The KPMG Government Institute Webcast Series:

Insights into cloud adoption in the public sector: improving cost savings and efficiency

Manolet Dayrit, KPMG
Sri Damaraju, KPMG
Steve Lucas, Indiana Public Retirement system
Geoff Weber, KPMG

April 24, 2012
KPMG Government Institute Webcast Series:

Insights into cloud adoption in the public sector: improving cost savings and efficiency

Welcome and Introduction

Manolet Dayrit

KPMG State and Local Government IT Consulting Leader

The information contained herein is of a general nature and is not intended to address the circumstances of any particular individual or entity. Although we endeavor to provide accurate and timely information, there can be no guarantee that such information is accurate as of the date it is received or that it will continue to be accurate in the future. No one should act upon such information without appropriate professional advice after a thorough examination of the particular situation.
Administrative

- CPE regulations require that online participants take part in online questions:
  - You must be registered and logged in online.
  - You must respond to a minimum of seven questions in order to be eligible for 1.5 CPE credits.
- Pop-up questions will appear on your media player.
- Do not view the presentation on “slide show mode,” or polling questions will not appear.
- To ask a question, use the “Ask A Question” icon on your media player and hit “X” after submitting your question to close the dialogue box.
- Help Desk: 877-398-1471 or outside the United States at +1-954-969-3342
## Upcoming KPMG Government Institute Webcasts

<table>
<thead>
<tr>
<th>Title/Topic</th>
<th>Tentative Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>GASB Update</td>
<td>Thursday 5/17</td>
</tr>
<tr>
<td>Single Audit Update</td>
<td>Thursday 6/21</td>
</tr>
<tr>
<td>Pension Accounting – Part I</td>
<td>Thursday 7/19</td>
</tr>
<tr>
<td>Pension Accounting – Part II</td>
<td>Thursday 8/16</td>
</tr>
</tbody>
</table>

• Registrants for today’s Webcast will automatically be invited to upcoming Webcasts.
• Individuals not on today’s Webcast can register for upcoming Webcasts at [www.kpmginstitutes.com/government-institute](http://www.kpmginstitutes.com/government-institute) or by sending first and last name, company, title, and e-mail address to ljones@kpmg.com.
Your speakers today

- **Sri Damaraju**
  Director, KPMG Advisory practice

- **Steve Lucas**
  Director, Indiana Public Retirement System

- **Geoff Weber**
  Principal, KPMG Federal Management Consulting leader
Agenda

- What is “cloud?”
- IT operating model transformation
- Productivity and collaboration programs
- Telephony: voice in the cloud
- ITSM platform services
- One state’s experience: State of Indiana
- Federal government: issues and perspective
- Q & A
Polling question #1

Which of the following is your organization’s primary industry?

A. Federal government  
B. Higher education  
C. Nonprofit organization  
D. State government  
E. Other
What is “cloud?”
Cloud operating environment

Cloud Environment = Internet-based data access & exchange + Internet-based access to low-cost computing & applications

Cloud Environment Characteristics:

Self-Service On-Demand

Internet Accessibility

Pooled Resources

Elastic Capacity

Usage-Based Billing

Cloud Service Models

Software as a Service

Platform as a Service

Infrastructure as a Service

“SaaS”

“PaaS”

“IaaS”

Cloud Deployment Models

Private

Operated for a single organization

Public

Available to the general public or large industry group, owned by an organization selling cloud services

Community

Shared by several organizations, supporting a specific community
Global SaaS market by function

Collaboration, CRM, and ERM/HR are among the highest growth rate categories

Source: IDC
IT operating model transformation
IT needs to transform into an “IT Services Integrator”

Successful adoption of a cloud delivery model depends on an organization’s ability to establish a robust Enterprise IT Service Integration model.
Planning for the cloud

Different cloud models have varying impacts on IT capabilities so the implementation approach must be based on the selected cloud model and the current maturity of IT capabilities.

Note: most organizations will use a hybrid of various cloud models.
Planning for the adoption of cloud delivery models

Enterprise IT organizations that have successfully adopted cloud delivery models have transformed their IT operating models to focus on integrating their internal and external IT services. This transformation should be holistic, taking into account the required process, organization, and technology elements as well as related risks, services, and financial aspects.

**Process**
- Service provider processes
- Service integrator processes

**Organization**
- Governance
- Organization change management
- Role of IT

**Technology**
- Technology standards and road map
- Integration and interoperability
- Management tools

**Risk**
- Cloud Risks
- Mitigation strategy and controls framework

**Services**
- Service Definition
- Business Services Management

**Finance**
- IT Funding Model and chargeback allocation
Polling question #2

Which best describes your title?

A. CEO
B. CFO
C. CIO
D. Senior director/director
E. Senior manager/manger
F. Other
Productivity and collaboration platforms
Cloud service for end-user productivity and collaboration

More and more public sector entities are looking to cloud productivity solutions as a viable option to traditional, in-house IT services.

<table>
<thead>
<tr>
<th>Traditional Model</th>
<th>Cloud Approach</th>
</tr>
</thead>
</table>
| Applications and infrastructure are installed and maintained within the IT enterprise | - Services for e-mail, collaboration, and communication are provided in an on-demand fashion over Web interface.  
- Computing power and storage is provided by the cloud provider. |
| Client applications are installed on local user devices                          | - Mobile, Web-based “pull” solution allows anywhere access.                                        
- Avoids client software, license management and patch management.               
- Flexible options exist for power users.                                       |
| IT staff is dedicated to supporting productivity services                        | - IT staff focuses on service configuration and service request management.                          
- Vendor provides technical support and financially backed SLAs.                |
| Large initial license fees, followed by ongoing maintenance and support         | - Opex, pay-as-you-go model                                                                            
- One fee per user (by user type)                                               
- Can be less expensive… is more predictable                                    |
A Cloud Productivity suite is a collection of tools that enable collaboration, productivity and communication. The suite is delivered in an on-demand, access anywhere fashion with services provided on a user-based, “pay-as-you-go” model.

**Microsoft Office 365**

**Exchange**
- E-mail
- Calendar
- Contacts
- Anti-Virus
- Anti-Spam
- Web and mobility access

**Office**
- Desktop and Web delivery
- Co-authoring
- Office apps (Outlook, Word, Excel, PowerPoint, Access, etc.)

**SharePoint**
- Intranet and news
- Team sites
- MySites
- Document management
- Offline access

**Lync**
- Instant messaging
- Audio/video calls
- Live meeting
- Presence status
Productivity deployment options

The right solution will depend on an organization’s priorities, environment, and constraints, and must include decision on service delivery model and vendor.

<table>
<thead>
<tr>
<th>Description</th>
<th>Office 365</th>
<th>3rd Party Vendor</th>
<th>On-premise</th>
</tr>
</thead>
</table>
| Pros        | Lower net costs  
               Faster time to market  
               Financially backed SLAs  
               Frees up IT resources | Faster time to market  
               Financially backed SLAs  
               Frees up IT resources | Ability to secure email within it’s enterprise  
               Ability to maintain control |
| Cons        | Vendor reliance  
               Must address actual and perceived technology risks related to regulatory, privacy and compliance | Vendor reliance  
               Worst of both alternatives (client will not have control, nor will the source vendor) | Will require resources and focus  
               Execution risk  
               No external SLAs |
| Costs       | 1st year costs: $1.2M  
               5 year costs: $4.7 M  
               Cost Displacement: Novel, Storage, BIS Servers, Iron Gate | 1st year costs: TBD  
               5 year costs: TBD  
               Cost Displacement: Novel, Storage, BIS Servers, Iron Gate | 1st year costs: $2.0M  
               5 year costs: $6.3M  
               Cost Displacement: Novel, Storage, BIS Servers, Iron Gate |
| Timeline    | 6-9 months | 9-12 months | 18-24 months |

Key Comparative Elements

<table>
<thead>
<tr>
<th>Security</th>
<th>Functionality</th>
<th>Stability</th>
<th>Vendor Support</th>
</tr>
</thead>
</table>

© 2012 KPMG LLP, a Delaware limited liability partnership and the U.S. member firm of the KPMG network of independent member firms affiliated with KPMG International Cooperative (“KPMG International”), a Swiss entity. All rights reserved. The KPMG name and logo and “cutting through complexity” are registered trademarks or trademarks of KPMG International.
What an enterprise has to consider…

Evaluating, selecting, and migrating to cloud productivity solutions requires careful planning and execution… there is no switch to flip.

**Assessment**
- Cloud Feasibility
  - Functionality
  - Financials
  - Data
  - Security
  - Regulations
- Impact Assessment
  - Technology
  - People
  - Process
- Risk Mitigation
- Business Case
- Recommendations

**Planning**
- Requirements
  - User Groups
  - Functional
  - Non-Functional
- Vendor Selection
- Pilot Implementations
- Architecture
  - Email
  - Collaboration
  - Communication
  - Office Tools
- Migration Planning
- Support Vendor Negotiation

**Migration Support**
- Overall PMO Support
- People
  - Change Management
  - Training
- Process
  - Vendor Management
  - Provisioning
  - Operations and Support
- Technology
  - Active Directory
  - Email – data, profiles, .pst files
  - Calendars and address books
  - Anti-virus, anti-spam, anti-malware
  - Legacy Apps
  - Archiving

*Is the cloud right for us?*

*What should our solution be?*

*How do we get there?*
Polling question #3

What is the status of your organization’s current use of a cloud environment?

A. Evaluating the cloud for use in our organization
B. Currently using or testing some aspects of cloud
C. Have embraced cloud and transitioning core business applications
D. Running all core IT services on cloud
E. Planning to implement within next year
F. Planning to implement within next two years
G. Planning to implement after two years
H. Not considering cloud for our organization
I. Don’t know
Telephony: voice in the cloud
Telephony: voice in the cloud

- Traditional voice solutions
  - Based upon PBX services connected to PSTN or Centrex services
  - Provided by local service providers such as AT&T and Verizon
  - Now regarded as legacy systems to be disinvested in

- Over the last decade businesses have moved to Voice over IP (VoIP) Telephony
  - Regarded as similar to e-mail or the Internet; mix of software that can run on open systems combined with specialized voice systems
  - Leverages enterprise data networks
  - Through consolidated voice and data infrastructure and resources they offer:
    - Lower operating costs
    - Broader selection of telephony features
Telephony: voice in the cloud (continued)

- Many business have not made the transition to VoIP due to:
  - Initial investments expended
  - Lack of VoIP expertise
  - Others continue to pay yearly maintenance fees on legacy systems or struggle with VoIP due to various factors

- Cloud-based services, e.g., SaaS have been enabled by:
  - Growth and maturity of the Internet
  - Enterprises are connected to the cloud.

- Voice in the cloud: IT service providers have realized that they can offer VoIP telephony services
  - Like any other SaaS-based application
  - Or alternatively, outsource their IT services
Voice in the cloud – benefits are significant

**Value to Business**
- Agility/Time-to-Market
- Cost
- Transparency
- Increased mobility
- Service options

**Value to IT**
- Reduced infrastructure footprint
- Reduced operational footprint
- Faster provision of services
- “Green” (Improved efficiency of capacity)

Many enterprises are in various stages of cloud adoption, and there are many factors that inhibit the achievement of the stated benefits.
Polling question #4

What type of cloud environment does your organization use or intend to use?

A. Community cloud (rules-based environment shared by many organizations with similar needs)
B. Hybrid cloud (combination of public and private cloud)
C. Private cloud (closed environment for single organization, hosted by third party)
D. Public cloud (shared environment used by many organizations)
E. Cloud is not/will not be used by my organization.
F. Don’t know
ITSM platform services
Cloud services for ITSM

- IT Service Management (ITSM):
  - A discipline for managing IT systems
  - Philosophically centered on *customer's perspective of IT's contribution to the business or enterprise*

- Effective ITSM involves process definition for each function that represents a different aspect of management of the service.

- IT Infrastructure Library (ITIL) – generally regarded as de facto reference model that articulates the various processes that make up the ITSM domain

- ITIL framework is broken down into five domains:
  - Service Strategy – managing investments into new and existing services
  - Service Design – design of services and processes
  - Service Transition – transition of services into operations
  - Service Operation – operation of services to achieve stated objectives
  - Continual Service Improvement – improving services on a continual basis
Cloud services for ITSM-as-a-Service (ITSMaaS)

- Traditional model of enabling the ITSM processes – leveraging platforms such as BMC Remedy ARS, HP Service Manager, CA Service Center, and IBM Tivoli Service Manager
  - Had to first design each of the processes
  - Depending on the platform, configure/customize to conform to the process

- Model required:
  - Identification of process owners (often one per process), platform owners, administrators
  - Periodic, extensive compatibility testing for each new version of the platform released by vendor
  - Maintenance fees
    - Typically 15 – 18 percent of list price of licenses
    - Usually charged per-user-per-module, e.g., Incident and Problem, Change and Release, Service Desk, Configuration, Service-Level Management)
  - Typical model with 400 users could cost about $2 million in license fees alone, excluding hardware and DR infrastructure
ITSM in the cloud – latest platforms that enable ITSM processes are truly cloud services:

- Pay-as-you-go – doesn’t require long-term, multiyear deal; some providers offer monthly contracts.
- Elastic platform – allows for the increase or decrease of the number of users within the organization
- Internet accessible – can access the platform via the internet
- Self-service/on-demand – can increase or decrease the number of licenses through a self-service portal
Cloud service providers are offering:

- Guaranteed/automatic upgrades to latest revisions of the platform, without need for extensive testing of personalizations or configurations
- One licensed user cost for all modules in the platform – typically ranges from $1000 to $1800 per user per year
- “Out-of-the-box” ITIL compliant modules
- High-availability of the platform – 99.5 percent is common
- Some providers offer “operations services” – processes operations are sourced, avoiding need to invest in staff
- Very few service providers offer services on a piece-meal, per module basis.
ITSMaaS – benefits are significant

Value to Business
- Reduced capital expenditures
- Reduced operations expenditures
- Increased flexibility
- Reduced operational risk

Value to IT
- Faster implementation of ITSM framework
- Reduced infrastructure footprint
- Reduced platform administration
- Standards compliance (ITIL)
- Staff training
Polling question #5

Which of the following is the top challenge for your organization to move to a cloud environment?

A. Cost
B. Difficulty integrating cloud with existing systems
C. IT governance
D. Loss of control over data
E. Performance
F. Security
G. Don’t know
H. Other
One state’s experience: State of Indiana
Indiana Public Retirement System (INPRS)

Background:

- Manages defined benefits and defined contributions (retirement funds) for all state employees including police, fire, teachers, and other public employees
- Manages approximately $25B in assets
- Resulted from the merger of the Teachers Retirement Fund and the fund that managed all other public employees

Applications & Infrastructure (A&I) Organization:

- Responsible for the engineering, development, configuration, administration and support of all business applications for Defined Benefits and Defined Contributions
Indiana Public Retirement System (INPRS)

Historical Service Delivery Model:

- All computer, infrastructure and network services are provided by the state’s IT department.
- Phone services and all desktop end-user services are provided by the state’s IT department as well.
- Application support is provided by internal agency resources with state IT providing core infrastructure and back-office services.
## Business Drivers for Change

- Agency embarked on a modernization program to make it easier to make changes to the rules governing the management of the public employee funds.
- The services provided by the state’s IT were deemed insufficiently flexible to provide the service levels envisioned for the new application services.
- Business strategy is to position the organization to opportunistically derive value from emerging IT technologies and trends.
Decision-making Process:

- Given the need for improving service levels and decreasing the risk associated with availability and security, INPRS developed a strategy to identify the best of breed services across the full spectrum of IT services (phone, desktop services, contact center, IT Service Management framework, Computing infrastructure, application development and support).

- INPRS IT is to become a service integrator and not a service provider.

- The business case for the change was signed off by the board of the agency.

- The objective is to support the state’s IT also recognize the various IT services that could be sourced through them – State IT becomes a service integrator as well, not a service creator/provider.
Indiana Public Retirement System (INPRS)

Results:

– Outsourced Data Center services related to the Linux platform to a hosted private cloud provider.

– Phone and Contact Center services have been migrated to a public cloud-based service that has better service levels than those once available through the state and at a lower cost.

– Implemented the Service Desk (End-User requests, End-User Incidents), Change Management, and Release Management on a cloud ITSM platform.

– Currently implementing end-to-end Incident, Problem, and Configuration Management functions as the next phase of the ITSM rollout.
Lessons Learned:

- Working collaboratively with the state IT service in order to identify alternative solutions that can coexist with current services simplifies implementation and reduces execution risk.

- State IT service catalog needs to leverage the new cloud services available in the market; the catalog needs to get more granular in the service levels and functionality offered.

- The model where “one size fits all” in today’s world, does not work.

- IT operating in a “service integrator” model rather than operating in a service provider model offers more flexibility, better service levels, and is better aligned to business needs.

- While there may be less staff required within the service integrator model, having the right skill set is much more critical.
Polling question #6

Which of the following would your organization consider the primary benefit of adopting the cloud?

A. Cost savings  
B. Faster service deployment  
C. Flexibility  
D. Scalability  
E. Security  
F. Other
Federal government: issues and perspective
The federal IT challenge

The federal IT environment:

- $79 billion IT budget for FY13
  - $41.7 billion Civilian Agencies
  - $37.2 billion Department of Defense
- 2,200+ Data Centers
- 10,000+ IT systems
- Duplication in capabilities for IT infrastructure, applications, services, telecommunication
- Excess Capacity (~25% capacity utilization)
- Stovepiped IT functions under lines of business/programs
25-point implementation plan to reform IT

Plan:
- Issued by the US CIO
- Defines actions to drive efficiencies, cost reductions, and to eliminate redundancies in IT across federal government
- Includes:
  - “Cloud First” policy
  - Data center consolidation
  - Transparency associated with progress of major IT Projects

<table>
<thead>
<tr>
<th>“Cloud First” Policy</th>
<th>Data Center Consolidation</th>
<th>Consolidated IT Projects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify three “must move” services within three months, and move:</td>
<td>Consolidating data centers from 2,200+ to 1,400 data centers by 2015</td>
<td>Analyze IT portfolio to identify underperforming IT projects within 18 months</td>
</tr>
<tr>
<td>▪ one service to the cloud within 12 months</td>
<td></td>
<td></td>
</tr>
<tr>
<td>▪ remaining two within 18 months</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Impact of Implementation

- Enhanced efficiencies to reduce the $79 billion federal IT budget
- Consolidating data centers provides an opportunity to leverage cloud services
- Leveraged resources, knowledge, and expertise across agencies
- Allows for more agile and cost-competitive solutions to greatly increase efficiency and effectiveness of services provided to citizens
Since the release of the CIO 25-point implementation plan, the federal government’s adoption of cloud computing is on the rise.

<table>
<thead>
<tr>
<th>Private Clouds Managed by the Government On-Site</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Have implemented</td>
<td>58%</td>
</tr>
<tr>
<td>Plan to implement</td>
<td>64%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Private Clouds Managed by a Third-Party Provider</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Have implemented</td>
<td>44%</td>
</tr>
<tr>
<td>Plan to implement</td>
<td>32%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Public Clouds</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Have implemented</td>
<td>21%</td>
</tr>
<tr>
<td>Plan to implement</td>
<td>20%</td>
</tr>
</tbody>
</table>

Survey of 202 Federal IT decision-makers  
Source: Federal Computer Week
Strategic benefits

Cloud computing has the potential to provide benefits and opportunities to the federal government and its supported beneficiaries.

Cost Savings/Scalability/Elasticity

− Data center consolidation:
  ▪ results in reduced capital outlay on hardware and costs associated with computer operations and software maintenance
  ▪ enables a better understanding of the current IT infrastructure and services to jumpstart IT transformation

− Cloud-enabled capacity can be purchased temporarily, as needed, without requiring long-term capital investment to support short duration needs

− Ability to quickly scale computing resources to match business growth while helping to manage risk
Strategic benefits (continued)

- Improved Flexibility/Business Agility
  - Ability to leverage and reallocate staff and expertise based on business needs
  - Address new or changing federal regulations and business requirements quickly and efficiently
  - Enables quick and efficient response to changes in the way agencies address citizen needs

- Collaboration
  - Enables key federal personnel ability to access computing power of the cloud, regardless of location
  - Offers a single data footprint for calendars, e-mails, documents, and projects making it easier for geographically distributed personnel to collaborate
Polling question #7

Which of the following type of entities would your organization be most likely to select for certification cloud services?

A. Government body
B. Independent nonprofit third party
C. Independent for-profit third party
D. Other
### Federal government cloud initiatives

Agencies are currently adopting a number of cloud computing solutions to optimize their IT portfolio and meet budgetary goals.

<table>
<thead>
<tr>
<th>Agency</th>
<th>Cloud Initiative</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DISA</strong></td>
<td>Defense Information Systems Agency (DISA) has developed a number of Cloud Computing solutions available for Government authorized use. DISA began leveraging cloud computing in 2008 by using virtual server technology to provide on-demand server infrastructure for development teams called the Rapid Access Computing Environment (RACE) and has now introduced numerous cloud offerings. DISA recently migrated the U.S. Army enterprise e-mail capability and is implementing cloud-based collaboration tools.</td>
</tr>
<tr>
<td><strong>USDA</strong></td>
<td>Department of Agriculture’s (USDA) Food and Nutrition Service is leveraging cloud computing for an application to support the Supplemental Nutrition Assistance Program (SNAP). The cloud application, SNAP Retailer Locator, is an online map that enables people to find retail establishments that accept SNAP benefits cards. The application is hosted on a cloud service offered by Amazon since the summer of 2010. The ability to easily scale was key in adopting cloud for the SNAP Retail Locator, as USDA had no way of knowing demand for the application at any given time. In addition, USDA has deployed the Revised Universal Soil Loss Equation (RUSLE2) using an IaaS cloud service model to analyze soil sample across the country by 3,000+ field officers. The application can be accessed via an Android device and is integrated with a distributed cloud-based soils geospatial database that covers 30 million shapes with a &lt;10 ms query response time.</td>
</tr>
<tr>
<td><strong>GSA</strong></td>
<td>General Services Administration (GSA), through the Federal Cloud Computing Initiative, is playing a key role in the president's initiative to modernize IT by identifying enterprise-wide common services and solutions and adopting a new cloud computing business model. GSA coordinates Federal Cloud activities via its Program Management Office (CC PMO). GSA and the CC PMO are focusing on implementing projects for planning, acquiring, deploying, and utilizing cloud computing solutions for the federal government that increase operational efficiencies, optimize common services and solutions to enable transparent, collaborative, and participatory government. Additionally, GSA plans to migrate over 15,000 mailboxes to a cloud-based e-mail solution currently being supported by 17 different Data Centers worldwide.</td>
</tr>
</tbody>
</table>
Federal Agencies in the Cloud

- **DISA**: Software Development, Testing, and Deployment
- **HHS**: CRM and Project Mgmt. for Electronic Health Records System
- **Army**: Recruitment Management
- **USA.gov and internal email and messaging**
- **Energy**: E-mail, Documentation, and Collaboration (Lawrence Berkeley Labs)
- **Interior**: Hosting (IaaS) and development (PaaS) (National Business Ctr)
- **NASA**: Nebula platform for computing, storage, and networking
- **Air Force**: Human Resources Tools
- **GSA**: CRM for its Integrated Partner Contact Database
- **Commerce**: Source: GovWin

© 2012 KPMG LLP, a Delaware limited liability partnership and the U.S. member firm of the KPMG network of independent member firms affiliated with KPMG International Cooperative (“KPMG International”), a Swiss entity. All rights reserved. The KPMG name, logo and “cutting through complexity” are registered trademarks or trademarks of KPMG International.
Polling question #8

Which of the following cloud environments will your organization most likely invest in?

A. IaaS (Infrastructure as a Service – shared computing infrastructure, e.g., services, storage, processing, etc.)
B. PaaS (Platform as a Service – enables developers to write applications to run on cloud)
C. SaaS (Software as a Service – software and applications run business operations over a network)
D. Don’t know
Key perceived challenges

Security has been the greatest concern surrounding cloud adoption at enterprises as identified in the CIO survey results below.

<table>
<thead>
<tr>
<th>Greatest Concerns Surrounding Cloud Adoption at Your Company</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Security</td>
<td>45%</td>
</tr>
<tr>
<td>Integration with Existing Systems</td>
<td>26%</td>
</tr>
<tr>
<td>Loss of Control Over Data</td>
<td>26%</td>
</tr>
<tr>
<td>Availability Concerns</td>
<td>25%</td>
</tr>
<tr>
<td>Performance Issues</td>
<td>24%</td>
</tr>
<tr>
<td>IT Governance Issues</td>
<td>19%</td>
</tr>
<tr>
<td>Regulatory/Compliance Concerns</td>
<td>19%</td>
</tr>
<tr>
<td>Dissatisfaction with Vendor Offerings/Pricing</td>
<td>12%</td>
</tr>
<tr>
<td>Ability to Bring Systems Back In-House</td>
<td>11%</td>
</tr>
<tr>
<td>Lack of Customization Opportunities</td>
<td>11%</td>
</tr>
<tr>
<td>Measuring ROI</td>
<td>11%</td>
</tr>
<tr>
<td>Not Sure</td>
<td>7%</td>
</tr>
<tr>
<td>Other</td>
<td>6%</td>
</tr>
</tbody>
</table>

Note: Respondents selected up to three criteria. Source: CIO Research
Regulatory compliance requirements

- **Authorization to Operate**
  - Formal authorization to operate is mandated by FISMA
  - General Services Administration (GSA) – establishing governmentwide security authorization process (FedRAMP) to facilitate adoption of cloud computing solutions
  - National Institute of Standards and Technology (NIST) – developing cloud-specific security guidance

- **Continuous Monitoring**
  - Required by OMB A-123, FISMA; further defined by NIST Special Publication 800-37 rev.1
  - Internal control evaluations could:
    - extend to cloud-based applications
    - require evaluation of emerging issues, e.g., end-user control responsibilities for browser security, mobile device security, user provisioning and data encryption standards
  - Reporting by cloud service organization may change due to introduction of “SOC 2” reporting by the AICPA

- **Privacy (Privacy Act, OMB 06-16, 07-16)** – Agencies are required to comply with Privacy laws and OMB privacy regulations and should consider those requirements when evaluating cloud solutions.
### FedRAMP phases and timeline

Phased FedRAMP implementation approach with cloud service providers and users

<table>
<thead>
<tr>
<th>FY12</th>
<th>FY12</th>
<th>FY13</th>
<th>FY14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-launch activities</td>
<td><strong>Initial operational capabilities (IOC)</strong></td>
<td><strong>Full Operations</strong></td>
<td><strong>Sustaining Operations</strong></td>
</tr>
<tr>
<td>Finalize requirements and documentation in preparation of launch</td>
<td>Launch IOC with limited scope and cloud service provider (CSPs)</td>
<td>Execute full operational capabilities with manual processes</td>
<td>Move to full implementation with on-demand scalability</td>
</tr>
</tbody>
</table>
| • Publish FedRAMP requirements (security controls, templates, guidance) | • Authorize CSPs  
• Updated CONOPS, continuous monitoring requirements and CSP guidance | • Conduct assessments and authorizations  
• Scale operations to authorize more CSPs | • Implement electronic authorization repository  
• Scale to steady state operations |
| • Accredit 3 PAOs  
• Establish priority queue | • Initial CSP authorizations  
• Established performance benchmark | • Multiple CSP authorizations  
• Defined business model  
• Measure benchmarks | • Authorizations scale by demand  
• Implement business model  
• Self-sustaining funding Model covering operations  
• Privatized accreditation board |
| • Initial list of accredited 3 PAOs  
• Launch FedRAMP into initial operating capabilities | | | |

**Source:** “Federal Cloud Computing: Moving to Cloud Smart; GSA. OCSIT”
Final thoughts on adoption

Key Considerations in the Cloud Adoption Process

- As an element of the IT Strategy, develop a cloud strategy and road map, identifying opportunities and business cases to leverage cloud capabilities.

- Develop a cloud computing technical framework, use cases, and requirements of functional capabilities to be provided by clouds, and identify qualification criteria for each type of cloud service.

- Develop a cloud computing portability/interoperability reference architecture.

- Develop transitional architectures and implementation plans with multiple layers of system components (IaaS, PaaS, DaaS, and SaaS) from the cloud service consumer and provider perspectives.
Final thoughts on adoption (continued)

− Establish key requirements to include in service-level agreements, expectations and monitoring (disaster recovery, contract termination, migration).

− Support readiness for compliance, certification reviews.

− Evaluate the need for SOC2 or SOC3 assessment and reports for service providers.
Polling question #9

How does your organization plan to measure return on its investment in cloud?

A. Access to geographies, customers, constituents
B. Cost savings
C. Productivity
D. Revenues (fees, tax receivables, etc.)
E. Other
F. Cloud ROI not measured
Q & A
Closing items

- Replay this and previous KPMG Webcasts through the KPMG Government Institute at kpmginstitutes.com/government-institute.

- If you are eligible for CPE credit for today’s session, you will receive the certificate electronically in four to six weeks.

- Please complete and return the evaluation form for today’s Webcast, located in the “Downloadable Files” section (lower right corner) of your screen.

THANK YOU FOR JOINING THE KPMG GOVERNMENT INSTITUTE’S WEBCAST TODAY.
Contacts

Manolet Dayrit
212-872-3854
mdayrit@kpmg.com

Sri Damaraju
973-912-4566
srdamaragu@kpmg.com

Steve Lucas
317- 234-6021
sflucas@perf.IN.gov

Geoff Weber
703-286-8480
glweber@kpmg.com

Rick Wright
617-988-1163
richardwright@kpmg.com

© 2012 KPMG LLP, a Delaware limited liability partnership and the U.S. member firm of the KPMG network of independent member firms affiliated with KPMG International Cooperative ("KPMG International"), a Swiss entity. All rights reserved. The KPMG name, logo and "cutting through complexity" are registered trademarks or trademarks of KPMG International.
The information contained herein is of a general nature and is not intended to address the circumstances of any particular individual or entity. Although we endeavor to provide accurate and timely information, there can be no guarantee that such information is accurate as of the date it is received or that it will continue to be accurate in the future. No one should act upon such information without appropriate professional advice after a thorough examination of the particular situation.