Draft for Discussion
Subject to Revision

FEDERAL INFORMATION TECHNOLOGY SHARED SERVICES STRATEGY

"Shared First"

December 8, 2011

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I. Overview

"Shared First" is the foundational paradigm for this Federal Information Technology (IT) Shared Services Strategy, which provides Federal agencies with guidance on the identification, implementation, and operation of shared services for commodity, support, and mission IT functions. The strategy is part of IT Reform #6 ("Develop a strategy for shared services") of the 25-Point Implementation Plan to Reform Federal Information Technology Management[1] that seeks to increase return on investment (ROI), eliminate waste and duplication, improve the effectiveness of technology solutions, and reduce costs through shared approaches to program activities.

This document reflects current thinking regarding the Federal Government's approach to Shared IT Services and incorporates preliminary feedback from the Federal CIO Council, Agency Chief Architects, and Managing Partner Agencies (for existing services). It is intended as a discussion draft and will evolve based on: input from agencies as they move towards shared IT services models; additional review from across the public sector; and feedback from industry, academia, and other interested groups. The final strategy document will be released in April 2012.

Please provide feedback, as relevant, to egov@omb.eop.gov with subject line of "Shared First" by January 31, 2012.

The Need to Do More with Less

There are nearly 300 organizational entities in the Federal Government that employ more than 2.6 million people who operate over 10,000 IT systems providing a myriad of manual and online services to customer groups that include citizens, industry, and other agencies at the Federal, state, local, tribal, and international levels.

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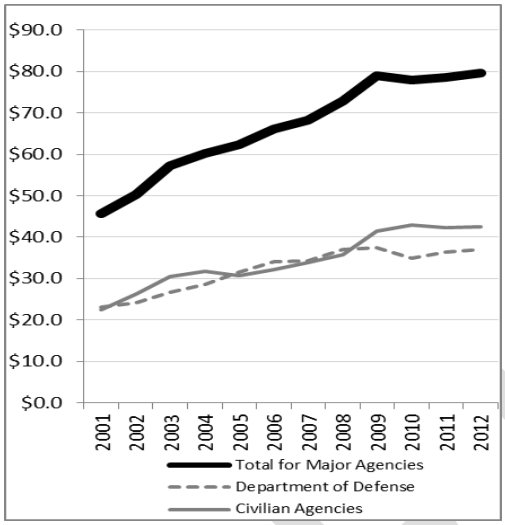
[1] http://www.cio.gov/documents/25-point-implementation-plan-to-reform-federal%20it.pdf

Annual spending on IT by the Executive Branch has increased steadily during the past decade to nearly $80 billion for unclassified systems and programs, as shown in Figure 1 below.



Source: OMB, Annual Exhibit 53 Totals

Figure 1: Annual Federal IT Spending in $Billions (2001-2012)

However, given current fiscal constraints coupled with increasing mission requirements, rising customer expectations, and the evolving landscape of Federal IT, Federal agencies must find ways to do more with less funding. For agency CIOs this means that they must:

- Deliver solutions faster, for less money, and with fewer resources;
- Develop authoritative future-ready architectures and standards to guide investment;
- Take advantage of evolving technologies and methodologies to work more nimbly, while also improving quality and flexibility.

For the Federal Government overall, it means reducing the wasteful spending that results from the building of duplicative IT solutions. For example, a review of over 7,000 agency IT investments submitted in Fiscal Year (FY) 2010 revealed hundreds of redundancies in support and commodity IT resources across the Federal Government and billions of dollars in potential savings through consolidation and shared services (Figure 2).

Area	USG # Invest.	Cost ($M)
Planning & Budgeting	222	$515
General Government	182	$1,209
Administrative Management	197	$578
Financial Management	311	$1,650
HR Management	276	$751
IT Management	1,035	$17,371
Supply Chain Management	122	$362

Source: FY 2010 OMB Exhibit 53

Figure 2. Potential Shared Service Opportunity Areas

Federal agency CIOs are positioned for leadership in this effort. As providers of IT solutions they assist their department or agency in the redesign of functional activities and processes. They also bring a unique cross organizational perspective that can be used to identify commonalities and redundancies and assist program managers in working with other organizations within their departments or across agencies.

Shared Services Strategy

The Shared IT Services Strategy entails a phased approach consisting of agency implementation activities that build upon one another, beginning with intra-agency commodity IT, moving to inter-agency commodity and support IT, and culminating with improvements in mission IT. This reflects a crawl, walk, run approach in terms of dealing with the complexity of implementing shared IT services and allows agencies to gain proficiency in areas that represent "low hanging fruit" (Figure 3).

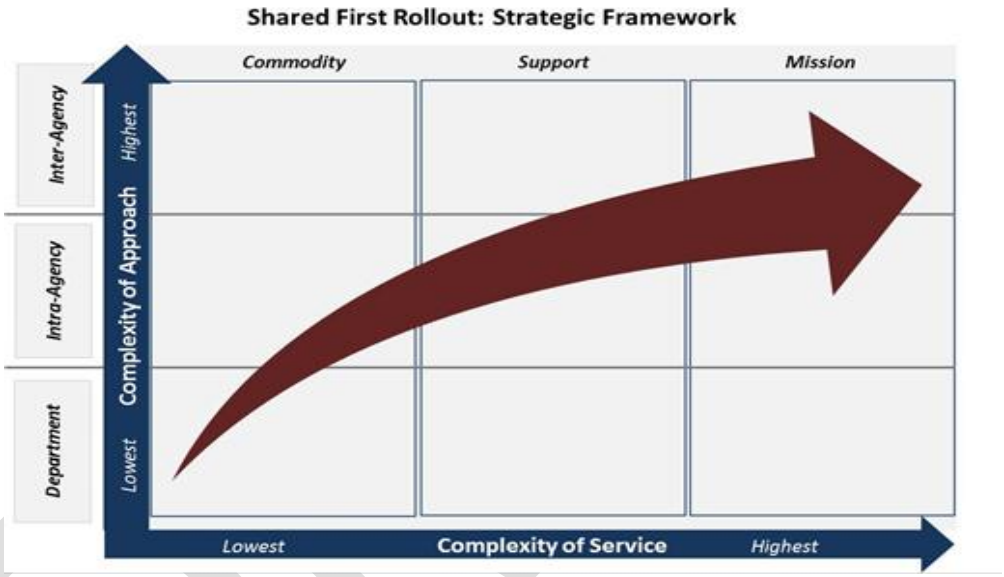


Figure 3. Shared Service Implementation Concept

The primary focus of this strategy is on consolidating intra-agency commodity IT services as outlined in OMB Memorandum M-11-29[2] to realize the improvements to both efficiency and service delivery possible through broader adoption of intra-agency commodity IT services.

As a parallel activity, existing LoBs will be assessed by Managing Partners. This approach will allow us to first build a robust base of capabilities before moving towards more complex, inter-agency and mission-focused services.

[2] http://m.whitehouse.gov/sites/default/files/omb/memoranda/2011/m11-29.pdf

The implementation activities for 2012 are designed to kick-start the move to intra-agency shared IT services, while ensuring that agencies have a suite of high-quality services from which to choose. Leading up to the release of the final strategy document by April 2012, by March 1, agencies will be asked to:

- **Implement a Shared First Plan** – Each agency will develop a shared services plan that includes, at minimum, two commodity IT areas for migration to a shared environment by December 31, 2012, with an initial focus on consolidation at the intra-agency level.
- **Assess & Benchmark Existing Lines of Business –** Each existing LoB will assess current services and develop benchmark metrics to measure quality and uptake of services provided;
- **Develop Roadmaps for Modernization & Improvement of Existing Services –** Each Managing Partner will develop a roadmap for improvement of existing services. Agencies and OMB will work together to monitor progress toward these goals throughout the year.

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II. Implementation Strategy

Widespread adoption of shared IT services will help create a Federal Government that is leaner, more agile and more efficient. Leveraging commodity IT services at the department level within agencies presents quick win opportunities, and is typically less complex to implement and easier to manage than efforts between agencies.

By implementing a phased approach and focusing first on intra-agency commodity IT service areas with existing service provision frameworks, a strong base of knowledge around shared IT services will be developed. Once this base is solidified, the Shared First strategy will evolve along the value chain, creating new opportunities in core mission areas.

Figure 4 below provides an overview of the Shared First Strategic Framework.

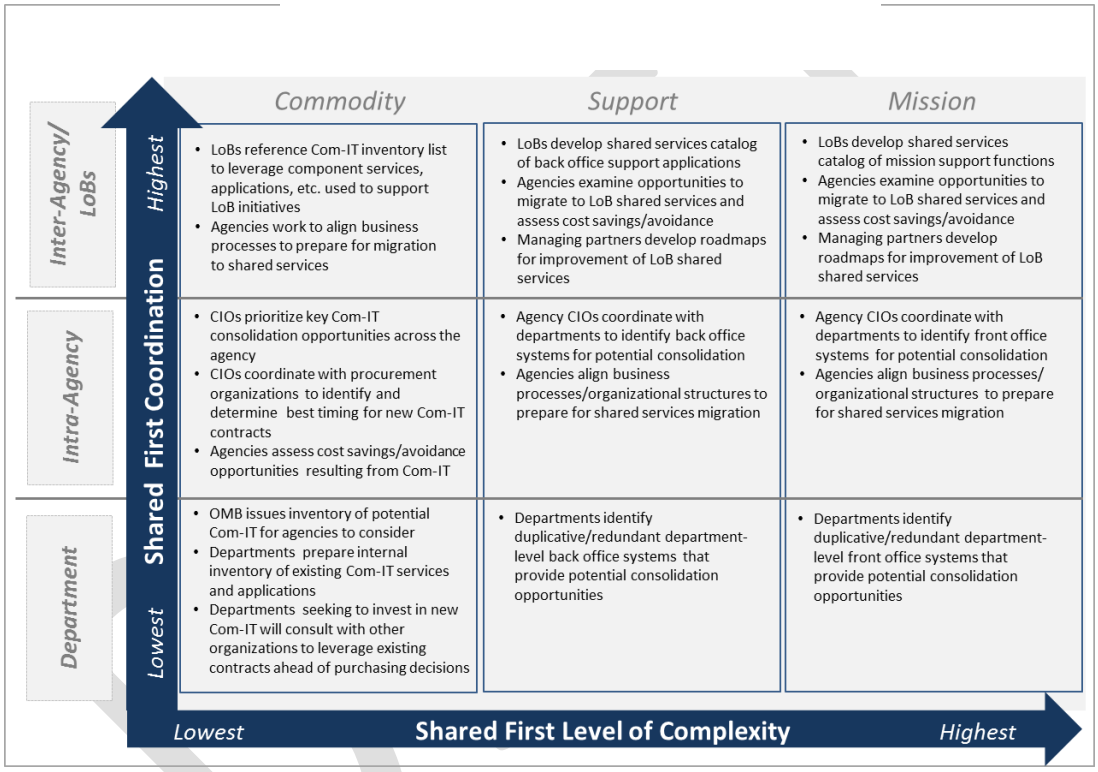

Figure 4. Implementation Path

Overall, the approach is segmented into the following phases:

- **Expand Intra-Agency Shared Services for Commodity IT –** Greater mission effectiveness and cost efficiency can be achieved through the adoption of shared services. This is especially true for large agencies and sub-agencies where there may be dozen(s) of business processes that meet strategic and/or tactical requirements in a number of lines of business / programs, yet due to the current design are "stove-piped" as they serve only one consumer group in that agency. M-11-29 requires CIOs to focus on elimination, duplication, and rationalize their portfolios in these areas. Accordingly, these services are the first building block of the overall strategy to move toward shared IT services.

- **Leverage Existing Efforts to Develop the Next Generation of Inter-Agency Shared IT Services –** The Shared First approach will leverage current LoBs and existing inter-agency shared IT services to develop the next generation of inter-agency shared IT services. Managing Partner agencies will be required to create and implement roadmaps for the improvement of these services. It is imperative that the LoBs be assessed and strengthened, as they will compose the base upon which future inter-agency initiatives will be built. The current phase of the strategy will focus on strengthening and expanding the LoBs and accelerating the adoption of inter-agency shared IT services across the government.

- **Drive Shared Services Delivery Through Higher ROI Investments –** Once this broad base has been established, the government will be prepared to move along the value chain to provide both intra and inter-agency shared IT services in mission areas. While it is significantly more complex to offer these types of services on a shared basis, they also have the potential to create far greater organizational efficiencies.

Policy Considerations

A number of barriers exist which have prevented the broader adoption of shared IT services. Lack of information sharing among Federal agencies, budgetary restrictions, acquisition issues, and other factors have all contributed to a culture in which proprietary, specialized systems are the norm. Some of these issues are being addressed; for instance under IT Reform #17, OMB is working to improve the flexibility of agency budgets in order to ameliorate some of the artificial restrictions created by traditional funding structures. To help address the remaining roadblocks, OMB has stated that a Shared First approach to service delivery and a Future First approach to architecting agency services are to be adopted by all Federal agencies.

Shared First

Wherever a business process or IT function can be reasonably altered in order to utilize an existing asset as opposed to performing new development, agencies must do so. By changing the "default setting" for IT investment decisions from the development of new components to the utilization of existing resources, agencies will be able to do more with less and streamline their operations.

Future First

Given the rapid pace of change in technology, it's not enough to just build technology solutions that meet the government's needs today. This is why the Federal CIO has launched the Future First initiative to help the government continuously architect for the future. As it stands, agency IT investments are so highly specialized and difficult to integrate with one another that it is often less expensive to acquire a new proprietary system than to share existing systems.

Future First is a set of principles for agencies to consider when embarking on planning, development, and modernization efforts. OMB has identified an initial set of Future First principles, which currently include the broad adoption of XML, virtualization, and other open standards. These principles will evolve as technology advances. These new default settings for architecting IT solutions will allow investments that are made today to take advantage of opportunities that will reveal themselves in the future, while laying the groundwork for greater interoperability. By agreeing to and implementing common standards across the Federal Government, we will ensure that agency assets are prepared to share data and functionality with one another in the coming years.

Each shared IT service offering must have a business and technology architecture that fits the operating model and supports new Future First Federal EA methods. There are a number of general design principles that apply to Future First architectural designs for shared IT services, including:

- Multiple consumers for each service, with minimal customization;
- Process standardization (commercial product/workflow adoption);
- Web-based solutions with standardized application interfaces;
- Object reuse, machine-readable data, and XML data formats;
- Cloud-based application hosting and virtualization of servers;
- Security controls and continuous monitoring of service operations;
- Configuration management and version control.

Strategy Implementation Plan

The Shared IT Services Strategy implementation during the 2012 calendar year will consist of the following steps:

1. Shared IT Services Strategy Information Sessions

Starting in December 2012, OMB will lead a series of information sessions to discuss the Shared IT Services Strategy in depth with agencies. Agency feedback will be solicited and used to inform development of the final strategy for release in April 2012.

2. Identification/Migration of Two Areas to a Shared Environment by the End of 2012

To kick-start the adoption of shared IT services, agencies are asked to develop a shared services plan and to identify (at minimum) two commodity IT areas for migration to an intra-agency shared service model by the end of 2012. For each candidate area, agencies should:

- Determine sources of value
- Assess readiness

- Assess current market offerings
- Address business process changes
- Develop cost-benefit analyses

3. Shared Service Assessment & Benchmarks

Managing Partners for existing LoBs (and E-Gov Initiatives, as relevant) will prepare an assessment report for OMB of each shared service area. This assessment will focus on:

- How to improve the quality of the shared service;
- How to increase customer uptake (how many customers – other agencies – are actually subscribing to the shared service out of the total potential subscriber population)?

The assessment should also discuss challenges and opportunities that the shared service area presents, such as needed adjustments to funding models, service provider issues (e.g., in-sourcing, outsourcing, cloud-first implementation, security and privacy of systems and data), and changes in customer requirements that will result in significant changes to the service. Managing Partners should incorporate customer feedback into the assessments wherever possible.

The assessment should also include benchmarks to evaluate shared service provider performance. The benchmarks must be measurable, attainable and clear to all of the different partners in the shared service – Managing Partners, suppliers and customers. Examples of potential benchmarks follow.

- **Current Usage** (e.g., number of services offered, number of active customers in each service area, percentage of agencies using or migrating to shared IT services)
- **Uptake** (e.g., total possible number of customers, number of current customers, change in user base compared to previous quarter)
- **Service Level Agreements** (e.g., target service levels, "credits" provided to consumer when SLA levels are not maintained, customization of any mission-specific performance metrics)
- **Customer Satisfaction** (e.g., number of repeat customers to service provider, tickets/requests opened compared to time required to resolve, periodic comprehensive surveys of customers and/or end users)
- **Cost** (e.g., cost per service/person/transaction, industry comparative prices, cost savings/avoidance of migrating to shared solution)
- **Effectiveness** (e.g., agency-determined areas of focus, performance level metrics, comparison of usage rates against cost, percentage or number of transfers from non-shared to shared provider)

The Shared Service Assessments are due to OMB on March 1, 2012. The assessments will also be used to inform development of the final strategy for release in April 2012.

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4. *Improvement Roadmaps*

Managing Partners will prepare a Roadmap for the modernization and improvement of existing services (Roadmap) of each shared service area. The Roadmap should prioritize objectives and improvement initiatives for the shared service and provide a three-year detailed Plan of Action and Milestones for each of the initiatives. A high-level Analysis of Alternatives for the approach to each initiative is also to be included, such that Administration and Agency priority goals and guidance are considered (e.g., elimination of waste and duplication, trusted internet connection, cloud-first, data center consolidation, IPv6, and HSPD-12 identity management). The Roadmap should also include the plans to improve customer service and increase customer uptake that were identified through the assessment described above. The Shared Service Roadmaps are due to OMB on March 1, 2012.

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III. Design Principles

Quality IT services designs are those that follow Future First principles and meet the business requirements of the Managing Partner, supplier, and customers, which brings a number of benefits to the Federal Government including:

- **Standardization –** Shared service providers must leverage consistent standards that streamline functions across the Federal Government. This enables communication, data sharing and function use across all agencies. It eliminates the use of decentralized and inconsistent resources to create new, unique solutions throughout agencies in response to a single set of Federal requirements.
- **Visibility –** A government-wide shared services catalog helps agencies discover the wide array of available services. This enhances the potential for service integration as some agencies will develop shared services for those functions not already being provided.
- **Reusability –** Shared services harness a way to support duplicated agency functions throughout the mission areas. This reduces the potential for development and maintenance costs by using repeatable services.
- **Platform Independence –** Agencies no longer need to worry about integrating with their current platforms in-house. Shared services providers ensure a stable infrastructure and can manage systems changes and updates within a controlled environment.
- **Extensibility –** The basic shared services of a provider can be used as building blocks for other services that consumer agencies need. Services can be scaled up or down, based on demand.
- **Location Transparency –** Users of shared services access the services from anywhere within the shared service network. This increases availability and end user access to strengthen SLAs between the provider and the services consumer.
- **Reliability –** Services provided are robust and stable with service continuity capabilities to minimize critical system outages to levels established by SLAs.

A shared IT service has six architectural components: requirements, workflow, data exchange, applications, hosting, and security/privacy controls. The first five components have a hierarchical relationship, while security/privacy controls pervade all of the component areas, as is shown in Figure 5 below.

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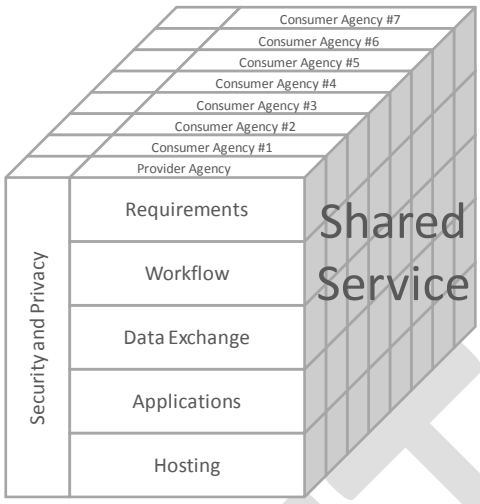

Figure 5. Architectural Components of a Shared Service

Component #1: Requirements. This includes the strategic and tactical requirements for the type(s) of functionality that the service has to provide to consumers. The number and type of functional requirements depends on the type of service area, number and diversity of participating agencies, sensitivity of information and data being exchanged.

Component #2: Workflow. These are the business processes that function through the shared service. The design of the process must be such that the functional requirements from Component #1 are supported.

Component #3: Data Exchange. This is the part of the business process in Component #2 that involves the creation, exchange, manipulation, storage, or deletion of data and information.

Component #4: Applications. This includes the software and hardware that provide the functionality and data exchange capabilities that are identified in Components #2 and #3.

Component #5: Hosting. This is the infrastructure that the application(s) are hosted in. This includes cloud-based, client-server hosting solutions.

Component #6: Security and Privacy. These are the various types of logical, physical, process, and personnel controls that achieve required levels of protection and risk mitigation for the shared service.

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Appendix A: Definition of Terms

Commodity IT Services: A category of back-office IT services whose functionality applies to most, if not all, agencies (e.g., infrastructure and asset management, email, and help desk).

Components: The specific elements that make a shared service work. These include: functional requirements, workflow, data exchange, applications, hosting, and security/privacy controls.

Customer: The customer is the Federal agency or part of an agency, which established an agreement with a Managing Partner or provider to receive a shared service. The customer may be required to interact with the actual service supplier (if it is not the Managing Partner) to provide inputs such as transaction data and user information, coordinate specific deliverables, and resolve service issues not requiring the Managing Partner for resolution.

Line of Business: An operating unit defined functionally or structurally in an agency. Includes cross-agency Lines of Business and select E-Gov initiatives currently in operation.

Managing Partner: The managing partner (sometimes called the executive agency or executive agent) is the Federal agency that establishes and maintains the shared service with approval by agency leadership for intra-agency services, or by OMB for inter-agency services. The Managing Partner develops, implements, and maintains financial and service models as well as contracts with customers and suppliers using strategic sourcing vehicles whenever possible. The Managing Partner is responsible for the success of the shared service as measured by benchmarking metrics provided to OMB (see the "Implementation" section for details on metrics / reporting).

Mission IT Services: A category of IT services for the front office tied to agency business functions (e.g., grants management, performance management, and Federal health architecture).

Producer: Agencies or contractors to agencies that develop part or all of a shared service for a provider.

Provider: Agencies or contractors to agencies that deliver part or all of a shared service to consumers.

Shared Service: A function that is provided by one organization for consumption by multiple organizations within or between Federal agencies.

Supplier: The supplier is a government or commercial organization that actually provides the shared service to consumers. Managing Partners contract with suppliers using Federal-wide contract vehicles whenever possible. SLAs for overall performance and for specific customer requirements are also maintained between the Managing Partner and supplier.

Support IT Services: A category of back-office IT services whose functionality applies to multiple agencies and is business focused (e.g., geospatial information systems, human resources management, and financial management).

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Appendix B: Key Considerations

In designing and implementing shared IT services, the following planning elements need to be taken into consideration:

- Moving existing and new services to the cloud (government or commercial hosting) to increase service elasticity, reduce system equipment footprints, free IT organizations from the expensive work of data center storage, maintenance, backup and recovery burdens;
- Partnering within and between agencies to co-develop and/or share the applications, systems, networks that enable a shared service. Each partner gets a full solution for only a portion of the cost or at no cost;
- Participating as a consumer of shared IT services already being offered by Federal agencies or commercial providers that have developed centers of excellence for particular sets of IT functionality;
- Transforming one's own agency systems and expertise into a shared service–a center of excellence—to become a provider of shared IT services to other agencies.
- Complexity of the service must be taken into account.

At the agency and bureau levels, it is only through careful consideration of mission and support needs, the specific operating environment, existing systems expertise, and risk tolerance that an agency-wide shared service strategy can be planned and executed over the next two to five years.

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Appendix C: Critical Success Factors

- **Executive Support –** Agency leadership must be solidly behind their shared service strategy or needed changes will not happen at the business unit, program, and system levels.
- **Cultural Change –** Cultural change in this context refers to the need for agencies to move away from internally centered, program-specific thinking, and move toward a paradigm of consuming or providing shared services with multiple groups in mission and support areas whenever possible.
- **Planning and Business Process Reengineering –** Reengineering business processes is essential to shared service adoption in order to move from stove-piped workflows to processes that work across the agency enterprise and beyond.
- **Technology Enablement –** Robust connectivity and the use of agile computing clouds are two of the primary technical elements that are key to the success of shared services. The modernization and convergence of voice, data, and video infrastructures, paralleled by advances in processing, storage, and standards will enable the functionality, scalability, security and cost efficiency that will be required.
- **Resource Realignment –** As the business requirements and technology solutions for shared IT services are identified, and as agency budgets remain flat or decline, financial and personnel resources must be moved away from lower value stovepipe workflows toward new programs that support shared services.
- **Agency Adoption Strategy –** The plan for shifting to shared IT services needs to clearly articulate who is accountable, what the performance targets are, and how the transition will occur in each service area.
- **Continuous Improvement –** Shared services must seek to identify opportunities for ongoing improvement to meet the needs of its customer base. This requires monitoring of best of breed processes and new innovations to ensure that service delivery provides the best possible capability and the best possible value.

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