DELIVERING MISSION OUTCOMES THROUGH DIGITAL TRANSFORMATION: WAYS TO ACCELERATE TECHNOLOGY

By David Powner

The federal government spends more than $90 billion on information technology. At least 80 percent of this is used to operate and maintain existing IT systems, including aging legacy systems – many of which are decades old.

These technical environments are highly inefficient because they are costly to maintain, vulnerable to cyberattacks, and don't adequately meet the growing needs of U.S. citizens. With technology advances, growing mission needs, and high public expectations, Congress and several Administrations have introduced legislation and policies that helped to reduce barriers and provide tools to get a better return on this technology investment. While there have been many successes and improvements recently, additional steps can be taken.

MITRE – a nonprofit, public interest company that operates Federally Funded Research and Development Centers (FFRDCs), performs independent research, and participates in public-private partnerships – has been engaged in modernization for much of the past 20 years. Through our Center for Enterprise Modernization (CEM), an FFRDC sponsored by U.S. Department of the Treasury, and co-sponsored by the Department of Veterans Affairs, and dedicated to address this challenge, we have worked with our sponsoring agencies, OMB and Congress, to identify and tackle barriers in order to successfully adopt new technology to support their missions. Our role and experience has provided evidence that has contributed to our insights and observations about practices that work and issues that impede progress. During that time, Congress, the Office of Management and Budget (OMB), and other executive branch agencies have accomplished a great deal. Despite this, the pace of technology change has accelerated, and the impact of legacy technology on cost, mission effectiveness, and security has become an even greater burden and risk to agencies and the public. We believe the accomplishments to date have created a foundation for even greater progress, with additional action by Congress, OMB, agency leaders, and chief information officers (CIOs).

Congressional and Executive Branch Actions Have Led to Major Accomplishments

Over a decade ago, OMB started a number of initiatives to address the many inefficiencies associated with operational spending. For example, in 2010 OMB began a data center consolidation initiative because of low utilization rates and in 2012 called for agencies to review their IT portfolios for duplication and costs savings – an initiative called PortfolioStat.

OMB's sound policy efforts were followed up by those of the legislative branch when, in December 2014, Congress passed the Federal Information Technology Acquisition Reform Act, known as FITARA, to improve agency management of IT and enable Congress and agency leaders to monitor progress in reducing duplication and achieving costs savings. And in 2015, the congressional watchdog, the U.S. Government

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Accountability Office (GAO), added IT acquisitions and operations to its high-risk list of areas needing special congressional attention, due to the government's poor track record delivering IT acquisitions and the inefficiencies that existed among systems in operations.

Following the passage of FITARA, the House Committee on Oversight and Reform developed a scorecard to measure progress on this significant legislation. OMB and agency CIOs focused on improving their IT management as well as their scores. Since November 2015, Congress has provided a transparent evaluation by giving agencies letter grades every six months on FITARA progress and holding hearings to review progress and provide direction where more work remained. OMB developed FITARA implementation guidance and supported CIOs as they strengthened their management of IT acquisitions and operations. Five-plus years and ten scorecards later, the results are significant. These include:

- Nearly $5 billion saved consolidating data centers

- Fewer IT acquisitions with a big-band, waterfall approach and more agencies tackling acquisitions in more manageable increments to improve delivery

- CIO authorities and their relationships with CFOs are significantly stronger, which better positions them to approve and manage IT budgets.

Legislative and executive leadership didn't stop there. Congress also passed the Modernizing Government Technology (MGT) Act in 2017, which created agency-working capital funds so that agencies were incentivized to save on IT operations and reinvest in agencies' unfunded priorities. This legislation also created a central Technology Modernization Fund (TMF) to address shortfalls in modernization funding. In addition, the current President's Management Agenda (PMA) has provided a vision to improve mission outcomes and highlights IT Modernization as one of three key drivers of transformation. The PMA also supports other critical IT areas, such as building our IT workforce, using the TMF and working capital funds, and having better transparency with our IT spending.

With an eye toward the next management agenda, now is the time to build off the legislative and executive branch successes and accelerate the pace on confronting the additional challenges facing agency leadership and CIOs. There are four key observations Congress, OMB, agency leaders, and CIOs should consider as they look for ways to accelerate progress.

Technology Leadership Matters, but CIOs are not Consistently Viewed as Strategic Business Partners

Although the scorecard's transparency and congressional oversight helped, agency CIO leadership drove many of the results from FITARA. During the past five years, many CIO reporting arrangements improved, where more now report to the agency head or deputy secretary. This alone has helped many CIOs have more of a seat at the management table. But to be clear, this alone is not the answer as CIO credibility is earned, not granted, and about one-third of our CIOs are still not reporting to the top.

CIOs still need to be viewed more as a strategic business partner. Many IT acquisitions tied to mission enhancements are still being pursued without enough input and management from CIO organizations. When this occurs, agencies risk not effectively managing IT delivery, cybersecurity requirements, and oversight of contractors, and often fail to account for subsequent funding requirements for staffing, maintenance, and licensing.

FITARA had Significant Impact On IT Operations, but the Results Were Not as Significant On IT Acquisitions, Especially Those That Are to Replace Mission-Critical Legacy Applications

Even though it is the Federal IT "ACQUISITION" Reform Act, FITARA had more impact on IT operations than acquisitions. It did improve the dashboard transparency on both IT operations and acquisitions, and improved agencies' movement toward a more incremental or agile approach to acquisitions, but the big returns were on data centers, duplication business systems, and better management of software licensing.

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GAO continues to report on critical legacy systems, some of which are more than 50 years old. Many of these systems are no longer supported or have hardware that is no longer under warranty, which poses significant security risks. COVID-19 and, more specifically, the implementation of the CARES Act requirements, also exposed the inability of these archaic legacy systems to scale quickly, including the unemployment systems that states operate. It was only through intense and extraordinary effort on the part of agency IT leadership and employees that these requirements were implemented. Even with the strategic focus on IT modernization, the needle has not moved enough on replacing these legacy systems. There are several key reasons why this is the case and why these systems are so difficult to replace:

- The lack of long-term plans to tackle the legacy code conversion. GAO's latest report highlighted success stories converting legacy systems, and they all took between three and five years, yet many of the current legacy systems do not have long-term plans.

- Federal CIO tenure is only about two years and contributes to this lack of a long-term focus.

- Since many of these legacy systems support key operations, such as tax processing, there is a tension between upgrading and not affecting critical operations that serve the public.

- Modernization and converting legacy applications typically require data cleansing and improvements to business processes, both of which demand business alignment. This drives home the importance of the CIOs as strategic business partners.

- Improving the customer or citizen experience, despite this being a major strategic cross-agency goal, is not always enough of a priority.

- Decommissioning these difficult to maintain and often insecure legacy applications is seldom an area of focus.

- IT budgets do not often accurately reflect these legacy modernization needs.

Agency Budgeting and Funding Discipline Has Received More Focus, but Savings and Efficiencies are Lagging

FITARA called for CIOs to approve IT budgets for their respective agencies. The MGT Act gave agencies the authority to establish IT working capital funds to reinvest IT savings. And the PMA calls for the agencies to use the Technology Business Management (TBM) taxonomy, an industry standard for categorizing costs, so that costs are better understood and possibly benchmarked. These collective efforts are all helpful in understanding IT costs and creating incentives to save. However, not enough agencies have established these working capital funds nor used TBM to the extent envisioned. In addition, many agency IT budgets remain relatively flat or receive modest increases year-to-year, and they don't always reflect the necessary increases to modernize and tackle big dollar items like legacy modernization.

A Collective Team Effort from the Legislative and Executive Branches is a Winning Formula

The progress that has resulted since FITARA passed is the result of both legislative and executive branch actions. Congress passed laws, followed up with transparent scorecards to measure results, and performed oversight on progress. OMB issued FITARA implementation guidance and provided support for agency CIOs to better manage IT. Auditors provided a neutral examination of agency progress. Emulating this collective approach to address continuing deficiencies moving forward will be critical for enhanced modernization and digital transformation.

> The ability for government to serve the public is directly dependent on being able to deploy effective, efficient, modern technology that closes the service gap and delivers enhanced mission outcomes.

Recommended Actions

Modernizing information technology is more than just the purview of the CIO. Business leaders and agency leaders play a key role – modernizing the technology portfolio should be an investment that improves the efficiency of the IT operation while advancing the mission and the business outcomes of the agency. There are a number of actions that Congress, OMB, agency leadership, and CIOs themselves can take to address the modernization challenge and accelerate progress. Many build off of steps already taken but expand the scope and ownership responsibility.

1. Strategic Business Partnerships

There are three ways in which CIO value as a business partner can be developed and enhanced, and modernization can become a strategic business priority: (a) develop and demonstrate functional business knowledge; (b) provide for longer tenure; and (c) execute major IT programs with integrated business-CIO governance and management.

On the first point, CIOs should consider inter-agency rotational assignments that involve placing IT staff in business units and vice versa. This helps to develop familiarity and deeper understanding of the others' operation and decision. In addition, another technique is to have the CIOs' performance measured by the same mission outcome metrics that business unit leadership is measured.

Regarding tenure, Congress and agencies should consider using critical pay positions to attract talent from the private sector (a technique that was used successfully by the IRS for years) to serve five-year appointments for CIOs to address the short-tenure challenges.

On the third point, integrated governance and management, OMB should require, and agency leadership should establish, a program integration office for major IT programs, with IT and business-line leadership and participation, and a single accountable business executive delegated to accept risk and make decisions. In this way, the CIO and the business leadership share accountability for the modernization and implementation of IT and the success of the business

outcome. This is the basis for a solid strategic partnership between CIO and business. The Department of Veterans Affairs Veterans Benefit Administration's (VBA) successful delivery of new functionality related to the Forever GI Bill in December of 2019 serves as an example of the power of an integrated team and joint governance, but single accountable business ownership.

2. Legacy Systems Transparency and Modernization

An important factor in accelerating progress is having visibility into the complexity of the legacy environment, and deciding where and how to modernize. Agency CIOs should know their environments, understand the inherent risk and costs, and have a plan for aggressively transitioning to new technology and new models. To that end, there are two recommendations that we see as critical to supporting transparency and accountability.

OMB should require that agencies identify on the IT dashboard their top-three legacy systems in need of modernization and the replacement acquisitions or other associated investments, so that there is clear transparency on these priority acquisitions. This can also help the CIO to ensure they have agreements with the business on priorities, and appropriate resourcing from OMB.

OMB should track progress on these legacy system replacements by having a government-wide list of these acquisitions to ensure that there are long-term plans, progress against these plans, and funding to support them. This effort should include incorporating the review of each of these investments into the agency performance-review process mandated by the GPRA Modernization Act of 2010.

3. IT Budgeting and Investment Funding

A powerful tool available to private-sector CIOs has been the ability to reinvest savings from legacy system retirements, consolidations, and replacements. These funds are invested in innovation and in new technology, and when used strategically, they accelerate progress by incentivizing retirement of old systems and allowing the prioritization of how those funds are reinvested to

be made by the CIO in partnership with their business partners. Congress has given federal CIOs and their agencies a similar tool. We recommend that OMB ensure that agencies establish IT working capital funds consistent with the MGT Act, use the TBM taxonomy consistent with the PMA, and include sufficient funding in their IT budget requests to address their legacy modernizations needs.

4. Workforce

The single greatest asset that agency CIOs have is their workforce. As they look to accelerate the pace on modernization, they have to address growing workforce gaps in key technical areas. These are in high demand both across government and in the private sector, and the government must compete more aggressively for this talent. To that end, OMB and OPM should work with agency CIOs and Chief Human Capital Officers to strengthen the IT workforce. This should include expanding the use of critical hiring authorities, increasing talent-exchange programs with industry, and using existing authorities to acquire private-sector experts to address gaps in knowledge and skills in mission-critical positions. See www.mitre.org/sites/default/files/publications/PR-18-3746-Symposium-Federal-Workforce-21st-Century-Report.pdf

5. Future PMA Focus

The current President's Management Agenda has emphasized IT modernization as a major strategic goal driving government effectiveness and value to the public. This emphasis should continue in future updates to the management agenda and priorities. In addition, OMB should build off of this by including IT modernization (and specifically legacy modernization), IT working capital funds, and the TBM taxonomy as strategic management priorities. It should also continue the holistic approach to modernization with the focus on data, the federal workforce, and customer experience, and add cybersecurity as a major part of the modernization strategy.

6. Legislation and Congressional Oversight

Finally, Congress should consider building on the successes of FITARA and the MGT Act by issuing additional legislation that further enhances the authorities of federal CIOs. Areas to consider are critical pay positions, term appointments, and a specific focus on legacy modernization.

- Congress should modify the current FITARA scorecard and continue its oversight that has had such great success. This modified scorecard should include the areas recommended in MITRE's August 3, 2020, testimony. These recommendations included grading the following five areas: (1) cybersecurity, (2) mission modernization, (3) infrastructure, (4) IT budgeting/funding, and (5) IT workforce.

Conclusions

The ability for government to serve the public is directly dependent on being able to deploy effective, efficient, modern technology that closes the service gap and delivers enhanced mission outcomes. The recommended actions build off of the many successes of the past five years and call for a collective team effort from Congress, OMB, and agency leadership. With a new Congress, the start of another Administration, and the requirement to refresh the management agenda around the corner, now is the time to enhance the enabling statutes and policies to drive these outcomes through digital transformation.

For more information about this paper or the Center for Data-Driven Policy, contact policy@mitre.org

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