INFORMATION TECHNOLOGY REFORM

Progress Made but Future Cloud Computing Efforts Should be Better Planned

Why GAO Did This Study

As part of a comprehensive effort to increase the operational efficiency of federal technology assets, federal agencies are shifting how they deploy IT services. OMB issued a "Cloud First" policy in December 2010 that requires federal agencies to implement cloud-based solutions whenever a secure, reliable, and cost-effective cloud option exists; and to migrate three technology services to a cloud solution by June 2012. Cloud computing provides on-demand access to a shared pool of computing resources; can be provisioned on a scalable basis; and reportedly has the potential to deliver services faster, more efficiently, and at a lower cost than custom-developed systems.

GAO was asked to (1) assess the progress selected agencies have made in implementing this policy and (2) identify challenges they are facing in implementing the policy. To do so, GAO (1) selected seven agencies, analyzed agency documentation, and interviewed agency and OMB officials; and (2) identified, assessed, and categorized common challenges.

What GAO Recommends

GAO is making recommendations to seven agencies to develop key planning information, such as estimated costs and legacy IT systems' retirement plans for existing and planned services. The agencies generally agreed with GAO's recommendations. State disagreed with one recommendation, noting that legacy retirement plans were not applicable to its existing cloud services. GAO maintains that the recommendation is applicable for reasons discussed in this report.

View GAO-12-756. For more information, contact David Powner at (202) 512-9286 or pownerd@gao.gov

What GAO Found

The selected federal agencies have made progress implementing the Office of Management and Budget's (OMB) "Cloud First" policy. Consistent with this policy, each of the seven agencies[1] incorporated cloud computing requirements into their policies and processes. For example, one agency had incorporated a review of its information technology (IT) investment portfolio to identify candidates for a cloud solution into its IT plan. Further, each of the seven agencies met the OMB deadlines to identify three cloud implementations by February 2011 and to implement at least one service by December 2011. However, two agencies do not plan to meet OMB's deadline to implement three services by June 2012, but plan to do so by calendar year end, ranging from August to December. Each of the seven agencies has also identified opportunities for future cloud implementations, such as moving storage and help desk services to a cloud environment. While each of the seven agencies submitted plans to OMB for implementing the cloud solutions, all but one plan were missing key required elements. For example, 7 of the 20 plans did not include estimated costs and none of the plans for services that were to migrate existing functionality to a cloud-based service included plans for retiring or repurposing the associated legacy systems. According to agency officials, this was largely because the information was not available at the time the plans were developed. Until agencies' cloud implementations are sufficiently planned and relevant systems are retired, the benefits of federal efforts to implement cloud solutions—improved operational efficiencies and reduced costs—may be delayed or not fully realized.

GAO identified seven common challenges associated with the implementation of OMB's "Cloud First" policy.

Common Challenges to Cloud Computing

1.	Meeting Federal Security Requirements
2.	Obtaining guidance
3.	Acquiring knowledge and expertise
4.	Certifying and accrediting vendors
5.	Ensuring data portability and interoperability
6.	Overcoming cultural barriers
7.	Procuring services on a consumption (on-demand) basis

Source: GAO analysis of agency data.

Recently issued federal guidance and initiatives recognize many of these challenges, such as the National Institute of Standards and Technology standards and guidance, and the General Services Administration's program to assist federal agencies certify and accredit potential cloud service providers.

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[1]The selected agencies are the Departments of Agriculture, Health and Human Services, Homeland Security, State, and Treasury; the General Services Administration and the Small Business Administration.

_____ United States Government Accountability Office