as usual, does little to identify lessons learned, and rarely acts on them to be prepared for the next national crisis. But in the case of the pandemic, agencies are proactively addressing many lessons learned. The federal government—through the combined and collaborative efforts of the Department of the Treasury (Treasury), Office of Management and Budget (OMB), Pandemic Response Accountability Committee (PRAC) of the Council of the Inspector's General on Integrity and Efficiency (CIGIE), General Accountability Office (GAO), Congress, and agency program offices—are actively addressing some shortfalls with solution to fraud and improper payments. The

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report that this article is excerpted from intends to assist in the process of capturing lessons learned and providing a whole-of-government perspective.

• Identify the specific management and oversight challenges associated with distributing government funds under emergency conditions prior to and after distribution.

• Make recommendations to ensure effective safeguards and oversight methods (policy, practices, tools, resources, systems, and authorities) to be ready for the next emergency funding need.

Background on Emergency Funding
For each emergency, the federal government legislates programs and releases funding through a defined disaster declaration process. Agencies are typically prepared to

manage and fund many of them. Yet government programs are not always prepared for emergencies of significant magnitude such as hurricanes Katrina or Sandy, or the most recent emergency, the COVID-19 pandemic. To address this pandemic, Congress responded with programs and emergency funding to support businesses, healthcare, COVID testing, the supply chain, healthcare workers, mental health, unemployment insurance, rental assistance, and more. Never has so much money been injected into the U.S. economy in such a short period of time. It is estimated that with most of the $5 trillion appropriated, over $600 billion was taken fraudulently and/or subject to improper payments.

The increased flow of funds in response to the COVID-19 pandemic exposed existing vulnerabilities in federal and state government payment systems and processes that resulted in increased improper payments—including fraud—in federal programs.

Major COVID-19 Spending

Other, $979

Suplimental Nutrition Assistance, $121

Coronavirus Relief, $150

Education Stabilization, $278

Public Health Emergency Funds, $346

State/Local Fiscal Recovery, $350

Economic Impact Payments, $859

Business Loan Program, $833

Unemployment Insurance, $702
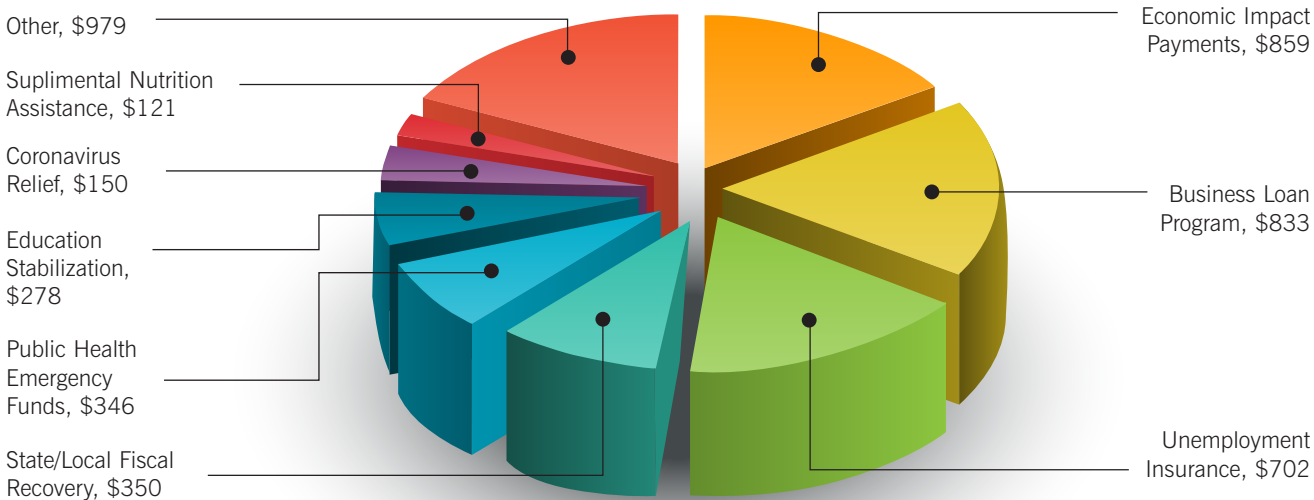
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Fellow, National Academy of
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About $1.4 billion of the $600 billion stolen has been returned to the federal government, and over 3,500 people have been criminally charged. As Small Business Administration (SBA) Inspectors General Mike Ware predicted in a 2021 interview, the amount of fraud from COVID relief programs was "larger than any government program that came before it."

Two key definitions help to frame an understanding of the nature and extent of this challenge.

- **Improper payments** are payments that should not have been made. This may be due to wrong amounts (either over or under), payments to the wrong person or corporation, or payments that did not follow statutory requirements. They may or may not include some level of fraud.

- **Fraud** involves paying an entity that is not entitled to the payment based on misrepresentation.

Both require effective prepayment controls and post-payment oversight and corrective action protocols to be put into place when programs are established and executed. The Government Accountability Office identifies root causes of improper payments and fraud to include:

Improper Payment Root Causes
- Failure to access data/information needed

- Data/information needed does not exist

- Lack of documentation from recipients to determine eligibility

Fraud Root Causes
- Opportunity, incentive, and rationalization on the part of the perpetrator

- Weak internal controls

- Undetected misrepresentations, falsifications, social engineering, data breaches, cybercrime, or coercion

- Lack of independent verification of applicant's information

This report seeks to help ensure that there is not a zero-sum trade-off between getting money out quickly, serving the nation, protecting program integrity, and minimizing fraud. The government is expected to be an effective custodian of taxpayer funds. Putting the policy, tools, and programmatic infrastructure into place now without overburdening agencies and the budget is essential. Taxpayer funds must be managed effectively, efficiently, and equitably to address an emergency, ensure proper use of public funds, and build the trust of the public.

Recommendations
The goal of these recommendations is for the government to be ready and more effective when the next emergency strikes, while attempting to not add significant expenditure of funds during nonemergency times. Here is a sampling of the proposed recommendations outlined in the report directed at Congress, Office of Management and Budget, Treasury, Inspectors General, agency programs, and for states.

For Congressional Action

Preparedness	• Establish proforma emergency funding legislation. • Provide fraud and improper payment requirements in reauthorizations. • Immediately direct agencies and the PRAC to enhance existing capacity. • Make the PRAC and PACE (All-inclusive Care for the Elderly) permanent. • Provide stricter sentencing for convicted fraudsters.
Prevention	• Require states to develop fraud control plans. • Require agencies and states to use Treasury's DNP. • Suspend procurement and hiring rules in emergency funding legislation. • Require electronic payments with emergency funding. • Expand fraud prevention and detection tools and expanded treasury authority. • Establish a payment integrity fund.
Detection	• Require states to provide data and reporting.
Recovery	• Provide treasury the ability to "claw back" electronic funds.

For the Office of Management and Budget

Preparedness	• Lead a whole-of-government counter fraud function. • Prepare briefing books for administration transition. • Formalize a counter fraud workforce.
Prevention	• Participate in the International Public Sector Fraud Forum. • Pressure test agency programs. • Prepare an emergency funding execution playbook.
Detection	• Adopt GAO guidance under gao-24-105833.
Recovery	• Provide Treasury the ability to "claw back" electronic funds.

For the Treasury

Preparedness	• Train government staff in fraud and improper payment and emergency funding preparedness. • Serve as the central POC for sharing tools and techniques. • Share information on fraud trends and best practices.
Prevention	• Strengthen payment integrity tools (e.g., DNP) based on lessons learned. Continue to add data sets. • Participate in the International Public Sector Fraud Forum. • Work with states to develop data sets and support fraud and improper payments. • Use open and proprietary data.
Detection	• Develop a risk monitoring and flagging system. • Develop a governmentwide monitoring system.
Recovery	• Develop capacity to "claw back" electronic funds.

For Inspectors General

Preparedness	• Continue to enhance the capacity of the PRAC and PACE.
Prevention	• Continue the blueprint development and Joint Program Review Meetings. • Support training of agency staff. • Support agency assessment of program readiness.
Detection and Investigation	• Collaborate with Treasury, Justice, OMB and others in taking a whole-of-government approach.

For Agency Programs

Preparedness	• Assess agency programs for susceptibility to fraud and improper payments. • Work to "harden systems." • Assess grants and contracts for appropriate practices. • Maintain a fraud risk catalog.
Prevention	• Develop standard risk profiles and continual update. • Develop a counter fraud and improper payment plans. • Continual test risk mitigation strategies and adapt. • Share best practices with others. Collaborate in whole-of-government approach.
Detection	• Automate internal controls where possible using advanced technologies.
Investigation	• Support Treasury, IG, OMB programs and investigations. • Share data—program, validation, source data, etc., including judicial agencies.

For States

Preparedness	• Develop fraud and improper payment management and reporting capacity.

While the recommendations highlighted above focus on emergency funding initiatives, many can also be applied to existing agency funding programs.

A Prepared Federal Government: Preventing Fraud and Improper Payments in Emergency Funding

by Steve Goodrich and Bob Westbrooks

Available at:
businessofgovernment.org

Preparing Governments for Future Shocks: Building Cyber Resilience for Critical Infrastructure Protection

By Lisa Schlosser

Cyber resilience is crucial for protecting critical infrastructure, which includes essential services from the energy grid to clean water distribution These systems are increasingly targeted by cyberattacks Cyber resilience involves not only robust cybersecurity measures to prevent attacks but also the ability to quickly detect, respond to, and recover from incidents.
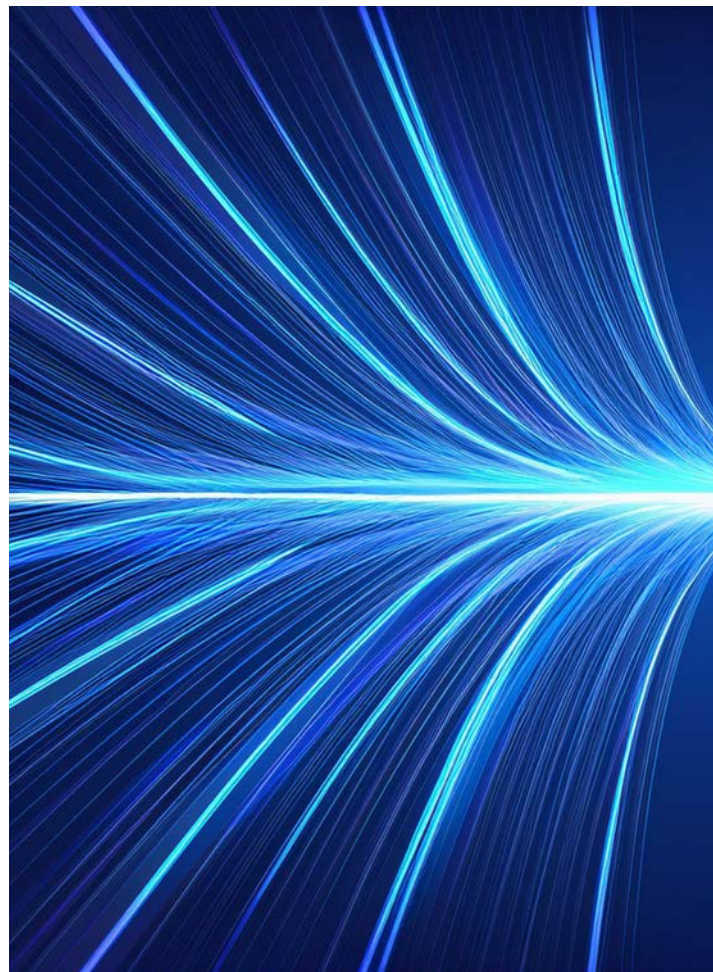
This ensures continuity of operations and minimizes the impact of cyber threats by enhancing cyber resilience, governments can safeguard critical systems, support the reliable functioning of vital services even in the face of crises, and help build and maintain public trust.

To discuss the above imperatives, the IBM Center for The Business of Government and the IBM Institute for Business Value (IBV) joined with the National Academy of Public Administration (NAPA) to convene a roundtable that identified opportunities and practical actions government can take to address these challenges. The roundtable included executives from the government, nonprofit, academic, and commercial sectors, for a highly interactive, roundtable discussion, "Preparing Governments for Future Shocks: Building Cyber Resilience for Critical Infrastructure Protection." This session addressed three areas essential to the cybersecurity and resilience of critical systems: Emergency Preparedness and Response, Supply Chain Resilience, and Workforce Resilience.

This report summarizes the discussions in this roundtable by presenting the challenges, observations and best practices, and opportunities within each of these areas. Roundtable participants identified multiple recommendations for government action, discussed in the report and highlighted in this article.

Emergency Preparedness and Response Recommendations

Promising new technologies—such as artificial intelligence (AI) and quantum computing—can provide governments with the ability to continuously improve resilience, especially in times of crises Artificial intelligence, for example, offers opportunities but introduces challenges. As AI continues to advance and become more pervasive, so do its risks—from mass disinformation campaigns and deepfakes to fully autonomous weapon systems quantum computing is also adding a new dimension of opportunity and risks. For example, quantum capabilities can help solve large-scale problems much faster such as analyzing compounds to create new drugs and optimizing global supply chains. However, with new capabilities come new risks. Nation-states will

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have a more powerful tool to attack critical infrastructure at scale. Also, given the power of quantum computing, current encryption solutions may be less difficult to crack.

Three recent incidents underscore the need to understand and address these and other risks and impacts, by enhancing preparedness, response, and resilience to sustain critical infrastructure operations

- First, the actions taken by the People's Republic of China (PRC) state-sponsored cyber group known as Volt Typhoon have shown how nation-state actors can infiltrate various critical infrastructure domains to gain a foothold for future attacks.

- Second, the Colonial Pipeline ransomware attack caused a critical infrastructure provider to shut down its pipeline system.

- Third, and more recently, a widespread outage, due to a faulty software update from CrowdStrike, led to substantial disruptions across numerous critical infrastructures domains, including airlines, hospitals, banks, and millions of other businesses.

These incidents highlighted many risks to our critical infrastructure.

Participants in the roundtable identified the following emergency preparedness and response recommendations to support the NCS strategy and to ensure readiness to address most effectively these risks.

- Implement National Security Memorandum on Critical Infrastructure Security and Resilience (NSM 22), and the Cyber Response and Recovery Funding (CRRF) Act to align aspirations and resources.

- Continue to look at ways to optimize/streamline/create economies of scale, and created tiered governance structures for ISACs.

- Develop and communicate incentives and resources to help SMBs prioritize cybersecurity.

- Establish response and resilience frameworks that address the physical/cyber nexus and test.

- Consider the inclusion of space systems as a critical infrastructure domain.

Supply Chain Resilience Recommendations

Shocks to supply chains over the past few years continue to reverberate. Whether a supply chain focuses on efficiency and resiliency or on data-led insights and innovations for the future, addressing supply chain challenges involves balancing priorities and navigating the complex ecosystem of modern, global supply chains.

Governments face unique supply chain challenges. They enable commercial supply chains by providing critical infrastructure and security, and oversee massive public-sector networks. However, these escalating supply chain challenges require increased digital transformation and innovation. Both the public and private sectors, nationally and internationally, have encountered challenges in building actionable resilience solutions into supply chains.

The federal government is addressing supply chain in many other ways. On November 27, 2023, the Supply Chain Resilience Center (SCRC) at the Department of Homeland Security was created to protect the supply chain from evolving threats. The SCRC examines security of U.S. port infrastructure and provides recommendations to private sector stakeholders. The SCRC will also analyze vulnerabilities and conduct scenario planning with private sector stakeholders to help mitigate supply chain disruptions, ensure reliable and efficient deliveries of goods and services, and lower costs for the American people.

The participants in the roundtable identified the following recommendations that can help advance supply chain resilience.

- Establish center of excellence for procuring prioritized commodities including technology, electronics and microchips.

- Create formal partnerships and collaboration tools to share, track and visualize supply chain information and risk management across domains such as an SCM control tower.

- Shift to best value vs low-cost procurement models to improve supply chain readiness.

- Use AI to drive real-time tracking, suggested solution and resource maximization.

- Drive policy to delegate the required ATO risk attestations to third-party support.

Workforce Resilience Recommendations

Amidst rapid technological changes and unprecedented industry disruptions, there is a growing disparity between the skills required in the workforce and the professionals who have obtained those skills. Public agencies will need to be able to recruit, retain, and develop a professional workforce who can successfully address emerging critical infrastructure issues now and into the future. Consequently, cybersecurity workforce resilience has evolved as an ongoing challenge, one that requires continuous improvements to address increasing threats to the critical infrastructure. Government faces several workforce resilience challenges:

- Huge pay gap exists between the public and private sectors. The long lead time to hire qualified cybersecurity professionals in government compounds this problem, as does the difficulty of matching needs with openings on a nationwide scale—due to the lack of a national database, or a system to identify cybersecurity professionals across geographical boundaries.

- Lack of consistency in academic programs where many institutions do not expose graduates to real-world, hands-on cybersecurity education

- Remote work often diminished coherence and collaboration; consequently, many organizations have moved to reduce remote work.

A consistent theme highlighted in the roundtable is that the government should capitalize on proven models of coordination between the public and private sectors. Roundtable participants also noted that the Office of Personnel Management (OPM) and other agencies need to update cybersecurity classification codes. The updates would define which positions require a college degree, and which do not. Additionally, updated classification codes would help to address cybersecurity jobs needed in the future, even in light of the emergence of AI.

Continued emphasis on employee engagement is also critical for retention of cybersecurity professionals. Employees need to be engaged as organizations determine the appropriate role of AI. Visibility into a career path and promotions should be a priority for employers. Employers must also continue to optimize opportunities for remote work and work-life balance. Roundtable participants also discussed the opportunity to develop a national database of cybersecurity professionals to help to identify and hire qualified individuals more rapidly.

The participants in the roundtable identified the following recommendations to ensure readiness that address more effectively workforce resilience.

- Use AI to improve the hiring process.

- Enhance coordination between the public and private sectors by using proven models.

- Improve cybersecurity classification codes and hiring processes.

- Focus on employee engagement to support retention.

- Create national database of cybersecurity professionals.

- Create role-based cyber education models for disciplines within the organization beyond technical practitioner roles.
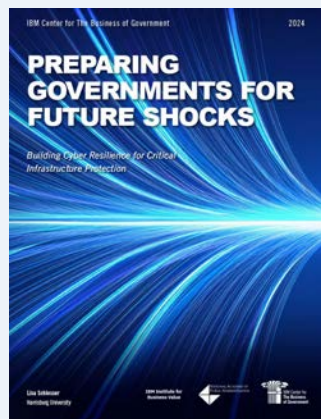
Preparing Governments for Future Shocks: Building Cyber Resilience for Critical Infrastructure Protection

by Lisa Schlosser

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The Role of Risk Leadership in Defining ERM Readiness in Government

By Peter C. Young and Trang Hoang

Today's risk landscape requires a unified, coordinated, disciplined, and consistent approach, no longer focused on risk management as a compliance exercise or perceiving risks solely as problems to avoid. Research is needed on reconceiving risk management as a value-creating. activity integral to strategic planning, decision making, and organizational resiliency.

As former federal Chief Information Officer Suzette Kent so aptly notes, "People and operational changes due to service delivery being significantly more digital, workforce in hybrid location mode and massive growth in automation and artificial intelligence drive the need to reexamine workforce, risk practices, and operational resiliency." This need to reexamine risk and how its effectively dealt with is made even more pressing in a world and at a time where government leaders increasingly agree that "rare unexpected events" are now neither rare nor unexpected. Indeed, they are shocks—more frequent and more destabilizing.

The report provides timely and insightful perspectives that underscore the connection between leadership actions that support government risk management and successful efforts to implement enterprise risk management (ERM). It explores two distinct concepts—risk leadership and ERM readiness. It aims to better understand the question of ERM readiness, seeking to ascertain the measure by which an organization can self-evaluate readiness for ERM implementation. The findings outlined in this report will help those planning to adopt ERM, as well as those in more advanced stages of implementation.

Supported by nearly two dozen interviews, we address how the role that risk leaders play in ERM implementation is essential to accessing an organization's readiness. Based on an analysis of survey results and interviews with U.S. federal leaders regarding ERM practices, along with supporting
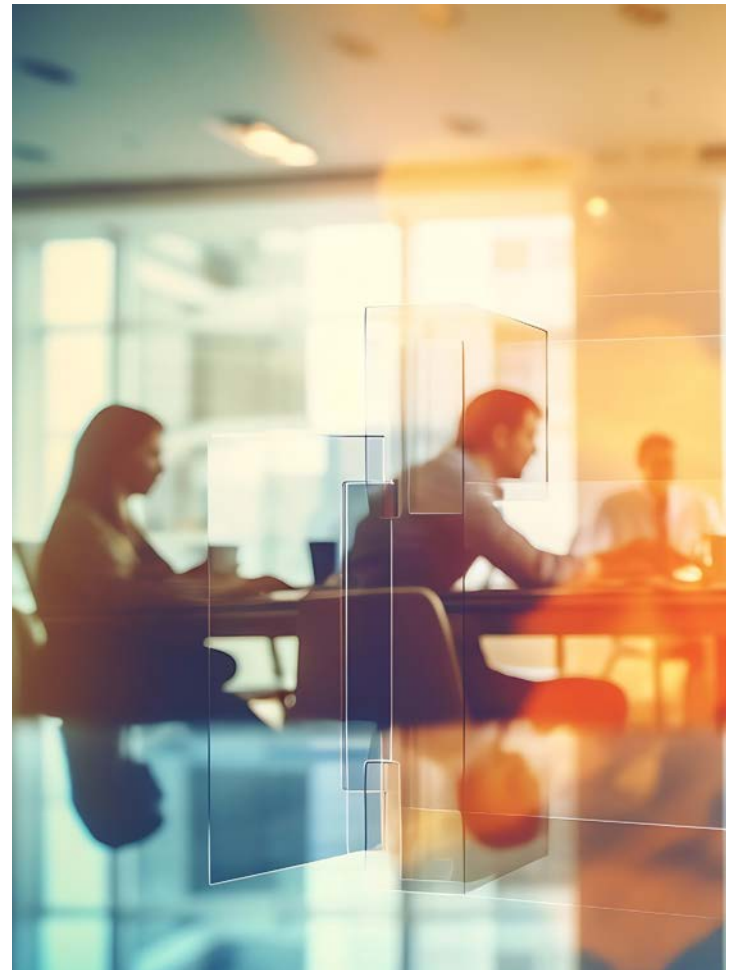
evidence from scholarly and professional research, the report documents observations and offer insights on the interconnection between risk leadership and organizational ERM readiness.

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Observations on ERM Readiness and Risk Leadership

It is a leadership imperative for government executives to mitigate potency of both risk and uncertainty. Employing an enterprise risk management (ERM) process can assist leaders in doing just that. When employed on a strategic level, ERM can help decision makers evaluate the likelihood and impact of major events and formulate the best way to either prevent them or manage their effects, if they do occur.

ERM proposes a proactive and comprehensive management approach that enables agencies to better function within a complex environment. Many federal agencies are well down the road in implementing ERM, their experiences illuminating both accomplishments and challenges. In this report, we aim to better understand the question of 'ERM readiness,' seeking to ascertain the measure by which an organization can self-evaluate its readiness for ERM implementation, what is expected, and how an organization develops a preparatory process for that implementation. This objective necessitates a brief retrospective look at the ERM story, which assists in informing a more prospectively oriented evaluation of ERM preparedness.

In looking back, a changing perspective on ERM in federal agencies emerges to undergird the observations recorded in this report. Given the current state of ERM adoption in federal agencies, it could be argued this report might better be oriented toward 'maturation' more so than 'readiness.' Either would benefit from the report's backward/forward approach, however. This report will strive to be attentive to the interests of those planning to adopt as well as those in more advanced stages of implementation.

ERM holds great promise for federal agencies—nearly all efforts to clarify assess and address threats and opportunities in a rational and organization-wide manner can yield positive benefits to leaders and managers. Supported by nearly two dozen interviews, it has become evident that understanding the role risk leaders play in ERM implementation is essential to clarifying an organization's readiness. Emphasis on risk leaders not only reflects the fact that it is critical to understanding leadership attributes, knowledge, skills, and abilities/strategies—a useful outcome in its own right— but also that risk leadership itself is an artifact of dynamic changes observed in the wider evolutionary story of modern risk management thought and practice.

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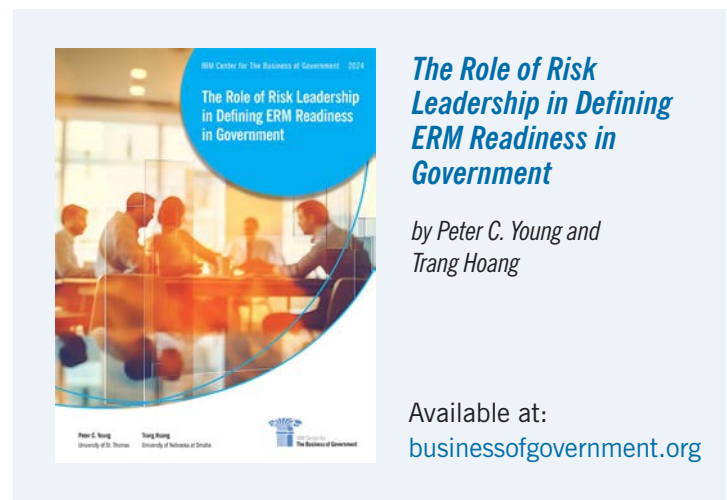
Six Key Insights

Based on an analysis of survey results and our interviews with risk leaders regarding the actual practices of ERM in U.S. federal agencies, along with supporting evidence from scholarly and professional research, six key observations and insights related to ERM readiness and risk leadership are outlined below:

- **Risk leaders and risk leadership concepts remain insufficiently understood:** The early demand for risk leaders, such as chief risk officers (CROs) outpaced a concrete understanding of the type of leader needed and the skills, knowledge, and abilities these leaders may need to be successful at managing risks across an enterprise. Though this may not be as concerning at the level of the individual risk leaders, this lack of understanding seems to be a significant issue for what we call the practice of risk leadership. Managing risk is imperative for successful leadership. Leaders must develop processes like ERM to improve their ability to manage risks effectively. ERM cuts across an organization's silos to identify and manage a spectrum of risks, which underscores the critical importance of understanding the purpose of risk leadership.

- **Risk leaders act as agency entrepreneurs:** Many risk leaders interviewed for this report leveraged highly imaginative, innovative, and adaptive efforts to build ERM processes within agencies. As such, the qualities they project and the insights they offered on how they implemented and matured ERM within their respective agencies share similarities to those typically associated with entrepreneurs. This is more than a clever description or turn of phrase and more indicative of the core capabilities needed today for risk leaders not usually found in traditional risk management practitioners.

- **ERM expands the aperture of threats and opportunities to include in measurable (and even non-detectable) phenomena:** Expanding the risk landscape ushers in complexity, uncertainty, the unknown, the unknowable, and emergent phenomena. This evolving change of emphasis and focus requires risk leaders to acquire or possess different knowledge, skills, and abilities, such as behavioral psychology, organizational change management, complexity leadership, strategic foresight, and scenario planning.

- **ERM supports sustainable resilience:** An uncertain future will challenge efforts at prediction, leading to different approaches to forecasting. This suggests that efforts to anticipate future events should focus on building a capacity to be resilient, and to maintain resilience over time.

- **Characteristics of risk leadership should include the right mindset and behaviors:** It is important to identify essential qualities of how risk leaders think—their mindset, but also what they do—what behaviors they employ to implement, manage, and mature the ERM function successfully within their government agency or department. This report outlines possible responses to both assertions.

- **Obstacles to ERM implementation seem endemic:** Given this observation, it might be better to imagine these obstacles as risks or uncertainties that fall within the domain of the risk leader's responsibilities, rather than as exogenous constraints on implementation. Tending to the well-being of the ERM function itself, beyond the operational methods implemented to address risk and uncertainty, appears to be a critical and—it could be said—political dimension of the risk leader's role.

The report describes the importance of risk leaders having an overall vision of the interaction between organizational structure and ERM readiness, given the siloed nature of many government operations. The insights outlined in this report can help governments grow more resilient in the face of increasing risks, promoting research on preparing for and responding to shocks that increase in frequency and magnitude.

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IBM Center Research Announcement

The IBM Center for The Business of Government connects research to practice, supporting work by scholars that benefits government through real-world experience and analysis. Our Center's reports are intended to spark the imagination—crafting new ways to think about government. We identify trends, new ideas, and best practices in public management and innovation.

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We look forward to hearing from you!

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