SPECIAL REPORT

2026

FIVE PILLARS OF EFFECTIVE GOVERNMENT

Daniel J. Chenok • Margie Graves • Michael J. Keegan

IBM Center for
The Business of Government

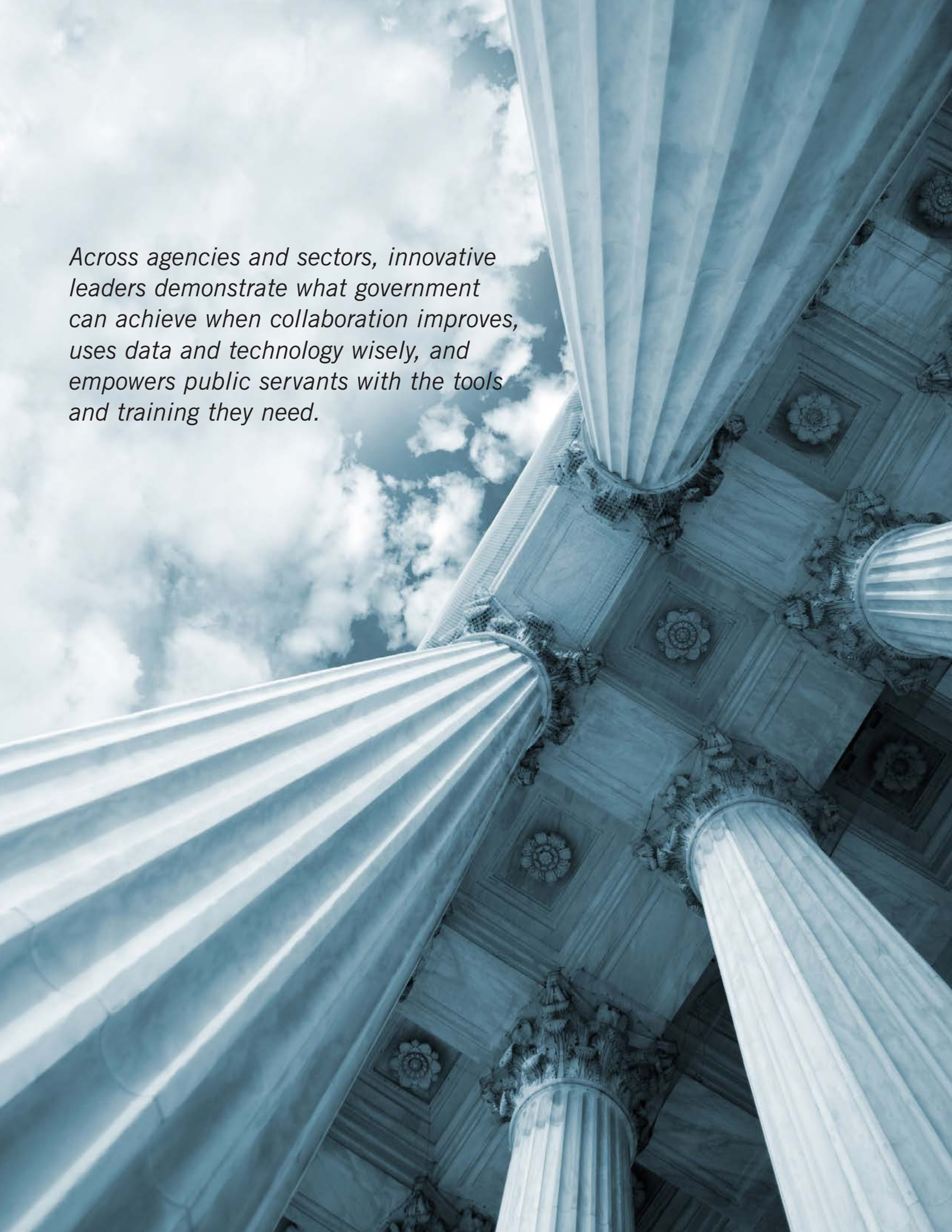
SPECIAL REPORT

FIVE PILLARS OF EFFECTIVE GOVERNMENT

JANUARY 2026

Daniel J. Chenok • Margie Graves • Michael J. Keegan

IBM Center for
The Business of Government



Across agencies and sectors, innovative leaders demonstrate what government can achieve when collaboration improves, uses data and technology wisely, and empowers public servants with the tools and training they need.

Table of Contents

Executive Summary

Government today stands at a crossroads. Global change continues to accelerate—through disruptive technologies, increasingly complex cross-national risks, rapid shifts in economic and social conditions, and rising public expectations for fast, trustworthy, and high-quality services. Every day, public agencies must manage challenges that no organization—public or private—can navigate alone, including protecting critical infrastructure from cyberattacks, responding to natural disasters, delivering benefits during emergencies, building resilient communities, and ensuring that essential services reach the public fairly and reliably.

The IBM Center for The Business of Government has spent more than two decades informing leaders about effective practices for meeting these challenges, by grounding public-sector innovation in evidence, research, and real-world experience. *Five Pillars of Effective Government* advances that work by identifying five areas where meaningful progress can have the greatest impact—areas where the right ideas, the right tools, and the right leadership can strengthen the capacity of government to serve the nation.

This report is built around five central pillars:

- Multi-sector partnerships
- Financial and operational effectiveness
- Technology-enabled service and efficiency
- Data-driven decision-making
- A strong and modern government workforce

Individually, each pillar addresses a fundamental dimension of good governance. Together, they support a comprehensive strategic framework for delivering on what the public expects—and deserves—from its institutions: a government that works, responds, and earns trust through performance.

What the Five Pillars Reveal

1. Partnerships Are Now Essential, Not Optional

No single organization can solve the hardest problems alone. Whether delivering vaccines, planning for climate risks, strengthening supply chains, or modernizing digital services, success increasingly depends on partnerships—across agencies, across levels of government, and across sectors.

The report shows how well-designed partnerships:

- Tap the innovation and agility of the private sector.
- Integrate the reach and expertise of nonprofits and universities.
- Align federal, state, and local efforts toward shared goals.
- Create “whole-of-government” approaches capable of tackling issues that cut across boundaries.

When partnerships build on trust, shared data, and mutual accountability, government’s impact expands dramatically.

2. Fiscal and Operational Stewardship Matter More Than Ever

The public expects government to invest resources wisely and deliver value. Yet agencies face enormous pressures: rising costs, aging systems, administrative burdens, and the constant need to do more with less.

This pillar highlights practical ways to improve performance—such as:

- Modernizing financial management
- Using analytics to anticipate future needs
- Designing operations around user needs
- Preventing fraud and improper payments before they happen
- Modernizing procurement to speed results and strengthen accountability

Financial responsibility and operational excellence reinforce one another. When government operates effectively, public trust grows.

3. Technology Is Transforming Government's Mission

Technology continues to reshape how government works. From artificial intelligence to cloud computing to digital identity systems, emerging technologies offer extraordinary opportunities to improve services, strengthen cybersecurity, and support public employees.

This pillar shows how technology enhances:

- Emergency preparedness and disaster response
- Benefits delivery, including during crises
- Protection of sensitive government data
- User experience for everyday services
- Operational efficiency through automation and AI-enabled decision support

But this pillar also emphasizes a critical insight: technology succeeds only when used thoughtfully, ethically, and with people—citizens and public servants—placed at the center.

4. Data Has Become the Foundation of Effective Governance

Sound decisions depend on quality and timely data. Government agencies now generate and manage enormous amounts of information, and when used effectively, data can transform policymaking, program management and evaluation, and public engagement.

This pillar explains how:

- High-quality, well-governed data improves priority-setting
- Evidence and evaluation strengthen accountability
- Cross-agency data sharing enables a more complete picture of public problems
- Modern analytics—including machine learning—help leaders see what is coming before it arrives

Data-driven government gives public leaders the insight they need to make choices that improve real lives.

5. A Strong Workforce Is the Backbone of Government

Every public service—from emergency response to benefits processing—is ultimately delivered by people. Yet the government workforce faces increasing strain: retirements are rising, hiring is slow and complex, skills gaps are widening, and employee engagement has been shaken by years of disruption.

This pillar outlines a path forward by:

- Modernizing hiring to bring in talent quickly and fairly
- Updating compensation systems to reward performance and attract new skills
- Expanding training and upskilling so the workforce can take full advantage of new technologies
- Strengthening accountability systems that support excellence
- Developing leaders who can guide agencies through uncertainty and innovation

In short, better government depends on better supporting the people who make it work.

Introduction

Renewing Government Capacity

The past several years have underscored how deeply the public depends on effective government. The COVID-19 pandemic revealed both remarkable ingenuity—such as rapid vaccine development—and painful gaps, from outdated systems to fragmented coordination. Natural disasters have grown more frequent and severe, requiring faster, more integrated response. Digital services now define people's expectations, yet government often struggles to keep up with the pace of technological change. And across all levels of government, workforce shortages, legacy processes, and growing demands strain the capacity to deliver.

In addressing such significant challenges are real, governments can also drive opportunities to respond and grown stronger. Across agencies and sectors, innovative leaders demonstrate what government can achieve when collaboration improves, uses data and technology wisely, and empowers public servants with the tools and training they need.

This report captures those lessons within and across the five pillars, showing how government can build and scale on what works so that agencies are not just reacting to crises, but anticipating them: not just managing today's responsibilities, but preparing for tomorrow's unknowns.

Ultimately, this special report offers a hopeful message: with the right investments, the right partnerships, and a commitment to innovation grounded in evidence, government can deliver exceptional value to the public. It can become more effective, more trusted, and more equipped to help the nation navigate whatever lies ahead.

ACROSS THE PILLARS

A Strategic Framework for Building the Government the Public Deserves

Across these pillars, developing comprehensive and strategic approaches to governance emerges as a key imperative. Such enterprise strategies can drive effective and resilient public sector performance that serves the nation. Government agencies operate in a dynamic environment shaped by fiscal constraints, policy shifts, evolving global connections, rapid technological advancements, and low levels of public trust. By acting with strategic intent to align government functions and actions, societal expectations and concerns, and constitutional principles, government can take action to improve near- and long-term outcomes.

Such a general perspective can help agencies to achieve service quality and operational efficiency that serves mission and program objectives, and can provide context for measuring progress, and outcomes. This framework can enable leaders to identify innovative strategies that optimize resource allocation, reduce costs, enhance customer experience, and strengthen resilience against multiple risks—driving reforms that deliver long-term value to government and the public.

Strategic objectives that can frame and integrate research across the five pillars include:

- Defining the role of government in managing effectively
- Driving innovation to drive outcomes
- Promoting public information and engagement

Setting these and similar cross-cutting strategic objectives can help to address complex issues facing government, through driving meaningful and replicable improvements in public management.

ACROSS THE PILLARS

A Strategic Framework for Building the Government the Public Deserves

A strategic framework underscores the fact that the five pillars presented in this report should not be viewed in isolation—they are interconnected strategies that, when pursued together in a strategic context, strengthen government's ability to serve. They help agencies become:

- More collaborative
- More data-driven
- More technologically agile
- More financially responsible
- More resilient and people-centered

The result is a government better prepared for the next crisis, more capable of meeting daily demands, and more responsive to the evolving needs of communities across the country.

PILLAR 1

Advancing Multi-Sector Partnerships: Improving Outcomes and Productivity

The governing landscape of the 21st century is defined by interconnected challenges that span traditional boundaries: cyber threats, public health emergencies, infrastructure demands, and technological advancements that reshape public expectations. U.S. federal leaders increasingly recognize that durable progress cannot be achieved within single agencies or sectors. "The complexity of modern governance necessities innovative collaborative approaches that bridge traditional bureaucratic divides."[1]

Multi-sector partnerships have emerged as operational necessities driven by budget constraints, rapid technological change, and increasingly complex challenges. Yet evolving political, fiscal, and social dynamics, including fluctuating trust in government and funding uncertainties, necessitate serious reexamination of how these partnerships are structured, managed, and sustained.

The stakes are considerable. Effective multi-sector collaboration can unlock innovation, enhance service delivery, and build resilience, while poorly designed partnerships risk duplicating efforts and creating accountability gaps. To understand how federal leaders can realize these benefits, government leaders and stakeholders can assess both the mechanisms of collaboration and the conditions that enable them to thrive. IBM Center research demonstrates that practical insights into collaborative governance are essential for building a more effective public sector.

The federal government can advance multi-sector partnerships to improve outcomes and productivity. Key dimensions of multi-sector partnerships include public-private collaborations, intergovernmental coordination, whole-of-government strategies, collaborative governance incentives, and future-oriented partnerships shaped by strategic foresight.

Public-Private Partnerships and Collaborative Networks: Building Bridges for Innovation

Public-private partnerships (PPPs) have demonstrated remarkable success in infrastructure development, technology deployment, and service delivery across federal agencies. These collaborations harness private sector innovation, efficiency, and capital while maintaining public sector oversight and accountability. However, structuring sustainable PPPs requires careful attention to underlying conditions that ensure their success.

Effective public-private partnerships extend beyond contractual agreements. Trust between partners, aligned vision, appropriate risk-sharing, and adequate funding form the bedrock of

1. IBM Center for The Business of Government, Research Announcement 2025–26, 7, https://www.businessofgovernment.org/sites/default/files/Center%20Research%20Announcement.pdf.

successful collaborations. Well-designed PPPs extend government capabilities without requiring substantial increases in public spending, particularly valuable during budget deficits and spending freezes.[2]

Recent federal initiatives illustrate these benefits. The Department of Veterans Affairs has deepened collaboration with technology firms and nonprofit service providers to modernize digital access for veterans. Joint efforts to enhance VA.gov, strengthen telehealth, and expand digital inclusion demonstrate how combining federal mission leadership with private technical talent can significantly improve service experience and uptake.[3]

Similarly, NOAA's growing reliance on commercial satellite operators providing space-based atmospheric sensing data (e.g., radio occultation data), hyperspectral imagery, and advanced modeling tools reflects a shift toward multi-sector data ecosystems.[4] By leveraging private-sector sensor innovation and analytic capacity, NOAA has enhanced climate and weather forecasting precision while avoiding major capital costs associated with solely government-owned systems. This partnership model directly strengthens public safety, environmental resilience, and fiscal stewardship.

USDA's expansion of online purchasing for SNAP beneficiaries highlights how federal–state–retail partnerships can simultaneously broaden access and improve operational effectiveness.[5] By coordinating with state agencies, large retailers, and e-commerce platforms, USDA rapidly scaled digital purchasing options for millions of households. This widened program reaches without increasing federal overhead and used private distribution networks to deliver public value more efficiently.

In addition to federal examples, state-level innovations offer equally valuable lessons. An interesting state example is the TEXpress Lanes project in the Dallas-Fort Worth metropolitan area, a PPP between the Texas Department of Transportation (TxDOT) and a private consortium led by Ferrovial.[6] This multisector approach—combining state government oversight, private engineering expertise, and local economic stakeholders—has reduced congestion by providing faster travel options, generated over $20.2 billion in economic impact for Texas, supported 104,500 jobs, and contributed $5.9 billion in wages.

In the realm of defense technology, the Pentagon has partnered with private firms like Microsoft and Anduril for the Integrated Visual Augmentation System (IVAS) program, with significant advancements in 2024-2025. This multisector effort focuses on developing augmented reality headsets for military use, where Anduril manages hardware and software production, and Microsoft provides cloud infrastructure via Azure for data processing and workloads.[7]

---

2. The White House Archives, "Public-Private Partnerships and Resource Optimization," obamawhitehouse.archives.gov.
3. U.S. Department of Veterans Affairs. (2025, November 20). Powered by AI, VA is improving Veteran care experience. *VA News*. https://news.va.gov/143486/powered-by-ai-improving-veteran-care-experience/ and Congress.gov. (2025). Closing the Data Gap: Improving Interoperability Between VA and Community Providers. https://www.congress.gov/event/119th-congress/house-event/118027.
4. eoPortal Directory. (2025). Joint Polar Satellite System (JPSS). https://www.eoportal.org/satellite-missions/noaa-20 and Lindsey, D. T., et al. (2024). GeoXO: NOAA's Future Geostationary Satellite System. Bulletin of the American Meteorological Society, 105(3), E660–E679. https://doi.org/10.1175/BAMS-D-23-0048.1.
5. Center on Budget and Policy Priorities. (2020, May 28). SNAP boosts retailers and local economies. https://www.cbpp.org/research/food-assistance/snap-boosts-retailers-and-local-economies.
6. Jonathan L Gifford, Shanjiang Zhu, Daniel Grimaldi, *Delivery methods, risk sharing, standards and performance for construction, operations, and management: The TEXpress managed lanes system* (Dallas-Ft. Worth, Texas, Case Studies on Transport Policy, Volume 12, 2023), https://doi.org/10.1016/j.cstp.2023.101016.
7. Amelia Hui, *In an Age of Convergence: Public-Private Partnerships in Defence R&D* (Waterloo, ON: Centre for International Governance Innovation, 2025), https://www.cigionline.org/documents/3558/DPH-paper-Hui_K7vuaM8.pdf.

These examples reinforce that multi-sector partnerships are foundational to modern governance. They extend federal reach, accelerate innovation, and enable government to deliver high-quality outcomes at scale.

Intergovernmental Coordination: Bridging Jurisdictional Divides

Effective coordination across federal, state, and local jurisdictions remains one of governance's most persistent challenges. Policy misalignment, resource disparities, and declining trust create barriers to collaboration—yet emergency management, infrastructure development, public health, and public safety demand coordinated intergovernmental responses.

The COVID-19 pandemic starkly illustrated both the necessity and difficulty of intergovernmental coordination. Federal partnerships with pharmaceutical companies, logistics firms, state health departments, and local providers facilitated rapid vaccine development and distribution, while also revealing significant gaps in coordination and data sharing that continue to inform improvement efforts—lessons that continue to inform efforts to strengthen intergovernmental collaboration.[8]

Beyond emergency response, successful intergovernmental coordination extends to financial transparency and data modernization. The DATA Act implementation[9] illustrated this potential by aligning federal agencies, the Office of Management and Budget (OMB), and the Treasury Department around a unified vision for governmentwide financial transparency. The law required agencies to adopt common data standards, enabling consistent reporting across the entire federal enterprise. This included collaborative town halls and pilot programs engaging state and local entities to reduce duplication and administrative burdens. Together, these efforts showcased how coordinated action across levels of government can modernize data, strengthen accountability, and improve public transparency.

When state and local leaders trust that federal partners respect their expertise, understand local contexts, and can provide sustained support, they engage more fully in collaborative initiatives. Conversely, when trust erodes, whether due to shifting federal priorities, inconsistent funding, or perceived federal overreach, intergovernmental partnerships struggle to achieve their objectives.

The IBM Center report, *Improving Performance with Intergovernmental Grants: Lessons from the Continuum of Care Homeless Assistance Program,* offers a case study of a program that sought to reduce homelessness in participating areas, through coordinated efforts.[10] The report demonstrates how improved coordination, integrated data systems, and shared performance measures can align incentives and enhance outcomes. By moving from fragmented grant administration to coordinated local planning with clear metrics, the program strengthened federal-local collaboration and improved service delivery. Key lessons include the use of performance-based funding to incentivize collaboration, ensuring that federal grants are tied to measurable outcomes like housing placement rates. These insights translate well to other domains in which joint responsibility is essential—public safety, climate adaptation, and environmental protection among them.

8. Katherine Barrett, Richard Greene, and Donald F. Kettl, *Managing the Next Crisis: Twelve Principles for Dealing With Viral Uncertainty,* (Washington, D.C.: IBM Center for The Business of Government, 2021), 13, http:/www.businessofgovernment.org/sites/default/files/Managing%20The%20Next%20Crisis-%20Twelve%20Principles%20For%20Dealing%20With%20Viral%20Uncertainty.pdf.
9. *The Business of Government Hour Interview—Reflections on Public Service with Dave Lebryk*, December 2025.
10. Juliet Musso, J. Woody Stanley, and Jordy Coutin, *Improving Performance with Intergovernmental Grants: Lessons from the Continuum of Care Homeless Assistance Program* (Washington, D.C.: IBM Center for The Business of Government, 2023), 15.

Scalable models for intergovernmental collaboration must address several critical factors: establishing clear roles and responsibilities across jurisdictional boundaries, creating sustainable funding mechanisms, developing shared information systems, and implementing joint accountability frameworks.

Whole-of-Government Approaches: Breaking Down Organizational Silos

Whole-of-government approaches align federal agencies around shared missions and create unified strategies for issues that cut across department boundaries—increasingly important given interconnected federal missions.

FEMA offers one example of a "whole of government" approach for emergency response. The agency strives to adopt a whole community approach that "attempts to engage the full capacity of the private and nonprofit sectors—including businesses, faith-based and disability organizations, and the American public—in conjunction with the participation of state, local, tribal, territorial, and federal governmental partners."[11] As noted in *Partnering for resilience: A practical approach to emergency preparedness*, working across sectors with differing values, attitudes, operating models, and accountability mechanisms is not easy, but recognizing and pursuing the value that can be delivered through partnerships is critical to the strength of the network.[12]

The Department of Homeland Security illustrates this dynamic through collaborations with logistics companies, infrastructure operators, and private technology providers that enhance preparedness and coordinate supply chain resilience. FEMA notes that public-private collaboration is critical for "improving information sharing and coordination within supply chain networks, thereby enhancing preparedness and response activities."[13]

The IBM Center report, *Cross-Agency Collaboration: A Case Study of Cross-Agency Priority Goals*, demonstrates how structured cross-agency mechanisms developed under the GPRA Modernization Act helped federal leaders establish shared goals, performance indicators, and governance framework.[14] Cross-Agency Priority (CAP) Goals improved transparency, strengthened interagency accountability, and provided clear roadmaps for complex mission areas. Successful CAP Goals feature strong leadership commitment, dedicated coordination mechanisms, shared performance metrics, and resources explicitly allocated for collaborative activities.

Similarly, the IBM Center report, *Addressing Complex and Cross-Boundary Challenges in Government: The Value of Strategy Mapping*, illustrates how strategy mapping enables agencies to visualize cross-boundary dependencies, identify leverage points, and align investments. "Strategy management-at-scale is a boundary-crossing process designed to create direction, alignment, and commitment across agencies and among independent organizations at the scale of the challenge or issue to be addressed."[15] This approach transforms abstract commitments to collaboration into concrete operational plans with clear accountability.

11. "A Whole Community Approach to Emergency Management: Principles, Themes, and Pathways for Action." FEMA. FDOC 104-008-1. December 2011, https://www.fema.gov/sites/default/files/2020-07/whole_community_dec2011__2.pdf.
12. J, Christopher Mihm, *Partnering for Resilience: A Practical Approach to Emergency Preparedness* (Washington, D.C.: IBM Center for The Business of Government, IBM Institute for Business Value, & National Academy of Public Administration, 2022), 3.
13. Federal Emergency Management Agency. (2023). Information sharing guide for private-public partnerships. U.S. Department of Homeland Security, https://www.fema.gov/sites/default/files/documents/fema_information-sharing_guide.pdf.
14. John M. Kamensky, *Cross-Agency Collaboration: A Case Study of Cross-Agency Priority Goals* (Washington, D.C.: IBM Center for The Business of Government, 2017), 27.
15. John M. Bryson, et al., *Addressing Complex and Cross-Boundary Challenges in Government: The Value of Strategy Mapping* (Washington, D.C.: IBM Center for The Business of Government, 2023), 20.

Data-sharing agreements constitute a critical enabler of whole-of-government collaboration. The IBM Center report, *Silo Busting: The Challenges and Successes of Intergovernmental Data Sharing*, examines how agencies can overcome legal, technical, and cultural barriers to sharing information.[16] Effective data sharing requires not only technical infrastructure but also governance frameworks that address privacy concerns, establish data standards, and create incentives for agencies to contribute to shared platforms. When implemented effectively, integrated data systems enable agencies to develop comprehensive understanding of complex problems and coordinate interventions more effectively.

Additional mechanisms can support more cohesive governance structures across agencies. The IBM Center's research identifies joint budgeting processes, outcome-based performance metrics, and data-sharing agreements as tools worthy of further study for their potential to enable cross-agency collaboration. These mechanisms represent areas where research into what governance frameworks and tools (e.g., portfolio budgeting, data-sharing platforms, operational procedures) can best support whole-of-government collaboration across federal agencies could yield valuable insights for practitioners.[17]

Sustaining whole-of-government collaboration requires appropriate organizational infrastructure and human capital. Cross-boundary collaboration demands skills in negotiation, stakeholder engagement, systems thinking, and change management—competencies often underemphasized in traditional public administration training. Moreover, institutional knowledge critical to maintaining partnerships can be lost during workforce turnover. Developing succession planning processes, creating communities of practice, and implementing knowledge management systems can help preserve collaborative capacity despite personnel changes.

Incentives for Collaborative Governance: Aligning Structures with Collaborative Objectives

Collaboration depends fundamentally on incentives that encourage individuals and organizations to invest time and resources in partnership activities. However, traditional government incentive structures often inadvertently discourage collaboration by rewarding individual agency performance, creating competition for resources, and failing to recognize contributions to collective outcomes.

Career incentives for federal employees typically emphasize advancement within single agencies rather than cross-agency expertise. Cross-agency rotation programs and collaborative leadership tracks offer potential remedies by creating career paths that value boundary-spanning work.

Team-based rather than individual reward systems can shift organizational culture toward collaboration. Implementing such systems requires careful design to maintain individual accountability while recognizing collaborative contributions.

Funding structures profoundly influence partnership dynamics. When agencies must compete for limited resources, collaboration becomes more difficult as organizations prioritize protecting their budgets over pursuing shared objectives. Alternative funding mechanisms—such as collaborative innovation funds, cross-agency pooled resources, or incentive grants for partnership activities—can create financial rewards for collaboration.

16. Jane Wiseman, *Silo Busting: The Challenges and Success Factors for Sharing Intergovernmental Data* (Washington, D.C.: IBM Center for The Business of Government, 2020), 20.
17. BM Center for The Business of Government, Research Announcement 2025–26.

Financial and regulatory mechanisms must ensure that partnerships remain resilient amid funding uncertainties. Multi-year funding commitments, flexible budget authorities that allow resources to flow across organizational boundaries, and regulatory frameworks that facilitate rather than impede collaboration all contribute to sustainable partnerships. In resource-constrained environments, agencies need clear guidance on how to structure partnerships that maximize public value while managing fiscal risks appropriately.

Performance measurement[18] frameworks must evolve to assess multi-sector initiatives effectively. Traditional metrics often focus on outputs easily attributable to single agencies rather than outcomes requiring collaborative action. Developing meaningful metrics for partnership performance requires identifying indicators that capture collective impact, establishing baseline measurements, and implementing systems for tracking progress over time. This requires not only technical measurement capabilities but also cultural shifts in how agencies define success. When agencies measure only their individual contributions rather than collective outcomes, partnerships struggle to demonstrate value, making it difficult to sustain political and financial support for collaborative initiatives.

Strategic Foresight and Future-Oriented Partnerships

Effective partnerships must look beyond immediate challenges to anticipate future disruptions and opportunities. Strategic foresight, the systematic exploration of possible futures and their implications, can offer a framework for designing resilient partnerships capable of adapting to evolving circumstances.[19]

Scenario planning enables partners to explore multiple possible futures and develop robust strategies across different potential conditions. Rather than assuming a single predictable trajectory, scenario planning acknowledges uncertainty and helps organizations prepare for various contingencies. For partnerships, this approach can identify which collaborative structures remain effective across different scenarios and which require modification as circumstances change.

Emerging technologies—from artificial intelligence to quantum computing—will fundamentally reshape how government operates and what citizens expect from public services. Future-oriented partnerships must therefore include technology providers, academic institutions, and civic organizations in ongoing dialogue about responsible innovation, ethical frameworks, and capability development. Agencies that engage these stakeholders early and continuously will be better positioned to harness technological advances while managing associated risks.

Learning from successful partnership[20] models provides crucial insights for designing future collaborations. Operation Warp Speed, the public-private partnership that accelerated COVID-19 vaccine development, demonstrates how clear objectives, adequate resources, streamlined regulatory processes, and strong leadership can enable rapid innovation through collaboration. This initiative brought together federal agencies, pharmaceutical companies,

18. John M. Kamensky, "Performance Management: An Emphasis on Learning," *Business of Government Stories* (blog), IBM Center for The Business of Government, February 27, 2020, https://www.businessofgovernment.org/blog/performance-management-emphasis-learning.
19. Bert George, *Embedding Strategic Foresight into Strategic Planning and Management* (Washington, D.C.: IBM Center for The Business of Government, 2025), 17 https://www.businessofgovernment.org/sites/default/files/Embedding%20Strategic%20Foresight%20into%20Strategic%20Planning%20and%20Management.pdf.
20. John M. Kamensky, "Performance Management: An Emphasis on Accountability," *Business of Government Stories* (blog), (Washington, D.C.: IBM Center for The Business of Government, 2020), https://www.businessofgovernment.org/blog/performance-management-emphasis-accountability.

logistics firms, and research institutions around a shared timeline and measurable milestones—a model that can inform future efforts requiring rapid multi-sector mobilization.

Cultural and structural change remains essential for embedding collaborative approaches into government operations. Leadership commitment, organizational learning systems, and institutional frameworks that support rather than hinder partnership activities all contribute to sustaining collaborative capacity over time.

Conclusion: Toward a More Collaborative Public Sector

Advancing multi-sector partnerships represents a central imperative for effective governance in the 21st century. The challenges facing American government cannot be addressed through individual agencies or sectors working in isolation.

The path forward requires sustained commitment to developing robust governance frameworks, enhancing data-sharing capabilities, leveraging emerging technologies, fostering whole-of-government coordination, aligning incentive structures with collaborative objectives, and cultivating strategic foresight. Each of these elements contributes to building a more resilient, innovative, and effective public sector capable of meeting contemporary challenges. The federal government stands at an inflection point. Challenges grow in complexity while expectations for responsive governance rise. Meeting this moment requires more than incremental improvements to existing partnerships—it demands a fundamental reorientation toward collaboration as the default mode of operation. By embracing multi-sector partnerships as a cornerstone of modern governance, federal leaders can build a public sector worthy of the challenges ahead and the citizens it serves. By embracing multi-sector partnerships as a cornerstone of governance, federal leaders can build a public sector worthy of the challenges ahead.

PILLAR 2

Improving Financial and Operational Effectiveness

U.S. federal government agencies face an increasingly complex operating environment characterized by fiscal constraints, technological disruption, evolving citizen expectations, and unprecedented global challenges. Improving financial and operational effectiveness represents a fundamental obligation to taxpayers and a prerequisite for maintaining public trust in democratic institutions.

This challenge is substantial and demands immediate attention. According to the Government Accountability Office's 2024 report, the federal government made $236 billion in improper payments in fiscal year 2023, with more than 80 percent concentrated in just five programs. Moreover, GAO estimates that $232-$521 billion is lost to fraud each year, making it equivalent to the "sixth largest agency in government" in budget terms.[21] These figures underscore the urgent need for systematic improvements in how government manages its finances and operations.

Yet within these challenges lie significant opportunities. Through rigorous research, evidence-based practices, and strategic adoption of proven innovations, federal agencies can transform operations to deliver better outcomes at lower costs.

Five critical dimensions define financial and operational effectiveness: operational efficiency, financial management, risk resilience, procurement reform, and regulatory reform—interconnected components of a broader imperative to optimize government performance.

Operational Effectiveness and Efficiency: Transforming How Government Works

Operational effectiveness requires rethinking how agencies design, execute, and improve core processes. Government workers seeking innovation "need new methods and tools that can help them make better decisions and deliver more effective results."[22]

IBM Center research has identified multiple strategies to improve effectiveness. The transformation toolkit includes four complementary approaches: Lean Production, Agile, Design Thinking, and Lean Startup—methods that are "complementary and essential" because they address different improvement aspects while sharing a focus on user needs and continuous iteration.

21. Steve Goodrich and Bob Westbrooks, *A Prepared Federal Government: Preventing Fraud and Improper Payments in Emergency Funding* (Washington, D.C.: IBM Center for The Business of Government, 2024), 11, https://www.businessofgovernment.org/sites/default/files/Preventing%20Fraud%20and%20Improper%20Payments%20in%20Emergency%20Funding.pdf.
22. Andrew B. Whitford, *Transforming How Government Operates: Four Methods of Change* (Washington, D.C.: IBM Center for The Business of Government, 2020), 6, https://www.businessofgovernment.org/sites/default/files/Transforming%20How%20Government%20Operates.pdf.

Data analytics represents one of the most powerful tools for improving operations. Federal agencies handle "vast amounts of data and serve millions of people, from safeguarding identities and national security to managing benefits and citizens services."[23] By leveraging data on program performance, resource utilization, and service outcomes, agencies can identify bottlenecks, predict challenges, and allocate resources strategically.

Artificial intelligence and machine learning offer particularly promising opportunities. As the Congressional Budget Office has noted, "AI can help agencies identify patterns and relationships and respond to queries that arise in complex scenarios."[24] Moreover, "AI can also augment and improve decision-making across the federal workforce, freeing up time and energy for dedicated federal workers by automating data analysis, reducing manual tasks, integrating cross agency services, and minimizing errors in claims processing and system maintenance."[25]

Robotic Process Automation (RPA) has emerged as a key solution to technology and human capital challenges. RPA enables agencies to automate repetitive, rule-based tasks, freeing employees to focus on higher-value work requiring human judgment. Government agencies have found RPA particularly valuable for bridging gaps between outdated legacy systems,[26] providing a practical intermediate solution while agencies work toward more comprehensive modernization efforts. A 2021 study on RPA usage in federal CFO organizations found that most organizations had five or more bots in production, with success depending on strong organizational change management and good working relationships with CIO offices.[27]

However, technology alone cannot transform government operations. Successful transformation requires placing people at the center of all technology decisions. Understanding how employees receive, think about, and use technology, and connecting that understanding to business outcomes, ensures that technological investments yield actual improvements in mission delivery rather than merely creating sophisticated systems that employees struggle to use effectively.[28]

Shared services and cross-agency collaboration represent another critical strategy for improving operational efficiency. Empowering shared service providers can drive potential for significant cost savings.[29] When multiple agencies perform similar administrative functions—such as human resources management, financial processing, or IT infrastructure—consolidating these activities can reduce duplication, lower costs, and improve service quality through specialization and economies of scale. The challenge lies in overcoming institutional barriers and aligning incentives to encourage cooperation across organizational boundaries.

Adopting agile approaches can enhance organizational capacity by enabling iterative development, cross-functional collaboration, and rapid adaptation to changing requirements. State and local governments that have successfully implemented agile methods report

23. *How Technology Can Drive Government Efficiency* (Washington, D.C.: IBM Center for The Business of Government, 2025), 11, https://www.businessofgovernment.org/sites/default/files/How%20TECHNOLOGY%20Can%20Drive%20GOVERNMENT%20EFFICIENCY_0.pdf. which is a companion piece to the more detailed TCC report, *How Productivity, Innovation, and Efficiency Can Transform American Government.*
24. Congressional Budget Office, Artificial Intelligence and Its Potential Effects on the Economy and the Federal Budget (Washington, D.C.: Congressional Budget Office, December 2024, https://www.cbo.gov/publication/61147#_idTextAnchor000.
25. *How Technology Can Drive Government Efficiency*, 11.
26. Dawson et al., *Digital Modernization for Government*, 7.
27. Dawson et al., *Digital Modernization for Government*, 30.
28. Gregory S. Dawson, James S. Denford, Kevin C. Desouza, and Marc E. B. Picavet, *Digital Modernization for Government: An Implementation Framework* (Washington, D.C.: IBM Center for The Business of Government, December 2024), 26.
29. *How Technology Can Drive Government Efficiency*, 6.

improved project outcomes, reduced failure rates, and greater stakeholder satisfaction.[30] However, agile represents not just a set of techniques but a cultural shift toward experimentation, learning from failure, and continuous improvement, values that must be cultivated throughout the organization, not merely within isolated project teams. The Agile Government Center, a collaborative venture led by the National Academy of Public Administration in partnership with the IBM Center, has produced additional research and frameworks for agencies to learn from and adapt; see more information at https://napawash.org/agile-government-center.

Financial Management and Cost Effectiveness: Optimizing Resource Allocation Under Constraint

Effective financial management extends beyond bookkeeping and compliance to encompass strategic budget formulation, performance measurement, cost analysis, and resource allocation. Budget processes should be transformed from purely fiscal exercises into strategic management tools.

The scale of the challenge is immense. Each year, the federal government spends more than $100 billion on IT and cyber-related investments, with agencies typically spending about 80 percent on operations and maintenance of existing IT, including legacy systems.[31] This creates a cycle where outdated systems consume resources that could drive transformation.

Performance-based budgeting represents a promising innovation. Traditional line-item budgeting focuses on controlling inputs—salaries, supplies, equipment—rather than outcomes. Performance-based approaches link funding to measurable results, creating incentives for efficiency. However, implementing these approaches requires robust performance measurement systems, clear articulation of program goals, and willingness to make difficult tradeoffs between competing priorities.[32]

Predictive analytics offers powerful capabilities for improving financial management and resource allocation. By analyzing historical spending patterns, program utilization trends, and external factors affecting demand, agencies can forecast future resource needs more accurately and identify potential problems before they become crises. The Department of Labor's early use of analytics enabled agency officials to anticipate and prevent operational bottlenecks, demonstrating how forward-looking analysis can prevent problems rather than merely responding to them after they occur.[33]

Zero-based budgeting approaches can surface hidden inefficiencies and encourage fundamental reconsideration of program design and delivery. Rather than assuming that current funding levels represent appropriate baselines and focusing debate on proposed increases or decreases, zero-based approaches require agencies to justify their entire budget from the ground up. While resource-intensive to implement, these approaches can reveal opportunities for significant cost savings and program improvements that incremental budget processes might miss.

30. Sukumar Ganapati, *Adopting Agile in State and Local Governments* (Washington, D.C.: IBM Center for The Business of Government, 2021), 10.
31. *How Technology Can Drive Government Efficiency,* 12.
32. Dawson et al., *Digital Modernization for Government*, 7.
33. U.S. Department of Labor, "Artificial Intelligence Use Case Inventory," Office of the Assistant Secretary for Administration and Management, accessed; U.S. Department of Labor, Office of Inspector General, *Fiscal Year 2026 Congressional Budget Justification*, section "Leveraging Data & Predictive Analytics to Strengthen Programmatic Oversight".

Transparency in financial management serves dual purposes: enabling better internal decision-making and strengthening public accountability. When budget information is presented clearly and accessibly to citizens, it invites informed public engagement and builds trust. However, presenting complex financial information in meaningful ways to non-expert audiences while maintaining technical rigor remains an ongoing challenge. Agencies must balance the need for comprehensive disclosure with the reality that overwhelming citizens with technical details can reduce rather than enhance understanding.

Risk Resilience: Building Capacity to Bounce Forward

Traditional risk management has focused on prevention and recovery—protecting against threats and returning to normal operations. However, contemporary challenges demand building resilience that enables agencies to 'bounce forward' by adapting and improving in response to challenges rather than merely recovering to their prior state.[34]

The COVID-19 pandemic exposed critical vulnerabilities in government systems for rapidly distributing emergency assistance while preventing fraud. It is estimated that with most of the $5 trillion appropriated, over $600 billion was taken fraudulently and/or subject to improper payments.[35] This unprecedented loss occurred because: "Relative to the rapid promulgation of legislation, developing program management rules and capacity, distributing funds, training staff, developing data systems, measuring the impact, and providing for proper oversight, the government was trailing with proper and effective tools and practices to prevent significant fraud or improper payments."[36]

The analysis of root causes provides crucial insights for future preparedness. Fraud involves paying entities not entitled to payment based on misrepresentation, while improper payments result from failures to access needed data, lack of documentation, or absence of necessary information. "The bottom line is regardless of what the number is, it emanates overwhelmingly from three programs that were designed and originated in 2020 with too many large holes that opened the door to criminal fraud."[37] This candid assessment highlights how emergency circumstances can create vulnerabilities that persist long after the immediate crisis passes.

Integrated risk assessment models enable agencies to prioritize resources across multiple threat categories. Rather than treating economic, cybersecurity, and operational risks as separate domains, sophisticated risk management recognizes the interdependencies among different types of threats. For example, a cybersecurity breach can create operational disruptions that generate financial losses and undermine public confidence.

Cybersecurity represents a critical dimension of resilience in an increasingly digital government. "The 2024 Ponemon Cost of Data Breach study found the average total cost of a data breach has risen to $4.88 million, a 10 percent increase over 2023 and the highest total ever."[38] More broadly, data breaches by local, state and federal agencies have cost over $26 billion over eight years. These figures demonstrate that inadequate cybersecurity represents a massive drain on public resources that could be invested in mission delivery.[39]

34. Michael J. Keegan, "Navigating Crisis: Insightful Lessons in Resilience," *The Business of Government Magazine*, 2022 Edition (Washington, D.C.: IBM Center for The Business of Government, 2022), https://www.businessofgovernment.org/sites/default/files/From%20the%20Editor%27s%20Desk_1.pdf.
35. Goodrich and Westbrooks, *A Prepared Federal Government*, 8.
36. Goodrich and Westbrooks, *A Prepared Federal Government*, 8.
37. Goodrich and Westbrooks, *A Prepared Federal Government*, 11.
38. *How Technology Can Drive Government Efficiency,* 14.
39. *How Technology Can Drive Government Efficiency,* 14.

Strategic foresight and scenario planning represent proactive approaches to risk resilience. Rather than waiting for crises to occur and then responding, agencies can "prepare an emergency funding execution playbook to ensure readiness for the next crisis, so that Standard Operating Procedures (SOPs), authorities, fraud risk inventory, and protocols are in place and ready for execution."[40] This preparation enables rapid, controlled response when emergencies arise, reducing both the immediate damage and the long-term costs of crisis management.

Building resilience also requires attention to organizational culture and human capital. "Resilient organizations cultivate employees who can adapt to changing circumstances, solve novel problems, and collaborate across functional boundaries."[41] Technical systems matter, but ultimately resilience depends on people who can exercise judgment, improvise, and work together under pressure.

Procurement Reform: Modernizing Acquisition Processes

Federal procurement represents one of the largest aspects of government operations. The Government Accountability Office reports that federal agencies purchase over $750 billion worth of contracts annually. The procurement system profoundly influences government effectiveness, determining not only costs but also how quickly agencies can access capabilities and leverage private sector innovation.[42]

The new Revolutionary FAR Overhaul (RFO) initiative provides a significant opportunity for procurement reform.[43] As the RFO website indicates, "this initiative will return the FAR to its statutory roots, rewrite it in plain language, and remove most non-statutory rules. In addition, non-regulatory buying guides will provide practical strategies grounded in common sense while remaining outside the FAR. The goal is clear: faster acquisitions, greater competition, and better results." The RFO provides a lynchpin to advance significant procurement reform activity.

Digital contracting and electronic procurement systems can dramatically reduce transaction costs and accelerate acquisition processes. Some encouraging news was reported in December 2024, when the Office of Management and Budget announced the use of Category Management to deliver over $100 billion in savings and cost avoidance.[44] This enterprisewide approach to federal contracting demonstrates how organizing as a better-informed buyer can yield substantial savings. Category management treats procurement as a strategic function where agencies coordinate their purchases, share information about supplier performance, and leverage their collective buying power rather than making independent decisions that fragment demand and reduce bargaining power.

Increasing vendor competition is essential for better taxpayer value. However, significant barriers persist, including overly restrictive requirements, complex proposal processes, and limited outreach to potential new vendors, particularly small businesses and non-traditional contractors. Agencies can benefit by seeking innovation from new vendors and reliability from established vendors; established vendors often bring proven expertise, reliability, and familiarity with government processes, which can provide for stability and predictable outcomes.[45]

40. Goodrich and Westbrooks, *A Prepared Federal Government*, 27.
41. Dawson et al., *Digital Modernization for Government*, 7.
42. *How Technology Can Drive Government Efficiency*, 16.
43. "Revolutionary FAR Overhaul," Acquisition.gov, General Services Administration, accessed December 18, 2025, https://www.acquisition.gov/far-overhaul. (Acquisition.gov).
44. *How Technology Can Drive Government Efficiency,* 16.
45. Dawson et al., *Digital Modernization for Government*, 41.

Agile procurement models offer promising alternatives to traditional waterfall approaches that require detailed specifications upfront and provide limited flexibility during execution. GSA's 18F program developed an innovative approach to agile contracting that "slims down the solicitation document to around a dozen pages but still follows all of the applicable procurement rules and keeps it under the contracting officer's control."[46] Key elements include using a Statement of Objectives rather than a Statement of Work, employing labor-hour contracts versus firm fixed price, and maintaining short periods of performance. This approach recognizes that for many technology and service contracts, detailed requirements cannot be fully specified in advance and rigid contracts can lock agencies into approaches that prove suboptimal as circumstances evolve.

Share-in-savings approaches, where contractors are compensated based on cost reductions or performance improvements, align vendor incentives with government interests. These models can be particularly effective where savings are measurable. However, structuring agreements that fairly allocate risk and reward while maintaining oversight remains challenging, requiring agencies to balance performance incentives with taxpayer protection.

The importance of vendor relationships extends beyond contractual terms. Government agencies sometimes create unrealistic expectations for contractors while failing to provide clear requirements or adequate support, effectively setting service providers up for failure. A more effective approach involves removing unnecessary burdens from contractors, strengthening the government's own capacity to articulate needs and evaluate performance, and fostering mutual accountability. When government agencies and contractors treat each other as peers working toward shared mission objectives rather than adversaries, both parties can focus on delivering results efficiently.

Regulatory Reform: Balancing Compliance with Flexibility and Innovation

Regulations shape behavior throughout society and the economy, yet regulatory processes struggle to balance competing imperatives: ensuring compliance, providing flexibility, maintaining accountability, and adapting to changing conditions. Modernizing regulatory frameworks offers critical opportunities to improve government effectiveness while reducing unnecessary burdens.

The challenge centers on translating broad policy intentions into implementable rules. Overly prescriptive regulations create rigidity that prevents adaptation to unforeseen circumstances; overly vague rules generate uncertainty and inconsistent enforcement. Finding balance requires analyzing regulated activities, engaging stakeholders, and learning from implementation experience.

Building flexibility enables agencies to address unanticipated events without time-consuming rule changes. Performance-based standards that specify outcomes rather than methods, or safe harbor provisions that provide clear compliance paths while allowing alternatives, can achieve this balance while maintaining accountability.

Retrospective review can identify outdated rules, requirements with costs exceeding benefits, or conflicting mandates. Building regular review processes into regulatory management, supported by data on effectiveness and compliance costs, ensures the regulatory framework evolves appropriately over time.

46. Whitford, *Transforming How Government Operates: Four Methods of Change*, 35.

Technology offers multiple pathways for improvement. Automated systems streamline routine compliance, reducing burden on agencies and regulated entities. Data analytics identify compliance patterns, target enforcement effectively, and detect emerging problems earlier. However, regulatory technology must be user-friendly and well-integrated with business processes. Given that most modern code relies on open-source components with security vulnerabilities, technology solutions require ongoing maintenance and updates to remain secure and effective.

Conclusion: An Integrated Path Forward

Improving financial and operational effectiveness requires sustained commitment across multiple dimensions. The five areas explored—operational efficiency, financial management, risk resilience, procurement reform, and regulatory reform—are interconnected elements of a comprehensive approach to government excellence.

Success requires leadership that articulates clear visions, builds cultures valuing evidence and innovation, and maintains focus through obstacles. It requires investment in technology and data systems, employee development, and stakeholder engagement to identify opportunities and build support for change.

Genuine transformation cannot be achieved through isolated initiatives or purely technical solutions. It requires integrated efforts that simultaneously address how people do their work, how processes are designed to support faster service delivery, and how technologies leverage commercial best practices, all focused on improving mission results for businesses and citizens.

The path forward is challenging but essential. Taxpayers deserve government that operates efficiently and spends wisely. Federal employees deserve organizations that provide tools and support to excel. Citizens deserve public institutions that earn trust through demonstrated competence and accountability.

As government leaders navigate digital transformation, they must balance short-term wins with long-term strategies for creating public value. The maturation of next-generation technologies will only amplify the importance of this balanced approach. By documenting successful practices and offering practical frameworks, research equips government leaders with tools for enhancing performance.

PILLAR 3

Leveraging Technology to Improve Service and Efficiency

Technology's impact on government operations and service quality represents one of the most significant transformations in public administration in recent decades. As emphasized in the IBM Center report, *How Technology Can Drive Government Efficiency*, leveraging AI technology, business process innovations, cloud native applications, and strategic partnership solutions enables government to operate smarter, more cost effectively, and with greater security.[47]

Five critical dimensions reflect technology's role in modern government: emergency preparedness and crisis response; benefits delivery that balances speed with program integrity; cybersecurity to protect critical infrastructure and public trust; user experience design that organizes services around citizen needs; and administrative efficiencies enabled by artificial intelligence and automation. Together, these areas demonstrate how technology serves as a powerful enabler of government's fundamental mission to serve the public interest.

Emergency Preparedness: Building Resilience Through Intelligent Systems

Emergency preparedness represents a critical area where technology can significantly enhance government capabilities and save lives. The increasing frequency and magnitude of natural disasters, public health emergencies, and other crises demand that governments upgrade existing technologies and adopt emerging innovations in ways that support rapid, effective crisis response.

Governments can leverage artificial intelligence to support first responders through weather forecasting, wildfire tracking, and post-disaster assessment. AI analyzes data from satellite imagery, social media, and sensor networks to predict and monitor natural disasters, enabling quicker, more effective responses that minimize impact on affected populations.

Research from the IBM Center emphasizes the importance of adaptive government structures in preparing for disruption.[48] Agencies must now plan and operate for "business as disrupted." The framework for building organizational resilience highlights how technology enables agencies to pivot rapidly in response to unforeseen crises.

47. *How Technology Can Drive Government Efficiency*, 5.
48. Nicholas D. Evans, *A Guide to Adaptive Government: Preparing for Disruption*, (Washington, D.C.: IBM Center for The Business of Government, March 2023), 6.

AI improves weather forecasting by analyzing historical patterns and real-time data to predict severe weather events with greater accuracy, enabling timely warnings and preventive measures.[49]

Similarly, AI can track wildfires by analyzing satellite images and sensor data to detect outbreaks and predict spread. Integrating multiple data streams—from ground sensors to aerial surveillance to historical fire behavior patterns—creates comprehensive situational awareness, transforming reactive disaster responses into proactive crisis management that enables governments to anticipate needs, pre-position resources, and coordinate multi-agency responses with unprecedented precision.

The IBM Center, in collaboration with the IBM Institute for Business Value (IBV) and the National Academy of Public Administration, published *Preparing governments for future shocks: A roadmap to resilience*, which provides a comprehensive framework for how governments can systematically build their capacity to withstand and recover from shocks. Technology serves as the backbone of this resilience, enabling real-time communication, data-driven decision-making, and rapid resource mobilization across jurisdictional boundaries.[50]

Benefits Delivery: Balancing Speed, Accuracy, and Integrity

Technology can dramatically improve delivery of benefits by enabling governments to provide financial support more rapidly and accurately. The COVID-19 pandemic demonstrated that the ability to quickly distribute benefits can mean the difference between stability and crisis for millions of families.

Analytics technologies can detect fraud in benefit applications and transactions earlier, promoting cost-effectiveness and program integrity. As detailed in the IBM Center report, *A Prepared Federal Government: Preventing Fraud and Improper Payments in Emergency Funding*, improper payments, including fraud, are long-standing and significant problems in the federal government, with cumulative "reported" improper payment estimates by executive branch agencies totaling around $2.7 trillion since fiscal year 2003.[51]

AI analyzes benefit applications and monitors transactions to detect inconsistencies and unusual patterns indicating fraudulent activity in real-time, helping governments identify suspicious applications more quickly while protecting public funds and program integrity.

The challenge lies in striking the appropriate balance. During emergencies, the imperative to provide rapid assistance can conflict with the need to prevent fraud. Technology offers a solution by enabling sophisticated fraud detection systems that operate at the speed of automated processing, allowing both speed and security simultaneously.

49. J. Christopher Mihm, *Preparing Governments for Future Shocks: Building Climate Resilience* (Washington, D.C.: IBM Center for The Business of Government, IBM Institute for Business Value, & National Academy of Public Administration, October 2023), 8, and Daniel J. Chenok, G. Edward DeSeve, Margie Graves, Michael J. Keegan, Mark Newsome, and Karin O'Leary, *Eight Strategies for Transforming Government* (Washington, D.C.: IBM Center for The Business of Government, 2022), 32 .
50. J. Christopher Mihm, Rob Handfield & Tony Scott, *Preparing governments for future shocks: A roadmap to resilience* (Washington, D.C.: IBM Center for The Business of Government, IBM Institute for Business Value, & National Academy of Public Administration, October 2023), https://www.businessofgovernment.org/sites/default/files/Preparing%20governments%20for%20future%20shocks.pdf.
51. Goodrich and Westbrooks, *A Prepared Federal Government: Preventing Fraud and Improper Payments in Emergency Funding*, 11.

Beyond fraud detection, AI improves efficiency by automating administrative processes and reducing employee burden, helping governments provide financial support more quickly while freeing staff to handle complex cases requiring human judgment and empathy.

Cybersecurity: Protecting Critical Infrastructure and Public Trust

Cybersecurity represents a critical area where technology enhances government capabilities amid escalating digital threats. As government services migrate online and critical infrastructure becomes more interconnected, the attack surface for malicious actors expands exponentially. The IBM Center report, *How Technology Can Drive Government Efficiency*, notes that the federal government faces complex, urgent cybersecurity challenges from advanced adversaries who use AI and machine learning to launch attacks with greater volume, velocity, and sophistication.[52]

AI analyzes data from network logs, social media, and sensor networks to detect and predict cyber threats. By identifying patterns and anomalies indicating cyberattacks, AI helps governments detect and respond to threats more quickly, minimizing impact on critical infrastructure and sensitive data.

The IBM Center report, *Preparing Governments for Future Shocks: Building Cyber Resilience for Critical Infrastructure Protection*, emphasizes that cybersecurity must be understood not merely as an IT issue but as a fundamental component of national security and public service continuity. The report outlines how governments can integrate cybersecurity considerations into every aspect of operations, from procurement and vendor management to employee training and incident response.[53] This insight becomes even more critical given what was found in the 2024 Ponemon Cost of Data Breach study, as noted under Pillar 2 of this report.[54]

AI performs predictive risk analysis by analyzing historical data and real-time information to predict future threats, helping governments develop prevention strategies. This shift from reactive to proactive cybersecurity represents a paradigm change enabled by machine learning. Additionally, AI automates responses to cyber threats in real-time, reducing detection and mitigation time—critical when minutes versus hours can determine whether sensitive data is compromised or protected.

The IBM Center report, *Preparing governments for future shocks: An action plan to build cyber resilience in a world of uncertainty*, provides a comprehensive framework for how governments can systematically enhance their cybersecurity posture. The action plan emphasizes that technology solutions must be paired with organizational culture changes, workforce development, and cross-agency collaboration.[55]

52. *How Technology Can Drive Government Efficiency*, 14.
53. Lisa Schlosser, *Preparing Governments for Future Shocks: Building Cyber Resilience for Critical Infrastructure Protection* (Washington, D.C.: IBM Center for The Business of Government, 2024), 10, https://www.businessofgovernment.org/sites/default/files/Building%20Cyber%20Resilience%20for%20Critical%20Infrastructure%20Protection.pdf.
54. *How Technology Can Drive Government Efficiency,* 14.
55. Tony Scott, *Preparing Governments for Future Shocks: An Action Plan to Build Cyber Resilience in a World of Uncertainty* (Washington, D.C.: IBM Center for The Business of Government, IBM Institute for Business Value, & National Academy of Public Administration, March 2023), 4, https://www.businessofgovernment.org/sites/default/files/Preparing%20governments%20for%20future%20cyber%20shocks.pdf.

User Experience: Designing Government Services Around Life Events

User experience represents a critical area where technology can fundamentally transform how citizens interact with government.[56] Best practices demonstrate how technology streamlines administrative processes and reduces burdens, especially in disaster and health assistance, facilitating eligible populations' access to services.

Noteworthy models have emerged, particularly in providing services around major life experiences, such as having a child, starting a business, or retiring, as opposed to navigating government organizational structures. This life-event-centered approach recognizes that citizens do not organize their needs around agency jurisdictions; they think in terms of their life circumstances and challenges. Technology enables governments to reorganize service delivery around these natural touchpoints.

Governments can create seamless experiences where citizens can access multiple services through a single interaction, rather than contacting numerous agencies separately. Consider a new parent who needs to register a birth, apply for benefits, update tax information, and enroll in healthcare programs. Technology enables a unified portal where providing information once automatically updates all relevant systems and triggers appropriate benefit enrollments.

By leveraging AI to scrutinize vast amounts of data, governments can optimize resource allocation, enhance operational efficiency, and detect fraudulent activities earlier. This proactive approach not only improves service delivery but also ensures greater accountability and integrity within government programs.

As the IBM Center's research emphasizes, governments must maintain a human-centered approach,[57] ensuring technology complements rather than supplant human interaction in service delivery. The most effective government services use technology to handle routine transactions efficiently while preserving and even enhancing human touchpoints where they matter most.

AI and Administrative Transformation

Artificial Intelligence can help agencies make better decisions by automating manual tasks like data entry and form processing. Yet recent IBM Center research[58] reveals a nuanced reality: rather than displacing workers, generative AI (GenAI) enhances human capabilities.

The IBM Center report, *GenAI and the Future of Government Work*, examines AI's impact on the U.S. federal workforce and finds that GenAI primarily acts as a force multiplier for employees.[59] The research shows GenAI is expanding what workers can do rather than making them obsolete. White-collar professionals can offload tedious data processing to AI and focus on higher-value analysis, while tasks requiring critical thinking, creativity, and human interaction

56. Ines Mergel, *Human Centricity in Digital Delivery: Enhancing Agile Governance* (Washington, D.C.: IBM Center for The Business of Government, 2022), 10, https://www.businessofgovernment.org/sites/default/files/Human-Centricity%20in%20Digital%20Delivery-Enhancing%20Agile%20Governance.pdf.
57. Dawson et.al., *Digital Modernization for Government,* 43.
58. *How Technology Can Drive Government Efficiency*, 2025, 9
59. William G. Resh et al., *GenAI and the Future of Government Work*, (Washington, D.C.: IBM Center for The Business of Government, 2025), 28, https://www.businessofgovernment.org/sites/default/files/GenAI%20AND%20THE%20FUTURE%20OF%20GOVERNMENT%20WORK.pdf.

remain the least amenable to automation. The report stresses that to harness GenAI's potential, government leaders should reimagine workforce development and talent strategy, investing in targeted retraining and upskilling, cross-training that blends technical know-how with human-centric skills, and recruitment that favors skills working in tandem with AI.

State governments are also rapidly experimenting with AI applications. According to the IBM Center report, *AI in State Government: Balancing Innovation, Efficiency, and Risk*, approximately one-third of states are leading in AI adoption, with another third in the middle stages, and a third still developing enterprise policies and roadmaps. States are exploring how GenAI can streamline operations, enhance service delivery, and support policy innovation. For example, Virginia launched a pilot program using "agentic AI"—an advanced form that can accomplish specific goals with limited supervision—for regulatory reduction, analyzing hundreds of thousands of provisions to identify inconsistencies and unnecessary burdens. Utah developed an AI-powered assistant for its Tax Commission that achieved 92 percent accuracy in answering typical taxpayer questions, enabling call center agents to provide faster, more accurate responses.

These state innovations demonstrate AI's collaborative potential. As the state government report notes, "AI success in the federal government depends not only on technical proficiency—but on governance fluency across all roles."[60] The best AI systems are built in collaboration with the people who serve the public, with clear accountability structures, transparency mechanisms, and literacy initiatives that reflect the public interest.

Agentic AI is a synergistic and powerful enhancement, resulting in significant savings of time and money and the improvement of customer service. Some examples of these efficiencies are illustrated below.

Financial Operations: Multi-agent AI can streamline and enhance the accuracy of complex processes such as integrated supply chain planning or logistics, enabling government agencies to optimize resource allocation across programs and respond rapidly to changing circumstances.

Human Resources Operations: Human resources operations can benefit from agentic AI by using technology to provide HR professionals with recommendations on qualified candidates for hiring from applicant pools. The ability to develop human resource plans, skill set needs, and hiring forecasts is greatly enhanced in both speed and precision. Additionally, AI agents can interact with employees to allow them to complete HR tasks like enrolling in benefits, generating proof of employment letters, choosing tax deductions, or updating addresses through self-service interactions—reducing administrative burden while improving employee experience.

Procurement Operations: Procurement operations can benefit by using AI agents to identify and vet suppliers based on a range of criteria including quality, price, location, capacity, and reputation. These agents can anticipate potential disruptions such as weather events or geopolitical issues, proactively suggesting alternative sourcing options. AI can be applied to the compendium of previous contracts to select appropriate language for new procurement vehicles, ensuring consistency, compliance, and best practices.

TECHNOLOGY

60. Katherine Barrett and Richard Greene, *AI in State Government: Balancing Innovation, Efficiency, and Risk* (Washington, D.C.: IBM Center for The Business of Government, 2025), 10.

Information Technology Operations: Information technology operations can take advantage of existing AI agents that are either built into infrastructure platforms or integrated to execute FinOps capabilities that optimize the use of IT assets and ultimately reduce costs. As government IT environments become increasingly complex, AI agents can monitor system performance, predict potential failures, optimize resource allocation, and even execute routine maintenance tasks autonomously.

Conclusion: A Human-Centered Technological Future

Leveraging technology to improve service and efficiency requires a multifaceted approach that balances innovation with accountability and automation with human judgment. By focusing on emergency preparedness, benefits delivery, cybersecurity, user experience, artificial intelligence, and administrative efficiencies, governments can enhance their service delivery, decision-making processes, and overall engagement with constituents.

The integration of AI, automation, and other emerging technologies, while maintaining a human-centered approach, will be crucial in achieving these goals and ensuring that technology serves the people effectively and ethically. As the IBM Center's research demonstrates, successful technology implementation in government requires more than simply deploying new tools—it demands organizational change, workforce development, thoughtful policy frameworks, and sustained leadership commitment.

The path forward requires governments to be adaptive, innovative, and resilient, qualities that technology can enhance but not replace. Technology is not merely a tool for operational improvement, but a catalyst for transforming how government fulfills its public service mission.

PILLAR 4

Using Data to Drive Priority-Setting, Decision Making, and Performance

In an era of mounting complexity and constrained resources, government agencies face unprecedented pressure to demonstrate both efficiency and effectiveness. The ability to harness data for priority-setting, decision making, and performance management has evolved from an aspirational concept to an operational imperative. As federal, state, and local governments navigate challenges ranging from public health emergencies to infrastructure modernization, the strategic use of data has become the cornerstone of responsive, accountable governance.

Landmark legislation such as the Foundations for Evidence-Based Policymaking Act of 2018 reflects this reality, requiring federal agencies to develop learning agendas and demonstrate that programs deliver intended results. As the fourth pillar, data-driven decision-making builds upon and reinforces the other foundational elements of effective government. It provides the evidence base for strategic planning, the metrics for performance management, and the transparency mechanisms that foster accountability. Without robust data capabilities, government agencies operate with limited visibility into program effectiveness, struggle to identify improvement opportunities, and face challenges in demonstrating value to stakeholders and the public.

Data-driven governance demonstrates how quality data, measurement systems, advanced analytics, and the Evidence Act enable better decision-making while addressing fraud prevention, organizational capacity, transparency, and cross-agency collaboration.

Quality Data as a Strategic Asset

The foundation of effective data-driven decision-making begins with high-quality data. Data provides the evidence needed to understand current conditions, identify problems, and evaluate the effectiveness of policies and programs. It enables decision-makers to set priorities based on objective criteria rather than subjective judgments or political pressures alone.

Recent research shows that 81 percent of U.S. federal government analytics professionals' express confidence in their agency data quality. However, quality must extend beyond accuracy to encompass timeliness, relevance, and accessibility.[61] Automated data collection enhances both quality and efficiency, reducing human error while freeing analysts for interpretation.

61. Jennifer Bachner, *Optimizing Analytics for Policymaking and Governance* (Washington, D.C.: IBM Center for The Business of Government, 2022), 6, https://www.businessofgovernment.org/sites/default/files/Optimizing%20Analytics%20for%20Policymaking%20and%20Governance.pdf.

The Health Resources and Services Administration's UDS Modernization Initiative[62] demonstrates this approach, as do Internet of Things (IoT) sensors deployed by cities for air quality monitoring and smart traffic management.[63]

Agencies must also think strategically about data collection. Not all data is equally valuable, and collection efforts should be guided by clear questions about program effectiveness and mission achievement. Three critical questions for any data collection initiative are: What is the value from the proposed dataset? What is the feasibility of scaling the dataset? What is the sustainability of the data collection project? These questions help ensure that resources invested in data collection yield proportional returns in decision-making capacity.[64]

Measurement and Transparency: Driving Accountability Through Metrics

Public-facing dashboards and metrics transform abstract data into accessible information that drives accountability. However, selecting appropriate measures at program inception—and evolving them over time—is critical. Measures must reflect true outcomes rather than merely what is easy to collect.

The Pandemic Response Accountability Committee (PRAC), established to oversee pandemic relief funds, demonstrates this approach. Using the Pandemic Analytics Center of Excellence and through sophisticated data analysis, the PRAC identified fraudulent applications tied to stolen social security numbers, showing how measurement systems can simultaneously ensure program integrity and operational effectiveness.[65]

Another instructive example is the Federal Information Technology Acquisition Reform Act (FITARA) scorecard, which measures agency progress on IT modernization and governance. Originally focused on data center consolidation, the metrics evolved to allow agencies to choose "fit for purpose" computing environments[66] including cloud services, demonstrating how measurement systems must adapt while maintaining focus on core objectives, a principle that aligns with agile approaches to government operations.[67]

Comprehensive Data Strategy: Breaking Down Silos

Comprehensive data strategy requires defining data elements across networks and including disaggregated data for population-specific insights. Organizational boundaries, incompatible systems, and cultural resistance to sharing information often impede the collaboration necessary for addressing complex public problems.[68] Since few holistic questions can be answered by single data sources, breaking down organizational silos becomes critical. This requires not just technical solutions but sustained leadership commitment and cultural change.

62. Health Resources and Services Administration (HRSA), "UDS Modernization Overview." https://www.fhir.org/guides/hrsa/uds-plus/.
63. Gwanhoo Lee, *Creating Public Value using the AI-Driven Internet of Things* (Washington, D.C.: IBM Center for The Business of Government, 2021), 28. https://www.businessofgovernment.org/sites/default/files/Creating%20Public%20Value%20using%20the%20AI-Driven%20Internet%20of%20Things.pdf.
64. Bachner, *Optimizing Analytics for Policymaking and Governance*, 15.
65. Goodrich and Westbrooks, *A Prepared Federal Government: Preventing Fraud and Improper Payments in Emergency Funding*, 23.
66. U.S. Government Accountability Office (GAO), "Information Technology and Cybersecurity: Evolving the Scorecard Remains Important for Monitoring Agency Progress," GAO-23-106414, December 2022, https://www.gao.gov/products/gao-23-106414.
67. Ganapati, *Adopting Agile in State and Local Governments*, 47,
68. Wiseman, *Silo Busting: The Challenges and Success Factors for Sharing Intergovernmental Data*, 21.

Effective data strategy begins by defining programmatic questions. The U.S. Department of Veterans Affairs' response to the opioid crisis[69] illustrates this: understanding and addressing the issue required data on educational and job opportunities, housing, food security, and transportation access from multiple agencies—Labor, Education, HUD, and Agriculture—highlighting the importance of reducing friction that prohibits information sharing.

Successful intergovernmental data sharing requires persistent leadership, cross-functional teams, and robust governance structures. Examples from state and local governments demonstrate that while data sharing agreements can take months to negotiate—Allegheny County's agreement with Pittsburgh Public Schools required eighteen months—the resulting integrated data systems enable dramatically improved service delivery and resource allocation. The Commonwealth of Virginia Data Trust, developed initially to address the opioid crisis, enabled the state to deploy COVID-19 dashboards in days rather than months, demonstrating how investments in data sharing infrastructure pay dividends during emergencies.[70]

Disaggregated data is particularly crucial for understanding differential effects of policies and programs, allowing for more targeted and effective interventions. For example, disaggregated data on education outcomes can reveal disparities that can point to remediation strategies. This granular understanding enables agencies to move beyond one-size-fits-all approaches toward interventions tailored to specific needs.

Analytics and Advanced Technologies: From Description to Prediction

Modern data-driven governance extends beyond descriptive statistics to predictive analytics using AI and machine learning. However, these tools should be viewed as evolutionary extensions of existing efforts rather than revolutionary replacements. Research shows that communicating and interpreting results has become the top focus of analytic effort, surpassing data gathering[71]—insights only create value when effectively communicated to decision-makers in accessible formats.

The AI-Driven Internet of Things (AIoT) offers transformative possibilities. Smart sensors provide real-time data while AI algorithms analyze patterns to enable predictive maintenance, optimize traffic flow, and improve public safety. Pittsburgh's smart traffic control systems, which optimize signal timing to reduce travel time and emissions, exemplify how AIoT creates adaptive systems.[72] These AIoT applications combine sensing, analytics, and control capabilities to create adaptive systems that respond dynamically to changing conditions.

69. John R. Blosnich et al., "Health Services Research and Social Determinants of Health," Military Medicine 185, no. 9–10 (2020): e1353–e1356, https://doi.org/10.1093/milmed/usaa067.
70. Wiseman, *Silo Busting: The Challenges and Successes of Intergovernmental Data Sharing*, 7, 18–19.
71. Bachner, *Optimizing Analytics for Policymaking and Governance,* 29.
72. Lee, *Creating Public Value using the AI-Driven Internet of Things,* 15.

Evidence-Based Decision-Making and the Evidence-Based Policymaking Act

The Evidence Act institutionalizes data-driven decision-making by requiring agencies to develop evidence-building plans, conduct annual evaluations, and assess their capacity to use evidence.

Implementation of the Evidence Act provides valuable lessons in integrating evidence-based practices into strategic planning. Agencies must move beyond viewing evidence requirements as mere compliance exercises, and instead embrace them as opportunities to fundamentally improve how they understand and advance their missions. This requires building organizational capacity—not just in technical analytics skills, but in the ability to frame answerable questions, interpret findings in context, and translate insights into action.

The creation of learning agendas—systematic plans for building evidence to inform decision-making—exemplifies the Evidence Act approach. Rather than conducting isolated studies, learning agendas establish coherent research programs aligned with agency priorities. This ensures that evaluation activities build upon each other and contribute to cumulative understanding of what works, for whom, and under what circumstances. The iterative nature of learning agendas reflects agile principles of continuous learning and adaptation based on evidence.[73]

Building Organizational Capacity: People, Processes, and Culture

Technology and data infrastructure are necessary but insufficient for effective data-driven governance. The fourth pillar requires organizational capacity spanning technical skills, analytic methods, and—perhaps most critically—cultural commitment to evidence-based decision-making.

Leadership buy-in emerges consistently as critical. Survey research on government analytics found that persistent, visible support from senior leaders ranks alongside clear communication about results as the most significant factors for success.[74] Leaders must actively use evidence in decision-making, ask data-informed questions, and create space for findings that challenge assumptions. This commitment proves particularly important when adopting approaches like agile methodologies that require sustained cultural change.[75]

Building this culture requires bridging the knowledge gap between technical analysts and program leaders requires reverse mentoring and collaborative workshops. These human capital investments may matter more than technology investments, as sophisticated tools deliver little value if insights fail to reach decision-makers.

Recruiting qualified analytics staff requires competing with the private sector by emphasizing government's unique value proposition: meaningful work affecting millions combined with access to comprehensive datasets. Agencies with analytics-friendly cultures that value data-driven decision-making find themselves better positioned to attract top talent.

73. Ganapati, *Adopting Agile in State and Local Governments*, 19.
74. Bachner, *Optimizing Analytics for Policymaking and Governance,* 17.
75. Ganapati, *Adopting Agile in State and Local Governments*, 25.

Transparency and Stakeholder Engagement: Data as a Bridge to Citizens

Data-driven governance extends beyond internal decision-making to transparency and stakeholder engagement, enabling citizen oversight, informed participation, and institutional trust. Public-facing dashboards can transform raw data into citizen insights, but user-centric access demands thoughtful design.

The trend toward self-service analytics reflects both technological advancement and philosophical commitment to empowering stakeholders. Self-service models allow users to explore, visualize, and analyze data using dashboards and cloud-based tools rather than depending entirely on centralized analytics teams.[76] This democratization of data access can increase efficiency, broaden perspective, and enhance accountability. However, it also requires careful attention to data literacy, ensuring that users understand not just how to access data but how to interpret it responsibly.

Cross-Agency Collaboration and Data Sharing

Government's most pressing challenges transcend agency boundaries, requiring integrated data and coordinated action. Yet organizational silos and legal barriers impede collaboration.

The pandemic response illustrated both the necessity and difficulty of data sharing.[77] When the U.S. Department of Labor initially indicated it lacked authority to demand unemployment insurance data from states, Inspectors General offices were forced to issue individual subpoenas to obtain information critical for fraud detection. This reactive approach cost precious time during a rapidly evolving crisis. Later legislation addressed some of these barriers, but the experience underscores the importance of establishing data sharing frameworks before emergencies strike.

Successful data sharing requires attention to technical standards, legal authorities, privacy protections, and governance structures. Memoranda of understanding between agencies can establish frameworks for routine data exchange, but these agreements often take months to negotiate. Standardizing data elements and formats across agencies—while respecting legitimate differences in mission and operational context—can dramatically reduce friction in data sharing when collaboration becomes necessary.[78]

76. Bachner, *Optimizing Analytics for Policymaking and Governance*, 27.
77. Goodrich and Westbrooks, *A Prepared Federal Government: Preventing Fraud and Improper Payments in Emergency Funding*, 15.
78. Goodrich and Westbrooks, *A Prepared Federal Government: Preventing Fraud and Improper Payments in Emergency Funding*, 30.

Conclusion: The Path Forward for Data-Driven Governance

As the fourth pillar of effective government, using data to drive priority-setting, decision-making, and performance represents more than a technical capability—it embodies a commitment to rational, evidence-based governance that serves citizens effectively and respects taxpayer resources. The journey toward truly data-driven government requires sustained attention to multiple dimensions: technical infrastructure and analytical capabilities, also organizational culture, leadership commitment, staff capacity, and mechanisms for transparency and accountability.

Looking forward, several priorities merit particular attention and may include developing comprehensive data strategies, investing in fraud prevention, expanding self-service analytics, fostering data literacy, strengthening cross-agency collaboration, adopting agile approaches, and maintaining transparency for public accountability.

Using data to drive priority-setting, decision-making, and performance rests on a simple premise: government should make decisions based on the best available evidence, evaluate them against clear metrics, and maintain transparency. This requires balancing quick wins with long-term investments in infrastructure and capacity, recognizing that data-driven governance is a continuous journey of learning and improvement—one that promises more effective government, better outcomes for citizens, and stronger democratic accountability.

DATA

PILLAR 5

Strengthening the Government Workforce

The strength of any government lies fundamentally in the capability, dedication, and effectiveness of its workforce. Public servants are the essential infrastructure through which democratic institutions function, policies are implemented, and critical services reach the American people. Yet today's government workforce faces unprecedented complexities: a significant decline in employment since January 2025—and disruptions from prolonged shutdowns that have eroded employee engagement to historic lows. These immediate crises compound longer-term pressures: rapidly evolving technologies, shifting workforce demographics, increasingly complex mission requirements, and growing public expectations for efficient, responsive service delivery.[79] These pressures converge when many personnel systems remain anchored to mid-20th century assumptions about work, careers, and organizational structures.

Interconnected dimensions of workforce modernization involves reimagining the future of work in government, revitalizing hiring processes, modernizing compensation systems, establishing meaningful accountability, driving greater productivity, and developing leadership for a new era. Each dimension presents both challenges and opportunities, and together they form a comprehensive framework for building a government workforce capable of meeting 21st century demands.

The Future of Work: Adapting to a Transformed Landscape

The nature of work itself is undergoing significant transformation, and government must adapt or risk falling further behind. Traditional models of work organization—characterized by fixed physical locations, rigid hierarchies, and stable job descriptions—are giving way to more fluidity. Research on cloud computing demonstrates how federal agencies have created hybrid ecosystems that distribute data across multiple computing environments, enabling employees to access critical systems from diverse locations—on the ground, afloat at sea, and even in extreme conditions.[80]

This technological infrastructure enables distributed teams that transcend geographic boundaries, allowing agencies to tap talent regardless of location while providing employees with flexibility essential for attracting and retaining skilled workers. Moreover, artificial intelligence and emerging technologies are reshaping what work needs to be done, who can do it, and how it gets accomplished.

79. U.S. Bureau of Labor Statistics, *The Employment Situation—August 2025*, September 5, 2025, accessed December 17, 2025, 3, https://www.bls.gov/news.release/pdf/empsit.pdf.
80. Amanda Starling Gould, *Mobilizing Cloud Computing for Public Service* (Washington, D.C.: The Partnership for Public Service and IBM Center for The Business of Government, 2023), 4, https://www.businessofgovernment.com/sites/default/files/Mobilizing%20Cloud%20Computing%20for%20Public%20Service.pdf.

According to IBM Center research, generative AI can transform analytical results into formats that improve explainability by converting complicated data into understandable content.[81] These technologies leverage AI not to replace human judgment but to augment it—automating routine tasks, enhancing decision-making with data-driven insights, and freeing skilled professionals to focus on higher-value work requiring creativity, critical thinking, and interpersonal skills. As one expert notes, generative AI "functions as a vital collaborator by offering strengths that complement human abilities."[82]

Yet realizing these benefits requires corresponding investments in workforce development. As organizational roles evolve, "government agencies need to address the ever-growing information technology skills gap in their workforce by reskilling employees."[83] Employees require not just technical training in specific tools, but cultivation of adaptive mindsets and continuous learning capabilities. Research demonstrates that "technology-oriented training programs enable individuals to learn new skills about systems and applications to solve problems in new or evolving organizational roles."[84] Equipping employees with competencies in cloud computing, cybersecurity, data analytics, and AI literacy is no longer optional—these capabilities are becoming foundational to effective public service across virtually all domains.

Revitalizing the Hiring Process: Breaking Down Barriers to Talent

Perhaps no aspect of government workforce management generates more frustration than the hiring process. The current lengthy hiring process represents a major barrier to attracting talent, confusing applicants who struggle to navigate complex application requirements, hiring managers who lack authority and flexibility to make timely decisions, and even human resources specialists who must interpret countless pages of regulations and agency-specific policies.

Research points to successful examples from agencies and governments. Key innovations include simplifying application processes to focus on essential qualifications rather than extensive documentation, leveraging digital platforms to improve candidate experience and accelerating review timelines, and implementing skills-based hiring that emphasizes demonstrable capabilities over traditional credentials.

The shift toward skills-based hiring represents a particularly promising avenue for workforce strengthening. Rather than defaulting to degree requirements that screen out qualified candidates, agencies can assess generalized competencies—critical thinking, problem-solving, collaboration, communication, adaptability, and resilience—alongside domain-specific expertise. This approach broadens the talent pool, promotes equity and inclusion, and better aligns selection with actual job requirements.

81. Alexander Richter, *Navigating Generative AI in Government* (Washington, D.C.: IBM Center for The Business of Government, 2024), 8, https://www.businessofgovernment.org/sites/default/files/Navigating%20Generative%20AI%20in%20Government.pdf.
82. Richter, *Navigating Generative AI in Government,* 8.
83. Stacie Petter and Laurie Giddens, *Reskilling the Workforce with Technology-Oriented Training* (Washington, D.C.: IBM Center for The Business of Government, 2021), 4, https://www.businessofgovernment.org/sites/default/files/Reskilling%20the%20Workforce%20with%20Technology-Oriented%20Training.pdf.
84. Petter and Gidden, *Reskilling the Workforce with Technology-Oriented Training,* (Washington, D.C.: IBM Center for The Business of Government, 2021), 9, https://businessofgovernment.org/sites/default/files/Reskilling%20the%20Workforce%20with%20Technology-Oriented%20Training.pdf.

Modernizing Compensation Systems: Aligning Pay with Performance and Mission

Even when agencies successfully navigate the hiring process, outdated compensation systems represent another critical area where outdated structures undermine workforce effectiveness. The ability to attract and retain skilled professionals increasingly depends on competitive compensation, yet the General Schedule system—which governs pay for most federal employees—was designed in a different era and has not kept pace with 21st century government missions.

Under current systems, most pay increases are awarded primarily for time in service, minimizing the connection between compensation and performance. This position-centric approach, predicated on stable work requirements and predictable career ladders, misaligns with the dynamic reality agencies face: shifting missions, evolving work roles, changing skill requirements, and volatile labor markets.

The challenge is identifying how compensation can be restructured to incentivize quality work, attract top talent, and reward contributions to mission outcomes. Performance-related incentives might link to individual achievements, team results, or departmental progress, reflecting that valuable contributions often result from collaboration rather than isolated individual effort. Research on innovation demonstrates that when agencies have flexibility to reward innovation and results, and when leaders and managers provide pathways for organizations to succeed and work together effectively,[85] they can drive meaningful improvements in service delivery and organizational effectiveness.

However, compensation reform must extend beyond base pay to encompass total rewards. Non-cash benefits increasingly matter to workers: flexible work arrangements, remote and hybrid options, professional development opportunities, and work-life balance initiatives often weigh heavily in employment decisions, particularly for younger workers and those with caregiving responsibilities. Alternative pay systems already exist within government. Some agencies operate under different authorities that permit greater pay flexibility. Comparing outcomes across these systems can reveal strengths and weaknesses, identify best practices, and inform broader reform efforts.

Accountability: Establishing Standards and Addressing Performance

Accountability in the government workforce presents a paradoxical challenge. Government workers often report that poor performers are not dealt with effectively—a perception that signals a problem exists, though its extent is not well-defined. While evidence suggests government workers generally perform well, those who do not often avoid meaningful consequences.

Government can strengthen accountability through three reinforcing approaches: expecting excellence as the norm rather than the exception, establishing clear performance standards linked to mission outcomes, and taking timely action when performance falls short. Performance measurement systems and accountability mechanisms become particularly crucial during periods of workforce change or reduction, when agencies must engage their remaining personnel effectively while maintaining service levels.

85. Jane Wiseman, *Accelerating Government Innovation with Leadership and Stimulus Funding* (Washington, D.C.: IBM Center for The Business of Government, 2022), 4. https://www.businessofgovernment.org/sites/default/files/Accelerating%20Government%20Innovation%20with%20Leadership%20and%20Stimulus%20Funding.pdf.

Accountability systems must address both ends of the performance spectrum. For high performers, recognition and reward mechanisms should be meaningful and timely, providing incentives for continued excellence and creating models for others. For poor performers, intervention should be swift and constructive, offering support for improvement while establishing clear consequences if standards are not met. The current reality—where both high and low performers receive similar treatment—demoralizes strong employees, enables continued poor performance, and ultimately undermines mission effectiveness.

Driving Greater Productivity: Optimizing Resources and Capacity

Beyond hiring, compensating, and holding employees accountable, governments at all levels face resource constraints that demand maximizing productivity from available workforce capacity. This challenge requires thinking about what work needs government employees to perform versus what might be accomplished through partnerships with private or nonprofit sectors. It necessitates strategic investments in training and development to build and maintain a high-performing workforce.

Research emphasizes that effective technology-oriented training requires transfer of knowledge to actual workplace applications. The government workforce needs proficiency in using modern digital platforms, data analysis tools, and technologies to enhance productivity and engagement. According to IBM Center research, "effective technology-oriented training involves a transfer of technical, functional, and contextual knowledge to the workplace after training."[86] Organizations must move beyond simply providing training to ensure that newly acquired skills translate into improved job performance and organizational outcomes.

Better integration of government employees with contractors offers one pathway to maintaining capacity and expertise, particularly in rapidly evolving fields like cybersecurity where demand for specialized skills far exceeds supply. However, this approach requires robust contract oversight to ensure effective outcomes, maintain accountability, and provide for appropriate allocation of roles and responsibilities.

Innovative staffing models provide additional options for maintaining surge capacity and accessing specialized expertise. Programs like FEMA's disaster reserves, the National Guard's dual civilian-military structure, the U.S. Digital Corps and U.S. Tech Force for technology talent, and the International Science Reserve demonstrate diverse approaches to supplementing full-time employees with flexible capacity that can be mobilized when needed. Similarly, the Census Bureau, FEMA, and NOAA have demonstrated how agencies can plan for transformed field work by creating systems accessible in diverse and challenging operational environments.[87] These models merit systematic study to understand when and how they work effectively, what costs and benefits they entail, and how they might be adapted across different agency contexts.

86. Petter and Giddens, *Reskilling the Workforce*, 13.
87. Amanda Starling Gould, *Mobilizing Cloud Computing for Public Service*, 8.

Leadership for a New Era: Cultivating Adaptive Capabilities

The complexity of contemporary government operations and missions demands leadership capabilities that extend well beyond traditional management skills. Leaders must navigate rapid change, orchestrate cross-team and cross-agency collaboration, align diverse stakeholders around common purposes, balance statutory requirements with administrative priorities, shape organizational cultures that attract talent, encourage innovation, and maintain public trust.

Effective government leadership in the 21st century requires balancing competing demands across multiple dimensions: accountability with appropriate risk-taking, institutional stability with necessary change, hierarchical authority with collaborative networks, and immediate operational demands with longer-term preparation. Leaders must be equally comfortable with data analytics and human dynamics, technological systems and interpersonal relationships, strategic planning and adaptive improvisation.

The most effective approaches combine multiple modalities: structured learning to build conceptual frameworks and analytical capabilities; mentorship and coaching to provide personalized guidance and support; rotational assignments to broaden perspective and build networks; and action learning where emerging leaders tackle real organizational challenges under experienced guidance. Research from the IBM Center on *Preparing the Next Generation of Federal Leaders* demonstrates that leadership capability directly influences organizational capacity to leverage resources effectively and drive meaningful innovation.[88] As one study found, significant federal funding provides leaders with unique opportunities to collaborate and promote innovation,[89] but only when those leaders possess the skills to capitalize on such opportunities.

Among these balancing acts, the emerging technological landscape presents particular leadership challenges. As generative AI becomes more prevalent in government operations, leaders must understand not only the technology's capabilities but also its limitations and ethical implications. Research indicates that "in order to implement generative AI solutions effectively, government agencies must address key questions"[90] about problem-solving applications, data governance frameworks, and scaling strategies. Leaders who can navigate these complex technological, ethical, and operational considerations will be better positioned to guide their organizations through digital transformation while maintaining public trust.

88. Gordon Abner, Jenny Knowles Morrison, James L. Perry, and Bill Valdez, *Preparing the Next Generation of Federal Leaders: Agency-Based Leadership Development Programs* (Washington, D.C.: IBM Center for The Business of Government, 2019), 32, https://www.businessofgovernment.org/sites/default/files/Preparing%20the%20Next%20Generation%20of%20Federal%20Leaders.pdf.
89. Wiseman, *Accelerating Government Innovation*, 12.
90. Richter, *Navigating Generative AI*, 9.

Conclusion: An Integrated Agenda for Workforce Transformation

The path forward demands both immediate actions and sustained commitment. Some reforms can begin quickly: simplifying application processes, expanding skills-based hiring, piloting alternative compensation approaches in agencies with existing flexibility, and investing in leadership development. Other changes require longer-term efforts: modernizing HR technology systems, securing legislative authority for pay reform, building robust performance measurement capabilities, and transforming organizational cultures.

Evidence-based research plays a crucial role in this transformation. By identifying what works, understanding why it works, and illuminating pathways for adaptation across different contexts, systematic investigation can guide practical reform efforts. The IBM Center's research portfolio demonstrates the value of systematic inquiry into workforce challenges—from understanding how to reskill employees for technology-oriented roles, to examining how leadership and resources can accelerate innovation, to exploring how emerging technologies like generative AI and cloud computing can enhance government capabilities.

Ultimately, strengthening the government workforce is not an end but rather a means to an essential end: effective governance that serves the American people. Every dimension of workforce modernization—from recruiting outstanding talent to developing adaptive leaders, from incentivizing excellence to driving greater productivity—contributes to government's capacity to carry out missions and programs effectively and efficiently. In an era of rapid change and mounting challenges, investing in the government workforce is investing in public service capacity and infrastructure, and ultimately, in the future of effective governance.

WORKFORCE

About the Authors

Daniel J. Chenok

Executive Director
IBM Center for The Business of Government
Washington, D.C.
chenokd@us.ibm.com

Daniel J. Chenok is the Executive Director of the IBM Center for The Business of Government. He oversees all of the Center's activities in connecting research to practice to benefit government, and has written and spoken extensively around government technology, cybersecurity, privacy, regulation, budget, acquisition, and Presidential transitions. Dan previously led consulting services for Public Sector Technology Strategy, working with IBM government, healthcare, and education clients.

Dan serves in numerous industry leadership positions. He is a Fellow and member of the Board of Directors of the National Academy of Public Administration, Member of the Board of Directors for the Senior Executives Association, CIO SAGE with the Partnership for Public Service, Member of the Government Accountability Office Polaris Advisory Council for Science and Technology, and Member of the American University Kogod School of Business Data and Business Executive Council. Previously, he served as Chair of the Industry Advisory Council (IAC) for the government-led American Council for Technology (ACT), Chair of the Cyber Subcommittee of the DHS Data Privacy and Integrity Advisory Committee, Chair of the NIST-sponsored Federal Information Security and Privacy Advisory Board, and an Adjunct Associate Professor with the University of Texas, Lyndon B. Johnson School of Public Affairs. He is also a three-time member of Cyber and Cloud Computing commissions with the Center for Strategic and International Studies. Mr. Chenok also generally advises public sector leaders on a wide range of management issues.

Before joining IBM, Dan was a Senior Vice President for Civilian Operations with Pragmatics, and prior to that was a Vice President for Business Solutions and Offerings with SRA International.

As a career government executive, Dan served as Branch Chief for Information Policy and Technology with the Office of Management and Budget, where he led a staff with oversight of federal information and IT policy, including electronic government, computer security, privacy and IT budgeting. Prior to that, he served as Assistant Branch Chief and Desk Officer for Education, Labor, HHS, and related agencies in OMB's Office of Information and Regulatory Affairs. In 2008, he served on President Barack Obama's transition team as the government lead for the Technology, Innovation, and Government Reform group, and as a member of the OMB Agency Review Team.

He has won numerous honors and awards, including a 2010 Federal 100 winner for his work on the presidential transition, the 2016 Eagle Award for Industry Executive of the Year, and the 2002 Federal CIO Council Azimuth Award for Government Executive of the Year.

Dan earned a BA from Columbia University and a Master of Public Policy degree from Harvard's Kennedy School of Government.

Margie Graves

Senior Fellow
IBM Center for The Business of Government
Washington, D.C.
margaret.graves@ibm.com

Margie Graves is Senior Fellow with the IBM Center for The Business of Government and the IBM Partner for Digital Transformation Strategy. Margie serves as a senior advisor to IBM Consulting—Federal and is a member of IBM's Former Government Executives Council. She holds an IBM Diamond Badge in recognition of her federal government expertise.

She is the former Federal Deputy CIO for the Office of Management and Budget (OMB) where she worked to improve the way government delivers results and technology services to the public. She led the Office of the Federal Chief Information Officer efforts to drive value in federal IT, deliver digital services, protect federal IT assets and information, and develop the next generation IT workforce. She also drove elements of the President's Management Agenda; IT modernization, data as a strategic asset, and workforce of the 21st century.

Prior to her role with OMB, Margie served as the Deputy CIO at the U.S. Department of Homeland Security (DHS), where she had oversight of an IT portfolio of $5.4 billion in programs. In addition, she managed the operations of the Office of the Chief Information Officer, covering the functional areas of applied technology, enterprise architecture, data management, IT security, infrastructure operations, IT accessibility, budget, and acquisition.

Earlier, she was the Executive Director of the Enterprise Business Management Office within the DHS Office of the CIO. She developed and executed IT portfolio strategies in alignment with the DHS mission. She also served as the Deputy Program Manager for the DHS Border and Transportation Security IT Integration Program which established the operational foundation and roadmap for consolidating and securing segments of the DHS application portfolio, data architecture, and IT infrastructure.

Margie has also held numerous industry leadership positions in nonprofit organizations, including past President of the government-led American Council for Technology (ACT) and the Executive Vice Chair and then Chair of the industry-led Industry Advisory Council (IAC). She received the 2025 Janice Mendenhall award from ACT-IAC which is given for lifetime service and commitment to the advancement of innovation and federal government improvement and transformation.

She is a Fellow of the National Academy of Public Administration and a CIO Senior Advisor to Government Executives (SAGE) for the Partnership for Public Service.

Margie has private sector experience in the management consulting industry, where she held executive positions and performed consulting engagements for clients.

She holds a M.B.A. from the University of Virginia Darden School of Business and a B.S.in Chemistry from the University of Virginia.

Michael J. Keegan

Leadership Fellow & Host, *The Business of Government Hour*
IBM Center for The Business of Government
Washington, D.C.
michael.j.keegan@us.ibm.com

Michael J. Keegan is the Leadership Fellow at the IBM Center for The Business of Government and host of *The Business of Government Hour.* He leads the IBM Center for The Business of Government's leadership research, which is at the nexus of the Center's mission—connecting public management research with practice.

As host and producer of *The Business of Government Hour*, a weekly interview program and podcast with government executives and thought leaders at the intersection of government, technology, and innovation, Michael has conducted hundreds of in-depth conversations with senior government executives and prominent thought leaders. These conversations explore critical topics like leadership strategies, public service innovation, technology's role in government, and visions for 21st-century governance, contributing directly to the Center's goal of sparking creativity, sharing best practices, and building an unparalleled repository of insights on leadership and the future of governance. He also serves as editor of *The Business of Government* magazine and has managed the Center's competitive bi-annual research proposal review process.

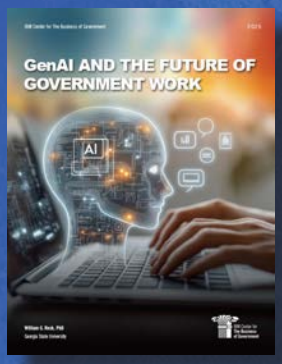
Michael has authored over 200 articles/blogs on AI, digital transformation, govtech, Enterprise Risk Management, resiliency, and leadership. He co-edited the 2023 book *Transforming the Business of Government: Insights on Resiliency, Innovation, and Performance* (Bloomsbury).

His thought leadership has earned him recognition from Thinkers360 as #1 GovTech Thought Leader globally, along with top rankings in Thought Leaders in North America (Top 100), IT Strategy (Top 25), Healthcare (Top 25), Digital Twins (Top 50), and Agile (Top 100).

Prior to joining the IBM Center, he served as a senior managing consultant with IBM Global Business Services (GBS), where he led transformative projects for federal agencies such as the U.S. Department of Energy (DOE), U.S. Department of Homeland Security (DHS), Centers for Medicare and Medicaid Services (CMS), Federal Emergency Management Agency (FEMA), and U.S. Department of Veterans Affairs (VA). His contributions focused on enhancing operational efficiency, risk management, and technology integration. Earlier in his career, Michael was a principal consultant with PricewaterhouseCoopers' Washington Consulting Practice (WCP), advising on business process redesign, strategic planning, and performance management for both private sector clients and federal agencies.

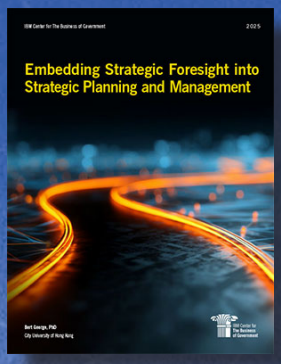
Michael holds a Master of Public Administration and Management from New York University, where he founded the Washington, D.C., alumni chapter and previously served as treasurer of the Graduate School's alumni board.

Recent Reports from the IBM Center for The Business of Government



GenAI and the Future of Government Work

by William G. Resh

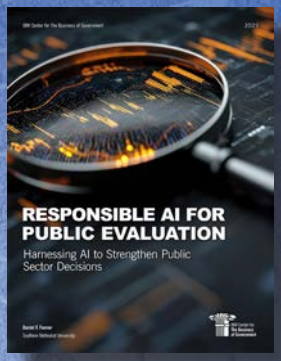


Embedding Strategic Foresight into Strategic Planning and Management

by Bert George

Resilience in action: Crisis leadership through innovation, collaboration, and human-centered solutions

by Julia Carboni



Responsible AI for Public Evaluation

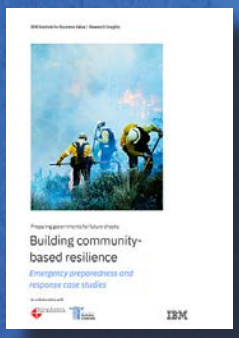
by Daniel Fonner

The Opportunity Project

by Joel Gurin and Matt Rumsey

Government's Digital DNA: Identity and Access Management for Public Sector Security

by Andrew Whitford



Building community- based resilience

by Authors of Case Study

AI in State Government

by Katherine Barrett and Richard Greene

For a full listing of our reports, visit businessofgovernment.org/reports

About the IBM Center for The Business of Government

Through research stipends and events, the IBM Center for The Business of Government stimulates research and facilitates discussion of new approaches to improving the effectiveness of government at the federal, state, local, and international levels.

About IBM Consulting

With consultants and professional staff in more than 160 countries globally, IBM Consulting is the world's largest consulting services organization. IBM Consulting provides clients with business process and industry expertise, a deep understanding of technology solutions that address specific industry issues, and the ability to design, build, and run those solutions in a way that delivers bottom-line value. To learn more visit ibm.com.

For more information:
Daniel J. Chenok
Executive Director
IBM Center for The Business of Government

600 14th Street NW
Second Floor
Washington, D.C. 20005
(202) 551-9342

website: www.businessofgovernment.org
e-mail: businessofgovernment@us.ibm.com

IBM Center for
The Business
of Government