The Business of Government

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Government Reform: Looking to the Future Based on Lessons from the Past

At any given moment in time, governments in the United States and around the globe are carrying out key missions in service of their citizens, learning from and engaging with partners in other sectors, and acting as cost-effective stewards of public resources. The countless positive daily actions of government leaders go largely unrecognized amidst a constant focus on the highly visible but far smaller set of challenges and problems faced by the public sector. However, stepping back to view progress over a span of decades reveals evidence of the sum total of this continuous evolution in government management—as well as providing perspective on the future of public service.

It is from this longer-term perspective about the performance and potential for government that the IBM Center for The Business of Government wrote the book *Government for the Future: Reflection and Vision for Tomorrow’s Leaders*, highlighted in the Forum of this edition of *The Business of Government* magazine.

Painting a future vision through reflection on past progress raises key issues, starting with six significant and enduring management trends of the past 20 years:

- **Digital initiatives**, including mobile computing and cloud computing
- **Data initiatives**, including big data, analytics, visualization, and dashboards
- **Performance management initiatives**, addressing the evolution of the supply of performance management information, and creating a demand for its use
- **Social media-related initiatives**, following the impact of social media that has been evident at all levels of government and has become a major agency communication tool
- **Collaboration initiatives**, such as public-private partnerships, cross-agency collaboration, and inter-governmental collaboration
- **Risk Management initiatives**, including cyber, financial, and environmental risks

What does the implementation of management reform over the past 20 years teach current and future government leaders about how to proceed with these and other management reforms in the future? Several common themes emerge from our analysis of past management trends.

- **Management reform is not for the faint-hearted.** Management reform requires major commitment and staying power. In short, it’s not for the timid or those with short time horizons. It takes a well-executed implementation plan and top-level commitment.
- **In launching management initiatives, government leaders should target key goals and not overload the “system” with too much reform concurrently.** Successful change leaders in government are selective about which management initiatives to launch.
Successful management initiatives require much time and effort, and a focus on implementation. While less successful initiatives launched over the last 20 years may have been sound conceptually, many suffered from poor execution.

Effective leadership makes management initiatives succeed. While it has become a cliché, leadership from the top drives success in launching a management initiative.

Based on lessons learned from the past work by the IBM Center and the research done for our forthcoming book, an outline of a vision of what government might look like in 2040 comes into focus. We see two sets of developments evolving. First, technology will drive the redeployment of resources—people, dollars, and organizational structures. Second, as a consequence of these technology changes, the way people work and interact will change, and this will reframe how government works—including service delivery, citizen involvement, and different business models.

We envision three technology-based drivers of change for government in coming years:

Artificial and augmented intelligence (AI) will change the game. Advances in the use of AI will change roles, both within government and between government and citizens.

Data will drive progress. The increased availability and use of data will reframe how government managers use knowledge and insight to analyze performance, make decisions, and deliver services.

Government services will become platform-based. In this scenario, government will be more of a facilitator, creating the conditions for platforms that could be built in the private and nonprofit sectors collaborating with the public sector.

Moreover, the vision of our authors suggest that these technology drivers will have three broader impacts on the government of the future:

Government will be more citizen-driven. Government in 2040 will be more citizen-focused, with people leveraging technology and data to interact with their government.

Government will become more network-based. The role of government workers evolving within a network-based environment as a result of technology will change, becoming flatter, more open, and more collaborative.

Volunteer participation with government will increase. Citizens will have more time to spend on volunteer activities in 2040—either as retirees or members of a 2040 workforce that benefits from technology.

This positive vision of a government for the future can be realized by leaders who continue to reflect on lessons from the past. We hope that the perspectives provided throughout this book help increase the likelihood that this vision can turn into tomorrow’s reality.
This edition of *The Business of Government* magazine marks the 20th anniversary of the IBM Center for The Business of Government. For the last two decades, the Center has led the charge of connecting research with practice and advancing public management scholarship, all while providing leaders with practical insights and actionable recommendations on how to enhance the way government does its business. Since its inception, the Center has always complemented its rigorous public management research by offering government executives a platform for telling their leadership stories on its weekly interview program, *The Business of Government Hour*. These conversations inform the Center’s research agenda as well as enable us to get that research to those on the frontline of public service. Leadership is at the core of the Center’s mission. Successful leadership is a measure of how we respond to volatility, uncertainty, complexity, and ambiguity—the unknown. By this definition, the Center continues to respond by making the unknown—knowable and the untried—mainstream in public management.

**Leadership Lessons**

Leadership stories are at the core of every magazine. In this edition, I profile the work and efforts of ten government leaders encompassing a wide range of disciplines, a diverse set of experiences, and a vast span of geographies. From these conversations, I have gleaned five key insights that speak to the public service journey of these ten leaders and serendipitously illustrate the essential ingredients to the two-decade success of the IBM Center for The Business of Government.

- **Articulate a vision.** You have to have a plan and work to that plan. You’re not going to be effective if you don’t know where you’re going. Articulating a forward-looking vision that bridges the gap between policy and action will help ensure that the organization is doing what you want it to be doing. A clear strategy provides a destination of how you and your leadership team get to where you want to go, given constraints within your operating environment and the resources available. There’s this quote in *Alice’s Adventures in Wonderland*, “If you don’t know where you’re going, any path will take you there.” If you don’t keep focused, then you risk accomplishing little to nothing.

- **Think strategically.** Leaders must look beyond the tyranny of the present. In other words, you must define and then tell people what you want to get accomplished. A key to successfully accomplishing your goals and objectives is clearly communicating them to a variety of audiences. Don’t just live in the moment, but also anticipate and be mindful of the future. Forecast probable successes and avoid potential failures.

- **Develop and engage your staff.** Ensure that you have the talent to meet current and future challenges. Your staff has much to offer your organization via their ideas, including innovations, to improve the performance of the agency’s programs and activities. You will be able to learn much about your agency by going out and listening and engaging with people, especially those on the front lines. You have a vision, now you have to share it and get others on board, otherwise it will never be accomplished. This is done through inspiring and motivating the entire organization to stretch toward the realization of that vision. It is through getting your employees excited about the work they are doing that the vision can be achieved.

*From the Editor’s Desk*

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From the Editor’s Desk

• **Put those you serve first.** Government leaders serve the public. Get out and talk with your customers. Ensure all customers have a voice and that every voice is heard. You will learn surprising things your employees and stakeholders may not tell you. Encourage your senior managers to do the same. Recent technologies allow new ways to constructively engage with your customers. Use them.

• **Communicate, communicate, communicate!** Typically, people think that good communicators talk more often, send more messages, and let people know more information. In other words, they believe that the solution to better communication is to do more telling. The most effective communicators are also very good at asking the right questions and listening. Ask pointed questions to ensure that others understand and then listen carefully—that will help you understand what’s going on in your organization.

Conversations with Leaders
Throughout the year, I have the pleasure of speaking with key government executives and public sector leaders about their agencies, accomplishments, and visions of government in the 21st century. The three government leaders profiled in this edition underscore the importance of public service and ethical leadership. These individuals are truly changing the way government does business on multiple levels.

• **Vice Admiral Raquel Bono, M.D., Director, Defense Health Agency,** leads an integral component of the Military Health System that serves as a strategic enabler, ensuring a “medically ready force and a ready medical force.” DHA focuses on improving readiness and healthcare, while working to lower costs. Vice Admiral Bono discusses DHA’s evolving mission, its work to create a more integrated healthcare system, and her efforts to improve the readiness and health of service members.

• **Emily Murphy, Administrator, U.S. General Services Administration,** spearheads the support of the missions of many federal agencies. These agencies need mission support services that are easy-to-use, reliable, and cost effective. Administrator Murphy outlines her strategic priorities, efforts to simplify how industry works with government, and ways it is promoting smarter management, buying, and the efficient use of technology across the federal government.

• **Mike Gill, Secretary, Maryland Department of Commerce,** fosters an economic development culture in a state that seeks to maximize its greatest assets and create quality jobs. The state of Maryland is doing just that through a series of initiatives that increase competitiveness, transform economic development programs, and meet business needs in the 21st century. Secretary Gill highlights the mission of the department he leads. He also explains how Maryland is attracting and retaining businesses and what it does to promote the state’s economic prosperity.

Insights
I’ve interviewed a variety of government executives who manifest the leadership and commitment needed to meet their varied missions. In this edition, six government executives share their insights on the work they do and the efforts they lead. Their respective missions force them to look ahead, and although they come from diverse disciplines, they are all focusing on finding what works.
• Henry Darwin, Acting Deputy Administrator and Chief of Operations, U.S. Environmental Protection Agency, ensures that the agency is running as effectively and efficiently as possible. He is the key advisor to the EPA administrator on day-to-day operations and the leader of the agency’s transformation to an organization of continuous improvement.

• Joe Klimavicz, Deputy Assistant Attorney General and Chief Information Officer, U.S. Department of Justice, provides high-quality and secure information and technology services that enable the DOJ to meet its important missions. He has sought to transform the way the department does IT, finding ways to be innovative and cost effective.

• Frank Konieczny, Chief Technology Officer, U.S. Department of the Air Force, injects new technology innovation across the entire Air Force enterprise. He works to advance the technology landscape of the Air Force, focused on developing the technical target baseline and determining how these technologies can best be applied across the Air Force.

• Chris Piehota, Executive Assistant Director, Science and Technology Branch, FBI, enables and enhances operations and investigations for national security and criminal investigative programs. He leads an enterprise service provider of technological services and products across the bureau that enables agents to conduct investigations and operations most effectively.

• Alan Thomas, Commissioner, U.S. General Services Administration, Federal Acquisition Service, leads a premier provider of acquisition and technology transformation solutions and promotes smarter buying, the efficient use of technology, and reduced administrative costs across the government. His vision is to make FAS easy, efficient, and modern.

• Joe Vastola, Chief Information Officer, Florida Department of Children and Families, manages the entire IT services portfolio and infrastructure for one of the largest state agency in Florida. He puts IT to use protecting the most vulnerable citizens of Florida while also promoting strong and self-sufficient families, and helping advance personal and family recovery and resiliency.

Forum on the Government for the Future: Reflection and Vision for Tomorrow’s Leaders
This Forum offers selected excerpts from the new IBM Center book, Government for the Future: Reflection and Vision for Tomorrow’s Leaders, as an introduction into 20 years of connecting research to practice. With our objective of crafting a future vision of government by reflecting on the past, Government for the Future consists of two parts. The initial chapters examine six significant and enduring management trends identified over the past 20 years. The three trends highlighted in this Forum focus on the digital transformation in government. This rapid movement to “going digital” over the last 20 years has served as a key enabler of the increasing capability of government to collect, analyze, and use data. Along with the digital and data trends in government, many of the problems facing government executives today transcend traditional program and agency boundaries. This reality has ushered in the trend toward “collaborative governance” which is working jointly across the traditional boundaries of governmental agencies, and between the public and private sector to tackle knotty public management challenges.
From the Editor’s Desk

The second part of the book looks 20 years into the future and this Forum highlights three particular visions of the future. I will take you on a brief journey through both parts of the book. It is my hope that this will pique your intellectual curiosity and that you will find value in the insights, lessons learned, best practices, and vision of the future offered in this magnum opus that marks 20 years of shaping public management research and practice.

Perspective on Digital Transformation in Government
Beginning in the 1990s, the Internet ushered in a revolution in the way citizens and businesses share, access, and retain information over open networks. These digital steps forward have led to a significant change in how information technology impacts society, the economy, and government. It has led to a digital transformation in how nations govern. The Abu Dhabi Smart Solutions and Services Authority (ADSSSA) works across the Emirate’s government enterprise to develop smart systems in the delivery of government services. It does this by focusing on the combined experiences of all categories of customers to improve and assist the work of the government services sector. Her Excellency Dr. Rauda Al Saadi, Director General of the Abu Dhabi Smart Solutions and Services Authority, joined me on The Business of Government Hour to share her perspective on Abu Dhabi’s digital transformation strategy and how ADSSSA is changing the way citizens engage with their government.

Viewpoints
John Kamensky explores the history of government reform and proposed reorganizations. Dan Chenok focuses on accelerating IT Modernization in government. Lisa Mascolo underscores the need to understand the impact of emerging technologies—their promise and value—to more rapidly advance and usher in the government of the future.

I wrap this edition with overviews of recent IBM Center reports. If you have not read these reports, we encourage you to do so by going to businessofgovernment.org. I hope you enjoy this edition of The Business of Government magazine. Please let us know what you think by contacting me at michael.j.keegan@us.ibm.com
The Military Health System (MHS) is a vital component of our national security strategy, offering a diverse array of healthcare services, logistics, public health, research and training, and support to U.S. armed forces.

The Defense Health Agency (DHA), a vital element of the MHS, serves as a strategic enabler, ensuring a medically ready force and a ready medical force. DHA seeks to improve readiness, health, care, and lower costs. More than ever, DHA is tasked with leading these efforts to create a more integrated system founded on readiness and health.

Vice Admiral Raquel Bono, M.D., Director of DHA, joined me on The Business of Government Hour to discuss DHA's evolving mission, its work to create a more integrated healthcare system, and efforts to improve the readiness and health of its service members. The following is an edited excerpt of our discussion, complemented with updated and additional research.

On the Evolving Mission of the Defense Health Agency
The agency was established in 2013 as part of a larger effort to reorganize healthcare programs and services. The reorganization was based in part on the recommendations of a task force that issued a report on the management of U.S. military healthcare in 2011. We reached full operating capability in 2015 and I came on board in November 2015 as the second director of the agency.

Under the previous system, many aspects of military healthcare were managed by the individual armed services. Today, seven years later, DHA is an integrated Combat Support Agency that enables the Army, Navy, and Air Force to provide a medically ready force and ready medical force to Combatant Commands in both peacetime and wartime. We support the delivery of integrated, affordable, and high quality health services to MHS beneficiaries and DHA is responsible for driving greater integration of clinical and business processes across the MHS. The DHA also leads the MHS in delivering the objectives of the Quadruple Aim objectives: increased readiness, better health, better care, and lower cost.

The agency directs the execution of ten joint directorates—the shared services representing about 85 percent of the shared functions and processes that occur across the services and that manage and administer the following: Enterprise Support Activities (ESAs), TRICARE Health Plan, pharmacy programs, health information technology, education and training, public health, medical logistics, facility management, budget and resource management, research, development & acquisition, and procurement & contracting. The DHA's administration of the TRICARE Health Plan provides worldwide medical, dental, and pharmacy programs to over 9.4 million uniformed services, members, retirees, and their families.
We are also the market manager for the National Capital Region (NCR) enhanced Multi-Service Market, which includes Walter Reed National Military Medical Center (WRNMMC) and Fort Belvoir Community Hospital (FBCH).

This expansive mission requires a serious investment. Our budget is close to $50-51 billion a year, which includes all of the elements that support the MHS (i.e., military construction, personnel, training, and equipment) with $15 billion dedicated to TRICARE health plan.

For the last four years, the DHA has grown from a newly established defense agency to a mature organization that continues to meet the expanding expectations that our Combatant Commanders, the services, and our patients place on us.

In 2018, the DHA accepted important new leadership responsibilities for managing healthcare services around the world. At the same time, we remain deeply engaged in several transformative initiatives—deploying a new global Electronic Health Record, MHS GENESIS, that supports our shared and intertwined readiness and healthcare delivery missions, as well as ensuring our improved TRICARE program expands access to an integrated team of military and civilian network providers.

**On Changes to TRICARE**

TRICARE is the uniformed services healthcare program. It brings together the healthcare resources of the MHS—such as military hospitals and clinics—with a network of civilian healthcare professionals, institutions, pharmacies, and suppliers to foster, protect, sustain, and restore health for those entrusted to their care. With the help of Congress and passage of the National Defense Authorization Act (NDAA) of 2017, MHS is focusing on modernizing and simplifying TRICARE offering more benefit choices, improved access to care, and simplified cost-sharing.

We used three plans: prime, standard, and extra. We now have just two programs—TRICARE Prime, our managed care plan, and TRICARE Select, a Preferred Provider (PPO) type option. We streamlined the plan options, making it easier to choose. We also made it easier to enroll by instituting calendar year enrollment. We’ve gone from a cost-sharing model, which is a moving target and hard to budget for, to now having fixed co-pays. It is a two-tier co-pay system with different rates for those who are active duty before 2018 and those who join after. We’ve identified “qualifying life events” that allow beneficiaries the opportunity to change plans as their life and health needs change. It gives our beneficiaries greater choice and better ensures they are getting the healthcare plan that works for them.

TRICARE also will test the concept of value-based healthcare by customizing networks to include high-performing providers who use high-value reimbursement incentives to deliver quality care, facilitate greater access, and encourage their patients to more actively participate in healthcare decisions.

**On Improving the Pharmacy Benefit**

Our pharmacy benefit is great for our beneficiaries, probably one of our most generous benefits. We have a very robust formulary that makes it a real cost driver. We seek to manage our costs by better managing the supply chain of our pharmaceuticals. Along with new pharmacy co-pays, we gave our patients choices. They can get their medications at the MTF at no cost. They can go to retail pharmacies where there is a slightly higher cost and co-pay. Finally, they can also sign up for the mail order pharmacy. In terms of cost, the mail order is between the MTF option and the retail option, but the mail order by providing larger quantity of medicine is convenient for those beneficiaries with chronic conditions.

Along with these options, we realize that to truly maintain and manage the costs of our pharmacy benefit, we need to better understand the impact of certain drug groups in the MTFs. At all times, we have to be monitoring the effectiveness of the medication that is being prescribed.
On Modernizing MHS’s Electronic Health Record

MHS GENESIS is a single integrated inpatient and outpatient electronic health record, MHS GENESIS transforms the delivery of healthcare for the Department of Defense and the Military Health System. This cutting edge technology will supply MHS providers throughout the continuum of care, as well as private sector healthcare partners, with the necessary data to collaborate and make the best possible healthcare decisions. It enables standardized workflows, integrated healthcare delivery, and data standards for the improved and secure electronic exchange of medical and patient data. It is important to understand that MHS GENESIS isn’t just a technology platform, but involves the transformation of culture and process within our system.

MHS GENESIS has provided us an incredible opportunity. It was a big decision to go with a commercial off-the-shelf product based on the recognition that the pace of technology and the rate of innovation merited seeing what industry had to offer. We wanted to have a technology with a proven track record and the capability to keep pace with technological advances. Going in this direction has also required that MHS look inward and ask pertinent questions about how we are doing things and whether we are doing these things the best way for our patients.

In Fiscal Year 2017, MHS GENESIS launched at three Initial Operational Capability (IOC) sites in the Pacific Northwest. The first Go-Live occurred in February at Fairchild Air Force Base (AFB). MHS GENESIS also became operational at two other sites, Naval Health Clinic Oak Harbor and Naval Hospital Bremerton. The Program Executive Office, Defense Healthcare Management Systems (PEO DHMS) is hard at work on the next steps for the wave-model rollout of MHS GENESIS.

There are specific lessons learned from the initial deployment. The first thing is the infrastructure. There has to be the right platform, the right network. We have to make sure that the hardware and infrastructure are the right pieces in the right configuration with the right circuits. Second, the actual technical deployment of MHS GENESIS learning from industry was critically important. The third area is the importance of governance when deploying such a technology. You can’t have a thousand points of light making the decision. You have to have a decision-making process and governance structure that takes an enterprise approach. This means that some of the decisions are not always going to be the most popular, but you have to go from flash to bang quickly. You can’t sit there and admire the problem. With new technology comes new and different business and clinical workflows. Along with a solid governance structure, you cannot overstate the importance of change management to the successful implementation of such transformative technology.

On the Success of the Joint Trauma System

In 2003, the Joint Trauma System (JTS) began forming when a commander with the U.S. Army Institute of Surgical Research recognized that no formal trauma care standards existed in Iraq and Afghanistan.

Today, as part of the DHA, the mission of the Joint Trauma System is to provide evidence-based process improvement of trauma and combat casualty care. As a result, JTS can help to drive morbidity and mortality to the lowest possible levels and to provide evidence-based recommendations on trauma care and trauma systems across the Department of Defense (DoD).

Over the last sixteen years of conflict, principally in Iraq and Afghanistan, but also extending to other spots around the globe, the MHS has indeed achieved the highest survival rates witnessed in the history of warfare. An important contributor to this success was the collaborative work of Army, Navy and Air Force professionals – particularly in the areas of trauma care and surgery – to collect and share data.
“You have to have a decision-making process and governance structure that takes an enterprise approach. This means that some of the decisions are not always going to be the most popular, but you have to go from flash to bang quickly. You can’t sit there and admire the problem.”

—Vice Admiral Raquel Bono, M.D.

so that the MHS could track outcomes, assess and improve clinical practices and organize resources to improve our ability to save lives.

In 2016, Congress required that DHA establish the JTS with several vital responsibilities: serve as the reference body for all trauma care provided across the MHS; establish standards of care for trauma services both in the deployed environment and at home station; coordinate knowledge translation from our research programs to the delivery of care; and coordinate lessons learned from our military-civilian educational partnerships (where military surgeons work in civilian trauma centers).

The JTS is an exemplary model for our integrated future. Although it was initially established on an informal basis, driven by our surgeons’ desire for improved outcomes on the battlefield, it will serve as a permanent part of our approach in the DHA for creating a common framework for healthcare improvement in all settings.

We’re taking the lessons learned beyond the MHS as well. We’ve partnered with the American College of Surgeons and National Academy of Medicine and Sciences to share our collective expertise in trauma response and what we have learned from building the joint trauma system. It is about taking our experiences to—and sharing these insights with—the rest of the nation to enhance the ability and capabilities of civilian trauma medicine. For example, we’ve partnered on the “Stop the Bleed Campaign,” which trains the public in hemorrhage-control techniques that could save lives in an accident, mass shooting, or terrorist attack. Over 16 years of war, we’ve developed innovative ways to apply tourniquets more effectively, helping to resuscitate people—literally saving life and limb.

On the Preventable Disease of Opioid Addiction

Much like trauma, opioid addiction is a preventable disease. Less than one percent of active duty service members either abuse or are addicted to opioids, but we are cognizant of the broader public health crisis facing this nation. For those ill or injured in service to our nation, we have an ongoing obligation to provide the full range of services to assist with their recovery and rehabilitation. This includes the management of pain and addiction. We have taken a comprehensive set of actions to include: instituting provider education (leading to a reduction in opioid prescribing); expanding partnerships with federal, state, private sector, and contracted partners; developing alternatives to opioids for both our direct and purchased care settings; and now further expanding our Prescription Drug Monitoring Program (PDMP) to include state monitoring programs.

We continue to emphasize advances in pain and addiction treatment, pharmacy interventions, and research into pain and addiction syndromes. Given the physically demanding nature of military service, the incidence of pain must be anticipated and addressed. Our approach to the opioid crisis has a dual focus: to implement a comprehensive model of pain management that focuses on non-pharmacologic pain treatments and, when opioid use is necessary, to optimize safe usage for our patients.

It is a very serious issue. Look at the stats of people overdosing in the general population. They outnumber car accidents. It is preventable, but it requires a multi-pronged approach. We have to look at our system. We have to look at our providers. We have to look at our patients. Then we have to make sure we’ve got the right stop gaps in place and provide the most comprehensive and contemporary care that is available.
“A leader must always be mindful and in the moment. You have to be present in order to be attentive and listen to those around you. Being an effective leader means that you also help create the conditions in which other people can modify or align their behaviors so that we are all going in the same direction.”

— Vice Admiral Raquel Bono, M.D.
Conversations with Leaders

The law is built on and strengthens many of the MHS reforms implemented in the last several years:

- Increases the imperative for greater collaboration (“jointness”) across the services in support of the readiness mission
- Matures the responsibilities of the DHA
- Expands common, enterprise-wide performance measures
- Improves access to care for all beneficiaries
- Improves accountability for performance in access, quality, and safety

The law modernizes the TRICARE benefit by:

- Combining several benefit options into a new TRICARE Select benefit that expands TRICARE network coverage across the U.S
- Simplifying TRICARE cost-sharing for service members, retirees, and families by updating the fee structures, which had not been changed in over 20 years

The centralized administration of the MTFs under the authority of the DHA provides us the opportunity to focus on readiness, create a common high-quality experience for patients, and eliminate redundancies. Increasing military readiness is the top priority and the DHA is working toward implementing the law and collaborating with stakeholders in support of Congressional intent.

When you take a look at Title Seven of the NDAA 2017 you actually see a vision of the system that is being developed and everything nests within each other. I am very appreciative of Congress because these reforms put our patients first and will have a profound impact on them and the care we deliver.

On Leadership
Leadership is about making change happen. Being an effective leader means that you also help create the conditions in which other people can modify or align their behaviors so that we are all going in the same direction.

A leader must always be mindful and in the moment. You have to be present in order to be attentive and listen to those around you. I think that is one of the greatest skills or one of the greatest tools that leaders have to have: the ability to listen and really hear what someone is telling you. Change is always challenging. If you’re not tuned in to what others are telling you, then you might miss that opportunity to help make change a little easier.

The other leadership quality that is important is being inclusive and welcoming of divergent perspectives. It is interesting what you learn when you understand someone else’s perspective. It gives me insight into where that person might be in that moment and what might be important to them. If I want them to be a part of my team, then this leads to my third characteristic for leadership—engagement. If I know where someone is at, then it helps me understand the best way to engage them.

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

To hear The Business of Government Hour interview with Vice Admiral Raquel Bono, M.D., go to businessofgovernment.org.

To download the show as a podcast, go to PodcastOne, iTunes, and businessofgovernment.org.

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

To read the full transcript of The Business of Government Hour interview with Vice Admiral Raquel Bono, M.D., go to businessofgovernment.org.
U.S. federal agencies need to focus attention and resources on mission delivery—but they cannot do that alone. They need support services that are easy-to-use, reliable, and cost effective. To that end, by making it easier to do business with government, the U.S. General Services Administration (GSA) plays an integral role in support of the missions of many federal agencies. It works with industry and customer agencies to deliver high-quality, cost-effective services in real estate, acquisition, and technology. These service areas represent the core of GSA’s offerings, and it continues to enhance them to meet the needs and expectations of its agency partners.

GSA Administrator Emily Murphy joined me on The Business of Government Hour to discuss her strategic priorities, simplifying how industry works with government, and ways GSA is promoting smarter management, buying, and the efficient use of technology across the federal government. The following is an edited excerpt of our discussion, complemented with updated and additional research.

On the Evolving Mission of GSA
GSA’s mission is to deliver value and savings in real estate, acquisition, technology, and other mission support services across the government. Our services really focus on ensuring our customer agencies can carry out their critical missions and that entities trying to do business with the government can do so as seamlessly as possible.

I’m actually in a unique position to talk about how GSA has evolved. I served at GSA for several years during the George W. Bush Administration. Over the past 13 years, GSA has changed. It’s consolidated space, for instance—from campuses in Crystal City and Willow Wood to a central office in one building. We’re down to about 140 square feet per person. When we talk about spatialization, GSA is leading the charge. We’ve also consolidated our internal functions, which has improved the way we do business, the way we operate. Throughout these changes, the GSA passion for its mission has remained constant.

On GSA’s Operational Footprint
GSA has two main lines of business. The Federal Acquisition Service (FAS) supports about $54 to $55 billion in acquisition across the government. It manages about one-third of the government’s fleet—about 200,000 vehicles. It manages 3.3 million charge cards for the government. We dispose of about $1 billion in personal property each year. FAS also houses the innovation arm of GSA, including the Technology Transformation Service (TTS), the new Centers of Excellence, 18F, and the Presidential Innovation Fellow program.

The Public Building Service (PBS) is the other main line of business, which buys, builds, leases, and manages federal work space. We currently have about 8,700 owned or leased facilities, totalling about 371 million square feet of rentable space. This service consists of managing about 500 owned historic buildings; the other buildings include...
owned and leased space, about 50/50. GSA also has the
Office of Government-wide Policy, which focuses on cross-
government support technology and transformation work. It
does travel regulations, federal acquisitions regulations, and
management regulations. All total, we’re approaching about
12,000 employees at GSA. Unlike most federal agencies,
GSA doesn’t receive a direct appropriation for most of our
work. We are a fee-for-service organization. Last year our
budget was around $26 billion. Annual revenue collected is
about $22 billion—which puts us more or less on the same
level as a Starbucks or a Southwest Airlines.

On Challenges
I’ll identify three key challenges. One of them is actually a
great challenge to have. Agencies are relying on GSA more
and more. We have more customers coming to us. This
does pose a challenge, especially at the end of the fiscal
year. As agencies try to obligate funds, GSA is trying to
help them. Whether on the federal acquisition side or the
public building side, we’re trying to be there for our agency
customers when they need us.

The second challenge is the work we’re taking on as a
government-wide leader. Whether through the government-
wide reform plan or the President’s Management Agenda
(PMA), GSA is being asked to expand the size and the scope
of the work we do. It goes back to President Truman’s vision
for GSA as the federal government’s mission support agency.
The Trump administration has a similar vision for GSA.

The third challenge is keeping pace with changes in
technology. We help the government buy significant amounts
of technology. Our mission is to help them buy the right
solutions that meet their needs, now and into the future. It
is one of the areas where GSA really focuses on delivering
value.

On GSA’s Strategic Priorities
I have four priorities for GSA. My first is ethical leadership.
My second is reducing duplication. The third priority is
increasing competition, not just the number of vendors
who bid on our contracts, but making sure we have real
competition that ends in the best solutions for our customer
agencies—and ultimately for taxpayers. My fourth priority
focuses on increasing transparency in what we do and how
we do business.

These priorities frame the direction of the four strategic goals
we have for GSA. The first goal is managing federal real
estate—all 371 million square feet of rentable space—in a
way that saves money over the long term for taxpayers. My
second goal is positioning GSA as the premier provider of
acquisition solutions across the government, making sure
the contract vehicles we develop meet our customers’ needs
and attract the best solutions that the private sector has to
offer. My third strategic goal focuses on improving the way
that agencies buy, build, and use technology. We want to
help them identify a solution that meets their needs today
and tomorrow. Finally, the fourth goal involves designing and
delivering expanded shared services across the government.

On Investing in Federal Infrastructure
We have several core initiatives we are pursuing in our real
estate portfolio. The first is to shrink our footprint—using less
real estate, whether it be leased or owned. In doing so, we
can deliver some real savings. GSA has gone to about 140
square feet per person. We’re trying to help the government
overall get down to about 180 square feet per person. It
is believed that on some level this approach increases
collaboration and makes for a better workspace.

The second initiative is taking better care of the space we
have. When we neglect minor repairs, they turn into major
repairs. When we neglect major repairs, they turn into
leased buildings. With Congress’ permission, we invest
appropriations to make sure that federal buildings continue
to meet the needs of the federal workforce today and long
into the future. The GSA headquarters is a great example. The
building is 101 years old. But it now accommodates 3,300
employees, the largest number of employees ever housed
there.

The third initiative focuses on disposing real estate that we
no longer need. We want to take under-performing assets
and move them off the books. We are also looking into
“GSA’s mission is to deliver value and savings in real estate, acquisition, technology, and other mission support services across the government.”

—Emily Murphy
smarter leases. I have to give credit to the PBS Commissioner Dan Mathews and his team. I’ve learned that the average tenancy in a federal building is 21 years, while our average lease is six years. PBS has been focusing on getting better deals on our expiring leases. By putting resources into them, we can get longer-term leases with better deals. In FY18, PBS saved taxpayers $800 million—400 million through lease cost savings and through better management of federal real estate. The long-term plan is targeting substantial savings to taxpayers and agency customers alike.

I’m the first administrator with new authorities to dispose real property. Working with a board, we’re looking across our portfolio and trying to make sure we’re good guardians of these assets. For example, the Department of the Interior had a second property that was on Constitution Avenue, a beautiful historic building but in disrepair. Interior no longer needed it, so they transferred it to GSA. It was costing GSA about $3 million a year to maintain, and would have cost between $66 million to $140 million to rehabilitate it. In the end, GSA was able to sell it to the Federal Reserve for over $40 million, which went back into the Federal Buildings Fund. This sale keeps an historic property as a federal asset, but places it in the possession of an entity that will provide the necessary investment for repairs.

**On Improving the Way Federal Agencies Buy, Build, and Use Technology**

The government spends significant money on IT, specifically on operations and maintenance contracts. GSA has been focusing on helping agencies buy the right solutions. In many cases, it means we’re helping federal agencies buy technology solutions as a service. Instead of investing in the next legacy system, we’re working with the private sector to adopt best practices and avoid taking on the ownership operation and maintenance of technology systems.

Doing business in this way allows us to return value to taxpayers through better investments. The Technology Modernization Fund and the work being done at the IT Modernization Centers of Excellence are great examples of where GSA has been able to partner with other agencies to target investments for the best return. A better return means greater savings, better technology and improved security.

The Centers of Excellence allow us to implement IT solutions in a partnership with our federal customers. We work side-by-side. We do a deep dive into their requirements, we assess the state of the current IT environment, and we assess the most appropriate commercial solutions. The result of this collaboration is a better experience for the agency, taxpayers, and the federal employee using these IT systems.

**On Bringing the Modern Online Buying Experience to the Federal Buyer**

I’m really excited about this opportunity. Congress has directed GSA to put in place contracts with commercial portal providers. This will allow the federal government to buy items faster and improve the overall purchasing experience. GSA is reviewing the entire process. We’re asking questions and doing a lot of listening. We’ve done multiple sessions with the public, with the vendor community, and with the portal providers to find out what will work. It comes down to creating a search-and-ordering process that is easy to use, streamlined, and focuses on getting the best price every time. Because we have a limited number of acquisition professionals across the government, we want them performing high value work. By implementing a quality commercial solution, GSA will provide a great win for both taxpayers and the federal acquisition community.

**On Sharing Quality Services**

The government is spending about $28.6 billion a year on administrative services—and yet over half of federal executives are unhappy with the level of service they’re getting. The challenge I’ve been given is not just to save money—we have a $2 billion savings goal over the next 10 years—but also identify a solution that pleases the federal workforce and enables them to do their jobs more effectively. GSA needs to work collaboratively with other agencies, making sure we understand their requirements and policies—in turn, identifying common solutions.

There is never going to be a one-size-fits-all solution across government, but there is going to be a one-size-fits-most. Once we find that one-size-fits-most solution, we can work with agencies to identify the best way to provide that service.
either using a federal agency or a combination of federal workforce and contractor resources.

**On Simplifying Processes and Streamlining Access**

I want GSA to be the premier provider of efficient and effective acquisition solutions across the government. I’m continuing to evaluate and improve the federal procurement process. We’re doing this primarily in three ways for the schedules program. First, I want to reduce barriers to entry, so we can bring the right commercial solutions to the federal government. We can do that by streamlining how vendors access government clients. This involves having vendors provide the same information across agency partners once, not multiple times. We want to make it easier to access agencies, as well as to work with government agencies.

I also want to make sure that our current contracts aren’t preventing our customers from finding the best solution—not forcing them to cobble it together with a bit from a contract here and a bit from a contract there. Agency partners should come to GSA and our contracts should be flexible enough to adopt and adapt to their requirements.

Internally, we need to update GSA systems that are forcing us to do business in outdated and inefficient ways. It is important to make it easier for our customers to find items on GSA schedules, for example. I’ve asked FAS Commissioner Alan Thomas to take the lead and re-imagine and redesign our acquisition system.

**On Leadership**

Ethical leadership should be a top priority for any leader. That’s been my top priority from day one. It means doing the right thing and putting the taxpayer interest first. We admit we make mistakes. We learn from them and move on. Our goal is always to work with others to address challenges and to make our agency a better partner for customers and taxpayers. Leaders should also be humble and willing to admit that we don’t have all the answers. Leaders must learn from others, while they guide toward a collective goal.

My leadership is informed by three core values. Service is a core value—service to the taxpayers, service to other federal agencies, service to each other. We’re building a culture where we take care of one another. The second core value would be accountability. We are being asked to manage a large number of resources and being held accountable for the way we do that. The third value is innovation. We always want to be growing, improving on, and delivering better value. Therefore, service, accountability, and innovation are the core principles I focus on, at GSA.

**On the Future**

In 1949, President Truman signed GSA into law. He did so with the vision that GSA was going to be the mission support agency across the government. He saw problems with construction, real property, procurement—and he envisioned an agency to manage all of this for the government. The plan recently put forward by the Trump Administration places a similar emphasis on Truman’s vision of 69 years ago.

To that end, the future looks bright for acquisition. There is a tremendous willingness between Congress and the administration to do a deep dive into acquisition and procurement issues, such as investing in the federal workforce, establishing and supporting appropriate contracting vehicles, and providing special authorities outside the normal regulatory scope. Frankly, this administration values what GSA brings to the table and sees acquisition as a service where we want to make investments, recognize expertise, and build efficient systems for the future.
Driving Innovation and Growth: A Conversation with Mike Gill, Secretary, Maryland Department of Commerce

By Michael J. Keegan

Today economic development goes to the core of every U.S. state's ability to be competitive, to grow and retain jobs, and to fuel economic prosperity. The state of Maryland is doing just that through a series of initiatives that increase competitiveness, transform economic development programs, and meet business needs in the 21st century. Maryland's Department of Commerce fosters an economic development culture in a state that seeks to maximize its greatest assets and create quality jobs.

Mike Gill, Secretary of the Maryland Department of Commerce, joined me on The Business of Government Hour to discuss the mission of the department he leads. In our interview, he explains how Maryland is attracting and retaining businesses and how his department promotes the state to enhance its economic prosperity. The following is an edited excerpt of our discussion, complemented with updated and additional research.

On the History and Mission of the Maryland Department of Commerce

This department has gone through many changes. It began as the Department of Economic and Employment Development and evolved into Department of Business and Economic Development. In 2015, it became the Department of Commerce, as recommended by the Augustine Commission Report. Commerce is a more universally recognized term, which captures a broader range of assets and activities. It also reflects more accurately how I wanted to redirect, reposition, and reprioritize the way Maryland approaches economic development.

As the state's primary economic development agency, we stimulate private investment and create jobs by attracting new businesses, encouraging the expansion and retention of existing companies, and providing workforce training and financial assistance to Maryland companies. The department also promotes the state's many economic advantages, while marketing local products and services at home and abroad. Our mission is to spur economic development and international investment, trade, and tourism.

We're headquartered in downtown Baltimore at the World Trade Center, a city landmark that sits in the Inner Harbor. Some 30 years ago, this building was the vision of former Baltimore Mayor and former Maryland Governor, William Donald Schaefer. Today I lead a department composed of six business units:

- Administration and Technology
- Business and Industry Sector Development
- International Investment and Trade
- Marketing and Communications
- Military and Federal Affairs
- Tourism, Film, and the Arts
“As the state’s primary economic development agency, [the Maryland Department of Commerce] stimulates private investment and creates jobs by attracting new businesses, encouraging the expansion and retention of existing companies, and providing workforce training and financial assistance to Maryland companies.”

—Mike Gill
With a budget of around $150 million, the department is a nice mix of complementary functions and services.

**On Shaping a Strategic Vision**
Maryland has many great assets as well as significant and diverse resources. What we did from the get-go was to rethink and re-appreciate the assets that we do have—from the Port of Baltimore to our incredible industry sectors, be it cyber, life sciences, healthcare, the university system, and aerospace. We inventoried our assets, our industry clients, and every aspect that comprise the economy of Maryland and viewed each from a geographical or regional standpoint. With that information in hand, we work with the 24 counties and local jurisdictions to identify our strengths and leverage resources at the state level.

Maryland has 476,000 businesses that encompass a vast spectrum of industries and a diverse makeup. These businesses range from a two-person ice cream shop in Cumberland to Lockheed Martin, McCormick, and the Marriott Corporation. All of these companies have at least one thing in common to me and my Commerce team—they are our customers. As our customer, we constantly ask them how we can help. This mindset and approach inform and shape the department’s strategic vision. It is all about working together to serve our customers and collaborating with local jurisdictions to make sure we’re doing our best. Ultimately, our goal is to continue to grow our economy, create jobs, and open up new opportunities in every region of our state.

**On the Advantage Maryland Fund**
Advantage Maryland, formerly the Maryland Economic Development Assistance Authority and Fund (MEDAAF), is the department’s primary direct assistance fund, providing incentives to significant projects that address our mission to attract and retain jobs and stimulate capital investment. Capabilities are broad, including conditional loans and grants and investments. The fund also supports attraction and retention efforts, infrastructure, the arts and entertainment districts, revolving loan funds, and local strategic planning. It was created as a result of a mandated consolidation of a number of department financing programs in FY 2000. MEDAAF is focused on helping companies grow and expand with the support of the government.

The role of government can be one of providing seed capital that support businesses. This fund is focused on job creation and caps at $2 million. The local jurisdiction where the company resides also has to kick in and be part of the deal. We have close to $25 million in funds to invest annually. After 20-plus years in place, the program has led to tens of thousands of jobs and tremendous business support. For example, we invest $2 million that can result in at least another $22 to $25 million in economic impact. This program is a serious workhorse for fledgling companies across Maryland.

**On the Partnership For Workforce Quality**
The Partnership For Workforce Quality (PWQ) is an existing workforce-training program that was around for a number of years—and then it sort of fell off the map. Early in my tenure while visiting companies across the state, the one consistent request I would hear was bring back PWQ. This important program awards funds on a matching basis to businesses that invest in training and upskilling their workforce to maintain a competitive edge. It’s a relatively modest program of about $1 million. The grants can be as low as $50,000 to a company and can go as high as $200,000. It is meant to upgrade employee skills. In recent years, PWQ has assisted companies statewide to train employees on more advanced machinery or technology, including Protenergy in Dorchester County, Garrett Container in Garrett County, Knorr Brake in Carroll County, and Berry Plastics in Baltimore City. In addition, an analysis by Commerce’s research team shows that PWQ generated a return of more than $18 in state tax revenues for each dollar of incentive funds expended.
On the Economic Development Opportunities Fund

The Economic Development Opportunities Fund, or Sunny Day, supports extraordinary economic development projects that require financial assistance beyond the capabilities of other state and local funding programs. It has been a vitally important tool for us. I’m a big believer in growth through retention. I think it starts with retention and this fund has enabled us to retain key corporations. This is how we measure success.

Through Sunny Day, Commerce was able to support the expansion of Northrop Grumman, which has more than 10,000 highly skilled, high-paying jobs that are directly responsible for an estimated $49.2 million in state personal income and sales taxes per year. In total, the aerospace giant supports more than 25,000 jobs in Maryland and contributes about $81.1 million in state tax receipts.

We’ve also used this program to keep Marriott Corp. in Maryland, providing assistance in building a new $600-million headquarters in Montgomery County, securing its presence in Maryland for decades to come. As part of the project, the company will retain 3,500 employees, while projected economic output over the next 21 years is $31 billion. In total, the project will support 72,000 indirect and induced jobs, generate revenues in area businesses of $1.2 billion annually, and generate a 20-year projected tax revenue of $1.7 billion to the state and $153 million to Montgomery County.

The Sunny Day program is a tool that helps the state retain these firms. When we make these investments, we do it by looking through the lens of the taxpayer.

On Enhancing Business Outreach

We restructured Commerce to give us the best opportunities to work with stakeholders and to partner together. We did that by adding more regional representatives in all corners of the state for the best direct outreach to our customers. Today we have 12 regional reps spread among 24 jurisdictions. Their main mission is to establish a very close working relationship with businesses, business leaders, the respective Chambers of Commerce, and the economic development folks in that particular jurisdiction. We are there to assist business, but we can only do that if we have continuous two-way communication.

For example, we created the Platinum 500 program that identifies Maryland’s major private sector employers and schedules regular outreach to them by county. This program falls under the Division of Business and Industry Sector Development—led by a great leader Steve Pennington—which focuses on job development and deals primarily with business assistance, retention, and attraction. Platinum 500 fosters strong relationships with the state’s economic development and industry organizations and leaders, making it easier for staff to assist them. We meet every quarter with these businesses. CEOs want to be there because they know we want to help them. In one meeting, for instance, a CEO of a publicly traded, significant company shared some things about the state that he didn’t like and expressed his intention to possibly relocate. Not only did that not happen, but the company recommitted to Maryland. They’re putting up a new 200,000-square-foot building and doubling down on what they’re already doing. The regional rep program and Platinum 500 made a real difference.

In 2016, we launched a program to recognize Maryland companies that celebrate a significant milestone or anniversary. Through this outreach, Commerce was able to honor businesses and thank them for their continued investment in the state. We also have an outreach program that goes outside the borders of Maryland. Here we identify opportunities where companies might find Maryland—and what we have to offer—a better fit for their businesses.
On Marketing Maryland and Building its Brand
The Augustine Commission spent a year doing roundtables and hosting town halls around the state, asking the business community what they thought of Maryland and how they were being treated. A consistent finding was that the state could be more business friendly and needed a brand. This prompted the establishment of the Maryland Public-Private Partnership Marketing Corporation, known as the P3, which convened for the first time in April 2016 and has led the rebranding effort. This campaign has positioned Maryland as a hub of innovation and the ideal place to launch, relocate, or grow a business.

We decided to go with “Maryland is Open for Business.” When you make a statement like that, you better deliver. In the last 12 months, we launched an advertising campaign in the BWI Airport, on billboards, in business newspapers, and with targeted digital placements. We also identified 10 to 12 states where we rolled out the campaign to let companies know that Maryland is open for business. Another function of the P3 is fundraising in the private sector, which is being done to complement the state’s investment. This will include contributions from many private Maryland companies over the next three to five years. All advertising will drive businesses to a newly-designed website—open.maryland.gov.

On the Importance of Interagency Collaboration
The Augustine Commission identified the need and importance of collaboration among Maryland state agencies. To that end, on October 1, 2015, we established the Commerce Cabinet as an interagency effort for quicker and better responses to business issues. It is comprised of the secretaries of the Departments of Commerce; Transportation; Labor; Licensing and Regulation; Environment; Housing and Community Development; Planning; and the Governor’s Office of Small, Minority & Women Business Affairs. We also formed three workgroups focusing on customer service, workforce, and mega projects—tracking and advancing over 110 projects important to local communities. We have initiatives to clarify the roles of state agencies, improve customer service, and support economic vitality and growth.

At our first meeting, I gave the Cabinet secretaries a goody bag containing three items: a copy of my favorite book, The Little Engine That Could; a magic wand, because sometimes things get really tricky and it might take a little bit of magic; and a Magic 8-Ball, because sometimes you’re called on to make big decisions and you’ll need an additional tool in your toolbox. Right out of the gate, we decided to focus on customer service inside government. I asked, Why can’t we be Disney? Is there a book that says state agencies are supposed to deliver the worst customer service in the world? The answer is, of course not—so let’s change the game. Now we’re using a statewide initiative that includes customer surveys, training programs, and recognition programs. We have recognition programs. Some 55,000 state employees are engaged in this initiative. We’re just getting started, but I’ll put us as we are today against any state in the country in terms of customer service. Job creation was another category we needed to focus on. We identified 120 major opportunities around the state. We also pushed a “no silos” approach—we must work together. In the old days, when we had a significant project, it took four years to cut the ribbon.

“Solid leadership—combined with a requisite culture of urgency—makes organizations successful. Show me a great organization and I guarantee you they have a sense of urgency about everything they do. My motto that I have sought to instill in the Commerce culture is ‘Dream bigger, go faster.’

—Mike Gill
Today we ask why we can’t cut the ribbon in 18 months. I really believe the Commerce Cabinet is a true game changer and continues to make a big difference.

**On Leadership**
In my leadership role, I’m somewhere between the head coach/CEO and offensive coordinator, because at the end of the day our mission is to move the ball on all things economic development, all things business, all things that enhance businesses in Maryland. I am also a cheerleader and talent scout. From my perspective, effective leaders share similar qualities. They are as good at listening as they are at speaking. Successful leaders must have a clear vision, possess the ability to articulate that vision, and do it in simple yet captivating language. Good leaders are rarely great jugglers and that’s a good thing because it goes to the importance of laser focus. Leaders focus on a few core elements and then move the needle to that end.

The other critical aspect of leadership focuses on your people, your team. There’s a limit to how effective you can be if you don’t have the players. From day one, the most positive thing for me was the talent at Commerce. It exceeded my expectations. The image of a lousy employee born with a bad attitude and average skills is overdone. More often than not, good people who aren’t excelling just haven’t had good leadership. Solid leadership—combined with a requisite culture of urgency—makes organizations successful. Show me a great organization and I guarantee you they have a sense of urgency about everything they do. My motto that I have sought to instill in the Commerce culture is “Dream bigger, go faster.”

To learn more about the Maryland Department of Commerce, go to commerce.maryland.gov.

To hear The Business of Government Hour interview with Mike Gill, go to businessofgovernment.org.

To download the show as a podcast, go to PodcastOne, iTunes, and businessofgovernment.org.

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

To read the full transcript of The Business of Government Hour interview with Mike Gill, go to businessofgovernment.org.
The U.S. Environmental Protection Agency (EPA) is getting back to basics—re-energizing its mission of protecting human health and the environment. Today we’re working to ensure that future generations inherit a cleaner, healthier environment that supports a thriving economy.

The nation has made great progress in making rivers and lakes safer for swimming and boating, reducing the smog that clouded city skies, cleaning up lands that were once hidden chemical dumps, and providing Americans greater access to information on chemical safety. Yet, more needs to be done, and be done more quickly, efficiently, and effectively. To do this, the agency has sought to deploy a new management system based upon lean principles.

When I arrived at EPA, there was no system in place that would allow me to do my job well. In my first seven months, I focused on the deployment of a management system based upon lean principles. By deploying the EPA Lean Management System (ELMS) to reduce waste and maximize value-added work, I am working to create more effective ways to better serve EPA’s customers while increasing support for EPA employees to do environmental good. This includes strengthening partnerships with the states in streamlining and modernizing environmental protection. I am also working to reduce EPA’s backlog of new permit applications so that the agency can meet its goal of making permit-related decisions in six months. I am working closely with EPA’s state partners, in part by serving as a co-chair of the E-Enterprise Leadership Council, which oversees the collaborative modernization effort called E-Enterprise for the Environment.

What is EPA doing to get back to basics? How is EPA changing the way it does business? Henry Darwin, Acting Deputy Administrator and Chief of Operations at the U.S. Environmental Protection Agency, joined me on The Business of Government Hour to share his insights on these topics and more. The following is an edited excerpt of our discussion, complemented with additional research.

Would you tell us about your role within EPA?

The chief of operations is a new role within EPA. My primary responsibility is to ensure that the agency is running as effectively and efficiently as possible. As such, I am the key advisor to the EPA administrator on day-to-day operations and the leader of the agency’s transformation to an organization of continuous improvement.

In May 2018, EPA’s Office of Continuous Improvement (OCI) was officially formed, establishing a centralized team of lean experts charged with deploying the EPA Lean Management System across the agency. The goal of the ELMS effort is to deploy ELMS to 80 percent of the agency by September 30, 2020. Since April 2018, OCI has completed three ELMS deployments, scheduled monthly deployments through early 2019, and is scheduling the remainder now.

In January 2018, I brought together EPA’s entire senior executive service—or SES—to explain ELMS to them and to discuss the urgency of improving EPA’s business operations. A first step in the ELMS process was to develop new monthly metrics or modify existing ones, then to begin submitting

What is the mission of EPA’s Office of Continuous Improvement?

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—Henry Darwin
monthly updates on those metrics. The metrics are recorded on a “bowling chart” that compares monthly progress to targets and uses a red/yellow/green signal to reviewers. When a particular metric is in the red for two months or in the yellow for three months, the office is required to take action to get back on track and report progress to the COO.

At this point, all 22 offices are successfully onboard with the new system. Through the EPA’s Reform Plan, we’ve established priorities such as improving the speed of the acquisitions process, improving the oversight relationship EPA has with the states, reducing EPA’s Freedom of Information Act (FOIA) backlog, and relieving the reporting burden associated with EPA regulations. Over the next two years, we plan to improve EPA’s contracting process, establish a better means to consider regulatory reforms, and ensure that ELMS delivers on its promise to improve EPA processes. It is important to note that lean comes from the manufacturing sector. There is a fundamental difference between the manufacturing sector and the government. Until we realize that, deploying private sector or manufacturing concepts in the government context simply won’t work. The lean management system that I have brought to EPA is about visual management. Unlike the manufacturing, we must design ways to see our work, which is often hidden inside desks, file cabinets, and computers.

In putting that operational capacity in place and changing the culture, what are your top management challenges?

One of the biggest challenges is properly identifying the owners of a process. In such a large organization with a complex mission, it is often difficult to identify the agency leader who is responsible for a given process. For example, the Superfund was established by Congress to provide resources to clean up sites, yet it was hard to find an individual responsible for that task. These historically contaminated sites are very complex and can take decades to remedy and ready for future use. Finding a person responsible for the overall health of the process generally has been a challenge.

The next challenge involves getting the agency comfortable with measuring its efforts on a more frequent basis. EPA was very used to measuring on an annual or at most a semi-annual basis. That means you only give yourself at most two opportunities per year to make course corrections. By contrast, if we can measure on a monthly basis, we have twelve opportunities. Do it weekly, 52 opportunities. It’s been a challenge to monitor operations on a more frequent basis.

Another challenge is how we measure success. At its core, any management system is about measuring and managing success. In the private sector, measuring success focuses on the bottom line—profits and losses. In the government, measuring and evaluating success can be infinitely more complex.

In your current role, what has surprised you in the push for a new operational environment?

It’s not so much a surprise as a rewarding benefit. It’s been incredibly rewarding for me to work with the career staff at EPA, who truly believe in their mission. I appreciate the willingness of EPA staff to listen and embrace a new path forward. They realize and understand that in order to continue to succeed and get better that the agency needs to be more effective and efficient in its delivery. One way to do that is by taking lean management—which the agency is quite familiar with—to the next level. EPA has a long history of using lean to improve processes. What it was lacking is a system that helps us identify strategic opportunities where lean can improve our processes. Where the previous administration merely asked or required the programs to perform lean events, we’re actually setting very strategic goals with high targets. We’re asking our programs and regional offices to meet those targets using lean. And then through the management system, we’re monitoring whether or not those improvements are actually occurring.

Would you tell us more about your career path? How did you get to your current leadership position?

I am a lifelong environmental professional. I have an engineering degree in hydrology from the University of Arizona. I am a graduate of Lewis and Clark Law School in Portland, Oregon, which is widely regarded as being the best environmental law school in the country. In college and law school, I developed a real appreciation for public service. Immediately after law school, I worked for the Arizona Department of Environmental Quality for the next 18 years, serving as its director for five years. I was director at the height of the recession, which forced me to find ways to operate more efficiently. At that time, the department became a fee-for-service organization; the workforce reduced by 30 percent. In
“There is no greater opportunity to make a difference than being in the public sector. My advice is to find a government agency or program that complements your passion, be it environmental protection, building roads, protecting children, or whatever your passion happens to be—and go make a difference.”
—Henry Darwin

such a constrained environment, I began to identify and adapt tools and principles to meet mission goals.

I also served as the state of Arizona’s chief of operations, where I oversaw the operations of all 35 state agencies and worked to stand up the first state government intentional management system based upon lean principles. Among the improvements, we eliminated a backlog of 16,000 uninvestigated child abuse allegations and reduced customer wait times at motor vehicle division offices by over 50 percent. We also reduced review times of aquifer water quality compliance data from up to three months to 24 hours.

Given your background as both a state and federal executive, what are the characteristics of an effective leader?

It all begins by having a passion for performance, process, and people. An effective leader has to be passionate about organizational performance and constantly look for opportunities to measure its effectiveness.

When performance falls short, effective leaders need to look at the process before the people. An ineffective leader does the opposite. Their first reaction to a performance problem is to look for someone to blame. But most often it’s a broken process. Either the process isn’t designed well or adherence to the process is not occurring. Effective leaders need a real passion for process. You need to identify what processes you are responsible for and what steps are associated with that process. You also need to visually manage that process and know whether it’s performing as expected.

Lastly, leaders need to be passionate about people, especially developing people. Good leaders help employees develop as professionals. Leadership is not about solving problems for them, or becoming a pillar of knowledge that employees must depend upon. It’s about developing their skills and ability so they can solve problems for themselves.

As you pointed out, EPA’s mission is to protect human health and the environment. The agency’s most recent strategic plan focuses on getting back to basics. Would you tell us more about this vision and the overarching goals?

The EPA’s mission has its roots in various authorizing statutes, which affords the agency the authority and responsibility over statutes such as the Clean Water Act, the Clean Air Act, and the Resource Conservation and Recovery Act.

Over time, EPA has become focused on areas of some disagreement. For instance, what EPA has the authority to do or not to do. I’m not here to argue either way. The plan calls on the agency to focus on making sure that it is doing well in what it is authorized to do. It is about getting better at what the agency is suppose to do. The agency’s strategic plan has three overarching goals. At its core, the vision is based on the rule of law and process. It is about getting back to basics and making sure that everything the agency does is based on the rule of law, as well as an authorizing statute or an authorizing rule.

The vision also rests on acknowledgement of the special relationship that EPA has with the states. The vast majority of environmental work is performed by the states. Congress, when it created the various authorizing statutes, clearly intended for the states to take on the lion’s share of responsibilities. The EPA would serve in an oversight function. We’re reviewing our current relationship with the states and reevaluating that partnership to see what role we should be playing and what role the state should be playing. We’re doing this for the third goal, our core mission—that is, to improve air quality, provide safe drinking water, make sure state lands are clean, and ensure that chemicals in the marketplace are safe.
Let’s talk about air quality. What efforts are being pursued to prioritize key activities that support attainment for the national ambient air quality standards?

The way the Clean Air Act is designed, whenever there is an area that is in nonattainment, the state is required to submit a plan to EPA that describes how they are going to achieve attainment. We found that we had a significant backlog in EPA approval of state implementation plans. We looked at how we can become more efficient in approving this process. We’ve done a lean kaizen blitz, or rapid improvement, where we brought a group of people into a room with a facilitator who knows about all of the lean tools. We review each process and eliminate all of the steps in the process that don’t add value. After a full week of work, we have what we call a future state. It’s the future state that we want to adopt. In the end, we are working to reduce not only the time it takes to approve a plan, but also to reduce the backlog of unapproved plans.

What advice would you give someone who is thinking about a career in public service?

There is no greater opportunity to make a difference than being in the public sector. My advice is to find a government agency or program that complements your passion, be it environmental protection, building roads, protecting children, or whatever your passion happens to be—and go make a difference.
Today, more than ever, U.S. federal departments must ensure the security and reliability of their systems and information technology. In many ways, this also involves transforming how these departments deliver and consume information and technology services. The U.S. Department of Justice (DOJ) is one of those many federal agencies working to modernize its IT infrastructure to meet the demands of today.

What are the key IT priorities of the U.S. Department of Justice? How is DOJ going from IT modernization to its transformation? Joe Klimavicz, Chief Information Officer, U.S. Department of Justice, joined me on The Business of Government Hour to share his insights on these topics and more. The following is an edited excerpt of our discussion, complemented with additional research.

What is the mission of your office? How is it organized and how do you support the overall mission of the U.S. Department of Justice?

Before I talk about my specific office, I’d like to give a brief overview of the department. DOJ is a very broad and varied organization of over 40 components. Broadly, our high-level missions are to enforce the laws of the country; defend the interests of the United States according to the law; ensure public safety against threats, foreign and domestic; and prevent and control crime. As CIO, my mission is to provide high-quality and secure information and technology services that enable the mission of the department. The broad DOJ mission requires specific IT tools and services as well as shared enterprise IT. The office is comprised of four areas: service delivery, cybersecurity, policy and planning, essentially our portfolio management, and service engineering staff.

What are your specific duties and responsibilities as the chief information officer?

There are a couple areas. One is overseeing DOJ’s IT resources, IT portfolio—and that’s roughly about 10 percent of our overall budget, approximately $3 billion annually. We need to make sure we’re getting the value from that investment. I have to deliver IT services to the senior leadership, senior management offices, and provide enterprise services to DOJ. I have to protect DOJ’s information and information systems from data loss or unauthorized access. I have to engineer, develop, and broker new enterprise IT services, and those can come from a lot of different places. I’m also the lead for all geospatial activities in the department, radio frequency, spectrum use, and interagency law enforcement information sharing.

What are your top three management challenges and how have you sought to address them?

The three challenges are cybersecurity, modernization, and the IT workforce. Cybersecurity is probably the number one challenge. As everybody knows, cyberattacks are increasing in aggression, sophistication, and bypassing traditional security tools. I’m focused on enhancing and strengthening our security posture to defend against these attacks. We have very sensitive law enforcement, national security, operations, and missions. We’re a target, so we have to help maintain the confidentiality, integrity, and availability of our systems.
“There are many ways to define leadership, but my definition of leadership is getting people to follow you when a positive outcome is not certain. I always tell people that you can’t lead by sitting behind your desk and hoping somebody reads your email. You have to get out there. Active communication is an essential characteristic of an effective leader.”

— Joe Klimavicz
The next challenge is modernization of our legacy systems. We've been really focused on that for a number of years. Legacy systems that are built with antiquated code contain inherent vulnerabilities and increase the attack surface. We want to make sure we are modernizing to not only to enhance our cyber posture, but also reduce our operating costs and enhance our general capabilities.

The last challenge is recruiting and retaining highly qualified IT personnel. We have to work within the federal hiring process, so you have hiring freezes and we have competitive pay issues as compared to the private sector. There are going to be difficulties in locating individuals with the right skills. The one area that we’re really focusing on is training our existing workforce—making sure that they have access to the best training and doing everything possible to keep their skills current.

**How do you lead? What are the characteristics of an effective leader?**

There are many ways to define leadership, but my definition of leadership is getting people to follow you when a positive outcome is not certain. I always tell people that you can't lead by sitting behind your desk and hoping somebody reads your email. You have to get out there. Active communication is an essential characteristic of an effective leader.

You have to possess a laser focus on a consistent set of priorities. I always tell people that if you're not passionate about your job, go get another job because life is too short to waste on one that you're not really enthused about.

Leaders should choose their battles carefully. During the Revolutionary War, there were only nine major real battles. George Washington lost six of the nine, but he won the right three. It’s important to figure out what’s important to focus on rather than chasing everything. Additionally, you need to know yourself, your people, and your business. You need to convey a compelling vision and clear goals—priorities. Try to figure out how everybody fits into this and enlist everybody's help. Equip your staff to be able to get on board and support your goals. Act on facts and make decisions. I think too often we wait for perfect information to make decisions. Leaders must also demonstrate the highest standards of conduct, integrity, and professionalism. You're always on stage as a leader. Lastly, I would just say you've got to be a constant learner who isn't afraid of taking risks.

**IT is critical to the success of executing DOJ's mission. Would you give us an overview of your strategic vision for IT at DOJ, and more particularly, what are your priorities?**

My vision is to drive information and technology solutions at the pace of American innovation. It would be a huge failure on my part if the attorney general could go to Best Buy and buy something better than what I’m providing. We also want to be known as wise stewards of taxpayer dollars, so being frugal and smart with our investments. We want to be bold enough to make a difference. We need to be adaptive because we’re embracing and leveraging the changing world. We need to be smart risk-takers who experiment wisely with technology. We are technology leaders whom people trust because we exceed expectations.

We are in the process of revising our strategic plan, and we have four goals. The first is continuous service delivery improvement. It’s ongoing and something you always want to focus on. Make sure you’re trying to do everything you can to drive customer experience and provide tailorable services. At the same time, we want to provide enterprisewide services. We want to build intelligence and automation into standard processes. In so much of today’s IT environment, you’ve got to react fast, mostly in real-time. We want to strengthen and forge strategic relationships with our business partners. They’re every bit as critical to our success as our own employees. We want to design and launch autonomous services to support mission critical operations.

Secondly, we need to manage taxpayer funds wisely. I’m focusing on how we maximize the value from our budget. We want to pursue cost savings through shared services while exercising spending authorities that really pave the way for efficient modern systems. The key is strengthening cost transparency, accountability, and performance. I focus on leveraging economies of scale through strategic sourcing and partnering with other parts of the government to do that. We need to remove unnecessary layers of complexity and proprietary solutions. Open source standards-based solutions are ultimately going to be more cost effective.

The third one is protecting the mission. We want to minimize the risk through continuous monitoring. We want to enhance our enterprisewide instant response and cyber hunt capabilities. I want to provide enterprisewide identity credential access management services to ensure that the right users are accessing the right information and that we have the right credentials in place. When you talk about
“In addition to modernization, the concept of transformation speaks to adopting technologies and strategies that fundamentally shift how agencies do work. The last thing you want to do is just modernize the existing systems that you have in place with the same processes. You also need to create a dynamic IT environment that can evolve as your enterprise does.”

— Joe Klimavicz

protecting the mission you have to have plans in place for IT recovery, reconstitution, and business continuity of our key operations.

Our final goal is maximizing mission capabilities. I position my office as full service. We’re driving department-wide access and management of our smart data. It is about realizing the potential of dark or unused data. There is a lot of data that’s collected for a one-time purpose and then essentially put on a shelf. I want to make sure that we’re maximizing the use from this information. We are improving operations and stakeholder experience incrementally through micro innovations. Micro innovations, pilots, or proof of concepts are a great way to bring in new technology.

You can’t talk about data without talking about analytics and machine learning. We have tremendous amounts of information, much of it unstructured, and we’re constantly bringing in and evaluating new analytical tools.

**IT modernization is a key priority for the Trump administration.** I’d like to explore your efforts in modernizing the infrastructure and systems at DOJ. Would you tell us more about your migration to the cloud? What are the benefits?

The push to IT modernization coming out of the White House, with support from the Hill, is allowing CIOs the opportunity to address challenges head-on. The centerpiece of our modernization efforts has to start with what we built out as a cloud-optimized trusted Internet connection service. We essentially have a dual security stack, one going out to the regular Internet and one going to our business partners that are providing cloud services. This provides a secure direct access to our cloud service providers at very high speeds. Everything is fully redundant, very robust. If you’re going to say cloud is everything, then you have to build that network access to your cloud partners. We’ve also accelerated the adoption of cloud email. We’re very close to completing the move for all of our offices to Microsoft 365. When I came to Justice a little over four years ago, we had about 23 different email systems. We reduced that down to nine. Now we’re very close to getting that down to one. We’re saving the department tens of millions of dollars annually. At the same time, we are facilitating cross-component collaboration because we’re essentially on one platform.

The benefits of cloud have been articulated many times. To me, it is unfettered secure access across all of your devices and locations. In the DOJ, we have about 2,400 locations around the world where we have folks stationed. You really need to provide access from all of these points. It also centralizes our infrastructure platform, so it allows easier access to user information, where is it housed, and collaboration. We can leverage the cloud infrastructure, reduce redundancy, and the automatic failover is something that’s key. Operational efficiency and enhanced security are all things that are critical to supporting our core missions.

Some of our key mission systems are also taking advantage of the cloud. I’d like to highlight a couple. Within the FBI, the National Crime Information Center modernization is delivering new search capabilities and matching algorithms to a system that was deployed nearly 20 years ago. We’ve made a lot of enhancements to the National Instant Background Check System (NICS), enabling faster and more accurate dissemination of gun purchase eligibility. We’re modernizing our next generation identification infrastructure as well to improving the response, biometrics analysis, and identity confirmation. Within the United States Marshal Service, it is modernizing its case management system, a program called CAPTURE focused on custody management, prisoner transport, and fugitive case management. It is a huge payoff in terms of enabling system-to-system interoperability and information sharing. Within our Executive Office for Immigration Review, they’re also updating and modernizing case management capabilities. This enables immigration judges to reduce the backlog of immigration review cases. So much is happening that changes how we do business.

**Cloud migration presents significant challenges. Would you like to share any challenges faced in migrating to the cloud?**

The move to the cloud presents several challenges. I’ll highlight a couple. Early communication with all stakeholders is vital. The stakeholders must be aware of the goals, outcomes, and major milestones that are going to
occur during the migration. I regularly meet with component CIOs to address these challenges. You have to get that messaging for the migration to be mission centric. It is not simply about IT, but it’s about doing something better so that the department can operate better.

Enterprise security is another key step that has to be addressed. In the old days, organizations could pretty much count on a well-defined security boundary and build that security boundary into their network. Cloud services provide flexibility, and require a different way of looking at security. Current cloud breaches have been mostly due to poor configuration, lack of visibility, and lack of knowledge of how to properly defend cloud environments. We’re actually looking at a holistic cloud security infrastructure that delivers that visibility and responsive capability. I think if you’re buying software-as-a-service in a cloud environment, then the cloud provider should provide the entire security. Often we’re doing infrastructure or platform-as-a-service with the industry partner in securing the infrastructure—but we still have to secure the application that’s riding on the infrastructure.

Another aspect is the network. Everything is remote by definition. You need to make sure you’ve got sufficient bandwidth, not only for your current workload, but also for your future data growth. A robust and secure network is absolutely critical as you move to a cloud environment. The most significant and most overlooked issue is the people. The mission owners can be reluctant to physically separate from their servers. Again, it’s impossible to over-communicate. You need to be sensitive to the human aspect inherent in this migration.

Some of the lessons learned involve consistent priorities, good inventory of what you have, developing a migration plan and schedule early, and prioritizing the mission first. You can have the greatest optimization plans, but those plans can’t interrupt the agency’s mission. The mission will always come first and it must. Some of the benefits are ubiquitous access to data and computing. We’ve got a chance with cloud to aggregate the information, the compute, and the analytics together in one place—and that’s very powerful. Lastly, computational accelerators such as quantum and neurocomputing will be critical to fully secure and leverage capabilities. These cutting-edge computing technologies, like quantum, are only going to be available on a cloud environment.

Why is modernization not enough? What are the implications of a digital transformation?

Modernization is really important, but if you limit your efforts to only modernization, you’re going to limit your gains in terms of performance and security. In addition to modernization, the concept of transformation speaks to adopting technologies and strategies that fundamentally shift how agencies do work. The last thing you want to do is just modernize the existing systems that you have in place with the same processes. You also need to create a dynamic IT environment that can evolve as your enterprise does. A key aspect of this is creating a high performing, nimble workforce that can understand the technology, understand what is possible.
Insights

Advancing the Technology Landscape: Insights from Frank Konieczny, Chief Technology Officer, U.S. Department of the Air Force

By Michael J. Keegan

The U.S. Air Force flies, fights, and wins in air, space, and cyberspace. Cyberspace is a key component of its operating environment, which is dynamic and requires technological innovation. The Air Force continues to shift from primarily building, protecting, and defending the network to a convergence of integrated efforts in, through, and from cyberspace in order to execute its core missions. Airmen at every level need timely and accurate information to make decisions and act upon them. The ways of accessing and sharing information have evolved through innovation and technology.

What is the U.S. Air Force’s technology strategy? How is it identifying new technologies and promoting innovation? Frank Konieczny, Chief Technology Officer, U.S. Air Force, joined me on The Business of Government Hour to share his insights on these topics and more. The following is an edited excerpt of our discussion, complemented with additional research.

Would you describe the mission of your office and your role as chief technology officer?

The mission of the CTO is to inject new technology innovation across the entire Air Force enterprise. The CTO sits within the Air Force’s Office of Information Dominance and Chief Information Officer, SAF/CIO A6, which means we have an operational and policy guidance role. My primary responsibility is to advance the technology landscape of the Air Force, focused on developing the technical target baseline, mobile enterprise solutions, data management, cyber and technology innovation pathfinders, and advancing the Joint Information Environment. I also advise the Air Force CIO on cyberspace/IT emerging technology, enterprise architecture, enterprise infrastructure, and strategy including identifying short- and long-term goals of department-wide cyberspace/IT initiatives.

I do this by keeping abreast of technology advances in industry and by determining how these technologies can best be applied across the Air Force. I meet often with vendors to provide insights into specific capabilities/requirements that are emerging from our target baseline. I also discuss current vendor development roadmaps as to where technology appears to be going. We do deep dives into specific technologies to acquire and provide target baseline insights.

How challenging is it to coordinate your efforts across the Air Force enterprise?

Coordinating the advancement of innovative technology across the Air Force is a challenge. We develop a target baseline, which is future-oriented and looks out two to five years. We find that that is close enough to being reality, because everything changes in six months in the IT industry. We want to push the technology agenda that will better position the Air Force to meet its mission more effectively. Whether it is data management, mobility, navigation, or artificial intelligence technologies, we need to determine the toolset that the Air Force may need in the future. We are tasked with saying, Here are the technologies we need to go forward—and then ask, How are we going to manage new requirements and funding to make it happen?
“The mission of the CTO is to inject new technology innovation across the entire Air Force enterprise.”

—Frank Konieczny
You have worked both in the private sector and the public sector. With that as a backdrop, what makes one an effective leader?

An effective leader must listen to their people. It is an essential characteristic. An effective leader recognizes they don’t have all the answers. Engage your team and when necessary argue divergent points to identify the best path forward. A good leader considers perspectives from their team. An effective leader, especially in my role, is also an educator. I am here to share with the Air Force my knowledge of technological advances that they may be unaware of and may help them be more effective in their work.

What is the target baseline?

In crafting a strategic technology vision, we are always mission focused. The target baseline specifies the standards, protocols, guidelines, and implementation constraints for the future state of IT. It is used to inform the development of the implementation baseline. It is thoroughly documented and continually updated based upon emerging industry standards. We base the target baseline on use cases and scenarios, focusing on specific questions/issues that currently exist in the enterprise (e.g., How do I…) and new capabilities that are needed. We take that information, figure out the capabilities the field may need, and identify potential solutions.

Usually what happens is we come up with something in the target baseline and two years later everybody says, Hey, that’s a great idea. For example, two years ago the target baseline underscored the importance of data as a strategic asset. Two years later, the chief data office role is established.

Some of your business and mission systems are running on legacy systems. They’ve been out there, fielded, successful, sustained, and fulfilling a mission requirement. We know you have started a series of cloud migration initiatives across the Air Force. Can you tell us more about your efforts in migrating to the cloud?

We are using the cloud. The idea is to move to multiple clouds and pursue software as a service, which we now have for one of our military personnel applications. Our multiple cloud approach includes Department of Defense (DoD) clouds, commercial clouds, and clouds on bases.

The Air Force philosophy is that we fight from the base, with all mission critical applications run on the base. Some may not appreciate this new approach. For example, the fuel management application cannot be centralized because it must operate from the base. We also have legacy systems that are difficult to migrate to the cloud. In this instance, we explore what mobile applications can be put on top of the legacy systems and make them look like they’re in the cloud.

There are two ways to look at modernization—migrate old applications and generate new applications. For the old ones, we talked about auto provisioning out to the clouds. We fielded some of those capabilities already, and we’re going to field some more. The new side is DevOps (development and operations). What can we do for DevOps for new systems? We’re talking about doing a process to get most ATO (Authority to Operate) credentials done and ready for the RMF (risk management framework). We have a process currently that can actually do that. It’s ATO in a day, where we can actually field an application within a day.

You have to take an enterprise viewpoint—that’s the key. People get wrapped up in a new technology. But we are always asking how will we be using this new technology in five years. We are constantly tracking where we think new technology is going, how we can leverage it, and when is the most opportune time to just that. Our focus is to look into the future and to push the target baseline from an enterprise point of view. This involves many meetings and continued collaboration across the Air Force as well as with the DoD.

What constitutes true disruptive change versus simple evolutionary improvement?

One could assert that if it upsets people, then it’s true disruptive change. On some level, it depends on one’s perspective. What is disruptive to you? What is evolutionary improvement? For some people, network and enterprise IT as a service is disruptive. For others, it’s a total change in business operation and how they actually work. For those in industry, it’s probably evolutionary, since they’ve been talking about it for years. On another level, evolutionary improvements are bound to result in disruptive changes. So in the end, disruptive and evolutionary innovation is driven by context.

Would you tell us more about data, analytics, and the establishment of the Air Force’s chief data officer?

The real challenge is that everybody is doing some form of data analytics across the Air Force. We have pockets out there that are doing this right now and making decisions based upon it. The real issue centers on the question of authoritative data. Is the data being used to inform decision-making authoritative data? We need to coordinate these efforts and
An effective CTO must always have an enterprise viewpoint and recognize you are here to support the mission.”

—Frank Konieczny

provide the requisite toolset to support them. Making sure they are using the most authoritative data is critically important.

Several years ago, I established the Air Force data panel because we had trouble finding a reliable source of PM (project management) training data. We couldn’t find who had the data. The data panel was established as a better way of doing things. From this effort flowed the establishment of a chief data officer (CDO), whose job is to help us get a better handle on data issues. There is no doubt data is a strategic asset for the Air Force. The CDO plays a critical role in making sure our data is authoritative and access to it is guarded accordingly.

I talk to my guests about the importance of collaboration and partnerships in achieving mission outcomes. How do you leverage the benefits of partnership and collaboration to do the work that you do?

Government cannot do everything. We work with industry and on some level rely on industry, because much of what they do is on the cutting edge. We have many meetings with them. We explain our problem space and ask them to come up with new great solutions that help us. Through this process, we identify how industry innovations can better fit our needs. As I mentioned earlier, we collaborate and engage across the Air Force and also externally with the other military services and DoD proper. Collaborating and partnering is key, and it’s especially important when as a chief technology you have a future-oriented focus.

How is the CTO a trusted advisor across the enterprise?

We are purposely a small office. I am not here to build a CTO kingdom. I am here to help. We are not here to take away resources. We’re trying to provide things like insight as well as make connections. We offer a trusted point of view on technology and innovations that can help our colleagues better execute their mission sets. An effective CTO must always have an enterprise viewpoint and recognize they are here to support the mission.

How important are emerging technologies to ensuring resiliency?

Migrating to the cloud is obvious, but it’s not simply cloud. It’s the virtualization of applications for resiliency. On some level, the resiliency aspect is more important than the cost savings associated with the move to cloud. There are a host of other impactful technologies such as AI, machine learning, the neutral net, automation, and quantum computing. We’ll play with them and see what will work best for executing various missions.

To learn more about the U.S. Air Force chief technology office, go to safcioa6.af.mil/

To hear The Business of Government Hour interview with Frank Konieczny, go to businessofgovernment.org.

To download the show as a podcast, go to PodcastOne, iTunes, and businessofgovernment.org.

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

To read the full transcript of The Business of Government Hour interview with Frank Konieczny, go to businessofgovernment.org.
Technology plays an ever increasing role in daily life. Criminals and terrorists can use this trend to their advantage, posing an even bigger threat to civil liberty and national security. The Federal Bureau of Investigation (FBI) is mobilizing a wide range of advanced scientific techniques and operational technologies to help counter terrorism and criminal threats. Overseeing the FBI’s efforts in this area is the Science and Technology Branch (STB).

What is the mission of the STB? What are its key priorities? How does it use science and technology to combat crime and criminal threats? Chris Piehota, Executive Assistant Director of the FBI’s Science and Technology Branch, joined me on The Business of Government Hour to share his insights on these topics and more. The following is an edited excerpt of our discussion, complemented with additional research.

Would you provide an overview of the history and mission of the FBI’s Science and Technology Branch? How does it support the overall mission of the Bureau?

The branch has three major components. The Operational Technology Division (OTD) operates as our research and development arm. It also conducts all of our digital forensic work, secure communication, and digital investigative activities. We do fabrication work there. It develops and deploys technology-based solutions to enable and enhance the FBI’s intelligence, national security, and law enforcement operations. OTD is staffed with highly skilled and multi-disciplined agents, engineers, electronic technicians, forensic examiners, and analysts. They support our most significant investigations and national security operations with advanced electronic surveillance, digital forensics, technical surveillance, tactical operations, and communications capabilities. While OTD’s work doesn’t typically make the

The STB’s mission is very simple: to enable and enhance operations and investigations for our national security programs and our criminal investigative programs. We are an enterprise service provider of technological services and products that enable agents to conduct investigations and operations most effectively.

My main role is to help provide strategic vision and leadership for the branch. We figure out how the branch best fits in with the rest of the FBI’s mission sets. The FBI is broken into six primary branches of which the Science and Technology Branch is one of them. Two of the other branches are the National Security Branch and the Criminal, Cyber, Response, and Services Branch. We strive to maintain good strategic alignment with the other FBI primary branches. The STB is comprised of about 6,000 staff members. We’re the largest single component that the FBI manages and maintains.

How is STB organized?

The Science and Technology Branch was established in July 2006 to centralize our various applied scientific and technological capabilities and functions. Shortly after the 9/11 incident, the FBI reviewed its operations regarding how it conducted business post 9/11. We saw a requirement to consolidate its vast science and technology programs under a unified chain of command, a unified leadership model, so that we could better integrate resources.
“The STB’s mission is very simple: to enable and enhance operations and investigations for our national security programs and our criminal investigative programs. We are an enterprise service provider of technological services and products that enable agents to conduct investigations and operations most effectively.”

—Chris Piehota
news, the fruits of its labor are evident in the busted child pornography ring, the exposed computer hacker, the prevented bombing, the averted terrorist plot, and the prosecuted corrupt official. OTD works extensively with our partners at the local, state, national, and international levels.

The Laboratory Division houses one of the largest and most comprehensive crime labs in the world. It is the CSI of the FBI. We work with our state, local and federal partners to determine standards and practices and protocols for how to collect and maintain evidence. We maintain the Combined DNA Index System (CODIS), which is the nation’s DNA database. We do ballistics analysis and shooting reconstructions.

The third component is our Criminal Justice Information Services Division (CJIS). The CJIS Division is our outward facing law enforcement liaison component. The CJIS Division provides a number of services and products to the law enforcement community across the country and for international partners where we manage vast amounts of data and information. For instance, we run what used to be Integrated Automated Fingerprint Identification System (IAFIS), which is now the Next Generation Identification (NGI) system, so we do all of the fingerprint work as well.

We also have a fourth area. We run the Terrorist Explosive Devices Analysis Center in Huntsville, Alabama, a governmentwide service provider to counter improvised explosive device activity around the world.

**Any challenges or surprises you would like to highlight?**

The challenges are as broad and varied as is the FBI’s mission. One challenge is the rapidly evolving pace of technology. What we find is technology is developing and deploying faster and faster. It is challenging our ability to maintain a competitive edge. We also look at integrating mission resources across the FBI enterprise as part of the national security apparatus. These resources serve the U.S. government as well as the FBI as a partner to the law enforcement community, both domestically and internationally. On a day-to-day basis, I ask my people to identify and develop solutions for problems that don’t really exist just yet.

What has surprised me somewhat is the complexity and the scope of what the Science and Technology Branch has been asked to do, is doing, and will be asked to do. The challenge to maintain our edge as the counter to national security threats and investigating criminal activities is daunting.

**Prior to taking over the STB, you led the FBI Terrorist Screening Center. Would you tell us about your career path? How have you leveraged previous experience into your current leadership role?**

I spent six years of active duty in the U.S. Air Force. I trained in a specialized technical field called metrology. This is the study of measurement—of quantifying the world around us and assigning accuracy and uncertainty to various quantities and parameters. When I was in the Air Force, I learned how to be a good leader of people and a good follower of leaders. I left active duty and landed a job at the Kennedy Space Center in support of the space shuttle program, where I spent five years. I was always interested in law enforcement as a career. I applied and was accepted into the FBI in 1995.

After training, I was assigned to the Newark Field Office, working in the counter terrorism and weapons of mass destruction area. I was there through 9/11. In February 2002, I went to FBI Headquarters as a counter terrorism program manager for international terrorism. In 2005, I was assigned to a Washington field office, working in the counterintelligence area. I worked very closely with our intelligence community partners and was promoted to chief security officer for our second largest field office. I then had my initial stint at the Terrorist Screening Center (TSC) before becoming special agent in charge of all FBI operations for Western New York.

After that I became the director of the Terrorist Screening Center, a multiagency organization that was a primary part of the U.S. government’s counter terrorism function. I spent a few years at TSC, which was an outstanding assignment for me. I forged partnerships and used technology to identify, detect, and prevent threats around the world. Then one morning I received a very surprising call from the then-FBI Director, who asked me if I would consider serving as the executive assistant director for STB. Because of my experience at TSC—integrating technology with operations—I was able to bring the same customer service and operational support mentality to STB.

**What is your leadership philosophy? How do you lead?**

My leadership philosophy is based upon two words—mutual support. Everything we do has to help other people be successful and then we hope that they will help us be successful. Everything is about teamwork. Everything is about marshalling people and resources to accomplish our goals and objectives. I know that it happens more gracefully
sometimes than others, but what we try to make sure of is that we keep the mission in mind and the mission of the FBI is again to uphold the U.S. Constitution and to protect American society.

I take a three layered approach to leadership. On an interpersonal level, it is critical to be honest. Be objective and be considerate of others. On an organizational level, I ask people to be accountable and results-oriented. I don’t think there is anything more unforgiveable than misusing the time of our staff and of our people. They work very hard. Leaders need to make sure that we are getting results for their hard work and efforts. On a professional level, I ask people to be resilient because we have tough jobs. I also ask folks to be enthusiastic because our jobs are very important. People put trust and confidence in us and as such real leaders must lead by example.

Would you outline your vision and key priorities for the Science and Technology Branch?

Our current vision is to be the premier provider of applied science and technology capabilities that address the ever-evolving threat. Our primary drivers, of course, are FBI national priorities. We look at our FBI priorities and then we look at national threat priorities. National threat priorities are evaluated at least annually if not more often. We try to make sure that we are in line with and supporting directly those priorities. We monitor crime trends. We look at emerging crime issues. We try to make sure we provide our partners, customers, and investigative cadre with proper tools and products to identify those threats and counter those threats using science and technology, which complements old-fashion investigative police work.

What is biometrics analysis and how does it assist you in your work? Are there any innovations in this area that you would like to share?

Biometrics is just another way that human beings interact. We have two age-old questions that we ask about each other. First of all, who are you? And are you who you say you are?

We’ve tried to figure this out about each other for centuries—whether it was through secret handshakes, passcodes, different types of identifiers, or authenticators. As the world evolved, our ability to authenticate each other has changed. In the digital age, biographic information is easily counterfeited. Biometrics is a way to remedy this situation. Authentication can be broken down into three areas. It’s something you know, something you have, or something you are. What we find is that we try to use combinations of these three areas. Biometrics is something you are and is the way of the future today. It’s the modalities of iris scans, fingerprints, and DNA. What we’re trying to figure out is how to do this better, faster, more cost effectively. We also have to make sure that we’re doing it in line with people’s privacy, civil liberties, and constitutional rights.

We also look at other more esoteric things for experimental reasons, such as walking gait analysis. Everyone walks a little bit differently. Voice analysis is another way to authenticate. The shape of the ear can also identify people. It may not be a perfect identifier, but we can use it to triangulate other identifiers to make a good match of an individual.

Would you tell us more about how STB engages in scientific analysis?

As I mentioned, the FBI lab is our premiere law enforcement laboratory. As a leader and standards setter, the lab is a resource developing tools and techniques that the law enforcement community will adopt and use. We also maintain the CODIS Database, which is the National DNA Database. We do a lot of latent fingerprint work where we go in and we extract fingerprints from crime scenes. We extract latent fingerprints from explosive devices. You would be surprised how often we get identification from latent fingerprints off an explosive device. We also do a lot of DNA casework. The FBI lab does forensic response and analysis, and counter terrorism forensic work as well.

The evidence response teams are the FBI’s crime scene investigation component. We had multiple teams doing a landfill excavation in the Jacksonville, Florida, area looking
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for a missing person. Unfortunately, we were unsuccessful, but the team moved hundreds of tons of refuse and did forensic analysis. The lab does crime scene documentation, rescaling, and rebuilding. We do models of crime scenes. One of the more impressive crime scene remodeling projects was the shooting in Aurora, Colorado. It included a scaled down model of the theater, which showed you the trajectory of all rounds fired, the aftermath, the impact.

Integral to your forensic science portfolio is its capacity for operational response. Would you tell us more about the STB’s operational response?

I’ll give you an example of the Las Vegas shooting. In an event of that magnitude, one if not all three of the STB components will be engaged for direct investigative support, forensic work, field communications, and other types of technology based activities. For instance, our Operational Technology Division can do the digital forensic and information extraction from the device found on the scene. We can collect all of the evidence from the hotel rooms. We can do the ballistic testing on all of the weapons found. We can verify the shooting path. We can do all of the work to reconstruct that event. Also, our Criminal Justice Information Services Division can set up virtual command posts via electronic channels so we can communicate with our state and local partners. We can de-conflict efforts and share information for investigative leads to make sure there aren’t any other activities that are maybe planned or haven’t been executed. This allows us to be predictive and preventative.

How do advances in science and technology improve the success of law enforcement?

Technology can help us be more accurate, faster, more efficient. We do things differently now than we did just five to ten years ago. Technology can enhance our lives. These benefits can help law enforcement, but unfortunately, technology also allows criminals and national security adversaries to do things that they couldn’t do before. It makes them better, it makes them faster, and it makes them better users of resources as well. We try to be a step ahead. We try to be as forward looking and anticipatory as possible. What we try to do is work through partnerships. There is no one organization anymore that has the capabilities, the skills, the resources, or the authorities to combat the complexity of the new criminal investigative environment or the new national security environment. Technology for us is a way to make our investigators and intelligence analysts better at what they do. Technology will not replace them. It augments the Bureau’s investigative and intelligence cadres. Technology is not a solution. It’s part of the solution.
U.S. federal agencies need to procure goods and services essential to meeting their various missions. The U.S. General Services Administration (GSA) and its Federal Acquisition Service (FAS) provide those agencies with over 11 million different products and services, while delivering over $55 billion annually in federal procurement.

What is FAS doing to make its operations easy, efficient, and modern? How is FAS delivering best value mission support to customer agencies? What is FAS doing to promote smarter buying and the efficient use of technology across the federal government? FAS Commissioner Alan Thomas joined me on The Business of Government Hour to share his insights on these topics and more. The following is an edited excerpt of our discussion, complemented with additional research.

What is the mission of GSA’s Federal Acquisition Service?

Acquisition is at the core of what we do. But as you know, acquisition, its support technology, and how we serve customers are all changing rapidly. FAS is the government’s premier provider of acquisition and technology transformation solutions. We provide solutions to partner agencies throughout the entire acquisition cycle. Our work reflects a commitment to delivering service, innovation, and value through efficient operations, market expertise, and proactive partnerships with both customer agencies and private sector vendors.

In all of our core portfolios, FAS promotes smarter buying, the efficient use of technology, and reduced administrative costs across the government. We run the Schedules Program. We run a number of governmentwide acquisition contracts such as Alliant, as well as governmentwide multiple award contracts like OASIS. We manage the GSA Fleet program, which provides leased vehicles. We also run the world’s largest charge card program, the SmartPay Program.

How is FAS organized to execute this mission?

FAS employs more than 3,000 people, spread across the U.S. in 11 different regions. About half of the FAS staff is located in the D.C. central office. We have 20 or so folks in Europe, another 30 or 40 people in Asia. FAS operates a number of support offices such as acquisition policy and strategic management, but the core portfolios are Assisted Acquisition Services, Information Technology Category, Professional Services and Human Capital Categories, Travel, Transportation and Logistics Categories, General Supplies and Services, and Technology Transformation Services.

How do you lead FAS?

One of my most important duties is to inspire the people at FAS, give them a clear sense of direction, and focus our team on a few key goals that move our mission forward. From a leadership perspective, the three qualities that inform my leadership style are honesty, courage, and graciousness. As a leader, you want to be authentic. A successful leader has to be honest with themselves and their team. Often times being honest and delivering a tough message takes courage, but such a message must be delivered in a gracious way if you want people to listen to you. From my perspective, if people believe you’re authentic and honest with them, they’re more likely to listen to you, even if you’re telling
“My vision of FAS as easy, efficient, and modern complements GSA Administrator Murphy’s four operating principles—ethical leadership, increased competition, increased transparency, and reduced duplication. Let’s pick a few important things we want to do around those easy, efficient, modern priorities, and let’s focus 99 percent of our time and effort on getting those things done.”

—Alan Thomas
them something they don’t agree with. An open, honest environment also fosters healthy debate and engagement, which can lead to better collaboration and the results you’re looking for.

**What has challenged you most since taking the helm of FAS? What has surprised you?**

When I joined FAS I went on a listening tour, visiting all our regions in the field. Over five months, I met employees, I did town halls, I listened to those on the frontline. That process helped me identify our systems infrastructure as a top challenge.

We rely on technology to deliver services, and these systems are not up to par. My tagline is: the quality of our systems must match the quality of our people. I’m working with my colleague, GSA Chief Information Officer David Shive, and his team about how to modernize our business systems to better service customers and enhance the end-user experience. I’ve learned from my private sector experience that one way to take care of your staff is to put great tools in their hands. When you give them what they need to succeed, your team will take care of customers—and good results will follow.

During the course of my career, I came to know GSA from different perspectives—as a consultant, a federal employee at the Department of Defense, as a vendor. I helped get a technology company on Schedule 70. But as the commissioner, I have an entirely different perspective on the breadth and depth of GAS in general and FAS in particular. I have come to view FAS as a holding company composed of different subsidiaries. It has been a challenge to identify what we should be doing as an enterprise—and also, when to encourage individual business lines to act on their own to meet the needs of individual markets.

**Alan, FAS leverages the buying power of the federal government by negotiating prices on many products and services required by federal agencies to achieve their missions. To that end, would you outline your strategic vision for FAS and your key priorities?**

My vision is to make FAS easy, efficient, and modern. GSA’s mission is to deliver value and savings in real estate, acquisition, technology, and other mission-support services across government. Our values are service, accountability, and innovation. In an effort to develop priorities that not only embody these principles but also resonate with our stakeholders, I spent my first five months on that listening tour going to offices nationwide. My visits focused less on sharing what I wanted to do and more on hearing what my colleagues thought about where the organization has been and where we should be going. While on tour, I also visited with customers, such as the Departments of the Air Force, Army, Navy, and the Centers for Disease Control and Prevention—as well as industry partners. What I learned helped me set the priorities to become a more efficient, modern service.

**What are you doing to make it easier to work with FAS?**

As outlined in my first blog as FAS commissioner, we’re focused on improving the customer and supplier experience by making it easier to work with GSA. There is a lot that fits under this umbrella, including modernizing and simplifying our systems. Today, FAS helps our agency customers acquire $50 billion worth of goods and services from more than 20,000 industry partners each year. I’ve asked the team to make it easier to write contracts, place orders, and manage our assets.

Also included in this “easy” bucket is streamlining and simplifying our internal and external acquisition processes. This will focus mostly on continuing the plans for improvement, as outlined in our current Multiple Award Schedules (MAS) transformation initiative program. GSA is committed to providing our stakeholders with a MAS program that addresses current market forces. This program also provides government with a streamlined, value-based contracting solution that will continue to save time and money well into the future.

To that end, we expanded the IT Schedule 70 Plain Language Roadmap to the entire Schedules program—now the MAS Roadmap. We’re continuing our Transactional Data Reporting (TDR) pilot program to simplify sales reporting. We’re also being extremely thoughtful regarding the development of new Special Item Numbers (SINs) to reduce burden on industry, both of which you will hear more about throughout this year.

Additionally, we recently published two critical final rules that impact our stakeholders—Order-Level Materials (OLMs) and Commercial Supplier Agreements (CSAs). OLMs introduce a key flexibility into MAS, creating parity with other Indefinite Delivery, Indefinite Quantity (IDIQ) contracts and reducing contract duplication. CSAs decrease the time needed for legal review prior to contract formation, reduce costs significantly to government and contractors, and clarify expectations for all parties. The first phase of the policy
implementation will run through the end of 2018, with the official execution expected to start in 2019.

Would you tell us about your efforts to make FAS more efficient?

We are doing much work in the shared services space, including our Fleet and GSA SmartPay programs. It is important to recognize that the most efficient use of taxpayer dollars is developing and leveraging market-leading shared services. Reinventing the wheel is downright irresponsible. Our Office of Fleet Management manages about one-third of the federal fleet, roughly 200,000 vehicles. Our Purchase Card program provides over three million purchase, travel, fleet, and integrated charge accounts to over 560 U.S. government agencies and other authorized organizations. Both programs have been tremendously successful, and I’m looking to build on that success. We’re also going to explore additional innovative payment opportunities for SmartPay, such as cardless transactions. And we’re planning to invest in new shared services like payroll and time and attendance.

How are you working to modernize FAS for your staff and customers?

FAS is positioned as an enabler of IT modernization across the government. Internally, as I noted, we’re modernizing our internal systems that help us deliver our mission. For FAS, modern also means providing IT modernization expertise to enable agency transformation. The new GSA IT Modernization Centers of Excellence (COEs) will provide centralized expert advice, consulting, development, and support solution implementation for cloud adoption, IT infrastructure optimization, customer experience, service delivery analytics, and contact center solutions. It also means innovating. We’re leading on a number of key initiatives identified in the president’s report on IT modernization. GSA is named as the primary or supporting player in 25 of the 50 actions in the report, so we have a central role there. We’re also preparing to support the operation and administration of the recently approved Technology Modernization Fund (TMF), which will help agencies transition from older IT infrastructure to more efficient and secure technologies.

My vision of FAS—as easy, efficient, and modern—complements nicely GSA Administrator Emily Murphy’s four operating principles: ethical leadership, increased competition, increased transparency, and reduced duplication. Let’s pick a few important things we want to do around those easy, efficient, modern priorities, and let’s focus 99 percent of our time and effort on getting those things done. That was a message that really hit home with people.

Also, one of the biggest changes impacting the way we do business is the pace of technological change. We rely on technology to deliver our services effectively. Integral to our focus on IT modernization is the need to shape and inform a 21st century workforce. For instance, the introduction of robotic process automation may help reduce the number of mundane tasks for line-level contracting officers. Doing this will free them to focus on value added and more strategic efforts.

Alan, would you give us a brief overview of the Modernizing Government Technology Act?

The MGT Act is a great example of bipartisan spirit. It focuses on modernizing government technology to serve citizens better and make the government more efficient and effective. This is an issue that brings everybody together. The most important component of the MGT Act is the Technology Modernization Fund and the associated Working Capital Funds (WCF). Both seek to better align how agencies buy technology and make investments.

The TMF board is chaired by Federal CIO Suzette Kent. There are six other board members and GSA Administrator Emily Murphy appointed me as a permanent board member. We’ve been running what I would call a “shark tank style” process, where we receive initial proposals, review those, and then

“The Modernizing Government Technology (MGT) Act is a great example of bipartisan spirit. It focuses on modernizing government technology to serve citizens better and make the government more efficient and effective. This is an issue that brings everybody together.”

—Alan Thomas
ask people to present more detailed proposals. To presenters, my advice is to get to the point quickly—three or four impactful sentences that talk about outcomes. Our mindset is to invest in things that will have a big impact on citizens and that other agencies can leverage and model.

On June 7, the TMF board selected three projects from the departments of Agriculture (USDA), Energy (DoE), and Housing and Urban Development (HUD), awarding $45 million in total funding between the three agencies. USDA will receive $10 million to aid the development of a customer experience portal on its Farmers.gov website, which connects farmers and ranchers to USDA resources. DoE will receive $15 million to speed its enterprise cloud email migration. Cloud email is a priority that is also being pushed governmentwide through the President’s Management Agenda. HUD will receive $20 million to accelerate a mainframe application migration.

**What advice would you give someone who is thinking about a career in public service?**

Public service is a noble calling. In the public sector, you often can get more responsibility at a younger age than in the private sector. You also have the opportunity to tackle some interesting problems that only the public sector faces—for instance, when the government steps in for some sort of market failure. If you like that kind of environment, then the public sector is a good place for you. This is my third time working in government in my career. I would encourage those who have the passion for a particular agency mission to go for it.

To learn more about GSA’s Federal Acquisition Service, go to gsa.gov/about-us/organization/federal-acquisition-service.

To hear The Business of Government Hour interview with Alan Thomas, go to businessofgovernment.org.

To download the show as a podcast, go to PodcastOne, iTunes, and businessofgovernment.org.

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

To read the full transcript of The Business of Government Hour interview with Alan Thomas, go to businessofgovernment.org.
Role of IT in the Delivery of Social Services: Insights from Joe Vastola, Chief Information Officer, Florida Department of Children and Families

By Michael J. Keegan

The mission of the Florida Department of Children and Families (DCF) is to protect the vulnerable, promote strong and economically self-sufficient families, and advance personal and family recovery and resiliency.

Its vision is that every child in Florida lives in a safe, stable, permanent home nurtured by healthy families and strong communities. Making this vision a reality today involves a host of factors and the support of significant resources. One such resource is the use of a robust information technology infrastructure. IT and technology enable this critical social services department to meet its mission.

What role does IT play in the mission of the Florida DCF? How is DCF changing the way it does IT? Joe Vastola, Chief Information Officer at the Florida Department of Children and Families, joined me on The Business of Government Hour to share his insights on these topics and more. The following is an edited excerpt of our discussion.

Would you tell us more about the mission and operations of the Florida Department of Children and Families?

DCF’s mission is to work with our local partners and communities to protect the most vulnerable citizens of Florida, promote strong and self-sufficient families, and help advance personal and family recovery and resiliency.

DCF is a large state agency with a budget of just over $3 billion a year. It operates in 67 counties throughout the state of Florida. DCF is organized into six managed regions that handle all of our services throughout the state. The department has three key programmatic business areas: public assistance, which includes such programs as SNAP (United States Department of Agriculture’s Supplemental Nutrition Assistance Program), Medicaid eligibility, and cash assistance; the child welfare program, which is the foster care/child welfare system; and then our substance abuse and mental health program, which handles state hospitals and facilities and all of the activities associated with mental and behavioral health services.

We have just under 12,000 full-time employees who work throughout the state, supported by thousands of contract providers and partners that support the overall mission of the department. It is a large and far-reaching organization that has all of the opportunities and challenges typical of a $3 billion organization.

Now that you’ve provided us with a sense of the larger organization, would you tell us more about your specific role as a chief information officer at DCF? How is the Office of Information Technology organized and how does it support the overall mission of the department?

We have a centralized IT organization. My responsibility covers all technology assets and infrastructure, which includes management and support of all business applications, solution providers, and contracts to support those applications. Regarding infrastructure, this includes support and management of network, data, and voice communications across our statewide facilities. We have two primary call centers. Our public assistance program call center is staffed by close to 850 people who handle calls related to the public assistance program. We also have a 24/7/365 abuse hotline that is a part of our child welfare
“DCF’s mission is to work with our local partners and communities to protect the most vulnerable citizens of Florida, promote strong and self-sufficient families, and help advance personal and family recovery and resiliency.”

— Joe Vastola
program. We have a statewide group that operates in each of our regions and handles all of the local desktop network support activities. We have a statewide help desk that handles all of the 12,000 IT related calls. We have a set of IT services that support administrative activities such as procurement, budget, and human resources. These functions and activities are carried out by some 238 full-time staff supported by a number of consulting resources. We also work directly with our partners at the Agency for State Technology and the Department of Managed Services which handle our statewide network.

Joe, with such an expansive portfolio and set of responsibilities, would you tell us about some of the challenges faced by your office and how have you sought to address those challenges?

Over the years, the state of Florida made significant investments in technology to automate and implement systems that support DCF’s major programs. Some of these systems are dated while others newer. All of these systems house huge amounts of data. One of my biggest challenges is working with customers on data access and integration involving linking data across all programs and turning that data into information.

We’ve accomplished much in data integration. First, we put in place the department’s first master client index. We now can link clients across all of our systems, setting the foundation for data analytics. We use that information in an integrated way to derive more insights into effective services, clients’ needs, and more. We’re creating a big data virtualized environment to put all of these sources together, link them with the client index, and establish analytical and decision support tools that provide an enterprise picture for our customers.

Another challenge is what I call the balancing of or equalizing the level of IT investment. As I mentioned, we have three core programs. We are working today to bring them all to the same level of IT infrastructure. This is not easy because over the years each program has made different investments and pursued different priorities. Today we are constantly looking at ways to leverage solutions across the IT enterprise.

Despite having legacy technology, we continually challenge ourselves to be agile and deliver the IT solutions and services our customers need to meet their respective missions. Aligning our services to our customers’ requirements is necessary as well as challenging.

What makes one an effective leader?

Leaders need to see themselves as team members, but also sometimes coaches and mentors. It is not enough to just show up and tell staff what to do. Effective leaders need to roll up their sleeves and help their staff. Leadership is a balancing act. You need to set expectations, ensure your teams are operating with a sense of urgency, and provide them with the resources to be successful. Effective leaders need to tap those around them who may have more technical understanding and knowledge in a given area. Along with being open, leaders must be passionate about their mission as well.

In the end, leadership is all about people. Focus on helping people achieve the most they can. Have the same expectation for yourself as you do for your management team. Doing these things goes a long way toward making one an effective leader.

DCF has the largest operating budget of all Florida agencies at over $3 billion and the third largest staff at almost 12,000. The CIO role must be very important, keeping the organization connected and providing the tools for employees to do their job. To that end, would you tell us more about your IT plan for DCF and perhaps you could outline your key IT priorities?

My first goal is to put our customers first. We’re working on so many things that are important to our customers. We need to constantly communicate with our customers. We need to keep them abreast of project status. We need to understand their needs and goals. It is critical to engage in full transparency and communication to work effectively in support of our customers.

I tell my staff any time you’re with a customer, you should be doing your best to gauge customer service, because customer service is a key element of our IT strategy.

From an IT operation side, I focus on operational and delivery excellence. As a CIO, if your IT operation isn’t running smoothly, then you’ll be facing constant issues and have no time to work on any other initiatives. To establish operational and delivery excellence, it requires a certain level of agility. As an IT organization, we need to identify and implement the technologies that can most effectively assist our customers.

Our infrastructure must also support our entire enterprise. To that end, you look at every opportunity, every change, and
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“We’ve received tremendous benefit from moving to an agile IT methodology. It has truly changed the way we do our IT business in DCF.”

—Joe Vastola

you figure out how you can advance each of your strategic goals, even if it’s just a little bit. Our IT strategy includes absolute alignment. We need to know what our business partners need and what their challenges are. We need to constantly be questioning the work that we are doing to make sure that we are in absolute alignment with those requirements.

We also have rigorous performance and project management requirements for our vendors. All of our projects need to work within a model of project management that is understandable and standardized. DCF is linked at the hips with a number of contracted providers that are integral parts of the team. These are our partners and we can’t do our work without them.

It’s important to be good stewards of public funds and invest them wisely. To that end, I would like to explore the IT capital investment process that DCF uses. Would you tell us how it works and how do you ensure that investment decisions are mission aligned and cost justified?

The state has a rigorous planning process. It is a process that we go through each year to identify our priorities, capital investments, and cost justification for pursuing these initiatives. When we understand what our budget is for the following fiscal year, we then plan our priorities. For those that make the cut with our senior management and agency leadership, we submit proposal requests to the executive office of the governor and to our legislature. We have to submit any proposal that calls for an investment of $1 million or more. The proposal is accompanied with a cost-benefit analysis of why we need the funds, how these funds will be used, potential alternative options, return on investment, and how the initiative fits into the government’s larger strategic priorities. We work very closely with the governor’s office and the Florida legislature to justify each and every purchase that we have considered to be a priority. For those projects that receive funding, we provide quarterly status reports. Ultimately, this is a very rigorous process that seeks to obtain and justify funding for services and technology that will better serve Florida taxpayers.

Would you elaborate on your efforts to enhance IT governance within your department?

We have two different levels of governance. The first level is business or customer level governance. As I mentioned earlier, DCF has three key program areas and as such there are systems, staff, and funding associated with each program. We need to be doing what our customers in those program areas require. We have very well defined and standardized governance processes for each of those areas, so as to ensure the proper alignment of our services to their IT requirements. The work we do enhancing our business systems and infrastructure is directly tied to the needs and priorities of our customers. I just outlined the capital IT planning process. Our customers are hooked into this process because ROI and the benefits from a new investment aren’t simply an IT concern, but go to the core of our customers being able to deliver on their mission.

From business or customer level governance, we go to department level governance. This allows department leadership to access our priorities and efforts with a necessary enterprise perspective. It is at this point that leadership can and sometimes does redirect our efforts to ensure we are doing what’s best for the department as well as the programs. Having business and department level governance drives our focus and helps use identify the most important things that we should be doing.

There is much talk about migrating infrastructure to the cloud. Would you tell us more about your efforts migrating to the cloud?

In December 2017, we moved the first state government system in Florida to the cloud and that was our child welfare system. In Florida we have our Agency of State Technology. They are our data center. About two years ago, legislation directed us to transform our child welfare system and move it to the cloud. In the end, moving this system to the cloud reduced the overall costs for infrastructure and managed services. Customers are telling me that the performance of the system is significantly better. In January 2018, we had
43,000 more logons for the month. It showed us that there was a pent up amount of work that wasn’t getting done and when the capacity and performance of the system was enhanced, then that work was able to be done.

We’ve had significant success moving applications to the cloud. We have a number of smaller applications and one of our licensing divisions that run in the cloud today. We are in the process in our substance abuse and mental health program of building a cross organization financial and service tracking system that will also be hosted in the cloud. We are looking to do more with the cloud where it’s appropriate and where it’s cost effective. Performance is up and costs are down.

**What are you doing to spur innovation across the department? And more importantly, how are you changing the way information technology is done within DCF?**

The results we are seeing using agile methodology have been very positive. Often times what we’re planning to get done within a set of sprints gets done in a shorter timeframe. Secondly, we’re finding that the quality of the product at the end is significantly better. By quality, I do mean both the quality of the software and the testing, but more importantly, it’s the quality of alignment of the function with the expectations of our users.

When we used the waterfall method we’d find ourselves six months down the line, getting ready to implement, and realizing that the requirements we captured six months before weren’t complete or didn’t take into account the full picture. The move to agile has completely eliminated such situations.

We are seeing alignment with customer requirements, but we’re witnessing the application unfold during the sprints. It involves key stakeholders who are prepared, are ready, and understand that if there are any serious changes there is a process in place during the sprints to pivot. We’ve received tremendous benefit from moving to an agile approach. It has truly changed the way we do our IT business in DCF.
Since 1998, the IBM Center has published research from more than 400 outside contributors—largely from academia, as well as nonprofits and journalists. Collectively, these contributors created a body of knowledge about best practices and lessons learned for government improvement. In addition, the IBM Center has developed a record of public sector challenges and opportunities through more than 500 interviews with government leaders on its radio show, The Business of Government Hour.

It is from this longer-term perspective about the performance and potential for government that the IBM Center for The Business of Government wrote Government for the Future: Reflection and Vision for Tomorrow’s Leaders. In our Forum, we draw from this rich repository of content to reflect on major drivers of public sector progress over the past two decades. More importantly, reflection on this content provides a foundation of what government management may look like two decades hence.

We have built on this foundation to bring together a set of viewpoints about the public sector in 2040, through a set of collaborative brainstorming sessions and a crowdsourcing of ideas about future scenarios. This vision of tomorrow’s government is framed through essays from experts that lay out a roadmap for how to maximize benefits and minimize risks.

The Center’s mission has remained the same throughout our 20 years: to stimulate research and facilitate discussion of new approaches for improving the effectiveness of government at the federal, state, local, and international levels. We strive to assist public sector leaders and managers in addressing real-world problems through practical ideas and original thinking to improve government management. We hope that the Center’s efforts have raised awareness about the importance of good management to an effective government that makes a positive difference in the world.

This Forum offers selected excerpts from the new IBM Center book, Government for the Future, as an introduction into 20 years of connecting research to practice. With our objective of crafting a future vision of government by reflecting on the past, Government for the Future consists of two parts. The initial chapters examine six significant and enduring management trends identified over the past 20 years:

- Going Digital
- Using Data
- Managing Performance
- “Liking” Social Media
- Becoming Collaborative
- Assessing Risk

The second part of the book looks 20 years into the future. This Forum will take you on a brief journey through both parts of the book. It is my hope that this primer will peak your intellectual curiosity and that you will find value in the insights, lessons learned, best practices, and vision of the future offered in this magnum opus that marks 20 years of connecting research to practice.
The selected trends introduced in this Forum and detailed in the IBM Center book, *Government for the Future*, were identified through analysis of content in past IBM Center reports, as well as through insights about key government reforms gained from a survey of current and past government executives and leading academics.

The three trends highlighted in this part of the Forum focus on the digital transformation in government. This rapid movement to “going digital” over the last 20 years has served as a key enabler of the increasing capability of government to collect, analyze, and use data. Along with digital and data trends in government, many of the problems facing government executives today transcend traditional program and agency boundaries. This reality has ushered in a trend toward “collaborative governance,” which is working jointly across the traditional boundaries of governmental agencies and between the public and private sector to tackle knotty public management challenges. For a more detailed understanding of each trend as well as the documented sources from which these insights are based, I encourage you to pick up a copy of the IBM Center book, *Government for the Future: Reflection and Vision for Tomorrow’s Leaders*.

**Going Digital**

Today’s digital economy has evolved significantly since the eras of mechanical and analog electronic technology. Beginning in the 1990s, the Internet brought about a revolution in how citizens and businesses access, share, and retain information over open networks. These digital steps forward have led to significant changes in how information technology impacts society, the economy, and government.

**What is Digital Government?**

Just as the private sector has adapted digital technologies and ways of doing business to serve its customers, government has grown in its digital capacity over the past 20 years. The initial adoption of Internet applications for government services two decades ago led agencies to incorporate these technologies in placing information on the web.

Today, governments can leverage open networks in the cloud, where individuals work together over the Internet in a secure environment to communicate and develop new ideas and applications. Given advances such as artificial intelligence and the “Internet of things,” mechanisms exist to collect, distribute, and access vast amounts of data in various formats from many parts of the world.
sources to help government leaders make decisions that deliver on missions and programs.

**Evolution of Digital Government**

Progress in this area has moved through three major phases over past 20 years, as shown in the chart Evolution of Digital Government: 1998-2018.

*Early action:* As the position of agency-level chief information officers was authorized under a landmark IT management statute in 1996 (the Clinger-Cohen Act), the growing importance of IT in implementing agency missions led CIOs to develop business cases that showed return on IT investments in the form of mission achievement and cost management. The mission-critical nature of IT also pointed agencies to start integrating security and privacy into planning and implementation. At the same time, the Internet first entered wide use in the public sector as agencies took their large volume of written public information and made it widely available on the web. Early cross-government applications, such as the FirstGov web portal, introduced the notion that government could use technology at a wide scale to improve citizen service.

*Expansion:* The advent of e-government was accelerated by a U.S. federal initiative that established citizen-facing IT projects, shared services for back-office operations, and cross-agency architectural standards to drive significant progress. This acceleration was codified in the E-Government Act of 2002, which authorized a presidentially appointed governmentwide leader of IT under whose direction agencies continued to advance IT policy and programs, and drive IT security and privacy. Such activity led to the use of open data and open government as ways to continue integrating innovation with citizen service and program outcomes, fueled by enabling technologies like cloud and mobile computing.

*Institutionalization:* Agency IT progress pointed to the need for strategy, policy, and law to support an updated framework for bringing new talent into government, while strengthening the authorities of CIOs working as leaders of technological change with other mission and mission-support executives to drive outcomes. The highly visible challenges and resolution efforts associated with the rollout of healthcare.gov in 2013 led the Office of Management and Budget (OMB) and the General Services Administration (GSA) to drive commercial best practice into government through “digital services” teams, innovation officers, and chief technology officers. Congress stepped forward with two statutes that advanced governance and funding frameworks. The government has continued to move forward through several 2018 cross-agency priority (CAP) goals, linking IT modernization to data strategy and workforce improvements as top goals in the President’s Management Agenda. The tie between IT, data, and workforce is especially important given the large volume and variety of digital data now available to agency teams. These teams can leverage analytics technologies to derive insights from the data that enable them to improve citizen service and performance.

*Looking Forward*

For digital technology to transform operations, governments will also need to change both culture and policy. To take full advantage of the transformational changes made possible through the speed and scale of digital technologies, citizens must help drive how agencies work with them. Digital government in the future must adapt to the needs and expectations of citizens, businesses, non-profits, and other partners, creating user experiences that are personalized, interactive, and easy to access and use. Digital technologies can enable “cognitive systems” that help agencies understand, reason, and learn, allowing government to interact in real time with the public to deliver mission and mission support services with strong security and privacy protections.
Ultimately, new technologies will continue to help government drive performance improvements based on leveraging data and analytics over the cloud, in a secure manner, and in real time. These emerging technologies include artificial intelligence, blockchain, the Internet of things, and initial steps toward quantum computing. Early innovators have shown a path forward for agencies to engage with and serve the public. For example, two 2018 reports on artificial intelligence—The Future Has Begun: Using Artificial Intelligence to Transform Government and Delivering Artificial Intelligence in Government: Challenges and Opportunities—highlight visible progress in the adaptation of that revolutionary technology to government at all levels, federal, state, local, and international. The evolution of digital government over the past two decades shows that when implemented effectively, securely, and cost effectively, agencies can drive significant and positive change while managing risk to the government and the taxpayer. Part II of the IBM Center book Government of the Future points out how government in the next 20 years can act responsibly to accelerate this progress.

### Takeaways

- Technology has played a critical role in the delivery of government programs and the conduct of government operations. The evolution toward a “digital government” has improved services, reduced costs, and enhanced security through efforts that have progressed over the past two decades.

- Digital government promotes the introduction of emerging technologies, agile development, a skilled workforce, and flexible investment strategies.

- Law, policy, strategy, and organizational frameworks have laid the foundation for continued improvements in adopting commercial best practices to implement digital government.

### Using Data

The rapid movement toward “going digital” over the last 20 years has served as a key enabler to the increased capability of government to collect and analyze data. This capability has similarly been a valuable tool to shift the emphasis from complying with reporting requirements to generating more useful data that informs performance improvement efforts.

#### Leveraging Data as a Strategic Asset

In 2018, the President’s Management Agenda designated Leveraging Data as a Strategic Asset as a cross-agency priority (CAP) goal. In its description of the CAP goal, the administration set out three key opportunities to more effectively use data in coming years.

- Develop a long-term federal data strategy to better govern and leverage the federal government’s data.

- Enable government data to be accessible and useful for the American public, businesses, and researchers.

- Improve the use of data for decision making and accountability for the federal government, including policy making, innovation, oversight, and learning.

The last two decades have been characterized by a more robust supply of useful data and performance information that can serve as a foundation for more evidence-based insights and decisions in the future. Government policy in recent years has encouraged the greater availability of open data, which has contributed to the growing supply of useful information.

#### Evolution of the Use of Data

Progress in this area has moved through three major phases over the past 20 years, as shown in the chart Evolution of Data: 1998-2018.

- **Early action:** This phase was characterized by an important shift from simply collecting and reporting data to using and analyzing data. Government organizations at the federal, state, and local levels all demonstrated an increased interest...
in timelier, more useful data. This emphasis was seen in the creation of PerformanceStat initiatives in localities across the nation. During this phase, the federal government also continued its interest in the use of data generated by state and local governments.

**Expansion:** Based on the increased production of data, government organizations began to focus on new ways to more effectively use the datasets that were being produced. New, more effective uses of data included increased use of analytics, data visualization tools, and big data.

**Institutionalization:** Based on government’s increased experience with the creation and use of data, government policies needed to change. These changes resulted in a series of new policies, increased use of open datasets, and the creation of chief data officer positions.

**Looking Forward**

A variety of important issues appear on the horizon regarding the future use of data by government agencies. For instance, how can government use data collected by the private sector? To date, the emphasis has been on making data “open” from the government to the public, including the private sector. A future challenge will face the private sector to make its data “open” to the government and other users. This sharing would create the possibility of effectively combining data collected by the government and the private sector.

A series of issues relate to sharing of data between federal government agencies themselves, between the federal government and other levels of government, and between local governments. Presently, the sharing of data between federal agencies poses problems because of statutory limits on sharing data. Proposed legislation, the Foundations for Evidence-Based Policymaking Act of 2017, would ease barriers, which currently make the sharing of data between agencies difficult. The capacity of the federal government to both manage and analyze its data continues to be a major issue, as discussed earlier in findings from the Pew Charitable Trusts report on the state use of data. Another report, the 2017 report of the Commission on Evidence-Based Policymaking, set forth two key capacity challenges for the federal government related to data:

- The capacity to support the full range of evidence-building functions is uneven, and where capacity for evidence building does exist, it is often poorly coordinated within departments.
- The federal evidence community has insufficient resources and limited flexibilities that restrict the ability to expand evidence-building activities. A key recommendation of the Commission is that the president directs federal departments to increase capacity for evidence building throughout government.

**Takeaways**

- The use of data has risen exponentially. However, government agencies face challenges in transforming data into actionable insights.
- With the increased use of data, the challenges of handling data have also increased. As government makes open data more accessible, challenges include finding data experts and managing data accessibility, data quality, and data sharing.
- Data sharing by the private sector, data sharing among government agencies, and the government’s capacity to manage and analyze its increasing volumes of data will be critical.
The concept of “collaborative governance”—that is, working jointly across the traditional boundaries of governmental agencies, and between the public and private sectors—has proven an effective strategy for implementing policy initiatives over the past two decades in an increasingly interdependent environment. The descriptive terms for these phenomena vary—from networks and collaborations to partnerships, horizontal government, boundary spanning, joined up government, and more.

Progress in this area has moved through three major phases over past 20 years, as shown in the chart Evolution of Collaborative Networks: 1998-2018.

**Early action:** Informal networks of people, programs, and organizations—and the use of partnerships (a more formalized approach)—grew organically, largely from the bottom-up, as pragmatic responses to specific situations. These included community-led efforts to improve the water quality of rivers, as well as the Federal Emergency Management Agency’s efforts to prevent future damage to communities facing natural disasters—versus only responding to a community after a disaster has occurred.

**Expansion:** Policy makers began to proactively use network-based, collaborative governance models to address broader issues, such as improving food safety, addressing changes brought about by climate change, cross-agency law enforcement efforts, and creating veteran-centric approaches to myriad resources available to veterans.

**Institutionalization:** Statutory authority, strategic plans, and capacity-building efforts helped legitimize and provide the foundation for policymakers to use collaborative networks in a wide array of policy arenas. This has been reflected in statutory provisions creating cross-agency priority goals, Office of

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**What drives Collaborative Governance?**

Professor Rosemary O’Leary describes how government has steadily increased its use of collaborative approaches in lieu of the traditional hierarchical and bureaucratic approach. She says there are several explanations for this shift.

- First, most public challenges are larger than one organization, requiring new approaches to addressing public issues such as housing, pollution, transportation, and healthcare.

- Second, collaboration helps to improve the effectiveness and performance of programs by encouraging new ways to provide services.

- Third, technology advances have helped “organizations and their employees to share information in a way that is integrative and interoperable.”

- Finally, citizens are seeking additional avenues for engaging in governance, resulting in new and different forms of collaborative problem solving and decision making.

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**Evolution of Collaborative Networks**

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
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<tbody>
<tr>
<td>1998</td>
<td>Early Action: The Evolution and Use of Collaborative Networks</td>
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<td></td>
<td>- Evolution of Bottom-Up Network Models</td>
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<td>- Evolution of Agency-Based Network Models</td>
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<td></td>
<td>- Evolution of Top-Down Network Models</td>
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<td>2005</td>
<td>Expansion: The Maturation and Scaling of Collaborative Networks</td>
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<tr>
<td></td>
<td>- Development of New Tools</td>
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<td></td>
<td>- Identification of Challenges to Institutionalization</td>
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<tr>
<td>2010</td>
<td>Institutionalization: Overcoming Challenges to the Use of Networks</td>
</tr>
<tr>
<td></td>
<td>- New Statutory Authority</td>
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<td></td>
<td>- New Governance Institutions</td>
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<td></td>
<td>- New Administrative Routines</td>
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<td></td>
<td>- Enhanced Staff Capacity</td>
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<td></td>
<td>- New Capacities to Measure and Assess Progress</td>
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<tr>
<td>2011</td>
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<td>2018</td>
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Management and Budget directives, and presidential directives to use collaborative approaches and to develop a cadre of career executives with experience working across organizational boundaries. Some Congress appropriated funding has also specifically targeted these efforts.

In addition, there is a shift underway to create and use “platforms” to organize and deliver internal services. Platforms are electronic business models that have become a foundation for virtually frictionless transactions and interactions between “many-to-many”—like eBay, Facebook, Airbnb and Uber. Digital platforms may presage the future of how collaborative governance evolves.

**Looking Forward**

All of government will not suddenly transition to collaborative networks. And this model is not appropriate for everything that government does. As in the private sector, there will continue to be “dual operating systems,” with traditional hierarchies and collaborative networks operating side by side.

But, as the prevalence of collaborative governance increases, the use of “collaborative platforms” will grow as part of the broader family of collaborative network models. The platform concept is not new and has been widely adopted in the private sector. Businesses such as Uber, Airbnb, and Facebook all have a platform-based business model. Currently, platform models in the public sector are more prevalent at the state and local levels, and in other countries, than in the U.S. federal government. They seem more sustainable than some other forms of networks.

What is meant by “platform”? Collaborative platforms are defined as organizations or programs with dedicated competencies and resources for facilitating the creation, adaptation, and success of multiple or ongoing collaborative projects or networks. They also noted that collaborative platforms specialize in facilitating, enabling, and to some degree regulating “many-to-many” collaborative relationships. More effective platforms do not mandate participation, but rather catalyze and facilitate voluntary efforts.

Two key platform characteristics are (1) to provide a framework for other activities to be organized, and (2) to provide a stable framework that is easily reconfigured to respond to changes in demand and the broader environment. The use of platforms may mitigate in ensuring the sustainability of networks by capturing information on progress, knowledge, and work products. The use of a platform may also allow networks to scale and more quickly pivot in response to external shocks, such as funding cuts or the loss of a critical stakeholder.

In a 2008 report, *Integrating Service Delivery Across Levels of Government: Case Studies of Canada and Other Countries*, Jeffrey Roy and John Langford describe how other countries have adopted digital platforms to improve the delivery of services to citizens. They wrote that public services are “traditionally delivered by a plethora of government agencies via programs that are not connected to each other.” They found a global movement to be more citizen-centric in the design and delivery of services using a network approach that relies on the use of digital platforms. This is being done in countries such as Canada, Belgium, Denmark, and Australia.

At the U.S. federal level, this approach is not yet widely used in citizen interactions. However, the federal government has committed to the use of “enterprise platforms” for internal services, which is more about integrating services onto a common platform than using a voluntary collaborative networking approach. Examples include the move to shared services for human resources and payroll, the creation of the Defense Health Agency that is a new platform for providing healthcare services such as pharmaceutical support across military services, and the Department of Homeland Security’s development of a multiagency operations center. As state and local citizen services platforms multiply and gain experience in delivering integrated services in the coming years, this model will likely be adopted more widely at the federal level as well.

**Takeaways**

- **Collaborative governance**—that is, working jointly across the traditional boundaries of governmental agencies, and between the public and private sectors—has proven to be an effective strategy for implementing policy initiatives over the past two decades in an increasingly interdependent environment.

- **The increased demand for collaborative governance** stems from a changing policy environment, which has become more dynamic and demanding. A wide range of tools, techniques, and legal authorities have evolved in recent years in response to the increased demand.

- As the use of networked collaborative governance models goes to scale, we will likely see a shift to a greater use of “platform-based networks”—a business model inspired by the digital world.
Engaged Government: Five Predictions for 2040


By 2040, we will be nearing the end of the Internet Revolution. As the Industrial Revolution altered how we organized labor at the start of the 20th century, the Internet Revolution changed how we share information and work. Looking to the Post-Internet-Revolution Era, we can make some predictions based on identifiable trends. What will an engaged government look like in 2040? To answer that question, this chapter presents five predictions:

- A more agile government
- An increased reliance on artificial and augmented intelligence (AI)
- The ubiquitous need for collaborative skills
- The rise of volunteerism
- Increased citizen trust in government

**Prediction One: A More Agile Government**

Aided by the quality and quantity of data available from artificial and augmented intelligence (Prediction Two) and the support of a more trusting public (Prediction Five), government organizations large and small will embrace an agile approach to problem solving. Government will experiment with small trials of multiple innovative solutions derived from a wide variety of sources. Government will alter its plans in response to evolving data and feedback. Nearly all problems addressed by government will benefit from a more agile approach. Innovation will become the norm. For example, in its efforts to provide potable water to the public, an agile 2040 government will run dozens of small trials in multiple locations, testing different types of water quality sensors and systems that automatically measure and report water quality. These mini-trials will provide valuable data for deciding which sensors and systems are best used under specific circumstances.
What is Agility?

This prediction on agility is derived from agile software development to describe an iterative process where, instead of coding a program completely from start to finish, the process stops at several points to reevaluate the goals and progress of the program. In other words, agile approaches don’t have to stick to the original plan. Instead, plans change and adapt as the original plan is implemented. In 2040, the operations of government will follow a more agile approach and have the ability to swiftly change course when needed.

Prediction Two: An Increased Reliance on Artificial and Augmented Intelligence (AI)

AI will increase the volume and sources of data collected and decrease the amount of “drudge work” that currently requires lots of human attention, time, and energy. AI will generate two giant leaps forward for government. First, it will provide government with the information necessary to make informed decisions in ways never possible before. Second, it will free employees to focus on data quality and using data to make better decisions. The rise of AI will be a radical change for government. Executives will have more time to consider and evaluate the work to be done rather than spending all their time overseeing the day-to-day operations of government. Every field will be impacted. Remote sensors will collect and report information from many sources. Such augmented intelligence will enable government to quickly detect disease outbreaks and protect vulnerable populations. Government will be able to better predict when weather conditions and road usages will require extra work to maintain roads. AI will enable the government of 2040 to be more predictive than reactive. Government employees will spend their time in different ways. Thinking through and discussing decisions takes time. After much testing, routine decisions will benefit greatly when AI supports human decisions.

Prediction Three: The Ubiquitous Need for Collaborative Skills

With the extra time provided by artificial and augmented intelligence, government employees will be able to invest time in new ways to work with each other and to work with the public.

Prediction Four: A Rise in Volunteerism

By 2040, government employees will regularly produce public services side-by-side with volunteers. Community members will be active volunteer participants in the work of government. Volunteers will provide both labor and input in the form of ideas, feedback, and opinions. Today, there is an ebb and flow of employees between government and the private sector. By 2040, government will have a similar ebb and flow between volunteer and paid employees. This influx of volunteers will be driven by several forces. First, as the nation’s population ages, more people will retire and seek ways to remain actively involved in their communities. Second, the increased use of artificial intelligence and augmented intelligence for routine tasks will give citizens more time to engage with the community on higher-level activities. Third, people will want to contribute to society and help solve the problems facing their communities and the nation. The collaboration will be necessary, because problems will become more complex. This rise in complexity will derive from our ability to perceive new levels of intricacy in the problems we face. In 2040, it will be impossible for one person or organization to have all the skills, knowledge, and resources needed to understand or solve a particular problem. This will involve collaboration across government departments as well as with the private sector and the public. The expertise of all parties will be valued and used in 2040 for making decisions. Collaboration will require mastery of a diverse skill set, including communication, negotiation, storytelling and project management skills, and competence with the ever-evolving technologies supporting collaborative efforts. Many of these soft skills have seldom been taught in schools. Universities will add collaboration to their curriculums.
“nonemployee” status of volunteers will require management and operational adaptations to avoid problems for both the government and the volunteer. Governments will develop guidelines for identifying the line between volunteer work and paid employment.

**Prediction Five: Increased Citizen Trust in Government**

Government has been coping with a loss of public trust since the 1960s. In 2040, trust will be perceived as a valuable resource. Trust is also the means by which government will obtain the ability to risk the mistakes that happen when solving problems. Additionally, trust will enable governments to make long-term investments. In terms of management and operations, trust buys governments time and goodwill, with the public being well served.

Three changes in government operations will lead to large increases in public trust in government by 2040:

First, government will include volunteers in its work. Government organizations that invite citizens into the work of government will be more open and trusted by the communities they serve. In 2040, most government operations will routinely include both public engagement and participation. Second, governments will devote more time and effort toward making operations and decisions transparent. This transparency will be manifested in communications between government and the public. In 2040, it will be unacceptable for anyone to not be able to easily and quickly find answers to their questions about government. Third, frequent, well-organized, productive, and thoughtful interactions between government and the public will generate trust.

In 2040, there will be new, regular, and visible acts of trust in government. In 2040, the above three changes will take place via multiple platforms, locations, and times. Governments that listen to and talk with community members and organizations are governments that can be trusted.

**Networked Government: Managing Data, Knowledge, and Services**

This article is adapted from Chapter Ten, “Networked Government: Managing Data, Knowledge and Services,” by Lori Gordon, Government for the Future (Roman & Littlefield Publishers, Inc. 2018).

By 2040, given rapid advances in technology, the federal government will radically improve its ability to engage and involve more of the American public in its policy and administrative processes. Through a new organizational structure less focused on the institution and more focused on communities of interest, the re-engineered government will be more accountable to, and reflective of, its constituency—and more nimble and able to shift priorities, policies, and programs in strategic directions. These successes result from resolving challenges posed in earlier decades by some of the very technologies that the government was betting on to carry it into the future. As a result, by 2040, the federal government will disband its traditional agency structure and will establish networked teams to perform government work.

**Establishing a New Managerial Class in Government**

To organize this new redistribution of decision making and responsibilities, by 2040 the government will establish a new managerial class that redesigns how data, knowledge, and services flow across digital pathways and provide an evolving variety of service offerings that reflect society’s changing needs and requirements.

**Data Managers** will oversee a virtual government workforce comprised of teams that aggregate data in digital workspaces and process it almost instantaneously via the eighth-generation wireless network. Volumes of local data on transportation, energy, and municipal services that were once only used by insular Smart City ecosystems to increase their efficiency and reduce costs will be fed across state, regional, and even international networks to public and private organizations, to enhance processes and systems at global scale.

**Knowledge Integration Managers** will bridge knowledge, methods, data, and investigative communities. They will serve as catalysts and conveners, bringing together disciplines and experts from different domains to pursue shared research challenges. They will proactively recruit underrepresented or nontraditional thought networks into government operations. They will train employees on how to interface with their non-human counterparts, determining when artificial intelligence will lead or augment the human.

**Customized Services Managers** will use the data aggregated by data teams and analyzed by knowledge teams to provide tailored resources and services to constituents at the community level, which includes everything from prescribing medicine to veterans to providing emergency kits to disaster victims. The customized services teams will create learning tools in virtual reality and an “in-a-box” so that generalists will be able to do this work—specialists no longer need apply.
The Data Management Function: Crowdsourcing Citizen Input

After setting up a management system and distributed workforce that bridges disciplines and domains, in 2040 government will focus on data management. It will be clear that new models in societal-government engagement are needed, and that these new collaborations could be based on the handling of these data vaults. The data network will reimagine and reorganize data sensing and feedback loops so that the government can gain rich insights from citizens to inform knowledge-driven decisions. Without needing to procure costly studies or to requisition surveys, government will have instantaneous citizen input on issues that range from early childhood services to flood management to space security.

Data managers will set up two types of crowdsourcing initiatives.

- In active crowdsourcing, government will establish a social media app that tees up issues prior to a congressional vote so that constituents can pass their opinion to their congressperson.

- In passive crowdsourcing, government will establish thousands of Internet-of-things sensors across a city to pulse instantaneous citizen-level input on transportation, healthcare, municipal services, and the environment. Through ‘adaptive optics’ the government will be able to remove distortion and data noise from high-tech sensing mechanisms and communication tools. These will include gesture-controlled devices, iris recognition systems, and sensor swarms that will enable coordination of their activities and decisions about what to measure—and where—through a self-learning system directing their movements and data collection.

Just as people in the 2020s had become increasingly addicted to their personal devices, by 2040 this will translate to them becoming consciously attuned to continuous civic engagement, connecting to their city as they move around town, and owning their rights as a citizen to participate in civic processes.

The Knowledge Integration Management Function: Taking a Cross-Discipline Approach to Analyzing Data

These large governmental data sets will be observed by knowledge integration teams that bridge talent and research in a cross-discipline approach to investigate ever-evolving citizen needs. Using crowdsourced data, they will build heat maps of high-priority issues. A net assessment will result in local, regional, national, and global issues that affect citizens—from rising cyber dependency, to increasing income and wealth disparity, to the shifting landscape of geopolitical power and international governance. This will trigger government processes to move resources and develop responsive solutions. To do this well will require entirely new actors—from volunteer groups to nascent organizations which are both passionate about mission—to bring rich ideas and analytical techniques into the process. The government will tap the gig economy, giving it an open door to a global market of specialized communities to obtain sought-after knowledge.

The Customized Services Management Function: Tailoring Programs to Individual Needs

Similar to how design thinking helps to enhance user experience and elicit values and ethics, customized service teams will seek tech-enabled feedback mechanisms as an opportunity to better understand constituents’ changing values and ethics that are embedded in their digital fingerprint. They will see it as an opportunity to tailor programs to an individual’s needs, getting them the services and products that matter to them. Alongside the knowledge integration teams, they will recommend policies and controls that embed stakeholder values, and they will design out those that are at odds. Operationally, these teams will set a standard for how the rest of government begins to operate. The process will work like this: as customized service teams solve challenges, they will be rewarded with more complex, challenging issues. Once they resolve these challenges, they will become eligible for bonus pay. This will incentivize them to prioritize tackling and resolving the toughest challenges, and to encourage constituent feedback and response. A new era in government-constituent engagement will begin.
2040: A More Accountable Government

By 2040, government will realize that technology is the best lens through which it can understand its constituency. Advances in technology will enable it to not only better aggregate data, but to analyze that data and lay out a compelling picture of everything from what risks society is willing to take to what it chooses to buy. Society’s allegiance to bytes will be the means through which government can connect to its constituency. Government will reshape its structure, distribution of responsibilities, and technology investment to engage the American public more directly. The newly re-engineered, networked government will be more accountable to and reflective of citizens, and much better able to shift priorities, policies, and programs in strategic directions.

The Future of Work

This article is adapted from Chapter Thirteen, “The Future of Work” by Darrell West, Government for the Future (Roman & Littlefield Publishers, Inc. 2018).

In recent years, there have been numerous efforts to innovate in the public sector. Some government agencies have used Challenge.gov contests to encourage innovation. Others have suggested crowdsourcing as a means to test proposals. While these ideas have created some successes, they pale in comparison to the management and technical innovations likely to happen in the next two decades. Taking advantage of initiatives in both the public and private sectors, the U.S. federal government workforce is likely to evolve in several ways that follow best practices for improving performance.

New management and technology initiatives—and how they might affect the future of the federal workforce—are broken down into three periods: the near-term future (2020-2025), the medium-term future (2025-2030), and the long-term future (2030-2040). In each, key developments will have the potential to transform the public sector.

Near-Term Future (2020-2025)

The near-term future includes several options to change the federal workforce: the increased use of artificial intelligence and data analytics, greater deployment of personal digital assistants, and new employee performance rating systems. These tools would enable greater labor productivity and enhanced accountability.

• **Increased Use of Artificial Intelligence and Data Analytics.** Artificial intelligence algorithms are designed to improve decision making, often by using real-time data. Using sensors, digital data, or remote inputs, AI systems can combine information from a variety of different sources, analyze the material instantly, and act on the insights derived from those data. AI systems have the ability to learn and adapt as they make decisions. There are many ways that AI and data analytics systems can improve government decision making. They can help supervisors track performance, manage resources, and deploy agency assets. These systems can assist in federal efforts to drive energy efficiencies, promote national defense, and improve healthcare. In addition, AI has the potential to augment the work of civil servants by assisting the review of client eligibility determinations in agencies, such as the Veterans Benefit Administration and the Social Security Administration. Anti-fraud software can scan financial transactions and service delivery across large organizations and identify unusual patterns or clear outliers in terms of normal procedures and decisions. Transactions that seem out of the ordinary can be flagged for more intensive personal analysis, and this can help managers do a better job of keeping employees directed towards appropriate ends and performing at a high level of activity.

• **Increased Use of Personal Digital Assistants.** Digital assistants are becoming more common in the consumer market. Examples include Apple Siri, Amazon Alexa, Google Assistant, Microsoft Cortana, and Samsung Bixby
to help people find information, answer basic questions, and perform common tasks. These digital assistants also can be used in the public sector to help federal employees complete various activities. For example, they can help workers keep track of leave time, file reimbursement requests, request time off, and undertake routine tasks that used to take employees hours. One of the stultifying aspects of modern bureaucracy is outdated administrative processes. Having digital assistants that administer routine tasks represents a way to overcome these deficiencies and achieve better results in the process.

Medium-Term Future (2025-2030)

Between 2025 and 2030, there likely will be movements toward a flattening of agency organizations and greater use of biometric security systems. These shifts are designed to improve agency operations and protect public information systems.

- **Use of Flattened, More Collaborative Organizations.**
  The sharing economy represents an example of an idea that has revolutionized the private-sector workforce. Through firms such as Uber, Airbnb, and WeWork, companies have flattened their organizations, introduced digital technology, improved collaboration, and moved to temporary workers or outside contractors to fulfill key parts of the business mission. Over the next 20 years, this collaborative concept likely will be deployed extensively within the federal workforce. Flatter, more open, and more collaborative organizations reduce the number of mid-level managers, empower front-line workers, and give upper echelons the tools to hold service providers accountable for their actions. This approach makes it possible to operate a lean team that still delivers on key objectives. Long-term employees may no longer form the bulk of the workforce. One of the hallmarks of the contemporary period is “megachange,” whereby local, national, or international circumstances can alter quickly and require very different responses from the federal government. Reliance upon short-term workers will produce greater agility in responding to public needs, reduce the cost of government, promote efficiency in the public sector, and speed up government responses.

- **Use of Biometric-Based Security.** Security is currently handled poorly in most federal agencies. A number of organizations rely upon outmoded password systems that are hard to remember and susceptible to external hacking. A better way to handle security is through biometrics and facial recognition software. Employees no longer need alphanumeric passwords that have to be changed every few months. Their mobile devices scan their faces, fingerprints, and irises, and thereby provide safe access to digital files and collaboration tools. Under this kind of system, security is improved dramatically and external adversaries have a much tougher time stealing personnel records, financial data, or email correspondence.

Long-Term Future (2030-2040)

For 2030 and beyond, there are “farther out” ideas for altering the government workforce. By this time, automation will be fully advancing and workforce disruptions quite substantial. Regardless of whether the disruption is high, medium, or low, the fact that all the major studies report significant workforce disruptions should be taken seriously. Relatively small workforce impacts can have outsized political consequences. One way to deal with a situation where there are more workers than jobs is to reduce the mandatory hours for full-time positions for everyone, and therefore free up additional jobs for other people. That would enable more people to be able to gain employment and help society cope with a scenario where fewer workers are needed.
**Forum Conclusion**

This Forum concludes with an overview of the key lessons learned from the major management trends—three of which were explored in the earlier part of this Forum—over the past 20 years. Several common themes emerge from the analysis of these management trends.

**Lesson One: Management Reform Is Not for the Faint-Hearted.**

Management reform requires major commitment and staying power. In short, it is not for the timid or those with short time horizons. It takes a well-executed implementation plan and sustained commitment from the top.

**Lesson Two: In Launching Management Initiatives, Government Leaders Should Target Key Goals and Not Overload the “System” with Too Much Reform Concurrently.**

Some management initiatives in our survey were rated as having low impact. We believe that these ratings were most likely based on either poor implementation of the initiative or lack of “staying power” on the part of government leaders. One survey respondent noted, “Many innovations seem to be mostly a ‘flavor of the day’ effort.” Another respondent summed up this phenomenon well, “There have been many attempts at real reform and improvement, but they always end up with too many at a time.” In contrast, successful change leaders in government are selective about which management initiatives they decide to launch.

**Lesson Three: Successful Management Initiatives Require Much Time and Effort, and a Focus on Implementation.**

While less successful initiatives launched over the last 20 years may have been sound conceptually, many suffered from poor execution. One survey respondent told us, “There have been lots of good ideas, but they rarely have been implemented effectively.” Another respondent noted, “While government is working better as a result of many management initiatives, much more focus and effort is still needed.” In evaluating the impact of initiatives, government leaders must assess implementation—including training as well as timing.

**Lesson Four: Effective Leadership Makes Management Initiatives Succeed.**

While it has become a cliché, leadership from the top drives success in launching a management initiative. This comes from an effective combination of career and political leaders. Several survey respondents commented on the turnover of political appointees as a challenge in successfully implementing management reform. In preparing this book, we clearly saw the value of leaders communicating the importance of management reform and devoting a significant portion of their time to overseeing implementation.

**Turning to the Future**

Based on lessons learned from the past work by the IBM Center, the Challenge Grant essays, and envisioning sessions, an outline of a vision of what government might look like in 2040 came into focus. We see two sets of developments evolving. First, technology will drive the redeployment of resources—people, dollars, and organizational structures. Second, as a consequence of these technology changes, the way people work and interact will change, and this will reframe how government works—including service delivery, citizen involvement, and different business models.
We envision three technology-based agents of change for government in coming years.

- **Artificial and Augmented Intelligence Will Drive New Realities.** Advances in the use of AI will change roles, both within government and between government and citizens.

- **Data Will Drive Progress.** The increased availability and use of data will reframe how government managers use knowledge and insight to analyze performance, make decisions, and deliver services.

- **Government Services Will Become Platform-Based.** By 2040, government may be described as a platform for the production and delivery of a range of services and activities. Services will be based on digital platforms using principles such as agile, modular in nature, and rooted in peer networks of partners or communities of interest.

Moreover, the visions of our authors suggest that these technology drivers will have three broader impacts on the government of the future.

- **Government Will Be More Citizen-Driven.** Government in 2040 will be more citizen-focused, with people leveraging technology and data to interact with their government.

- **Government Will Become More Network-Based.** By 2040, the federal government will disband its traditional agency structure and will establish networked teams to perform government work.

- **Volunteer Participation with Government Will Increase.** Citizens will have more time to spend on volunteer activities in 2040—either as retirees or as members of a 2040 workforce that benefits from technology reducing the need to work as many hours.

This positive view of a government for the future can be realized by leaders who continue to reflect on lessons from the past. We hope that the perspectives introduced in this Forum and expanded in more detail in the IBM Center book, *Government for the Future: Reflection and Vision for Tomorrow’s Leaders*, will help increase the likelihood that this vision can turn into tomorrow’s reality.
Perspective on Digital Transformation in Government with Her Excellency Dr. Rauda Al Saadi, Director General, Abu Dhabi Smart Solutions and Services Authority

By Michael J. Keegan

Today’s digital economy has evolved significantly since the eras of mechanical and analog electronic technology. This evolution began in the late 1970s with the advent of mainframe computing as a standard practice for leading businesses, accelerated in the late 1970s with the introduction of personal computers, and continues to present day in the form of emerging technologies that include cloud computing and artificial intelligence. Beginning in the 1990s, the Internet ushered in a revolution in the way citizens and businesses share, access, and retain information over open networks. These digital steps forward have led to a significant change in how information technology impacts society, the economy, and government. It has led to a digital transformation in how nations govern.

The Abu Dhabi Smart Solutions and Services Authority (ADSSSA) works across the Emirate’s government enterprise to develop smart systems in the delivery of government services. It does this by focusing on the combined experiences of all categories of customers to improve and assist the work of the government services sector.

Her Excellency Dr. Rauda Al Saadi, Director General of the Abu Dhabi Smart Solutions and Services Authority, joined me on The Business of Government Hour to share her perspective on Abu Dhabi’s digital transformation strategy and how ADSSSA is changing the way citizens engage with their government.

The Mission of the Abu Dhabi Smart Solutions and Services Authority

ADSSSA is a government entity tasked with overseeing the information and communication technology (ICT) agenda of Abu Dhabi. In general, we are mandated to work closely with all government bodies, helping them by developing smart systems for government services. In line with this, ADSSSA is further tasked with setting policies, strategic plan initiatives, operational support to achieve government integration of ICT, and enabling government agencies with innovative systems.

Abu Dhabi’s ICT agenda—a major part of our focus—is also a key component comprising the government’s digital transformation plans. The ICT agenda is geared towards delivering personalized and proactive services, building a business friendly environment, and bringing happiness to our people.

Leading ADSSSA

Being the director general of ADSSSA entails many responsibilities. This includes helping achieve our lofty goals and objectives for the Emirate as the CIO arm of Abu Dhabi government. Part of those responsibilities revolves around ensuring that ADSSSA’s vision is fully realized through our defined strategy and execution, and then extending excellence in our services with various government entities.

I have always stressed the importance of working with a team, making sure that each member plays out their role to the highest standards and to the best of their abilities. It is also important to explore challenging issues with the staff and to encourage their creativity in finding solutions.
In terms of leadership, one must be well experienced and learn the significance of setting lofty goals—and then chart a path on how to best achieve them, with the key factors being communication, transparency, and leading by example.

**Digital Transformation Strategy**

In terms of digital transformation, ADSSSA is strongly focused on maintaining close communication ties with the government entities that we work closely with, especially in improving the customer services delivery. These efforts cover the development and drafting of policies, strategic plans, and initiatives. We provide operational support to integrate ICT infrastructure with the government sectors. We also enable government entities to provide their services through innovative systems and legislation.

We are committed to transform and consolidate government processes and services into unified channels and platforms centered on the needs and requirements for all our customers in Abu Dhabi.

**Unified Government Services System: Tamm Initiative**

The Tamm initiative falls in line with our continuing effort to provide a journey-focused approach to our customers. Tamm reflects ADSSSA’s move to establish Customer Service Centers across the Emirate, while also bringing various government entity services under one umbrella for better efficiency.

What does Tamm mean? In Arabic, Tamm means “Done.” It represents our promise to customers. The idea of this initiative lies within being proactive for the customer and being able to deliver on our promise even before they ask. I think this is what true service excellence means.

Also, we have found that one of the most successful drivers for Tamm is the power of designing the customer’s experience and integrating the most innovative technologies. In line with this, Tamm is focused on turning the service delivery model into a journey-focused approach that takes full use of digital technology in the provision of government services. We have set a target to reach a 90 percent customer satisfaction rate, be listed as one of the top ten countries in ease of doing business, and be one of the top five governments in the United Nations’ online service index.

**Shifting the Service Delivery Model**

The major strategic shift is the move away from simply digitizing individual services and toward an end-to-end journey through unified digital and physical channels. IT journeys are defined as those that would serve the priority needs of most people and businesses in the Emirate. Examples include starting a family, building a home, finding a job, starting a business, and exporting products and services.

First, we had a “Moving to a New Home” citizen journey, which was launched earlier this year. It looks toward developing an integrated smart services system for Abu Dhabi. The goal is to fully transform and integrate government services for moving to a new home in Abu Dhabi. We want to make it a smart and smooth journey for all residents—and to facilitate their prosperity and increase their quality of living.

Next, we had created a journey for the business trade license process, based on the Tamm initiative. Through this platform, a business trade license can be issued to investors even without visiting any government entity. Using Tamm will enable a customer to complete the process without the need to go back to other government entities to obtain required approvals. It is important to note that today 90 percent of these approvals for investors can be issued instantly.

In addition, ADSSSA will soon be launching the new medical journey that encourages investors to establish businesses and invest in Abu Dhabi. It opens opportunities, while offering proactive, fast, and efficient processes in terms of license approvals, building completion, staffing, and health audits to start the business.
Our mandate, directed to us, is to work closely with various government entities and departments. ADSSSA believes that cooperation remains an essential component to our success. The move to always collaborate and partner with these entities allows us to develop and enhance service delivery mechanisms, provide a unique customer experience, utilize the latest technologies and digital innovations, and help improve the quality of life in local communities.

Benefits of Journey-Mapping Citizen Services

Today we are taking citizen service to a whole new level by completely redefining government services from the customer point of view. We have consolidated more than 1,600 services into 80 end-to-end journeys focusing on the customer experience.

As you know with that, we are transforming the face of Abu Dhabi’s government and delivering at scale. The primary objective is to deliver a seamless personalized and proactive experience for more than three million citizens and residents as well as visitors and businesses in the Emirate.

Additionally, the transformation would significantly improve the economic environment and boost government efficiency.

We already offer the benefit of being one government, focused on a customer experience.

Abu Dhabi Connect (AD Connect) initiative aims to improve the customer experience by reducing the requirements of government documents. This initiative will provide integrated government services and facilitate the exchange of important data. As we know too well today, data is the era’s new oil.

AD Connect was established by the ADSSSA to drive the integration of digital documents across all government services.

The First Phase of AD Connect

- Upgraded the efficiency of 500 government services that provide more than 5 million transactions annually
- Transformation of 9 important government documents into digital data
- Digitize more than 80% of total required documents in Abu Dhabi Government services
- The project is a key pillar of Abu Dhabi Government services and a first in the region
- Saved over 80,000 working days for government employees in the Emirate
- Saved 50 thousand tons per year in carbon dioxide emissions
- Saved over 9 million client visits on an annual basis
services in the capital. This initiative is aimed at creating a system that enables government entities in Abu Dhabi to digitally exchange government documents of individuals and companies through secure channels.

AD Connect is expected to complement the TAMM initiative, which reflects our continued commitment toward improving and facilitating better service across the government sector. This initiative has saved more than $20 million for customers, and more than $40 million for government agencies. At the same time, it benefits the environment by reducing the carbon footprint, among the other positives.

### Improving the Quality of Government Services Using Data

Data is an essential resource for organizations. The success of an organization is affected by the quality of the data used within its business processes. Effective data management is the key to maximizing the quality of data and allowing the organization to deliver high quality services.

Industry experts have been promoting the important role that data plays. As such, there’s a need for effective data management to maximize benefits and deliver high quality services. In line with this, Abu Dhabi government has already implemented the necessary steps needed to create a government-wide data management program, which seeks to improve both data management functions and data storage within the Abu Dhabi government. Owning and using high quality data is a strategic enabler for the Abu Dhabi government in its journey to become a world-class city.

### Working with the Private Sector

Our mission is to ensure that both the government and the private sector work in a close partnership—and are fully capitalized—on today’s digital platforms and various emerging technologies, which we have put in place for business to run efficiently within the Emirate. We seek to ensure that our citizens enjoy a customer experience that is based on world-class high quality services. We cannot do this by ourselves, and as such, ADSSSA maintains key partnerships with leading companies.

We are looking to set a new benchmark in adopting the technology that government can share with our citizens. In fostering a safe environment to drive innovation, we hope to test new boundaries and enable future generations to continue our journey with the tangible impact already made. By adopting a customer centric approach, Abu Dhabi is on its way to revolutionize the way government thinks and delivers services.

You can listen to the complete version of my interview with Dr. Rauda Al Saadi, Director General, Abu Dhabi Smart Solutions and Services Authority on The Business of Government Hour at businessofgovernment.org.
Reorganizing Government: From Salmon to Pizza to Military Uniforms

By John M. Kamensky

The stories of government dysfunction as a result of misaligned programs are legendary. President Obama liked to talk about how salmon are regulated by different agencies throughout their lifecycle, depending on whether they were in the sea, in a river, or on a grocery shelf. The Government Accountability Office (GAO) dutifully describes on a regular basis the country’s fragmented food safety system, often by highlighting inconsistencies with the oversight of pizza—‘one agency regulates frozen cheese pizzas, another agency regulates frozen pizzas with meat, and additional agencies regulate components of both.’\(^1\) The Washington Post in 2013 found that military services did not coordinate their purchases of combat uniforms and as a result, over an 11-year period, “two kinds of camouflage have turned into 10.\(^2\)

Each of these examples grabs headlines and adds fuel to public demands to reorganize the government. The president responded, but skeptics call the president’s proposals to reorganize government as “boxology,” since they see the proposals as merely shuffling around organizational boxes without actually fixing anything. But by digging beneath the surface, there does seem to be a degree of coherence and long-term vision within an overarching framework that builds on a foundation of reforms that have evolved over the past two decades.

Some Context: Past Reorganization Efforts

Every president over the past half century has undertaken some form of government reform or reorganization. Some have been more successful than others. Reorganization efforts tend to be riskier endeavors because of the many different dynamics involved—congressional, agency, unions, interest groups, etc. Presidential authority to proactively undertake reorganization initiatives was not reauthorized by Congress in the early 1980s. As a result, reorganization efforts since that time have become even more difficult to undertake. For example, President Obama proposed in his 2012 State of the Union address to reorganize and consolidate trade-related agencies and functions. However, because of widespread opposition, this proposal never even made it to the stage of being introduced as legislation.

However, a statutory mandate has created a new impetus to focus on potential reorganizations. In 2010, Congress mandated that the Government Accountability Office publish a report annually that identifies duplicative, overlapping, and fragmented programs. It has since issued eight reports with
nearly 800 recommendations for action. A subset of these call for reorganizations that lead to greater efficiencies, such as the consolidation of agency data centers, reorganizing food safety programs, and streamlining financial literacy training programs. This series of GAO reports has resulted in an inventory of areas ripe for reorganization initiatives.

The Trump Reform and Reorganization Proposals

In March 2017, President Trump directed the Office of Management and Budget (OMB) to develop a comprehensive government reorganization plan. The administration’s long-awaited, headline-grabbing reorganization plan was released in June 2018. It claims that better organizational alignment should “increase efficiency via shared services, public-private partnerships, workforce redeployments, and better customer experiences.” The three transformation drivers in the President’s Management Agenda, are seen as important support elements for the implementation of the individual reform and reorganization alignment initiatives.

The reform and reorganization plan prioritizes its proposed initiatives within a four-part framework

**Mission alignment.** Programs or agencies in this category are operating relatively efficiently but are rooted in outdated or misaligned organizational constructs and need to refocus, reduce, or expand their mission. These initiatives were among the most controversial and ambitious and will require congressional action. They include proposals to:

- Merge the Education and Labor Departments
- Merge the food safety programs from the Agriculture Department and the Food and Drug Administration into a single, new agency in Agriculture
- Restructure the Postal Service and then convert it to a privately-held corporation
- Spin off Air Traffic Control to a non-profit corporation (note: this was recommended 25 years ago by the Clinton-Gore reinventing government initiative)

**Management improvement.** These initiatives address duplicative activities or those that rely on outdated organizational structures that are wasteful and inefficient. The goal is to achieve the same core missions with better results at lower costs. They include:

- Optimizing the federal real estate footprint (an Obama initiative, as well)
- Consolidating federal financial literacy programs
- Transitioning federal agency recordkeeping to a fully electronic environment by 2022

**Transformation urgency.** These proposals would create or expand critical capabilities for successful mission delivery across all agencies. They include:

- Creating a governmentwide customer experience improvement capability
- Establishing a Government Effectiveness Advanced Research Center as a public-private partnership
- Expanding agency evaluation capabilities to inform mission-critical decisions

**Organizations in alignment.** These proposals are seen as modest updates to organizations or capabilities. Most are long overdue and would likely receive bipartisan support. Included among the 50 specific agency reform proposals are:
Restructuring administrative functions at the National Institute for Health into a shared services arrangement

Consolidating headquarters for the Housing and Urban Development Department into a single building

Aligning geographic regions within the Interior Department across bureaus

Consolidating the management of the government’s motor vehicle fleet into the General Services Administration

Two Additional Reform Initiatives

There are two additional elements to the president’s reform efforts that are not headline grabbers and not part of the official reorganization plan, but may actually be critical components to success: the President’s Management Agenda, which was released in April, and the use of pre-existing administrative routines, such as the budget process.

The President’s Management Agenda. Presidents have developed management agendas since 2001, and President Trump’s management agenda continues that tradition. However, his agenda is not bounded by a two-or four-year frame focused on a small handful of specific management initiatives, such as expanding the use of shared services or improving cybersecurity. Rather, it is a long-term vision that draws on “system-level thinking to tackle interconnected barriers to change, most notably related to aging technology infrastructure, disconnected data, and an outmoded civil service framework.”

The key leader for this initiative is the deputy director for management at OMB, Margaret Weichert. She describes the vision behind the agenda as focused on three key areas:

- Deliver mission outcomes
- Provide excellent customer service
- Effectively steward taxpayer dollars

She sees these as interconnected challenges. To symbolize this interconnection, the agenda has adopted a logo of three intermeshed gears. And in going beyond this vision to action, it focuses on three “transformation drivers” that she says are focused on attacking broad structural issues that have traditionally been barriers to transforming the federal government for the 21st century. These drivers include:

- Increasing reliance on modern information technology as “the backbone of how government serves the public in the digital age”
• Using data, accountability, and transparency as strategies to deliver better outcomes to the public and hold agencies accountable

• Reforming the civil service to both empower staff to do their jobs and to better align staff skills with mission needs

To act on these goals and drivers, the administration turned to existing administrative mechanisms, such as those embedded in the GPRA Modernization Act, to implement specific elements of the agenda. For example, it established a set of 14 cross-agency priority goals, with oversight by the President's Management Council, to implement initiatives such as modernizing the federal government’s IT systems. Each goal has designated leaders responsible for reporting progress on a quarterly basis.

Existing Administrative Routines. Probably the least visible and most important element of the broader reform initiative is what occurs at the agency level. By law, every agency’s strategic plan and priority goals were announced in February along with the budget release. Reform initiatives have been embedded in these plans. For example, the National Science Foundation has made it a priority to expand scientific partnerships with not only other federal agencies, but also with private industry, foundations, and international organizations. It anticipates that this approach will “accelerate areas of mutual interest” and better prepare the workforce for the future.

In addition, since late spring, agencies have been undergoing annual strategic reviews of their progress towards their goals, jointly with OMB. These strategic meetings help identify areas of potential concern but also help fine tune their efforts to incorporate reform initiatives and new priorities into their fiscal year 2020 budgets, which were due in draft to OMB in September.

OMB is also embedding reform priorities into other routine government processes. For example, it has for the first time defined agency customer service requirements as part of agencies’ budget development process.

When taken together, the three transformation drivers provide a comprehensive long-term strategic management reform agenda. In fact, the administration states in its reorganization plan:

“The vision for reform must be multi-generational, enabling the federal government to adapt to changing needs over time. Rather than pursue short-term fixes that quickly become outdated once again, this administration will pursue deep-seated transformation. But it will not happen in one or two years.”

What Happens Next?

Every president wants to avoid the 1981 GAO report headline that summed up President Jimmy Carter’s reorganization effort in the 1970s: Implementation: The Missing Link in Planning Reorganizations.

In the case of the Trump reorganization initiative, there is good leadership in place in senior positions at OMB, the Office of Personnel Management, and the General Services Administration. Given their actions to date, the following three action steps are likely next steps:

• Digest, prioritize, and flesh out proposals. OMB will likely rely on the President’s Management Council and the other cross-agency councils (like the Chief Financial Officers Council) to provide leadership for those initiatives that require cross-agency collaboration. The Clinton-Gore reinventing government initiatives in the 1990s found greater success in pursuing initiatives that involved improvements to governmentwide mission support functions, such as customer service and promoting innovation centers. They experienced less success in specific agency-level reorganization proposals such as corporatizing the FAA’s air traffic control operations and merging Customs and Immigration.

A recent GAO report provides a helpful framework to assess the Trump reform proposals. It offers a four-part framework to assess the proposals. GAO’s report begins...
with the observation that “The transformation needed to improve the performance of federal agencies is no easy task, however, and can take years to fully implement.” It continues, noting that reform “is an immensely complex activity that requires agreement on both the goals to be achieved and the means for achieving them.”

- **Leverage existing administrative processes.** Another lesson from the Clinton-Gore initiative is to rely on existing administrative processes and don’t try to pursue a separate “reform and reorganization” package of legislation. After its original report was released in 1993, a legislative package to enact about 60 recommendations was sent to Congress and defeated, even though the Democrats held both houses of Congress. Afterwards, it began to weave its proposals into the regular agency budget and reauthorization bills. Over 100 recommendations were enacted using that approach. As a consequence, the FY 2020 budget could be a vehicle for a number of the Trump reform initiatives. Another approach being used is existing administrative authority, such as the transfer of the conduct of security clearances from the Office of Personnel Management to the Defense Department.

- **Work more closely with Congress.** The hardest institutional barrier to overcome is the creation of a close working relationship with Congress. This is not so much a partisan issue as it is an issue of institutional dynamics related to committee jurisdictions and prerogatives. For example, the administration traditionally withholds “pre-decisional” draft plans from Congress until a final decision is made. This results in congressional dismay over the lack of consultation. A 2011 congressional letter to the Obama Administration said: “Reorganization of the executive branch is a shared responsibility...we recommend that we be brought into the process early on, so that we can contribute collaboratively in the process of developing a proposal.”

Sharing and collaborating across organizational boundaries isn’t just for executive branch agencies—but also for congressional committees and subcommittees. To be successful, change will be needed at both ends of Pennsylvania Ave for any reorganization effort to be effective. History shows it can happen—see the largely successful restructuring of homeland security and intelligence functions after 9/11. But it has to be well-orchestrated.

**Footnotes**

The Office of Management and Budget (OMB) controls a fund that the General Services Administration (GSA) administers for bringing technology innovation to help modernize government, where the funds spent are overseen by a group of Federal Chief Information Officers. The funds are spent on multiple projects based on agency requests and spent via GSA multi-year budget accounts, though the return on investment (ROI) metrics are not yet clear. Congress requests more information about how the funds are being spent, and authorizes less than the initial request—and points to potential further reductions to the subsequent year request from the administration.

This scenario could be an accurate description of the current implementation and oversight for the Technology Modernization Fund (TMF), implemented as part of last year’s Modernizing Government Technology (MGT) Act. It also generally describes events surrounding the initial implementation of the E-Government Fund that was authorized under the E-Government Act of 2002. And it bears similarity to the process and review surrounding the Innovation Fund that was authorized for spending through the Federal CIO Council under the General Government Appropriations Laws of the late 1990s.

Given the declines in funding support that both of those prior technology funds encountered, what are the prospects for the TMF especially when Congress continues to ask questions about ROI as a condition of future funding? There is reason for optimism, because OMB and the agencies continue to build on lessons learned from those experiences, and have added new components of modernization governance that can help to sustain momentum over time.

Key Success Factors for IT Modernization

The TMF program elements—purpose, principles, processes, people, and more—are clearly displayed on the Federal CIO Council website at https://tmf.cio.gov/. And OMB and the CIO Council have held multiple industry briefings and interactive discussions to learn about effective practice, including “reserve industry days” where industry briefs government about options for a successful path forward. Over time, agencies, Congress and industry stakeholders will be able to leverage this transparency in improving fund operation and oversight. Congress has legitimate questions about how these funds are being spent to build successful modernization activities in agencies. Given the experience from past administrations, similar transparency about results will help OMB secure additional TMF resources in the 2019 budget and beyond.

The TMF criteria reflect best practice in modernization, including:

- A digital services approach that embodies agile and iterative development methods, continuous testing and user feedback, and the incremental introduction of emerging technologies including AI, blockchain, IOT, and mobile in a manner tied to agency mission goals

- A focus on the data that agencies collect over modern technology infrastructure and applications—reflected in the Data Strategy Cross-Agency Priority (CAP) goal under...
the President’s Management Agenda (PMA) that is tightly linked to the counterpart goal for IT modernization

- Integrating security into the modernization lifecycle, from the onset of planning to the scale of delivery—rather than having security be bolted onto applications after development, which has been the cause of many IT failures in both the public and private sectors

- Driving innovation as a practice by the government workforce supported by industry stakeholders, which will promote a culture of innovation while building governance norms that reward risk taking

Moreover, GSA has advanced the practice of IT modernization for adoption by agencies through its five Centers of Excellence that reflect private sector best practice in cloud migration, infrastructure optimization, data and analytics, customer experience, and call center efficiency—with security embedded as a key element throughout. GSA is working with the Department of Agriculture as a lead agency; scale success will come when multiple agencies can leverage these Centers, as multiple agencies do now with GSA functions like acquisition support and property management.

In this advance, agencies and overseers will need to recognize that modernization will not occur in the short term. Just as industry’s continuing journey to adopt 21st century approaches relies on discovery and planning to migrate applications over a period of years, government will achieve positive results by recognizing that a “hybrid” environment is necessary for continued delivery of services that rely on legacy systems while introducing cloud-based applications.

How Can Industry Help?

Agencies can learn from private sector practice in taking the next steps toward a modernized IT environment. Industry has experience with commercial investment models that capture ROI across years. As this year’s IBM Center report A Roadmap for IT Modernization in Government by Dr. Gregory S. Dawson of Arizona State University notes, industry uses a full cost model where benefits are measured and recognized over time, and an understanding of the full costs can be identified and applied. However, government rules generally do not allow budgetary recognition of...
What is TBM?

- TBM defines a business model and decision-making framework which enables IT to run as a business.
- TBM provides IT organizations with the solutions—strategies, methodologies, and tools—to manage the cost, quality, and value of their IT services.
- TBM was instituted by CIOs, CTOs, CFOs, and other technology leaders. Founded on transparency of costs, consumption, and performance, TBM gives technology leaders and their business partners the facts they need to collaborate on business-aligned decisions.

**TBM Benefits**

- **Optimize**: Continuously improve the unit cost of technologies and services while keeping cost and quality in proper balance.
- **Rationalize**: Better focus of time and resources on the services, applications, technologies and vendors that drive the most value.
- **Innovate**: Mission/business and IT partnership that ensures maximum value from technology investments.
- **Transform**: Provide mission/business partners with agility to "pivot" more quickly to exploit innovation and capitalize on new opportunities.

The Technology Business Management (TBM) Framework, introduced in the last administration and captured as another PMA CAP goal, also provides agencies with an industry benchmark for IT cost allocation. Ideally, TBM could also help agencies adapt such financial estimation to the procurement process in re-introducing gain sharing and share-in-savings approaches to contracting. This category of acquisition initiatives was authorized for technology modernization as part of the E-Government Act, but the provision expired in 2007 with no actual project implementation. Government could look to adapt similar models used for energy savings performance contracts, which have received an exemption from annual budget scoring rules to promote multi-year ROI capture.

Industry can also help by bringing forward commercial experience, both small scale start-up innovation and enterprise transformation. However, current government procurement rules do not often reward commercial qualifications. Agencies that lean forward to incentivize companies that can show how private sector practice can be adapted will likely drive greater innovation, and do so more rapidly. Agencies can also promote capacity for companies to bring forward ideas and prototypes in a way that does not rule out their ability to compete for downstream work because of a conflict of interest.

Next Steps: Findings From Research on Modernization

The Center’s IT Modernization report by Dr. Gregory S. Dawson recommends a modernization roadmap based on research into past experiences in IT modernization at the federal and state level, as well as in industry. The report draws lessons from his research and extensive case interviews with federal and state chief information officers (CIOs). Using these lessons, the author frames impediments to modernization and risks for agencies that do not modernize, including continued cybersecurity weaknesses. The report uses this framing to develop eight key lessons for government leaders at various stages of IT modernization, and concludes by setting out a roadmap for implementation that agencies can adapt to address these key lessons.
This report provides a resource for agencies to understand how best to develop a modernization business case, establish and implement a change management strategy, and put in place both a long-term initiative and short-term steps that can help agencies measure real progress. The report examines the status of IT modernization in the public sector, and identifies key lessons from private industry and government agencies that include:

- Understand the organizational drivers for modernization.
- Plan at the enterprise level, implement at the local level.
- Communicate value to citizens and shareholders.
- Focus on people, then address processes, and only then technology.
- Make modernization as a long-term commitment.

Based on these key lessons, the roadmap below illustrates how successful IT modernization can take place in government, in a manner consistent with the MGT Act. Major points from the roadmap include:

- Modernize as an on-going process rather than a single standalone event, to allow for continuous improvement rather than costlier sporadic “catch ups.”
- Seek feedback throughout the process to capture lessons learned and act accordingly.
- Focus on how technology is supporting mission goals.
- Identify stakeholders for each step, making leadership and operational staff aware of their requirements and empowering them to act.
- Ensure check-ins with agency leadership, functional leadership, technical leadership, and key users must take place throughout the process.
- Blend a strong execution strategy, technical approach, and the right team.
- Provide 360-degree communications to foster knowledge and buy-in.
- Measurement results both inside and outside the organization.

If the government embraces these lessons, agencies can reduce operating costs, lower the risk of cybersecurity attacks, and position themselves to take advantage of new technologies, including cloud, analytics, mobile, and artificial intelligence.

The report concludes with a recommendation that government make key investments in IT modernization, identifying and prioritizing the necessary initiatives for maximum effectiveness. Priority investments should be integrated into the budget planning cycle, to provide a foundation for continuous innovation and improvement. With recent statutory and agency progress, the federal government is well-positioned to move forward with effective IT modernizations that improve mission performance.
Getting to the Government of the Future

By Lisa Mascolo

Looking into the future, can technology truly revolutionize how government functions? Or will standardized norms and practices throttle the rate of change despite the pace of technological advancement? Furthermore, how will—and how should—emerging technologies impact public sector operations? These are key questions and challenges facing governments today. Federal, state, and local agencies can take advantage of technology to more rapidly advance their missions and better serve constituents. But to truly harness that power, we need to understand the emerging technologies—their promise and value—and then get the obstacles out of the way.

Data and Data Analytics

Much of the value that technology can bring to government lies in the data that technology captures for access, analysis, and action. Access to structured, unstructured, or even hard-to-locate “dark” data can provide an evolutionary pivot point. Currently, many government programs are focused on reacting to problems rather than preventing them. Access to the right data enables government to prevent and detect, save time and resources, and pivot from reactive behavior to proactive service. For example, government could proactively use data to reduce homelessness and suicide, increase student success, and more efficiently serve soldiers, sailors, and airmen, in addition to detecting the movement of adversaries. With the power of data properly harnessed, government can move from reacting and fixing to preventing and detecting. Data is the engine that can and should power the future of government outcome and government service.

Procurement

While data should be the powerful conductor for rapid change, government will likely sub-optimize the value of data as a result of antiquated procurement thinking and systems. Procurement philosophy and approach must adapt, empowering government to rapidly access the best technology available. Adopt a mindset of “think big, start small, scale fast.” While we all have a history with Lowest Price Technically Acceptable (LPTA), when properly used it is probably acceptable in this age of rapid technological advancement. But it’s time to shift the procurement paradigm. LPTE—or Low Price Technically Exceptional—should become the norm. During rapid technological change, the focus of procurement should be to increase the speed to exceptional value and results. The challenge will lie, of course, in the definition and governance of “technically exceptional.” While some may say this sounds like “best value,” it’s really not. The focus on “technically exceptional” is not one we’ve had in the past. Constituents to be served—and taxpayers footing the bill—deserve the exceptional, driving greater value over longer periods of time for less money.

Workforce

From leaders, managers, and administrators to the people who actually get the job done (no offense to the first three), the rapid advances we see in technology have the potential to fundamentally transform the way government works and the outcomes it achieves. The value of this potential will only be realized if the workforce is transformed as well. Today, the workforce is transforming at least in part due to retirements and the influx of some younger, perhaps more technologically savvy, talent. Then there is the “frozen
middle”—people at all levels whose current skills may not only be irrelevant in the future, they are not the skills required to get to the future rapidly. This is a reality in the private sector as well. Redefining the job roles and skill sets, at all levels of workforce, has to become a high priority. If government is to take full advantage of the power of technology advancement as a way to drive speed to value and stay ahead of our adversaries, workforce transformation has to be at the top of the A-list.

And first on that A-list should be leadership. Leaders need to be grounded in what it takes to function well during times of uncertainty and rapid innovation. Developing and deploying the power of the workforce during tumultuous times will be the hallmark of great leaders in the future.

We’ve talked for years about the value of technology in freeing up the people to do more value-added tasks. The realization of that is now finally here. Informed automation and comprehension, augmented knowledge transfer— all at scale—are now a reality.

The technologies are here. Augmented and artificial intelligence, informed automation and comprehension, and blockchain are the future. Importantly, they all must scale through public and private clouds and harness the power of data. As we move forward, the requirements for success will be strong leadership, a skilled and adaptable workforce, and nimble policies that enable organizations to thrive in conditions of uncertainty.

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IT modernization in government has substantial and increasing momentum. Recent U.S. federal legislation and focus at the highest levels of government has fueled activity across agencies that spend on average 75–80 percent of their IT budget on operations and maintenance (O&M). This activity can significantly improve a public-sector environment where new systems development lags behind the private sector, the federal government has excessive costs and significant vulnerability to cyberattacks, and agencies are often behind the private sector in their ability to implement advanced technologies that could dramatically reshape government operations.

IT modernization—which we define as continuously retaining, extending, and modernizing legacy data and technology assets in order to increase value and achieve organizational objectives—is a key component of enhanced productivity. In addition to saving money, modernizing government systems could significantly address the ever-increasing cybersecurity threats and pave the way to implementing high-potential technologies—like analytics, mobile, and artificial intelligence—in the public sector.

This report examines the status of IT modernization in the public sector and draws on key lessons from private industry, state government, and exemplary federal government agencies.

Effective Practices in IT Modernization

IT modernization is not a new concept in the private sector. As a result of having up-to-date IT, industry can manage technology costs while still taking advantage of new technologies and better protecting itself from cybercrime. Historically, many private-sector organizations have taken an incremental approach to IT modernization, in which they first address immediate points of pain and then, as budgets and time permit, address subsequent issues that arise. This incremental strategy produces short-term improvements and minimizes risk.

After many years of incremental change, many leading private-sector organizations have instead provided a “shock” to the enterprise and adopted an end-to-end, holistic IT modernization strategy. While unquestionably riskier than an incremental modernization strategy, this broader path also can significantly reduce duplicative work efforts resulting from redundant systems and ensure that the organization has sufficient IT capacity for the long term rather than just for the next several years.

This model of incremental improvement followed by end-to-end modernization is not foreign to the public sector. For example, the state of Oklahoma’s modernization outcomes are impressive. State IT spend dropped significantly and the state reduced its annual IT spend by $112 million. Additionally, the state achieved $260 million in cost avoidance from IT projects and better contracting. By taking an incremental approach, and then supplementing it with periodic end-to-end modernization, Oklahoma lowered its IT spend while also dramatically reducing its vulnerability to cybersecurity threats.

The federal government has largely relied on the incremental approach, due to two major reasons. First, budget constraints have always been—and are expected to remain—a significant limitation to engaging in end-to-end modernization. Second, agencies have generally had an easier job putting out RFPs for new systems as compared to replacing old ones. Other reasons for incremental change in government include significant complications with legacy systems and technologies, perceptions of risk and magnitude of risk, complexity of integration across agencies, duplication in programs and systems, and lack of key drivers needed to force efficiencies.

These factors have contributed to a number of problems with public-sector IT, including disconnected systems, non-interoperable hardware, reliance on aging infrastructure and out-of-date business systems and solutions—precisely the
problems that much of private industry faced and solved 20 years ago.

Recent legislative action has helped government refocus on the importance of federal agency modernization, most notably the Federal IT Acquisition Reform Act (FITARA) and the more recent Modernizing Government Technology (MGT) Act. Over time, other federal government initiatives have been suggested to help address modernization, including innovation investment funds, establishment of a digital infrastructure council, set-asides for infrastructure upgrades, and a dedicated capital fund for federal agencies to upgrade their IT systems (now part of the MGT Act). While being in different stages of deployment, all of these initiatives may be helpful for modernization efforts.

**Impediments to Modernization in the Federal Government**

Impediments to federal IT modernization largely break down into three areas: spending and acquisition, culture, and speed of technology change.

- **Spending and acquisition.** While the government spends nearly $100 billion on IT systems annually, strategic spending is difficult. Public funds are often tied to particular purposes, making it harder to invest in IT and then directly allocate the spending, savings, and benefit of the investment to the mission—as the private sector does. Another issue with public-sector return on investment (ROI) calculations is that an investment cannot always be adequately valued for outyears as a company can do via a commercial ROI model—using a full cost model where benefits are measured and recognized over a time, and an understanding of the full costs can be identified and applied.

- **Culture and measurement.** Cultural impediments to changing the status quo also significantly limit modernization. For example, when undertaking innovation within the federal government, numerous federal technologists lament the lack of buy-in from key players in the organization. This lack of buy-in hinders changing from an incremental modernization approach to a more end-to-end enterprise approach. Similarly, few government organizations have the process discipline to undertake major changes in organizational policies and procedures, and this further stymies innovation. Perhaps more importantly, most federal agencies fail to systematically implement and track key IT performance metrics.

- **Pace of technology change.** Without a doubt, the speed of technology change contributes to much of the need for modernization. For government today, leveraging this pace of technological change requires time and freedom to experiment with these technologies and see how best to employ them. Positive technological changes create a demand for modernization—a demand that the federal government has been slow to respond to and realize outcomes from.

**Impacts from Avoiding Modernization**

Failing to modernize can lead to a host of negative impacts. Unless the problem is addressed, these outcomes are likely to increase in severity.

- **Increasing costs.** Many agencies continue to rely on aging and obsolete infrastructure, systems, and business applications. Along with significant duplication and redundant solutions, agencies face further budgetary and resource constraints due to excessive operations and maintenance (O&M) and technology costs.

- **Security and privacy concerns.** Cybercrime is one of the most worrying trends in technology, both for the amount of damage that can be done per incident and the number of incidents. Thus, it is not surprising that government cybersecurity strategies depend upon modernizing legacy information systems.

- **Lack of access to advanced technologies.** Industry has leveraged advanced technologies quite effectively. However, modern hardware and software is required to effectively take advantage of these technologies and access the data to achieve such results. Effectively implementing
technical innovations such as analytics and AI at scale are simply still out of reach across much of the government.

**Keys to Successful Modernizations**
Several key lessons emerge from this report’s analysis of successful modernization initiatives:

- Understand the organizational drivers for modernization
- Plan at the enterprise level
- Deliver incremental value at the departmental level
- Communicate value to citizens and shareholders
- Understand what you have and where you need to go
- People first then processes, and only then technology
- Importance of leadership
- Look at the “long tail” for modernization

**Recommended Roadmap for IT Modernization**
Based on these key lessons, the roadmap below illustrates how successful IT modernization could take place in government, and is consistent with the newly released guidance of the MGT Act. Major points from the roadmap include:

- Modernization must be an on-going process rather than a single standalone event, to allow for continuous modernization rather than costlier sporadic “catch ups.”
- Feedback occurs throughout the process to capture lessons learned and act accordingly.
- Ensures a focus on how technology is supporting mission goals.
- Key and supporting players should be identified for each step, making leadership and operational staff both aware of their requirements and empowering them to act.
- Check-ins with agency leadership, functional leadership, technical leadership, and key users must take place throughout the process.
- Ensures the optimal blend of a strong execution strategy, technical approach and the right team.
- 360-degree communications will ensure knowledge and buy-in.
- Measurement identification, and tracking and communication of those measures, should take place both inside and outside the organization.
Conclusion
The high allocation of public-sector O&M costs, in relation to the commercial sector, is not sustainable and only treats short-term symptoms instead of modernizing IT to correct systemic problems. Federal agencies must consider their spending on IT and how to make the right investments that can increase efficiency and decrease costs. IT modernization initiatives can transform an organization’s infrastructure, technologies, applications, and services to greatly reduce costs, improve performance, and meet evolving mission needs and priorities.

The government should make key investments in IT modernization and identify and prioritize the necessary initiatives for maximum effectiveness. Priority investments should be integrated into the budget planning cycle, and appropriate measures must be taken to provide a foundation for continuous innovation and improvement. With recent statutory and agency progress, the federal government is well-positioned to set an example in implementing modernization frameworks, like those outlined in this report, and moving forward with effective IT modernizations that improve mission performance.

TO LEARN MORE
A Roadmap for IT Modernization in Government
By Dr. Gregory S. Dawson

The report can be obtained:
• In .pdf (Acrobat) format at the Center website, businessofgovernment.org
• By e-mailing the Center at businessofgovernment@us.ibm.com
• By calling the Center at (202) 551-9342
Managing Cybersecurity Risk in Government: An Implementation Model

By Dr. Rajni Goel, James Haddow, and Dr. Anupam Kumar

The increased use of technologies such as social media, the Internet of Things, mobility, and cloud computing by government agencies has extended the sources of potential cyber risk faced by those agencies. Diverse agency data stores extend the source of risk throughout government organizations, bringing the need for new approaches that move beyond traditional security precautions. Cyberattacks against government are becoming more common and have more severe impact.

In a new report from the IBM Center for The Business of Government, Managing Cybersecurity Risk in Government: An Implementation Model, we address cybersecurity risk management needs by developing a decision model that allows agencies to tailor approaches for particular cyber challenges. We review existing risk management frameworks in use across government, and analyze steps that agencies can take to understand and respond to those risks in a manner consistent with existing law and policy. We put this work together to develop an implementation model based on taking five steps to improve cybersecurity outcomes: Prioritize, Resource, Implement, Standardize, and Monitor—the PRISM model.

The PRISM model can lead agencies to make intelligent choices about how best to address cyber risk. The model helps agencies begin by prioritizing risk drivers and interdependencies, and by linking cybersecurity goals to mission and operational objectives. The model can also assist agencies in communicating return on security investments to mitigate cyber risks. Such communications can foster discussion, assessment, and decisions and actions to tailor approaches for addressing cyber risk management in government.

Understanding Cybersecurity Risk Management

Cyber risk can be thought of as the likelihood of an event occurring, factoring in the consequences of that event. Risk is fundamentally the quantitative measure of the potential damage caused by specific threat. The likelihood of a breach or a security incident is a function of the (1) likelihood of a threat appearing and (2) likelihood that the threat is successful (which is relative to successfully exploiting a vulnerability in the system). Hence, the cyber risk assessment process includes identifying, characterizing, and understanding potential risk scenarios, which translates to studying, analyzing, and describing the set of outcomes and likelihoods for a given cyber activity.

Understanding cybersecurity requirements means assessing unique organizational risks associated with multiple factors, including business processes, organizational structure, goals, risk tolerance, culture, and system design. Calculating cyber risk is complex as it requires a combination of vectors, ranging from threats (known and unknowns), to vulnerabilities (including information sharing), to human behavior, and to organizational assets (tangible and intangible). A cybersecurity risk management (CSRM) framework enables an organization to build an end-to-end risk strategy for gathering and analyzing information and developing approaches aligned with the mission.

Nature of Cybersecurity Threats

CSRM is necessary for organizations that seek to deliver on their missions while facing a multitude of cyber threats—including phishing attacks, sophisticated viruses exploiting zero-day vulnerabilities, and above all, internal threats to confidential data from state and non-state actors. Multiple types of evolving threats vary in size and complexity, and emerge in organizational contexts that make it difficult to create a one-size-fits-all solution. For example, an attack on the electricity grid is different from an attack to steal intellectual property from a vault on a firm's server. This exemplifies the need for a tailored cybersecurity risk management framework that aligns with organizational priorities.
It is impossible to completely eliminate cybersecurity risks given numerous access points to information systems. Furthermore, organizations must weigh the cost of implementing solutions that might be against delivering on mission requirements. For example, setting up a non-connected intranet is expensive and could stymie innovation and efficiencies that occur by leveraging solutions developed on the open Internet. And recent incidents highlight the challenges in maintaining a cybersecurity posture that can defend against every possible attack scenario, when the avenues of attacks are proliferating faster than organizational response times in deploying safeguards.

Cyber Risk in the Federal Sector
Government cyber systems continue to have vulnerabilities and to be a target for successful attacks. Examples include the Office of Personnel Management (OPM), the IRS, and Pentagon intrusions. Today, attackers have expanded their attack vectors to not only include anything connected to the Internet, but also to use the newly available connectivity capabilities as intermediaries through which to launch their attacks. This is seen in the news regarding data breaches being reported regularly by government and private sector enterprises.

In 2013, the continuation of cyberattack losses led to issuance of Executive Order (EO) 13636, Improving Critical Infrastructure Cybersecurity, and the National Institute of Standards and Technology (NIST) released the Cybersecurity Framework. The principle behind cybersecurity risk management is to manage the investment in protecting cyber assets so that it does not exceed the expected harm from the risk that is addressed. This principle forms the basis for the NIST Framework. Along with requirements under the Federal Information Security Management Act (FISMA), the NIST Framework provides agencies with a common structure for top-level controls and many variations, both within and across federal agencies and with private sector partners.

Agencies face multiple challenges in addressing cybersecurity risk.

- Competing and detailed frameworks make prioritization and strategic decision making a challenge.
- Current approaches are often reactive and ad hoc, which can lead to a fragmented approach that drives organizations away from formulation and implementation of a clear strategy for managing cybersecurity risk.
- Inadequate resources to manage cybersecurity risk also persist, and the lack of strategy leads to sub-optimal deployment of available resources.
- Across and within agencies, a lack of standardization and information sharing results in weaknesses and risks that could otherwise be mitigated.
- The extensive and prolonged nature of attacks in certain instances highlight issues surrounding monitoring capabilities.

To improve the ability of organizations to address cyber risks, this report proposes a decision matrix framework to identify appropriate approaches to resolve these problems, building on a significant body of knowledge regarding cyber risk that currently exists in the form of industry white papers and academic research.

Decision Model for Cybersecurity Risk Assessment: The PRISM Approach
This report finds that there is a need for a strategic framework to aid in developing and maintaining a cybersecurity strategy at the enterprise level. The authors performed a meta-analysis of the existing body of knowledge to harvest key elements of cybersecurity risk management. This leads to the five emergent themes of Prioritize, Resource, Implement, Standardize, and Monitor, or PRISM, from which content analysis supporting the proposed operational model allows for a tailored approach to cybersecurity risk management.
The PRISM model complements the FISMA process by addressing additional implementation components critical for cyber risk assessment and management.

Key elements of the PRISM decision model are intended to help improve an agency’s cybersecurity posture, preparedness, and responsiveness.

• **Prioritize.** Agencies need to assess the risk or potential impact from compromises in their cybersecurity posture through these different attack vectors, using computational techniques to quantify the probability of compromise through any given avenue. Cyber analytics can potentially assist each agency component to identify threats and impacts, based on historical data on similar threat vectors and expected effects on sensitive datasets. Both the likelihood of an attack and extent of the impact must be calculated for risk prioritization.

• **Resource.** Most agencies report that cybersecurity is underfunded, even as the opportunity cost of poor security can far outweigh protective investments. Funding can support financial, personnel, technology, and/or other resources necessary to address and resolve a cybersecurity risk area, factor, or vector.

• **Implement.** Agencies should rapidly detect and destroy viruses and other forms of malware introduced in their ecosystem.

• **Standardize.** By sharing information across agencies, the federal government can institutionalize knowledge and solutions about cyberattacks to avoid repeat incidents and incrementally build awareness, preparedness and response knowledge and tactics. This should be done in a manner tied to the key metrics that demonstrate cyber performance in and across agencies.

• **Monitor.** Agencies must constantly monitor their systems for unusual behavior. From monitoring, agencies can track digital footprints and assess system loads to detect anomalies, protecting their cyber interests.

**Summary—Contributions to Better Cyber Risk Decision Making**

Evaluating problems through a single decision matrix creates an opportunity to harmonize different approaches across agencies. Our proposed cybersecurity evaluation PRISM model will help agencies/organizations identify and implement the most tailored risk management and cybersecurity approach applicable to their problem(s).
A Framework for Improving Federal Program Management

By Dr. Janet A. Weiss

The public, Congress, and the executive branch have a crucial stake in the performance and management of U.S. federal programs. Yet, over time, it has proved difficult for policymakers to strengthen program management across the federal government. The Program Management Improvement Accountability Act (PMIAA) is the most recent example from decades of efforts to improve government management with the goal of better outcomes for the American people. This 2016 law requires, among other provisions, “governmentwide standards, policies, and guidelines for program and project management for executive agencies.”

This report examines the experiences of a wide range of federal program managers in implementing large-scale programs. It assesses whether requirements like those stipulated in PMIAA are likely to improve program management and how best to raise the performance of program managers.

It also examines why efforts to improve program management cannot succeed without taking into account the diversity of federal programs. To avoid imposing overly simple solutions on heterogeneous phenomena, federal policies to improve operations should be based on a realistic picture of program management.

This report begins by discussing the different types of federal programs and how they differ from each other in ways that have consequences for how they should be managed. To analyze these differences, this report uses a conceptual framework that shows the relationship between program characteristics and the strategies that managers use. The framework reveals why techniques for good management need to be adapted to the type of program being managed, and why good managers use multiple strategies to achieve good results.

Framework of Organizational Effectiveness for Different Types of Programs
What are the management challenges that arise across different kinds of programs? This report offers a way to distinguish the management styles indicated for different types of programs.

A powerful diagnostic tool, the “Competing Values Framework,” has been developed by Kim Cameron, Robert Quinn, and colleagues to help leaders and managers understand what makes their organizations effective. It has been tested empirically with thousands of organizations and over 100,000 managers from private, nonprofit, and public sectors. This section explains the framework, and then applies the framework to different kinds of federal programs. The framework reveals the basic managerial challenges that arise in different kinds of federal programs. Because the challenges vary, the framework also highlights differences in the skills and strategies that make managers effective in the context of different kinds of programs.

The framework shows how the management styles in the different quadrants—the leader types, their values, and theories of effectiveness—produce different kinds of change.

- **The Collaborate Quadrant**: Change can be institutionalized over the long term, as those working on the change take ownership of implementation and develop the necessary expertise to carry it out.

- **The Create Quadrant**: Change can be novel and innovative, as creative program ideas can be nurtured and launched.

- **The Get Results Quadrant**: Change can be accomplished quickly, with an aggressive and hard-driving approach to meeting targets and satisfying external demands.
The Control Quadrant: Change can be accomplished incrementally, and the incremental changes can be locked into the organizations’ procedures and practices.

These four kinds of change are represented in the four corners of Figure 1.

**Different Types of Programs Make Differing Demands on Program Managers**

As discussed in the previous sections, one single style of management and one common definition of program management cannot capture the range of skills and strategies needed by managers leading different types of federal programs. PMIAA calls for a single standard to be applied across all government programs, a standard that is most appropriate for federal programs that look like those described in the Control quadrant of the Competing Values Framework.

The theory of change for PMIAA suggests that there is “one right way” to carry out program management, and that the law will spread the one right way to more managers and more programs. This theory is not consistent with the finding that programs differ substantially in the demands they place on program managers.

**Research Insight: One set of standards will not apply equally to all federal programs.** As the Office of Management and Budget (OMB) and Office of Personnel Management (OPM) proceed with the implementation of PMIAA, they will find the law best fits programs that are squarely in the Control quadrant. To make the provisions of the law useful to program managers who work in other quadrants, OMB, OPM, and the agencies need a range of standards that reflect differing program needs.

**Which Program Management Strategies Are Most Effective in Different Quadrants?**

Just as it is important to appreciate how and why programs differ in the management challenges they present, managers need to know which skills and strategies are needed to meet those challenges. The framework shows how differences among programs lead managers to use strategies that are adapted to the challenges of their programs. As Figure 2 shows, different programs call for different strategies or skills.

When a program is centered in one of the quadrants, the most successful managers in that program develop a matching style, relying heavily on the strategies most important in that quadrant. Thus, for programs centered in the Control quadrant, managers focus on organizing, measuring, increasing efficiency, standardizing, and eliminating errors. That kind of leadership is the right match for those programs. If managers are responsible for programs that are centered in the Create quadrant, they are not likely

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Source: Diagnosing and Changing Organizational Culture, 3rd ed., adapted by the author
to succeed if they rely heavily on control-oriented skills that worked so well in a different program. Instead, they need to develop management skills and embrace strategies that are entrepreneurial, innovative, risk-taking, and flexible. The framework suggests which skills will be most important to success with a given program.

**Figure 2: Different Program Management Strategies Are Used in the Competing Values Framework**

![Figure 2: Different Program Management Strategies Are Used in the Competing Values Framework](image)

**Source:** Cameron and Quinn, Diagnosing and Changing Organizational Culture, 3rd ed., adapted by the author

**Managers Need a Portfolio of Skills and Capacity to Match Their Programs**

Building the skills of program managers can be very helpful for improvement, so long as the available training and support matches the skills and expertise needed in differing programs. Of course, the federal government already invests considerable resources in training and support for senior managers within agencies and through OPM, the Senior Executive Service, and interagency programs. The question is how to add to the current commitment to training in ways that will strengthen the capacity of program managers to be effective.

**Research Insight:** Establishing a separate job series and career path for program and project managers may not accomplish its intended purpose. PMIAA provides for OPM to establish a new job series and define a career path for program and project managers; this assumes that program managers are fundamentally alike across a range of different program types. With a variety of skills needed for program management, it is not clear that a unified job career will make it easier to recruit, train, or retain excellent program managers.

**Research Insight:** The skills and competencies to be a successful program manager will vary, depending on the type of program to be managed. PMIAA requires that OPM identify skills and competencies needed for federal program and project managers. While various groups have developed lists of competencies, some of these make the assumption that there is only one kind of program, and that this program demands a set of Control quadrant skills. Successful leaders require discrete skills, and the capacity to deploy those skills skillfully and strategically, to meet changing circumstances.

**Research Insight:** Communities of practice can be an important mechanism to share expertise among program managers across agencies and different program types. Bringing together program managers across the federal government to learn from one another is a useful way to inspire creative thinking, share expertise, and introduce new program managers to resources and support that can help them succeed.

As the implementation of PMIAA moves ahead, policymakers need to appreciate the full range of skills and experiences needed to manage programs of different types. Policymakers should ensure sufficient flexibility and variation when issuing guidance, to reflect the diversity that program managers experience. The resulting guidance should also address systemic constraints that inhibit managers from being effective in meeting mission demands. Following are seven recommendations to the central agencies responsible for overseeing governmentwide implementation of PMIAA, and four recommendations to each of the federal agencies covered by the Act.
Recommendations for Government-wide Implementation of PMIAA

- The OMB and the OPM should develop multiple standards and guidelines, to reflect the different management skills and experiences needed to manage different types of programs.

- OMB and OPM should create opportunities for high-performing program managers to learn skills from one another.

- OMB should use the annual portfolio reviews and five-year strategic plan that are required by PMIAA to identify and propose simplifications for federal workforce planning and ease the burden on program managers.

- OMB and the Program Management Policy Council should support the creation of communities of practice where program managers from multiple agencies who work on similar issues can learn from one another.

- OPM should develop multiple strands of program management training, tailored for managers of different types of programs.

- OPM should develop an inclusive list of competencies for program management, using the Executive Core Qualifications for the Senior Executive Service as a possible starting point.

- OPM should plan for a new or improved job series after recognizing that only some program managers will benefit from a single career path, and many will benefit from a variety of career trajectories.

Recommendations for Agency-level Implementation of PMIAA

- Agency Program Management Improvement Officers (PMIOs) should recognize the different kinds of programs in their agencies, and tailor a program manager training plan aligned to each kind of program.

- Agency PMIOs should help to create multiple communities of practice for program managers in each agency as they develop required agency implementation plans. To improve mentoring and retention of program managers, these communities should be organized around shared challenges.

- Agency PMIOs should develop plans to recognize excellence in program management, give high-performing program managers developmental assignments, and expand opportunities for training at multiple career stages.

- Agency leaders should provide public celebration and recognition of program managers who achieve measurable progress toward agency goals.
Recently Published IBM Center Reports

Integrating and Analyzing Data Across Governments—the Key to 21st Century Security
Douglas Lute and Francis Taylor

This report focuses on data gathering, analysis, and dissemination challenges and opportunities across the homeland security enterprise, looking especially at how improved information sharing could enhance threat prediction and prevention in a transatlantic context. The authors address how stakeholders in the U.S. and Europe can increase the understanding of effective ways to leverage channels involving technology, human capital, organizations, and private sector coordination that meet strategic, mission, and operational needs. The report highlights opportunities for governments to leverage data integration and analytics to support better decision making around cyber and homeland security.

A Roadmap for IT Modernization in Government
Dr. Gregory S. Dawson

This report comes at a timely moment for government modernization at the federal level, given the recent enactment of the Modernizing Government Technology Act and its Technology Modernization Fund provisions, as well as the IT Modernization strategy being carried out by agencies and led by the General Services Administration, the Office of Management and Budget, and the Office of American Innovation. This report provides a resource for agencies to understand how best to develop a modernization business case, establish and implement a change management strategy, and put in place both a long-term initiative and short-term steps that can help agencies measure real progress. The recommended roadmap is based on research into past experiences in IT modernization at the Federal and State level, as well as in industry. He draws lessons from his research and extensive case interviews with federal and state chief information officers (CIOs). Using these lessons, the author frames impediments to modernization and risks for agencies that do not modernize, including continued cybersecurity weaknesses.

Delivering Artificial Intelligence in Government: Challenges and Opportunities
Dr. Kevin C. DeSouza

This report reviews progress made in applying artificial intelligence to public sector service provision, drawing on lessons learned from commercial experience as well as cognitive computing activity by Federal, State, & international governments. The author takes this real-world experience to set forth a framework for agencies to plan, develop, and deploy AI systems. The report puts forward a set of challenges for government leaders and innovators in this space, along with opportunities for agencies to act in addressing these challenges. Finally, the report outlines a maturity model for agencies to use in guiding their journey forward in applying AI to improve mission performance.
Data-Driven Government: The Role of Chief Data Officers

Jane A. Wiseman

This report focuses on the expanding use of data at the federal level and how to best manage it. The purpose of this report is to advance the use of data in government by describing the work of pioneering federal CDOs and providing a framework for thinking about how a new analytics leader might establish his or her office and use data to advance the mission of the agency. The report provides rich profiles of five pioneering CDOs in the federal government and how they have defined their new roles. Based on research and interviews, the report offers insights into how the role of agency CDOs is evolving in different agencies and the reasons agency leaders are establishing these roles. It also offers advice on how new CDOs can be successful at the federal level, based on the experiences of the pioneers as well as the experiences of state and local CDOs.

A Framework for Improving Federal Program Management

Dr. Janet A. Weiss

Congress passed legislation in late 2016—The Program Management Improvement Accountability Act (PMIAA)—to establish standards, define competencies, and conduct progress reviews that improve program and project management at a government-wide and agency level. This report offers a framework for how the Office of Management and Budget (OMB), the Office of Personnel Management (OPM), and agencies should develop standards and competencies for improved program management. This report is designed to help agencies understand the full range of skills and experiences needed across the range of program management needs in government. She supplements the framework with concrete case examples of program managers who demonstrate the skills and experiences needed to lead different types of programs. The report offers government-wide and agency-level leaders a set of practical recommendations for implementing PMIAA requirements in a way that maximizes potential for success.
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