Leaning in on Technology
Early in my financial management career I received my first BlackBerry. Even though its robust shape prevented me from properly rocking my tailored suits, that thing was awesome. I marveled at how much more productive I could be with the ability to receive emails and noisily clack out responses on those tiny keys from anywhere in the world. Whether it be that beloved BlackBerry, the internet, or remote networking, some of the greatest applications of technology are those that enhance the power and capabilities of their users.

Today, focus mainly centers on the potential of emerging technologies, like blockchain and machine learning. Still, one of the most exciting technological advances is low-code/no-code platform applications. These platforms enable business users, including financial management professionals, to play a more significant role in technology development and build apps without coding by configuring pre-coded application components together. Given current financial constraints in government, agencies need to explore these platforms to democratize IT solutions — meaning, expand tech access to new, often non-technical professionals. By breaking down organizational silos, distributing technology resources, and adopting low-code/no-code platforms, government entities can lower costs, improve the business focus of IT systems, and foster greater cross-disciplinary cooperation.
Historical Challenges in Government IT

Government organizations have an unfortunate reputation for bureaucratic, siloed management structures that hamper efficiency and cooperation. Likewise, government hiring processes leave organizations with enormous gaps in technology skills among their personnel. Both challenges are worth reviewing for insights toward new solutions.

Siloed Organizations

While these stereotypes can be overblown, several structural barriers make intra-governmental collaboration inherently difficult:

- Government budgets are largely static and compartmentalized in individual offices and programs. As a result, single technology investments are often narrow in scope, serving the specific interests of the funding office, but not always accounting for the needs of other government stakeholders.
- Funded mandates and mission areas often come from piecemeal legislation. As such, offices and programs are not always part of a comprehensive organizational strategy.1
- IT and mission areas are traditionally separate, due to very specialized, technical skills needed to build or implement systems and applications. Barriers are especially pronounced when program offices lack staff with formal coding skills who can meaningfully engage in development projects.

Silos can lead to conflict, miscommunication and rework. Siloed business models engender blame over collaboration by reducing professional empathy and teamwork. One study to determine the level of innovation and digital maturity in respondents’ companies found that 70% of the companies which study participants considered “digitally advanced” used cross-functional teams, while only 30% of businesses considered less-mature by respondents used cross-functional teams.2 Clearly, governments must find ways to overcome structural silos to achieve the level of collaboration needed in forward-leaning organizations.

IT Skills Gap

One reason public sector institutions struggle to keep pace with innovation is their trouble recruiting and training staff proficient in the latest technologies — mainly a result of their tortuous hiring processes. Until recently, developing and supporting technology apps required specialized coding expertise, both expensive and difficult to maintain in-house. Moreover, any IT skills extant in the federal workforce often become outdated, because they are dedicated to supporting legacy systems. The General Accountability Office (GAO) estimates 75% of federal technology budgets go toward legacy systems that rely on older, sometimes obsolete code.3 The IT skills gap can lead to trade-offs. A new government IT system involves a choice between purchasing an off-the-shelf product that only addresses a portion of agency requirements, or plunging into an expensive, multi-year endeavor with contractors to create a custom system that is costly to enhance and maintain. The choice is between continued reliance on outdated systems or new reliance on contract labor. Both options present barriers to government innovation.

Empowering Program Offices Improves Tech Outcomes

Changing the government landscape will require significant contributions from individual program offices, which can take the form of involvement in market research of technology apps; actively participating in cross-functional, Agile project teams with IT functions; and recruiting and training staff in emerging technologies. Program offices are often the engine for innovation, since they often own the budgets, the vision, and the requirements that drive tech solutions. But success demands a more active role in the technical side of these efforts. When program offices have more say in IT matters, the resulting solutions remain closely focused on the business problem and improve overall outcomes.

Two proven methods to increase collaboration between IT and program offices include: 1) increasing the use of Integrated Project Teams (IPT) and 2) enhancing technology skills in program areas.

Agile Methodology & IPTs

Agile methodologies and IPTs stress business stakeholder involvement throughout the IT development process and can considerably improve collaboration between business areas and IT. GAO acknowledged the value of IPTs in major IT acquisitions.
Specifically, GAO said two factors are critical to their success:

- involving mission area experts in new systems acquisitions.
- constant, face-to-face interaction with IT personnel.

Federal organizations, such as 18F and the U.S. Digital Service, use Agile and IPTs to improve the speed and quality of deliverables. Business stakeholders now identify issues early to prevent rework. Since many government organizations adhere to traditional, siloed waterfall methodologies, vast potential to realize gains awaits in promoting the use of IPTs.

**Tech Skills in Business Units**

Empowering program offices requires more than demanding they have a seat at the table. It also demands they have something to contribute. Whether through training current employees or recruiting new entrants with specific technical skills, business units should invest in building a workforce who understands the technology that supports their business.

When I joined the Federal Financing Bank, it was modernizing its legacy loan management system after multiple failed attempts. Besides hiring people with additional skills in our IT division, I hired a technical lead who could read and write code for the system's two major stakeholder groups — lending and accounting. This gave the business units an advocate who could participate in technical discussions and make sure system development adhered to business requirements. Similarly, our IT group had partners who could provide insight and share accountability for development efforts. The result was the successful deployment of a modernized system with full business-unit buy-in.

Government IT purchases are expected to exceed $87 billion in 2020 to augment technology usage in government operations. In order to take advantage of potential gains from automation, data science, and platform technologies, program offices should recruit IT professionals for non-IT business units to represent their interests and help them craft solutions tailored to their specific needs. Business needs will remain central to the functionality of apps developed, and financial managers will extend insight into and control of the new technology.

**Empowering Program Offices with Low-Code/No-Code Platforms**

One group of innovations bringing program and business users closer than ever to solution development includes platforms and platform-as-a-service, or PaaS. They are collections of interrelated computing programs and services that operate together as a “platform”
that customers can build upon and use to manage a multitude of applications in a common infrastructure. Many of these platforms — Microsoft Power Platform, Salesforce and others — support low-code or no-code development. Exactly as it sounds, no-code development uses pre-developed code packages that developers can drag, drop and connect to create new, individualized apps without computer coding. Low-code is similar to no-code but may require light coding to enable advanced functionality. Moreover, using a common platform for multiple applications streamlines management and compliance requirements with shared security and infrastructure.

Platforms are beginning to change the way public and private sector organizations automate, modernize and leverage their data. Gartner, a leading IT research and advisory firm, expects 65% of application development will be low-code or no-code by 2024. By simplifying efforts, platforms save time and money. Because they are intuitive, these platforms afford greater understanding and participation among non-technical personnel and usher business users into the development process.

Governments enjoy specific benefits from low-code/no-code platforms, including:

- **Shared Development**
- **Cost and Speed of Development**
- **FedRAMP and Security**

**Shared Development**

If we are to attack silos to get business users closer to the solutions that support them, what better measure could there be than implementing technologies that allow them to build solutions to their own problems? The greatest potential in these platforms is their capability to open a window for program offices into app development. Whether creating prototypes by connecting low-code/no-code modules to solve business problems or visualizing apps from a flow-chart perspective, platforms grant insight — previously reserved for coders alone — into the inner-workings of systems.

Allowing non-technical personnel to participate in app development, often called citizen development in industry, has yielded positive results for institutions that let program area users, such as accountants, project managers, and human resources professionals, develop low-code/no-code apps that support their business. By eliminating the need to communicate requirements to an additional party, solutions are built by those who know the business problems intimately, rather than building strictly to specifications.

In this model, groups from the Office of the Chief Information Officer (OCIO) would still play a critical role in governing overall technical infrastructure, ensure compliance with established standards and security protocols, and support program offices with functionality that requires custom code. In fact, the platforms offer OCIO divisions the ability to set common guardrails around applications, which can assist with organization-wide governance strategy. Further, when program offices gain an expanded role in development, traditional IT resources can focus more attention on the technically demanding tasks of cybersecurity, governance and infrastructure.

**Cost and Speed of Development**

Perhaps the most intuitive benefit of the low-code/no-code nature of platforms is the reduction of time and cost associated with development activities. A tech market research firm, Forrester, issued a study showing organizations that used Microsoft platform technologies experienced a 70% reduction in time required to develop new apps and a 38% reduction in management and maintenance.
THE ROLE OF THE OCIO

While this article focuses on opportunities that arise from increasing the role of program offices in IT development, OCIOs and traditional IT professionals remain critical and irreplaceable. An engaged OCIO helps program offices succeed in their missions with technology infrastructure, guardrails, security, and compliance requirements. Program offices with modern tech skills can free up OCIO staff to work on areas of unique responsibility and more fully support development efforts.

costs, shown in Figure 1. The reduced time to deployment saves money in IT and eliminates the need for highly skilled developers, keeping contract support costs low. The companies analyzed by Forrester collectively netted a 362% return on investment in adopting platform technologies across their organization.

The speed of development also assists with Agile methodologies. Low-code/no-code shortens development cycles by eliminating complex code-writing for custom applications. This simplification allows for quicker functionality, which leads to rapid releases of business apps to meet ever-changing program area needs.

FedRAMP and Security

These platform solutions also help new apps clear FedRAMP and other government security protocols. The federal government and many states enforce rigorous security and interoperability requirements before new systems and software can be authorized to operate within a production environment. Leveraging established platform solutions helps lighten this burden. While apps built on platform solutions must still be approved individually, reviewers can expedite the process at the platform level with prior assessments and approvals of the common base of security controls.

One review completed by the federal government shows FedRAMP certification can take months and cost between $500,000 and $4 million. While industry increasingly bears this cost, the ultimate price and time delays associated with obtaining certification is passed on to the government for custom development or new systems. Developing apps on a common platform can alleviate much of the pain, frustration and schedule constraints associated with implementing new systems.

Conclusion

Innovation is a burden shared across government. Best results occur when program offices take an active role in shaping the technology solutions that support their mission. Strategies to increase technical skills in business units and form IPTs are excellent first steps, but low-code/no-code platforms that involve a range of professionals, including financial managers, in the development process will drive improvements in the cost, timeline and quality of government systems and applications.

Democratizing IT through collaborations and up-to-date platform solutions opens a new world of capabilities and possibilities for government financial managers — much like the Blackberry once transformed the ability to stay connected to the office. Highly touted innovations will undoubtedly expand government systems and become critical components of work in the future. However, the transition may feel like trading a Blackberry for an iPhone. We’ve already grown dependent on handheld devices, but not so long ago they were a real revolution we held in our pockets.

Endnotes


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