Use Technology to Enhance Productivity

by Mark Forman

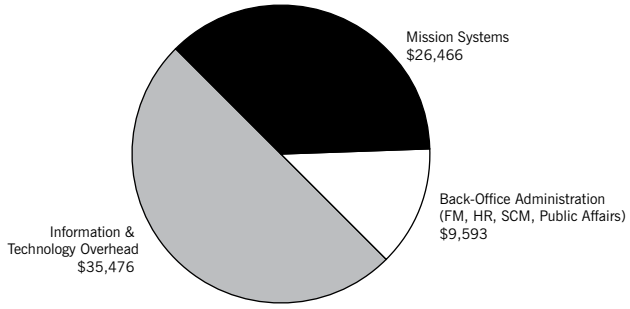
The Problem

Government today spends more on information technology (IT) overhead costs than on the direct costs of mission systems. This is because government now has thousands of mission systems using legacy architecture, each built for a single purpose to support the needs of a single program or agency. Common standards, common definitions of like data, or enterprise approaches are rarely used in the federal government. Government does not often leverage IT to make things simpler, generate economies of scale, or increase collaboration. Over the last 20 years, mission systems have become more customized and focused on single programs or needs, making government information systems at once more siloed and complex.

Customized mission systems require expensive tools and large specialized staffs to manage complex operations and maintenance activities. The Government Accountability Office reported in October 2011 that $26.5 billion is spent on systems that directly support agencies in the performance of their missions, while $35.5 billion is being spent on overhead costs to manage those systems (see Figure). The following questions need to be answered in order to get more value out of government IT spending:

- Why does the government spend more on managing IT than on the mission systems themselves?
- How would the government benefit from new technologies, and what specifically should be done to change government's current IT infrastructure?
- What is the role of the chief information officer (CIO) in addressing the cost and use of IT?

Spending on Systems Management Exceeds Spending on Systems (Government IT Spending In $B)



Source: U.S. Government Accountability Office. Information Technology: OMB Needs to Improve Its Guidance on IT Investments, GAO-11-826, September 2011.

A New Strategy for Government IT

In today's difficult budget environment, government needs to cut costs and improve results. In addition, today's policy issues require data, analysis, transparency, and program operations that cut across multiple government agencies. Since government's operations are information-intensive, its ability

to operate effectively and efficiently depends on how well it uses IT to access and manage information. Government's long-standing approach is to buy and customize systems for individual program needs at each agency. This approach separates information and operations into silos that constrain government's efficiency and effectiveness.

Government needs a new strategic approach to IT. A new strategy would use cloud computing architectures to create less complex, less costly, and more collaborative tools. The new strategy would use new IT tools to improve the timeliness, performance, and cost-effectiveness of government operations. The federal government's current IT reforms focus on reducing IT spending (which accounts for less than 0.01% of federal spending this year). Instead, redirecting current IT spending to focus on improved mission operations of government would be a more beneficial and cost-effective strategy. Specific benefits of a new strategy would include fewer erroneous payments, reduction of risk in loan guarantee programs, quick identification of effective and ineffective programs, and reduced cost of government operations.

Implementing a New IT Strategy for Government

Many argue that government productivity is now directly tied to how effectively it uses IT. Government should take advantage of new approaches for rapid deployment of IT capabilities by acquiring IT as a service; this practice is now commonly referred to as cloud computing. Instead of new capabilities requiring large capital investments and years of sophisticated project management, today's cloud computing services improve agility, cost-effectiveness, responsiveness, openness, and results from government programs. Many cloud computing services are now widely recognized brands, such as Salesforce.com, Google, and ADP Payroll Services.

The 21st-century IT infrastructure is being built around cloud computing, enabling organizations to adopt a new productivity model. Cloud computing incorporates both a continuation of the long-term trend toward automation and commoditization of transactional processes and a newer, rapidly growing trend toward broader access to problem-solving tools.

How can government use cloud computing to improve efficiency and effectiveness? A successful strategy would focus on transforming two types of business processes:

- **Transactional government operating processes, including payments, inventory management, commodity purchases, and report filing.** These should be simplified and standardized into repeatable, low-error rate automated tools that take advantage of economies of scale.
- **Government analysis and decision-making processes,** which should be transformed into team-based problem-solving environments that collaborate with government and non-government experts, leverage new data sources, and employ new analytic tools.

Transactional government operating processes. This productivity improvement strategy builds upon long-term trends in automation and commoditization. Back-office operations of government are among the biggest opportunity areas, since they account for $9.6 billion of federal government IT spending and comprise human resources, financial management, supply chain management, procurement, public affairs, and similar systems. Today, these are acquired, customized, and managed as siloed systems, even when the government buys the integrated end-to-end business process software.

A good example of the potential of cloud computing to assist in back-office operations is in the area of unmatched, or unreconciled, funds. Today, government bears the cost of significant growth in both unmatched funds and staff years devoted to reconciling transactions produced by these systems. As of 2010, the unmatched funds for the federal government totaled $17.4 billion. It is hard to validate the government's calculus of spending about $9 billion per year and generating nearly twice that in accounting errors that cannot be reconciled, as well as the untold staff hours spent reconciling billions more. If government adopts cloud computing services, it will be forced to use standard practices and shared services.

Government analysis and decision-making processes. Cloud computing tools enable more rapid, high-quality problem-solving to improve productivity. Studies show that problem-solving improves when people develop ideas and then use tools to share those ideas in a collaborative environment. As a result of IT infrastructure changes made to implement the 9/11 Commission findings, there has been significant progress in the area of counterterrorism. Other examples include the Recovery Accountability and Transparency Board's use of transparency concepts and tools. Using these tools, citizens identified potential fraudulent behavior, yielding 7,600 complaints from the public that have led to about 1,650 investigations for fraud, waste, and abuse. Both of these advances resulted from the adoption of cloud computing approaches and tools for collaboration, data sharing, and analytics.

Making It Happen: Recommendations

Government will have to change the way it has traditionally bought and managed IT. It must now move to a service-based construct. As an outgrowth of the new strategy, the following will need to change:

- The role and function of the chief information officer
- IT capital investment and spending processes
- IT purchasing processes

Over the past 10 years, technologies (such as virtualization) and IT security and privacy concerns have driven chief information officers (CIOs) toward being the "chief geek" or "control gate" on agencies' use of technology. CIOs will have to become the change agent for modernizing government in the 21st century, and that includes changing their own operations. To implement the new strategy of using cloud computing, we recommend the following.

Recommendation One: CIOs will have to maintain traditional IT controls, while developing new paradigms for managing IT-as-a-service models.

Increased use of cloud e-mail tools is just the tip of the iceberg. Many fear the growing cyber threat environment will be exacerbated by cloud computing. Done correctly, cloud-based solutions offer better security than government data centers, which now contain much redundant data.

CIOs will need to develop and obtain agency agreement on a hybrid cloud computing vision that provides advantages of ownership (including security and privacy controls), while rapidly obtaining the benefits of new tools and economies of scale.

Recommendation Two: In the immediate future, CIOs will need to identify and prioritize replacement of legacy IT with new cloud-based service models.

The new approach must recognize that government is no longer dependent on its own IT organization, and that the discussion must focus on which cloud computing tools can drive big gains in mission operations productivity. The emerging CIO role will be IT services brokering and sourcing, including overseeing the identification, evaluation, and acquisition of cloud-based services for transactional business processes, data, analytical tools, and collaboration. At the same time, the CIO has to create and maintain robust enterprise information assurance services. The CIO must be both the chief geek and identifier of strategic use of emerging IT solutions. ◘

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