

21st Century Government IT: The Digital Imperative

Market Study Shows Agencies Struggling to Evolve

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Government IT faces a data problem, a process problem, a mobility problem, and a collaboration problem all rolled into one. What's required to fix the situation is the creation and delivery of a staggering number of truly 21st Century digital business software applications across every government agency. Under the current structure of how government IT operates, such an influx of innovation is simply not possible. Public-sector IT teams are carrying too much technical debt in the face of shrinking budgets to ever get ahead.

This situation has dramatic consequences for agency efficiency, productivity, mission fulfillment, service delivery, and employee morale. On the financial bottom line, antiquated IT costs the government enormous sums of money, and makes it hard for agencies to be transparent about where and how citizen tax dollars are spent.

The pressure for comprehensive government IT modernization is mounting on all sides. The Administration is pushing it through mandates, government employees want it, and citizens are demanding it. All of this is borne out by a recent GovLoop market study commissioned by Appian.

This paper will use those survey results to explore the drivers and barriers to IT modernization in the public sector, and will also highlight an emergent solution to accelerate the evolution to 21st Century digital government.

INTRODUCTION

Many of the most advanced technologies available to us in our private lives were originally developed by the Government. The Global Positioning System in our mobile phones that can tell us exactly where we are virtually anywhere on the globe. Video Image Stabilization that makes our home movies watchable despite shaky camera work. Artificial human limbs, which came into existence as a result of the advancement of artificial muscle systems for use in NASA space robotic activities. Even Memory Foam pillows and mattresses – another NASA discovery first designed to reduce landing impact in aircraft and spacecraft seats.

Given this history of fostering innovation and delivering it to the private sector, it is a tremendous irony that government agencies today generally rely on rigid and inflexible Information Technology to conduct their missions and deliver services to citizens. Our personal lives and consumer habits are imbued with the speed, fluidity, and ubiquity of digital technologies provided by commercial organizations. Government, however, is struggling to keep pace. Citizens know how frustrating interactions with government agencies can be. There's relatively little self-service available, except for the most innocuous of inquiries. Chances are it will take phone calls with long wait times, emails, faxes, and even snail-mail to get questions answered, or data errors and other issues resolved.

Think of how we now interact with our favorite retailers and other consumer services. Everything is online and mobile, when and where you want, whether you are making a purchase, submitting a trouble ticket, or just asking a question. Now think of the last time you had to deal with the IRS or the DMV. It's a different experience, to say the least. And now consider that the out-moded systems government employees use to interact with citizens are no more modern than the back-end systems used to drive and report on mission-attainment for those agencies across Federal Civilian, Department of Defense, and State & Local. That's alarming.

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THE DIGITAL FUTURE IS HERE (at least in the commercial world...)

We have reached the post-PC era. In late 2014, the number of mobile devices (tablets and phones) surpassed the number of humans on the planet.¹ A study by Nielsen says consumers spend 15+ hours/week researching on a smartphone, and mobile influences purchases across channels. 93 percent of people who researched on their smart device went on to make a purchase.² Commercial organizations have responded, as evidenced by the growth of the enterprise mobility market which is expected to hit \$140 billion by the year 2020, a Compound Annual Growth Rate of 15%.³

Cloud computing is a cornerstone of the Digital Age. Just as digital commercial interactions have increased, cloud hosting use and traffic have ramped up significantly. It is estimated that global cloud traffic will more than quadruple from 1.2 zettabytes in 2012 to 5.3 ZB in 2017.⁴ Commercial companies are rapidly realizing the cost and time-to-market advantages of cloud computing over traditional on-premise hosting.

Adoption of social collaboration technologies in commercial organizations, while still on the low end, is rising. This is because as those tools have matured to be more business-oriented, the benefits have become harder to ignore. As much as 50 percent of knowledge workers believe that their productivity has increased due to access to social collaboration technologies.⁵

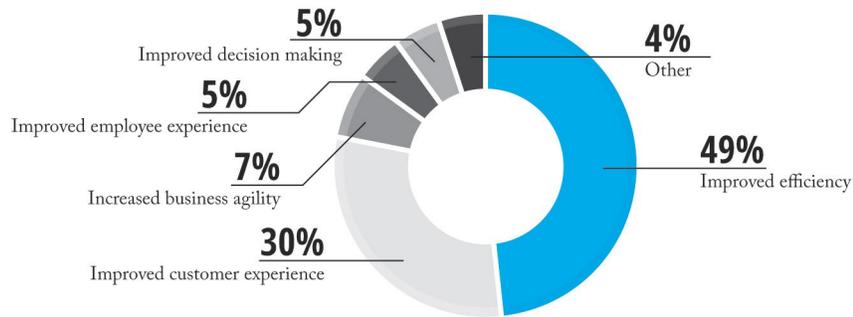
60% of survey respondents say they still lack the modern business functionality they need in their software applications.

Now contrast the above with the responses to a recent GovLoop survey of public-sector professionals. 60 percent of survey respondents say they still lack the modern business functionality they need in their software applications. These government employees remain tied to desktop workstations, limiting their productivity. They must wade through siloed data stored across disparate applications and interfaces, hampering efficiency and making it nearly impossible for them to be fully and accurately informed when making decisions. They have limited collaborative capabilities, barring them from taking advantage of insights available from their subject-matter-expert peers. Consequently, there are high volumes of repetitive work, unstructured process work-arounds conducted through email and phone calls, uninformed decisions and responses to queries, and lots of re-keying of data from one system into another (a primary source of data errors).

These government employees have a very clear sense of what modern digital business applications could mean for their jobs and for their agencies. Survey respondents focused on the benefits of improving efficiency in how work gets done (49 percent) and improving the customer experience (30 percent), but also cited other benefits like increased agility and improved decision-making.

The survey also reveals that only a paltry 2 percent of respondents believe their agency is currently “highly successful” when it comes to executing on process and technology innovation. While disappointing, this reflects the reality that 76 percent of respondents said they do not have access to key enterprise data and cannot participate in core business processes from mobile devices. We also asked respondents to identify

FIGURE 1
PRIMARY REASONS FOR EMBRACING NEW TECHNOLOGY



what percentage of business applications are already in the cloud. Seventy-seven percent said 0 to 25 percent of their business applications are available in the cloud, and only 2 percent have 75 percent or more of their applications hosted in the cloud.

While this inability to absorb technology innovation has obvious – and drastic – implications for agency mission-attainment and service delivery, it carries another threat as well for the future of the “graying” public-sector workforce. If government agencies want to attract the best and brightest of rising generations to public service, they must provide a compelling work environment, complete with modern tools. The percentage of US Federal Government employees under the age of 30 hit an eight-year low of 7 percent in 2013, compared with about 25 percent for the private sector workforce. In 1975, more than 20 percent of the federal workforce was under 30.⁶ Recruiting and retaining a “future ready” government workforce is critical. Without the talent, how can agencies move forward?

MODERNIZATION MATTERS...SO, WHAT’S THE HOLD-UP?

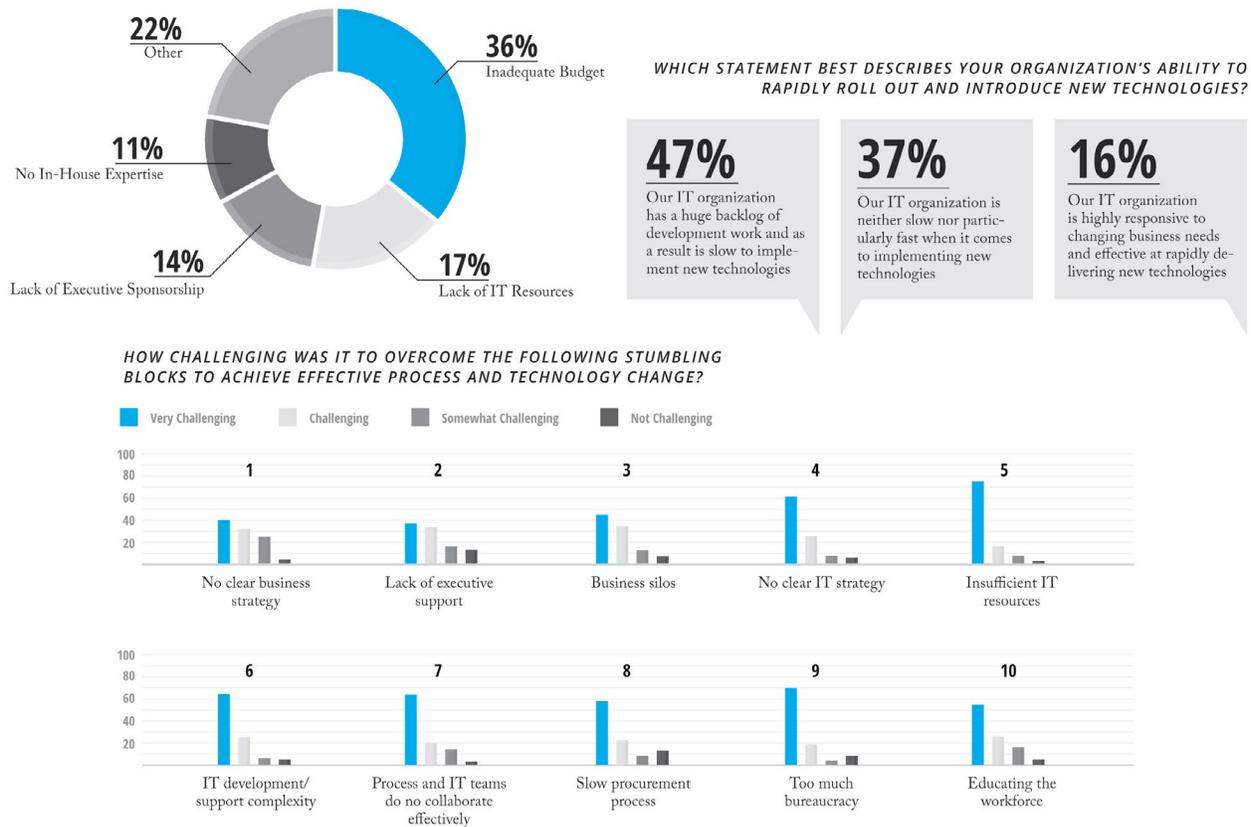
Government organizations are clearly aware of all of the trends discussed above, and are attempting to follow the lead of the private-sector. The Administration’s 2012 memo “Digital Government – Building a 21st Century Platform to Better Serve the American People” begins by stating:

“Today’s amazing mix of cloud computing, ever-smarter mobile devices, and collaboration tools is changing the consumer landscape and bleeding into government as both an opportunity and a challenge. New expectations require the Federal Government to be ready to deliver and receive digital information and services anytime, anywhere and on any device. It must do so safely, securely, and with fewer resources. To build for the future, the Federal Government needs a Digital Strategy that embraces the opportunity to innovate more with less, and enables entrepreneurs to better leverage government data to improve the quality of services to the American people.”⁷

The points of emphasis in the memo were the right ones: faster solutions and shared services through cloud computing, comprehensive mobility, and an information-centric approach that makes data easier to find, manage, and use for faster decisions and actions. While the principles were and remain sound, progress towards them has been slow. Why is that?

According to the GovLoop survey responses, the most common reason cited (36 percent) was inadequate budget. Lack of IT resources and lack of in-house expertise were stated by another 28 percent. These answers are closely linked to another survey question where 47 percent of respondents said their IT organization “has a huge backlog of development work and as a result is slow to implement new technologies.” In addition, the survey asked about the primary application development drivers within government agencies, and found that nearly half of respondents (46 percent) cited the need to reduce the cost of development.

FIGURE 3
CHALLENGES FOR DIGITAL TRANSFORMATION



All of these responses need to be peeled back a bit, because they are all related and they all point to the need for a fundamental change in how government agencies approach application development.

Here's the reality: Federal government's IT spending will be cut by \$2.4 billion in 2015. State and local governments will also suffer decreases in IT and support service budgets. In short, there is no “new” money to throw at this problem. That means no gains in IT staff resources are coming soon. It means the “in-house

Upwards of **75%** of government agency IT budgets were consumed by O&M in 2014.

expertise” currently lacking – for example, coders with experience writing in a variety of development languages across multiple platforms – will, for the most part, remain lacking. It means that backlog of projects will continue to move at a glacial pace. But, despite budget cut-backs, government agencies still spend an enormous amount of money on IT. Is it really all spoken-for? The answer is yes, but not for innovation. It is dedicated to “IT janitor” work – what’s called Operations & Maintenance – and it means just keeping the lights on, not investing for growth. In 2014, O&M consumed upwards of 75 percent of government agency IT budgets.⁸

In addition to all of these obstacles, government IT teams face increasing levels of demand from agency business units, creating frustration and friction within agencies. As one survey respondent put it, “Innovation is occurring within our in-divisional business units [but] our technology team takes too long to do anything.”

It is not IT’s fault. Government IT teams are doing their best, but they are currently operating under an unsustainable model. Thankfully, there is now a better way.

A PLATFORM TO CROSS THE DIGITAL DIVIDE

The GovLoop survey research report shows that to meet the complex demands of public-sector missions, IT organizations must explore new models for delivering innovative business apps more quickly, and at lower cost. This will allow their agencies to be more efficient and effective in public-sector mission attainment and service delivery.

In the survey responses, cloud computing, mobility, data, and social collaboration topped the list as the core IT framework for process transformation. The comprehensive solution to realize such a framework for 21st Century digital government is a single application development platform that unites those capabilities in a tightly integrated fashion while removing the complexity and rigidity of traditional coding.

Appian’s Business Process Management-based Application Platform does precisely that, accelerating the infusion of innovation throughout an agency while also reducing development cost and increasing application flexibility and extensibility. Appian enables the creation of powerful and modern business applications with virtually no coding. Instead, it uses a visual drag-and-drop approach to application composition that accelerates initial application creation, and facilitates easy iterative enhancement as requirements change over time. This provides a level of application flexibility and adaptability that is impossible to match through rigid hard coding, and it is a crucial advantage. 51 percent of GovLoop survey respondents said their agencies need better and faster capabilities for capturing business requirements. Appian allows business and IT to work collaboratively through a common and simple visual language to not only capture initial requirements more quickly, but to rapidly implement changes in deployed applications as conditions change.

Appian also alleviates the barriers to broad agency data and process mobility. With Appian, mobile is free. Applications are written once, and instantly render natively on the desktop and mobile devices with no additional effort, and no extra on-going maintenance. IT no longer needs to staff in-house experts for multiple platforms. Appian masks that complexity, allowing agencies to simply reap the benefits of a mobilized workforce. And every Appian app comes with embedded enterprise-grade security to accommodate the most demanding agency needs.

Appian also provides a modern cloud architecture that overcomes the common obstacles to cloud deployment within the government – namely, risk and security. Appian is able to provide a unique portable architecture because Appian Cloud is the exact same product as Appian on-premise. This means agencies can easily move entire applications from the cloud to behind the firewall, or vice versa, or support hybrid environments that take advantage of cloud scalability and speed while still keeping required data on-premise. In the cloud, Appian provides industrial security that is hard to match even in the most secure on-premise environments. Appian Cloud security features include localized hosting across the US, Europe, Latin America, Australia, and Asia, security certifications including PCI compliance, SOC 2, FISMA Moderate, and many more, and single sign-on with protocols including SAML, LDAP, and Active Directory authentication.

Appian Records is a core feature that unifies all agency data from across systems and processes in a single location, providing a comprehensive view of any topic. Records is tightly integrated with Appian’s industry-leading process management capabilities, allowing government employees to go from insight to action in a single environment. And everything is Appian is presented through an intuitive social collaboration interface that requires virtually no training. The result of all of these integrated capabilities is broader awareness of important events and data changes, acceleration of that awareness into knowledge on which to base decisions, and rapid execution of those decisions through structured and ad-hoc action – all of which is automatically captured in audit trails for easy reporting.

CONCLUSION

Government agencies want to modernize their operational processes for cost reductions, improved service delivery and accelerated mission fulfillment. Digital transformation technologies such as cloud computing, enterprise mobility, data/analytics and modern business process management (BPM) solutions can help information technology departments achieve these goals and deliver 21st-century government services.

Government IT teams are hamstrung by current structures that prevent them from infusing their agencies with modern cloud, mobile, data management, process management, and collaboration capabilities. This means the business application solutions those teams are able to deliver are already legacy by the time they are available.

Innovative business capabilities, as expressed through modern business applications, are vital to meeting agency goals, which according to the GovLoop survey respondents are:

1. Improved organizational productivity and efficiency (81 percent)
2. Improved customer service (72 percent)
3. Ability to meet compliance requirements (61 percent)
4. Reduced operational costs (60 percent)
5. Faster dissemination of information through the organization (46 percent)

Using a new approach to application development, such as that offered by Appian, dramatically accelerates IT’s ability to deliver innovation and drive the evolution of 21st Century digital government. This approach is not just better. It is crucial for overcoming current IT challenges and meeting the expectations of the Administration, agency leadership and employees, and citizens.

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Appian

Appian provides a leading low-code software development platform that enables organizations to rapidly develop powerful and unique applications. The applications created on Appian's platform help companies drive digital transformation and competitive differentiation

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