FEDERAL INFORMATION TECHNOLOGY SHARED SERVICES STRATEGY

May 2, 2012

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I. Overview

The *Federal Information Technology Shared Services Strategy* provides organizations in the Executive Branch of the United States Federal Government (Federal Agencies) with policy guidance on the full range and lifecycle of intra- and inter-agency information technology (IT) shared services, which enable mission, administrative, and infrastructure-related IT functions. This strategy is part of the Office of Management and Budget (OMB) *25-Point Implementation Plan to Reform Federal IT Management*[1], which seeks to increase return on investment, eliminate waste and duplication, and improve the effectiveness of IT solutions. Commonly referred to as "Shared-First", this strategy requires agencies to use a shared approach to IT service delivery. The Shared-First approach will:

- Improve return on investment across the Agency's entire IT portfolio through the coordinated use of TechStat program reviews[2]; PortfolioStat investment reviews[3]; and the consolidation of commodity IT[4] systems, services, and related contracts.

- Close productivity gaps by implementing integrated governance processes and innovative IT service solutions at the program, bureau and agency levels. Agency implementation is to be consistent with guidance contained in the *Federal Cloud Computing Strategy*[5]; the *Digital Government Strategy*[6], and the *Common Approach to Federal Enterprise Architecture*.[7]

- Increase communications with stakeholders as shared service managing partners, customers, and providers work together to ensure transparency, accountability, and ongoing collaboration in the full lifecycle of intra- and inter-agency IT shared service activities. Collaboration resources that are available to support this are CIO.gov, ITDashboard.gov, Performance.gov, and BusinessUSA.gov.

The Need to Innovate with Less

There are nearly 300 organizations in the Executive Branch of the Federal Government that employ more than 2.6 million people and operate over 10,000 IT systems. These organizations provide a myriad of manual and online services to customer groups that include citizens, industry, and other government agencies at the federal, state, local, tribal, and international levels. Moreover, annual spending on IT[8] by these organizations has increased steadily over the past decade to nearly $80 billion, as is shown in Figure 1.
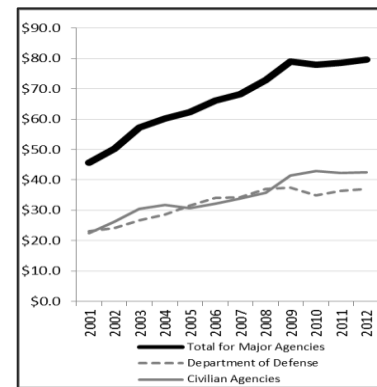
Source: OMB, Annual Exhibit 53 Totals $Billions)

Figure 1. Annual Federal IT Spending

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[1] *25 Point Implementation Plan to Reform Federal Information Technology Management*, Office of Management and Budget, December 9, 2010. The shared services strategy is called for in action item #6.

[2] OMB Memorandum M-10-31; *Immediate Review of Information Technology Projects*, July 28, 2010.

[3] OMB Memorandum M-12-10; *Implementing PortfolioStat*, March 30, 2012.

[4] OMB Memorandum M-11-29; *Chief Information Officer Authorities*, August 8, 2012.

[5] *Federal Cloud Computing Strategy*; OMB, February 8, 2011.

[6] *Building a 21st Century Digital Government;* Federal CIO, FOSE Conference, Washington, D.C., April 3, 2012.

[7] *The Common Approach to Federal Enterprise Architecture*, OMB, April 30, 2012.

[8] This does not include IT services that support National Security Systems.

Federal Agencies must innovate with less given current fiscal constraints, increasing mission requirements, rising customer expectations, and the ever-evolving landscape of IT. For Federal Agency Chief Information Officers (CIOs) this means that they must:

- Deliver solutions faster, for less money, and with fewer resources;
- Develop authoritative future-ready business and technology architectures / standards to guide investment; and
- Take advantage of evolving technologies and methodologies to accomplish agency mission and support functions more efficiently, while also improving quality and flexibility.

To be successful in resource-constrained operating environments, Federal Agencies must also eliminate wasteful spending that result from implementing duplicative solutions for mission, support, and commodity IT functions. For example, a review of over 7,000 Federal Agency IT investments reported to OMB for Budget Year 2013 revealed many redundancies and billions of dollars in potential savings that could be achieved through consolidation and a shared approach to IT service delivery within and between agencies, as is shown in Figure 2.

IT Investment Category (Budget Year 2013) Agency Submissions	# of Planned Investments	Total Planned Spending ($millions)
Information & Technology Management	1,572	$34,661
Supply Chain Management	759	$3,322
Financial Management	563	$2,503
Human Resources Management	662	$2,357
General Government	218	$2,110
Administrative Management	332	$947
Planning and Budgeting	291	$622
Total	4,397	$46,522

Source: OMB, Annual Exhibit 53 Totals, BY 2013

Figure 2. Potential Opportunity Areas for IT Shared Services

Along the same lines, in 2011 the U.S. Government Accountability Office (GAO) identified 34 areas[9] where Federal Agencies provide similar services to the same customer groups within and outside of government, with billions of dollars in potential savings if these services were reconciled, consolidated, and moved to a shared delivery model.

Federal Agency CIOs are well positioned to work with other agency executives and provide leadership for the Shared-First effort by using a cross-organizational perspective to identify opportunities for the consolidation of redundant mission, support, and commodity IT services at all levels, in all federal sector Lines of Business (LOBs), in all program areas, and with all IT acquisition vehicles. This is consistent with the requirements set forth in Presidential Executive Order 13589[10] that addresses efficient agency spending. To this end, in August 2011 OMB Memorandum M-11-29[11] clarified the authority of Agency CIOs in four areas: IT Governance, Commodity IT Management, IT Program Management, and Information Security. Additionally, OMB Memorandum M-12-10 directed Federal Agency Chief Operating Officers (COOs) to annually

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[9] U.S. Government Accountability Office: Report on "*Opportunities to Reduce Potential Duplication in Government Programs, Save Tax Dollars, and Enhance Revenue*"; GAO-11-318SP, March 2011.
[10] Presidential Executive Order 13589: Promoting Efficient Spending; November 11, 2011.
[11] OMB Memorandum M-11-29; *Chief Information Officer Authorities*, August 8, 2011.

lead an agency-wide IT portfolio review, called a "PortfolioStat." A PortfolioStat session is a face-to-face, evidence-based review of an agency's IT portfolio that includes examining cost, schedule and performance data on commodity IT investments, and identifying potential duplications or investments that do not appear to be well aligned to agency missions or business functions, with an eye toward consolidating or eliminating those investments to free up agency funds for innovation and other requirements. This strategy provides implementation guidance that supports the implementation of the PortfolioStat process.

II. Definitions, Concepts, and Critical Success Factors

An IT shared service is defined as: *An information technology function that is provided for consumption by multiple organizations within or between Federal Agencies.* There are three general categories of IT shared services: commodity, support, and mission; which are delivered through cloud-based or legacy infrastructures, as is shown in Figure 3.
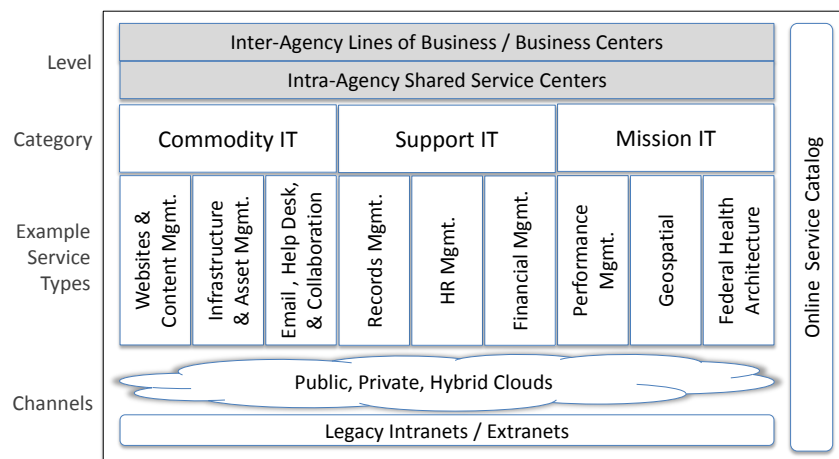

Figure 3. IT Shared Services Concept Overview

Federal Agencies establish and deliver intra-agency IT shared services, which are often overseen by the agency's CIO. Inter-agency IT shared services are called Lines of Business (LOBs) and are operated by a Managing Partner within a Federal Agency, after approval by OMB. An online catalog of approved inter-agency IT shared services will be maintained by the Federal CIO Council's Shared Services Sub-Committee, in collaboration with OMB and LOB Managing Partners. The basic roles in an IT shared service are Managing Partner, Supplier, and Customer as is shown in Figure 4.
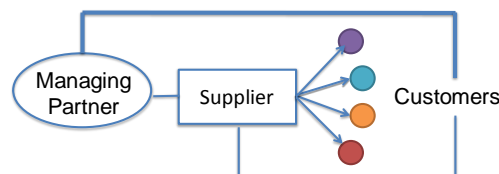

Figure 4. Basic Shared Service Roles

Managing Partner. The "Managing Partner" establishes and maintains an IT shared service with approval by agency leadership for intra-agency services, and also by OMB for inter-agency services. The Managing Partner organization, often referred to as the Program Management

Office (PMO), develops, implements, and maintains financial and service models as well as contracts with Customers and Suppliers using strategic sourcing vehicles whenever practicable. The Managing Partner PMO is responsible for the success of the IT shared service, and reports using metrics developed by the Federal Agency for its own intra-agency IT shared services, and by the Federal CIO Council's Shared Services Subcommittee for inter-agency LOBs. Managing Partners are also responsible for maintaining contracts with Customer agencies that allow the Customer agency to terminate the contract if specified levels of service are not maintained.

<u>Customer.</u> The "Customer" is the Federal Agency or sub-organization that contracts with and pays a Managing Partner to receive an IT shared service. The Customer organization may be required to interact with a Supplier for the coordination of day-to-day service issues. The Managing Partner handles major contract issues and resolves escalation items with Suppliers.

<u>Supplier.</u> The "Supplier" is a government or commercial organization that provides the actual IT shared service to Customers. Managing Partners contract with Suppliers using Federal-wide contract vehicles and strategic sourcing concepts whenever practicable. Statements of Work with Service Level Agreements are maintained between the Managing Partner and Suppliers that include metrics to track the quality of service to Customers, and list charges/expenditures.

Critical Success Factors

The following critical success factors should be considered when implementing IT shared services:

- <u>Executive Support</u>. Agency leadership must be solidly behind their IT shared service plan, or needed changes will not happen at the business unit, program, or system levels.

- <u>Cultural Change</u>. Refers to the need for agencies to move away from internally-centered, program-specific thinking, and move toward a paradigm of consuming and providing IT shared services with multiple groups whenever possible. "Loss of control" issues are central.

- <u>Business Process Reengineering</u>. Optimizing business processes is essential to move from stove-piped workflows to processes that work across the agency enterprise and beyond.

- <u>Technology Enablement</u>. Robust connectivity and the use of agile computing clouds are two of the primary technical elements that are key to the success of IT 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.

- <u>Resource Realignment</u>. Because agency budgets are often constrained while IT requirements continue to grow; financial and personnel resources must be moved away from duplicated programs, systems, and workflows to new shared approaches within and between agencies.

- <u>Adoption Strategy</u>. The agency's IT Shared Service Plan needs to clearly state who is accountable, what the performance targets are, and how each transition will occur.

- <u>Continuous Improvement</u>. Managing Partners must continually seek opportunities to improve services and meet the needs of Customers and Suppliers. This requires ongoing scanning for best-of-breed approaches in the public and private sectors, and implementing those that make sense, in collaboration with Customers, Suppliers, and oversight groups.

III. Implementation Strategy

Widespread adoption of IT shared services will help create a Federal Government that is leaner, more agile, and more efficient. To accomplish this, Federal Agencies should focus on three things:

Institutionalize a Shared-First Culture. Agency leaders must work with management, staff, and industry partners to create and cultivate a Shared-First orientation throughout the organization. This will involve changing historical ways of thinking about how business units and programs function – to move from independent silos of capability (some of which are duplicative) toward an integrated matrix of shared services that provide IT capabilities across the entire agency.

Begin with Commodity IT. Agency CIOs can accelerate the implementation of Shared-First concepts by focusing on commodity IT (defined in OMB M-11-29) and using the PortfolioStat[12] process and agency-wide Enterprise Architecture[13] to identify areas of waste and duplication. The consolidation of commodity IT will free-up funding for other areas where innovation is needed. OMB M-11-29 also gives the agency CIO authority over commodity IT resources.

Identify Providers and Delivery Models. Agencies should incorporate successful shared service business models from the public and private sector to use in intra-agency IT shared service delivery. A wide number of inter-agency services are available from existing Service Centers and LOBs. This includes the General Services Administration (GSA), the National Business Center (NBC), the National Finance Center (NFC), and OMB-approved LOBs in Financial Management, Human Resources Management, Geospatial Systems, Information Systems Security, Performance Management, and Budget Formulation/Execution. Each Service Center or LOB is located in an agency that has a Managing Partner organization to coordinate all aspects of service acquisition and delivery between Customer agencies and industry or government providers. Cost-benefit analyses that look out three to five years may show that outsourcing to an inter-agency shared service provider is the most cost-effective approach. Examples of this include commodity IT services for help desks, email, print management, website management, online collaboration services, and mobile/wireless services.

Consolidating commodity IT services within agencies is an immediate opportunity that can help build momentum to take on more complex IT shared services in mission and support areas. Agencies may want to use a phased approach to implementing a shared IT service so that a base of knowledge is developed between among the Managing Partner, Customer, and Suppliers; as well as to facilitate continuous improvement for service delivery and governance. Once the base is solidified, a Shared-First culture can expand and evolve at the business unit and program levels to create new opportunities. This reflects a "crawl, walk, run" approach to addressing complexity of IT shared service areas and allowing agencies to gain proficiency, as shown in Figure 5.
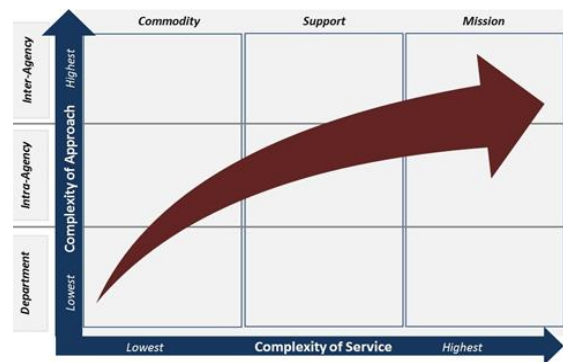

Figure 5. Addressing Complexity in
IT Shared Service Implementation

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[12] OMB Memorandum M-12-10 *Implementing PortfolioStat*, March 30, 2012.

[13] *The Common Approach to Federal Enterprise Architecture*, OMB, April 30, 2012.

Implementation Milestones for 2012

During the 2012 calendar year, Federal Agencies and their Managing Partners will identify new IT shared services opportunities, improve existing services, and lay the groundwork for broader adoption in the future. Due dates and major deliverables are summarized as follows:

Date	Action	Owner
March 1, 2012	Identify two IT areas for migration to a shared service approach by December 31, 2012.	Agencies
August 31, 2012	Submit an Enterprise Roadmap to OMB that includes the agency's Commodity IT Consolidation Plan (IT Asset inventory is optional in 2012) and LOB Service Plan.	Agencies and their Managing Partners
December 31, 2012	Agencies complete two OMB-approved IT shared service initiatives in 2012 and report status to OMB.	Agencies
April 1, 2013 and Annually Going Forward	Submit an updated Enterprise Roadmap to OMB	Agencies and their Managing Partners

Note: the March 1, 2012 action item was called for separately by OMB in November 2011. Agency planning for and OMB tracking of the resulting submissions is being incorporated into this strategy and the follow-on action items..

The Federal CIO Council's Shared Services Subcommittee will work collaboratively with Federal Agencies and Managing Partners to:

- Conduct a quarterly meeting / information session for Agencies and Managing Partners;
- Work with agencies to use enterprise architecture and capital planning processes to identify opportunity areas for IT shared services / strategic sourcing initiatives (e.g., PortfolioStat).
- Create an online catalog of inter-agency shared services;
- Collect and share best practices around the adoption of IT shared services;
- Assist OMB in reviewing Federal Agency shared IT service plans; and
- Assist OMB in monitoring LOB service quality via quarterly metric submissions.

Intra-Agency Commodity IT Services

The initial focus of the Shared-First strategy is on consolidating intra-agency commodity IT services, as described in OMB Memorandum M-11-29. Examples in each of commodity IT areas include:

IT Infrastructure	Enterprise IT Systems	Business Systems
Data Centers	E-mail	Finance
Networks	Collaboration Tools	Human Resources
Desktop and Laptop Computers	Identity and Access Management	Travel
Mobile Devices and Services	Security	Asset Management
Software Licenses	Web Infrastructure	Customer Relationship Mgmt.
Acquisition / Strategic Sourcing		

Migrate Two Areas in 2012

To accelerate the adoption of IT shared services, in November 2011 OMB directed agencies to identify at least two IT areas for migration to an intra- or inter-agency IT shared service model by December 31, 2012. The submissions were due March 1, 2012 and for each candidate area, agencies provided a description, justification for selection, and estimate of cost savings. In order to qualify as

a migration area, associated projects and services must have been in the concept, planning, or requirements phase as of March 1, 2012. Investments that were in the implementation or steady state operating phase at that time were not eligible. New participation in a government-wide or agency-wide contract vehicle or the addition of new customers to existing services also qualified.

Agency Enterprise Roadmap / IT Shared Service Plan

To ensure that IT shared services are implemented in a coordinated and expedited manner, Federal Agency Chief Information Officers (CIOs) will submit an "Enterprise Roadmap" to OMB by August 31, 2012 that covers Fiscal Years (FY) 2012-2015 and includes the sections described below. Annually, Agency CIO's will submit an updated Enterprise Roadmap to OMB by April 1st.

- Business and Technology Architecture: a high-level, integrated description of the agency's business objectives and enabling IT capabilities across all operating units and program areas using enterprise architecture concepts and methods described in *The Common Approach to Federal Enterprise Architecture*[14] to describe the agency-wide current architecture, future architecture, and transition plans.

- IT Asset Inventory (Appendix 1): a list of IT assets agency-wide to include all IT systems[15] and services that support mission, administrative, and commodity IT programs, using the Federal Enterprise Architecture Reference Model taxonomies provided in the Common Approach. For the August 2012 Enterprise Roadmap submission, this Asset Inventory is optional but highly recommended. The IT Asset Inventory will be required thereafter.

- Commodity IT Consolidation Plan (Appendix 2): a synopsis of the agency-wide IT investment portfolio review conducted during 2012 in accordance with guidance provided in OMB M-12-10. For the August 2010 submission, Federal Agencies will include their final plan to consolidate commodity IT, as is required by OMB M-12-10.

- Line of Business Service Plan (Appendix 3): the Program Manager of each Federal-wide Line of Business[16] will submit a Plan to OMB via the Managing Partner agency's CIO that addresses increasing the quality and update of the IT shared services that are provided through that LOB by the end of FY 2013. This Plan will follow guidance provided in the IT Reform Agenda's 25-Point Plan[17] and this IT Shared Services Strategy (see below).

For Enterprise Roadmap submission beginning with April 1, 2013, the following additional appendix will be included:

- IT Shared Service Plan (Appendix 4): a description, list, and transition plan for all intra-agency IT shared services that the agency intends to provide or consume during FY 2013-2017. The Plan will also contain a description of the two IT areas that agencies will migrate to a shared service model by December 31, 2012 in accordance with prior OMB guidance.

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[14] *The Common Approach to Federal Enterprise Architecture*, OMB, April 30, 2012.
[15] The word definitions for "information technology" and "information technology system" can be found in OMB Circular A-11, July 2011.
[16] OMB Memorandum M-04-08; *Maximizing Use of SmartBuy and Avoiding Duplication of Agency Activities with the President's E-Gov Initiatives*, February 25, 2004. Note: The list of Presidential E-Government Initiatives and Lines of Business were established by M-04-08 and is periodically updated by OMB. Current LOBs include: Human Resources, Geospatial Systems, Information Systems Security, Financial Management, Performance Management, Federal Health Architecture, and Budget Formulation and Execution.
[17] *25 Point Plan to Reform Information Technology Management*, OMB, December 9, 2010. http://www.cio.gov/documents/25-Point-Implementation-Plan-to-Reform-Federal%20IT.pdf

Improving IT Lines of Business

While commodity IT is the initial focus of this strategy, it is recognized that inter-agency shared services must be improved in order to lay the groundwork for increased future savings. As such, OMB; with the assistance of the Federal CIO Council, Agency CIOs, and Managing Partners; is taking steps to strengthen the existing set of inter-agency LOBs, streamline access to these services, and prepare for new LOBs and inter-agency service offerings.

Line of Business Service Plans

By August 31, 2012, as part of each host Agency's Enterprise Roadmap, LOB Managing Partners will prepare a "LOB Service Plan" that includes an assessment of each associated IT shared service area and a plan to improve quality and increase uptake in each area by the end of FY 2013. A high-level summary of alternatives is also to be included which incorporates legacy Federal IT requirements[18] and agency goals/guidance. OMB will work with Managing Partners and the Shared Services Subcommittee of the Federal CIO Council to assess the Roadmaps and monitor progress.

The LOB Service Plan should discuss challenges and opportunities in each shared service area, such as needed adjustments to funding models, Supplier issues, implementation of legacy Federal initiatives, security, data privacy, and changes in Customer requirements that may result in significant changes to services. Managing Partners should also incorporate Customer feedback and Supplier recommendations/requirements.

The LOB Service Plan should include benchmarks to evaluate the performance of Suppliers. These benchmarks must be measurable, attainable, and understandable by all stakeholders – to include:

- **Usage:** Number of services offered. Number of active Customers in each service area.
- **Uptake:** Number of currently subscribing Customers vs. total possible. Changes in the number of subscribing Customers over the past three years.
- **Satisfaction:** Number of repeat Customers for each Supplier. Number of Customer trouble tickets and service requests made in each service area. Time required to resolve trouble tickets and service requests (specific and average). Customer survey results. Adjustments or credits provided by Suppliers to Consumers when service levels are not maintained.
- **Efficiency:** Cost per service, person, and transaction by each Supplier. Industry comparative prices. Projected vs. actual cost savings in migrating to each shared service that is offered.
- **Effectiveness:** The attainment of performance metrics identified in Managing Partner contracts and Customer Service Level Agreements.

Online IT Services Catalog

Currently, Federal Agencies have limited information regarding the full spectrum of inter-agency IT shared service options that are available. To correct this, OMB has worked to with the Federal CIO Council's Shared Services Subcommittee to establish and maintain an online IT Services Catalog. This catalog will be launched in FY 2012 and will provide Federal Agencies with a list of available services and contract vehicles, as well as contact information for Managing Partners and Suppliers.

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[18] Legacy IT initiatives include the Federal-wide implementation of IPv6, HSPD-12, Federal Data Center Consolidation, Trusted Internet Connections, USGCB, Cloud-First, and FedRamp.

IV. Policy Considerations

New Policies

During the past several years, OMB has taken a number of steps to eliminate waste and duplication in how agencies acquire and deliver IT services across mission, support, and commodity areas. This *IT Shared Services Strategy* is part of that effort, and is intended to work in concert with improvements that are being made in other areas of IT governance, including strategic planning, capital planning, operations, security, enterprise architecture, program management, and human capital management. The following are major areas of new IT policy that Federal Agencies must integrate as they create a Shared-First culture.

PortfolioStat Process
OMB introduced the PortfolioStat process[19] for performing comprehensive reviews of their IT investment portfolio. The PortfolioStat process includes tools to use in analyzing individual investments and categories of investments to help in identifying waste and duplication and to prioritize where actions need to be taken to consolidate or terminate investments, and where there are opportunities to establish shared-approaches to IT service delivery. OMB will work in partnership with Federal Agencies to implement the PortfolioStat process and tools.

Future-First Architecture
Given the rapid pace of change in IT, it's not enough to just build solutions that meet the government's current needs, Federal Agencies must look more at future requirements to ensure that IT solutions are flexible enough meet those requirements too whenever possible. This is why the OMB has launched the "Future-First" initiative that is reflected in *The Common Approach to Federal Enterprise Architecture*[20] (Common Approach) which will help the Federal Government begin to continuously develop business and technology architectures that better prepare agencies for the future. Future-First is a set of principles for agencies to use when implementing the Common Approach and embarking on planning, development, and modernization efforts. OMB has identified an initial set of principles that will evolve as use of the Common Approach advances across Federal Agencies. Each IT shared service offering must have a business and technology architecture that fits the Agency's operating model, supports Future-First principles, and conforms with Federal law and guidance. Future-First architectural design principles are summarized as follows:

- Multiple consumers for each service;
- Modular development (big-to-little) of re-usable components (little-to-big);
- Process standardization, minimal customization;
- Web-based solutions with standardized application interfaces;
- Object reuse, machine-readable data, standard data formats (e.g., XML, semantic RDF);
- Cloud-based application hosting and virtualization of servers;
- Security and privacy controls, continuous monitoring of systems and services;
- Configuration management and version control for systems and services.

Future-Ready Digital Government

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[19] OMB Memorandum M-12-10; *Implementing PortfolioStat*, March 30, 2012.
[20] *The Common Approach to Federal Enterprise Architecture;* OMB, April 30, 2012.

Innovation in IT continues to transform how the Federal Government operates and as such OMB is developing a comprehensive approach to building a future-ready digital government.[21] This strategy promotes the increased use of mobile computing and communications platforms, engaging the public as partners in developing innovative digital services, adopting new standards for making government information open and machine-readable (by default), and using web services and metadata tagging to enhance the value and utility of Federal Government data. The Digital Government strategy also promotes the ability for Federal Agencies to make data-driven decisions about the success and usability of their websites by embedding web traffic analytics and customer satisfaction measurement tools, and applying industry-standard ratings for mobile applications to deliver better insight into the performance of digital services beyond the web space. To support this, Federal Agencies will need to establish an effective governance structure and specific, measurable goals for delivering better digital services at a lower cost.

Other Policy Considerations

In addition to IT policies that OMB has recently released, a number of prior policies are highly relevant to Federal Agency implementation of the *IT Shared Services Strategy*, including:

Cloud-First
The *Federal Cloud Computing Strategy*[22] states that "When evaluating options for new IT deployments, OMB will require that agencies default to cloud-based solutions whenever a secure, reliable, cost-effective cloud option exists." This *IT Shared Services Strategy* and the associated policy guidelines similarly require agencies to default to a shared solution when opportunities for consolidation exist. Cloud-First and Shared-First concepts and policies are intended to work in tandem. The Federal Government's continuing move toward cloud-based IT solutions will serve as a catalyst for the broader adoption of IT shared services.

Federal Data Center Consolidation Initiative
The Federal Data Center Consolidation Initiative (FDCCI) aims to achieve the following goals by requiring Federal Agencies to reduce waste and duplication in their data center assets, to include:

- Implementing "Green IT" by reducing the energy consumption and real estate footprint of Federal Government data centers;
- Reducing the cost of data center hardware, software, and operations;
- Enhancing the overall IT security posture of the Federal Government; and
- Increasing the use of more efficient computing platforms and technologies.

The Shared-First approach, PortfolioStat process, and Common Approach methods are intended to support data center consolidation and optimization by enabling Federal Agencies to identify where duplication and excess capacity exist and to create new cloud-based approaches to intra- or inter-agency IT infrastructure shared service delivery.

Modular Development
Modular development refers to an industry-proven approach to reducing risk and accelerating the pace of implementing IT resources, including applications, systems, websites, mobile platforms, and

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[21] *Building a 21st Century Digital Government;* Federal CIO, FOSE Conference, Washington, D.C., April 3, 2012.
[22] *Federal Cloud Computing Strategy*; OMB, February 8, 2011.

cloud computing environments. This is accomplished by executing IT projects in modules (also called increments) that support rapid development methods, iteration with key stakeholders, and sequenced phases that produce increasing levels of functionality. Each project module is roughly six months in duration and is designed to deliver specific capabilities that create a foundation and then increasing levels of functionality. Modular development approaches support Future-First architecture principles by dividing IT development projects into components (going from "big-to-little") and by using object-oriented methods to create reusable IT components that can be shared within or between Federal Agencies (going from "little-to-big"). The key point of modular development is the creation of reusable modules in short time increments, and making those components discoverable by Federal Agencies across government for future use.

Federal Strategic Sourcing Initiative

The Federal Strategic Sourcing Initiative[23] (FSSI) is a government-wide acquisition service that leverages the Federal Government's consolidated buying power to acquire and manage IT resources at lower cost. FSSI objectives are complementary to Shared-First concepts and three current FSSI acquisition programs address commodity IT services: print management, wireless/mobile, and software licensing. In addition to FSSI, a number of Federal Agencies have developed enterprise-wide strategic sourcing initiatives to acquire other types of commodity IT services, including laptops, desktop PCs, website management, email, and help desks. Federal Agencies are encouraged to use government-wide FSSI acquisition vehicles or their own enterprise-wide strategic sourcing vehicles to lower costs and promote a Shared-First operating culture.

V. Federal Governance for IT Shared Services

Shared Services Sub-Committee

The Federal CIO Council has established a Strategy and Planning Committee and Shared Services Subcommittee to work with OMB on Shared-First policy development and implementation, and to support Federal Agencies as they develop and implement their Enterprise Roadmaps, conduct PortfolioStat reviews, and create and execute their IT Shared Services Plans. The IT Shared Services Subcommittee has working groups to focus on intra- and inter-agency business and operating models, and to maintain the online service catalog. Inter-agency LOBs have their own governance processes, which must integrate with the Executive (host) Agency's IT governance processes and conform to OMB and Federal CIO Council guidance. The Shared Services Sub-Committee will initially focus on the following areas:

- **Inter-Agency Shared Services.** The committee will document current issues and roadblocks to the broader adoption of inter-agency shared services in the Federal Government and will propose solutions to resolve or ameliorate these issues;
- **Intra-Agency Shared Services.** The committee will document current issues and roadblocks to the broader adoption of intra-agency shared services in the Federal Government and will propose solutions to resolve or ameliorate these issues;
- **Online Marketplace.** Committee members will work to gather and socialize requirements for the online marketplace, and will work with developers to implement

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[23] Federal Strategic Sourcing Initiative; http://www.gsa.gov/portal/content/112561

and test the final product. They will also work to form marketing and communications plans to promote the use of the marketplace; and

- **Standards and Practices.** Committee Members will work with the Best Practices Subcommittee and others to collect best practices and lessons learned from previous Federal shared services efforts. The committee will also make recommendations in areas such as SLAs or common business data standards.

VI. Design Principles

General Service Principles

Effective designs for IT shared services begin with meeting the business requirements of customers, but must also include the use of common methods to lower costs. In designing and implementing IT shared 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, and 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, and networks that enable a shared service.

- Transforming one's own agency systems and expertise into a shared service–a center of excellence—to become a provider of IT shared services to other agencies.

- Complexity of the service must be taken into account.

The following general design principles must also be taken into consideration for each service area:

- Standardization. IT shared service providers must leverage public and private sector standards to streamline similar functions and lower delivery costs.

- Visibility. A government-wide shared services catalog helps agencies be aware of the wide array of IT shared services that are available.

- Reusability. Shared-First principles support the development of future-ready architecture solutions through component re-use in applications, systems, networks, and clouds.

- Platform Independence. IT shared services should strive to maintain platform independence for applications, systems, networks, and cloud computing environments. This supports more efficient migrations as new innovative IT solutions become available, and may lower costs.

- 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 can access services anywhere, using risk-based login methods.

- Reliability. Services provided are robust and stable with service continuity capabilities to minimize critical system outages to levels established by Service Level Agreements.

Design Principles

Federal Agencies must use Future-First principles and Common Approach methods in conducting architecture analysis and design activities, including those which support IT shared service

implementation. Future-First principles should promote the creation of n-tier architectures that promote reuse of functionality and information through platform independence. The IT applications, systems, networks, and clouds that enable shared services all have six basic 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 other component areas as follows:

- 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;
- Workflow. These are the business processes that function through the shared service. The design of the process must be such that the functional requirements are supported;
- Data Exchange. This is the part of a business process that involves the creation, exchange, manipulation, storage, or deletion of data and information;
- Applications. This includes the software and hardware that provide the functionality and data exchange capabilities that are identified in the workflow and data exchange areas;
- Hosting. This is the IT infrastructure that applications are hosted in. This includes cloud-based and client-server designs;
- 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.

The Common Approach provides standards in the following areas to support IT shared services:

- Primary Outcomes: service delivery, functional integration, resource optimization, authoritative reference.
- Levels of Scope: application, system, segment, agency, sector, federal, national, international.
- Basic Elements: governance, principles, method, tools, standards, use, reporting, audit.
- Sub-Architecture Domains: strategic, business, data, applications, infrastructure, security.
- Reference Models: to support analysis through classification taxonomies and best practices.
- Documentation: required, recommended, and elective artifacts.
- Collaborative Planning Method: a repeatable method for doing architecture projects.
- Plans and Views: enterprise roadmap, transition plan, current views, future views.

When followed, the standardization provided by the Common Approach will create comparable architectures across the Federal Government that will be more useful in managing change and enabling mission success with a lower total cost of ownership, faster time to market, and reduced duplication.

Summary

A Shared-First approach to designing and delivering IT services is critical to Federal Agencies being able to successfully execute their missions during times of rising customer expectations and declining resources. This *Federal Information Technology Shared Services Strategy* provides a

comprehensive approach to implementing intra- and inter-agency IT shared services for commodity, support, and mission functions – as was called for in the *25-Point Implementation Plan to Reform Federal IT Management.* Shared-First concepts compliment OMB policy on the elimination of waste and duplication, as well as the creation of a future-ready digital government.

Federal Agencies are to implement this strategy and make Shared-First the default approach to IT service planning and delivery. By August 31, 2012, Federal Agencies must submit to OMB an Enterprise Roadmap for the FY 2012-2015 timeframe that includes a business and technology architecture, IT asset inventory, PortfolioStat results, and IT Shared Services Plan. A LOB Service Plan will also be included in the Enterprise Roadmap of the hosting Federal Agency.

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, hardware and software acquisition, and help desks).

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.

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 enabling IT that support agency core business functions.

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

Shared Service: A function that is provided 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).