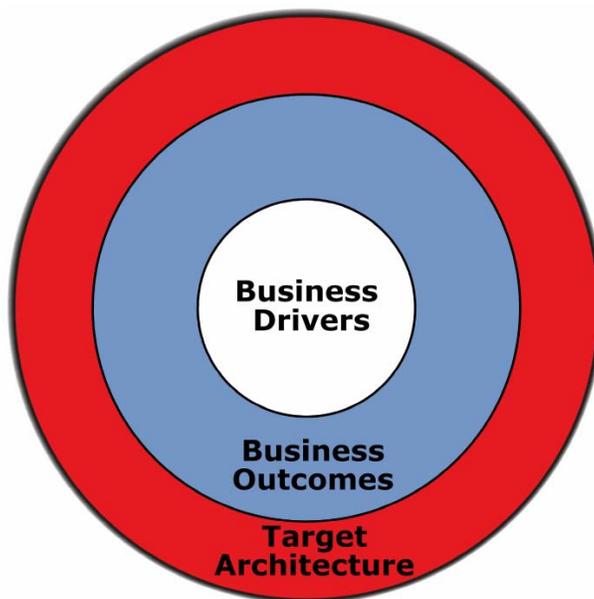


GSA Target Financial Management Architecture Submission



Version 1.0
December 31, 2002

Document Summary: This document defines the Target Financial Management Systems Architecture for the General Services Administration of the United States Government. A complete strategic evaluation of the Business Architecture, Data Architecture, Applications Architecture, and Target Architecture is presented to meet stated business goals of GSA senior managers.

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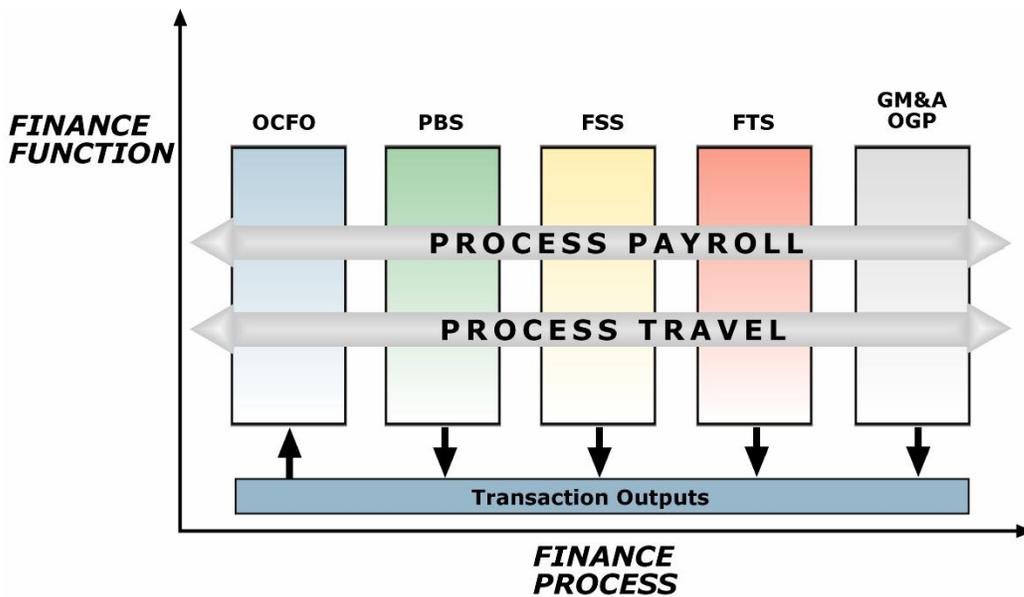
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Section 1: Executive Summary

The Target Financial Management Architecture is a conceptual view of the business processes and systems needed to realize the Mission and Goals of the GSA. GSA will migrate from a transactional to an analytical financial management system. This financial management system will emphasize the business information needs of the GSA managers. These robust information needs are being driven by the GSA financial business drivers which have been created from the GSA Strategic Goals. Compliance with Federal Financial Management Improvement Act (FFMIA), various OMB circulars (A123, A127, etc.), the President’s Management Agenda, and various audit inputs from the IG and GAO are also important drivers. Activities Based Cost/Management will be an important component of the financial management system. This will create an environment of better unit costs, quantitative resource measurement and precise activity contribution which will provide accurate earned value calculations and other detailed improvement to cost allocation and asset management systems. These improved Service systems will be similar to current best practices which focus on accurate financial analysis and reporting as being the major portion of most business/logistics management systems.

A natural product of this renewed focus is to eliminate redundancy and duplication of data and systems. These systems rely on one time data entry and provide the right information to the right person at the right time. This phenomenon is demonstrated by contrasting information flows in Figures 1 and 2 which illustrate how GSA financial management systems will evolve from transactions being gathered by the finance entities in each Service and Staff functions and provided to OCFO for summary processing (Figure 1).

Figure 1: Finance Business Architecture Current View



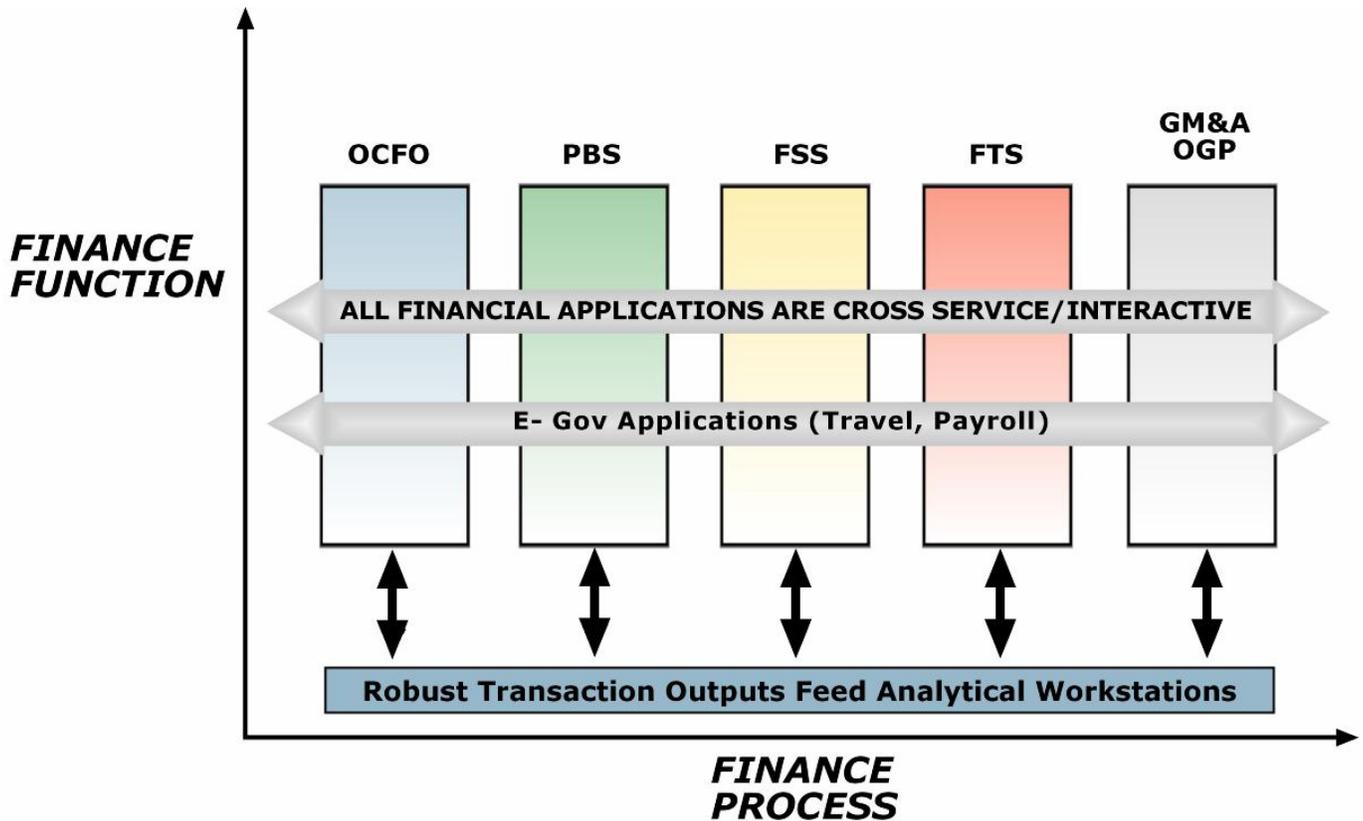
The new financial management focus, Figure 2, shows an enterprise-wide solution across Services and Staff functions with robust bi-directional data and information flows in and out of the transactional

Target GSA Financial Management Architecture

systems. There will be many feeder systems to these transactions. The bi-directional information flow provides detailed analytical reporting that will allow GSA to achieve its goals, be more performance oriented, and improve the workforce and workplace environment. An additional benefit will allow the GSA to maintain a leadership role in E-Gov by working with E-Payroll and E-Travel and supporting its other E-Gov obligations.

The Target Financial Management Architecture will be a living document, contribute to the build out of the GSA Enterprise Architecture and be supported by the yearly Transition Architecture updates which provide the detailed business process and IT systems changes. It is GSA's intention to use the GSA Enterprise Architecture document as the "communicator" of business and systems changes to GSA associates and other interested parties.

Figure 2: Finance Business Architecture Future View

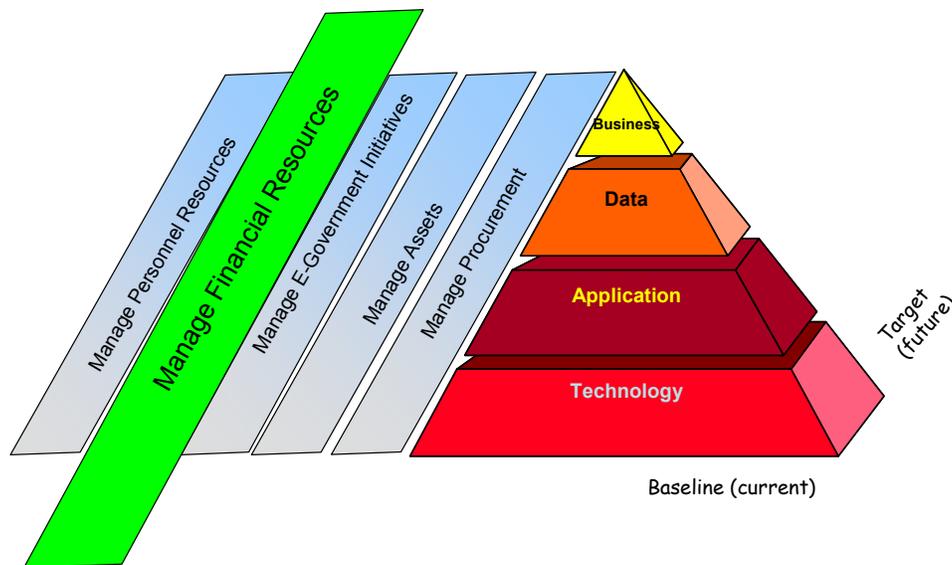


Organization of the Report

This report is comprised of nine sections describing all aspects of the Target Financial Management Architecture from the background in this section to the recommendation summary and referenced materials. The nine sections are as follows:

Section 1: An executive summary which contains a brief description the Target Financial Management Architecture from a business view and the document organization.
Section 2: Background of GSA approach to creating the Target Financial Management Systems Architecture. It describes the major architecture elements to be reviewed in the report.
Section 3: Description of the approach for each of the four Federal Enterprise Architecture Framework (FEAF) architectural layers as depicted in Figure 3. GSA is using this model to segment its development of an Enterprise Architecture starting with “Manage Financial Resources”.
Section 4: Description of the mission and goals for the business layer including Government compliance tenets, functional organization, business process flow, and the annual financial processing cycle.
Section 5: Description of the data layer the data entity models, entity definitions, and Transaction Data Inputs to Finance Process Reporting are presented and discussed.
Section 6: Description of the application layer, how the application architecture is compliant with JFMIP, and description of a single solution for each finance application.
Section 7: Description of the technical architecture network interactions, general hardware and software elements, system interactions, and interoperability requirements.
Section 8: Summary of the conclusions from the Target Financial Management Architecture analysis.
Section 9: A partial list of the reference documents and materials used to create the report.

Figure 3 GSA Finance Management Architecture and FEAF Segments



Section 2: Background

This report has been prepared according to the needs of the GSA and its Services, the requirements of the OCFO (OCFO function represents the Staff Office and OGP) and the current FEAF Guidance from the Federal CIO Council. We have taken the Strategic Goals of the GSA and created a set of Financial Management Business Drivers. From these business drivers we have created a Business Architecture. This Business Architecture is presented as a series of target (3-5 years) business functions descriptors, financial business process flows, finance functional organization requirements, which is presented as series of diagrams and tables which we have created from existing GSA and Service documentation, previous architecture reports, and the stated requirements of Federal Financial Management Improvement Act (FFMIA).

Supporting this Financial Business Architecture, we have created a Financial Management Data Architecture which uses as its baseline the current financial data elements, as created by Logistics Management Institute (LMI) in their current analysis process. These data elements will be expanded as GSA goes through a detailed business activity analysis and process re-engineering exercise. This target architecture has planned for these additions by providing current entity relationship diagrams and a platform for creating common GSA data types and formats for vendors, customers, etc. We have also created a data model which reflects current financial best practices and creates reports and analysis from standard financial elements such as Revenue, Budget, etc.

The Target Financial Management Applications Architecture has been developed from the requirements of JFMIP core financial systems mandates, the annual financial processing cycle, and analyzing the requirements of the GSA financial business functions with current financial application solution sets emanating from private sector best practices.

The Target Financial Management Technical Architecture has been created from an analysis of technical requirements 3-5 years from now. This analysis has included the requirements of E-Gov, the mandatory requirements from JFMIP core financial systems requirements, as well as practical GSA business information infrastructure delivery issues.

The Target Financial Architecture will be updated and refined on a continuous basis and guide the GSA Capital Planning and Strategic Planning Process.

Section 3: Target Financial Management Architecture Approach

The requirements for the Target Financial Management Architecture come from six primary business drivers of GSA management (see Table 1). These business drivers were created from the Agency’s Strategic Goals and reflect the GSA Values and Mission Statements. These Strategic Goals and associated Business drivers are an ever evolving set of Enterprise Architecture inputs that may change as business processes and business conditions change. These business drivers create the framework for the business process activity evolution of the GSA. They must be consistent with the GSA service delivery and as a result form the basis for the creation of the target architecture.

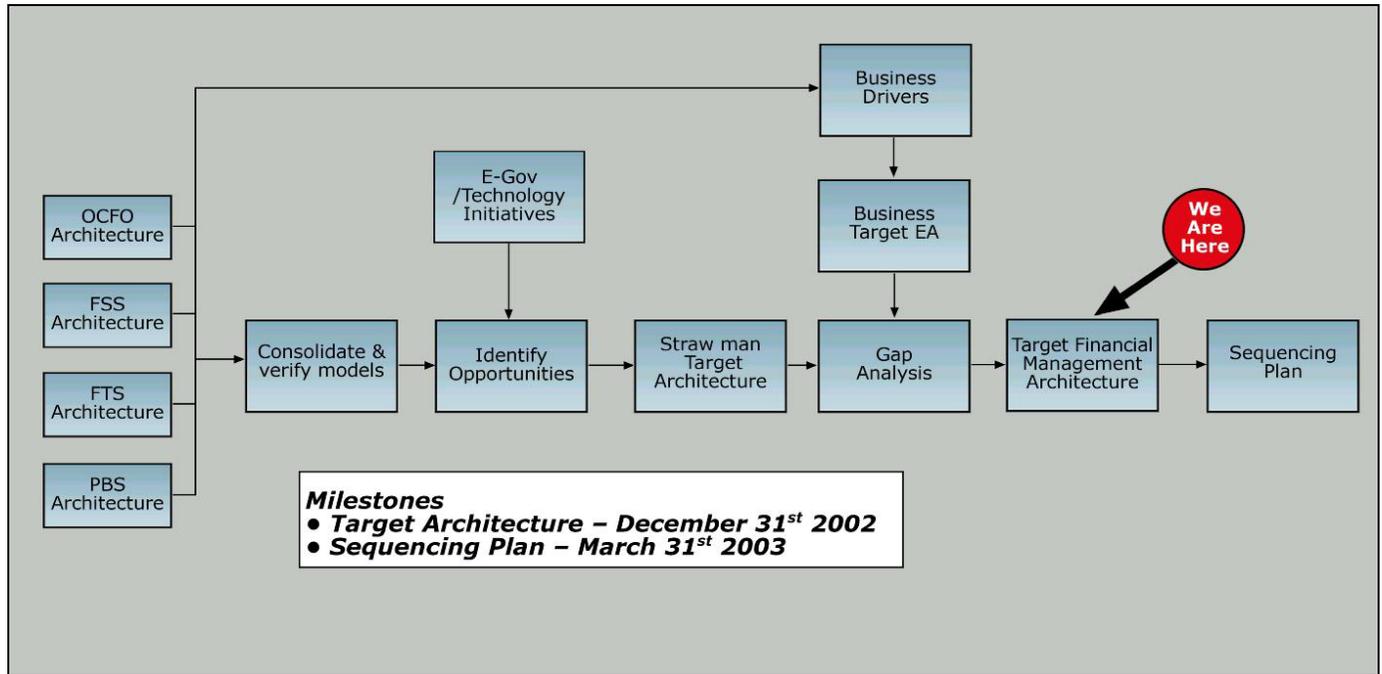
Table 1: GSA Strategic Goals and Finance Business Drivers Summary

GSA Strategic Goals		GSA Financial Management Business Drivers
1	Provide Best Value for Customer Agencies and Taxpayers	Move to Analytical Financial Organization by deploying interoperable user friendly financial systems which provide information that allow GSA Service executives to maximize the value of Agency business processes and delivery.
2	Achieve Responsible Asset Management	Streamline Standard Processes of Financial Systems. Create activity-focused asset management reports for managers.
3	Operate Efficiently and Effectively	Integration of financial management systems to process business transactions more efficiently and provide financial information and performance metrics which enable the Services to improve operational efficiency and effectiveness.
4	Ensure Financial Accountability	GSA Financial Management requires timely information for accuracy and traceability in reporting, closing, and forecasting. Meet JFMIP Requirements.
5	Maintain A World-Class Workforce And World-class Workplace	GSA Financial Management needs to baseline processes and create performance profiles. Service delivery needs to be aligned with these processes and profiles in order to deliver on the myriad of customer service and compliance issues.
6	Carry Out Social, Environmental, And Other Responsibilities As A Federal Agency	GSA Financial Management must create the necessary baseline information from its cost, vendor files, general ledger, and other sources to create customer facing reports that emphasize its social and environmental contributions.

Target GSA Financial Management Architecture

The target architecture creation process is summarized in Figure 4. The financial business drivers in Table 1 were used to create the target business architecture.

Figure 4: Financial Management Architecture Approach



The business target architecture was then vetted against the business process and systems outputs of the OCFO and Services current state architectures, which were reviewed and submitted to OMB in September, 2002. The E-Gov and Service opportunities were then added to the results of the OMB submission and a strawman target financial management architecture was created. A detailed gap analysis was then performed between the strawman and the business driver target to create the current Target Financial Management Architecture. As noted in Figure 4 the final piece of analysis will be the Sequencing Plan which will outline the migration process and sequence from the Services current state architecture to the Target Financial Management Architecture.

Section 4: Target Financial Management Business Architecture

The Target Financial Management Business Architecture needs to address:

- Mission and Goals of GSA
- Governmental Compliance Dictates
- Performance Goals
- Function Organizational Descriptor
- The Business Process and Activity Descriptors

Mission and Goals of GSA:

The GSA Target Financial Management Systems Architecture represents and reflects the GSA Target business model. The first Business Architecture process that needs to be examined is the projection of the future state of the business climate that the GSA must operate in. Table 2 summarizes these points.

Table 2: GSA Future Environment Assumptions

GSA Future Environment Assumptions that Impact Enterprise Architecture
1) GSA provides superior workplaces, expert solutions, acquisition services and management policies for the Federal Government and business volumes are expected to increase. As business volume increases unit cost of doing business will decrease.
2) Enterprise Architecture process will: <ul style="list-style-type: none"> • Represent the business requirements of GSA and its customers • Facilitate elimination of redundancy and duplication • Provide the roadmap for financial management modernization
3) Cross Organizational Business teams replace business silos <ul style="list-style-type: none"> • Teams will use activity data for business process analysis and improvement • Associates skill enhancement will result from Business Process Reengineering (BPR)
4) Business transaction processing is consistent, reliable, and repeatable across GSA
5) E-Gov and Citizen/Business User/Customer Agencies strategies
6) GSA will have a significant role in development of E-Payroll and E-Travel
7) Quantified business outcomes drive executive and management awards

One major impact for the GSA is that the volume of transactions coming through finance will increase significantly. This has already happened at FTS. Most, if not all, of the business processes associated with these transactions will have to be streamlined and aggregated into a core accounting system which is a composition of business and finance teams producing business results for clients. In addition, E-Gov initiatives, expanded enterprise architecture discipline, and an activity based focus will all have a prominent role in articulating and tracking the GSA transition to this business future state.

Governmental Compliance Dictates:

Target GSA Financial Management Architecture

This section lists the major compliance requirements in Table 3 for GSA Finance Operations and Reporting.

Table 3 Summary of Tenets for GSA’s Financial Management Enterprise Architecture

Table 3: Summary of Tenets for GSA’s Financial Management Enterprise Architecture

Tenet	Source
<i>Properly and consistently establish, record, and liquidate obligations.</i> GSA and its Services must establish and enforce consistent internal processes and systems to effectively manage appropriated and other monies with regard to purpose, amount, and time.	Appropriations law
<i>Do not obligate more funds than authorized.</i> GSA and its Services must maintain processes, systems, and internal controls to eliminate the possibility of antideficiency violations.	Appropriations law
<i>Comply with external financial management system requirements.</i> GSA must implement all external functional requirements and related standards defined by OMB, Treasury, JFMIP, and FASAB.	Appropriations law, FMFIA, FFMIA, A-127, A-130, JFMIP
<i>Integrate financial control processes.</i> GSA must design adequate internal control processes into its financial management system to guarantee data integrity and auditability.	Appropriations law, FMFIA, GSA annual report, GSA performance plan
<i>Pay vendors promptly and accurately.</i> GSA’s payables processing (and supporting processes of the Services and regions) must meet the functional provisions of the Prompt Payment Act (PPA) for tracking eligible vendors, calculating payment discounts and penalties, and accelerating payments to vendors who provide perishables.	PPA
<i>Maximize the use of electronic payments and collections.</i> GSA and the Services must design or reengineer business processes to maximize the use of electronic funds transfer (EFT) and the Intra-governmental Payment and Collection System (IPAC) for both payments and collections.	PPA, DCIA, GSA annual report
<i>Provide easy access to financial information.</i> Financial management processes are the responsibility of designated GSA central office, Service, and regional personnel. The appropriate management and staff members must have convenient and fast access to the information needed for accurate financial and operational reporting and for effective control of the GSA budget and other activities. The information needs of customers and stakeholders should not be neglected.	CFO Act, GSA annual report, GSA performance plan
<i>Produce auditable financial statements.</i> Both the GSA central office and the Services maintain and consolidate accounting data on which agency-wide financial statements are based. This information must be easily consolidated and fully auditable (i.e., traceable to an original approving document).	CFO Act, GSA annual report
<i>Implement and standardize processes for managing for results.</i> GSA must enhance its information and data architectures to collect, validate, analyze, and distribute reliable, consistent program and financial information to managers and stakeholders.	GPRA, GSA annual report
<i>Meet U.S. Standard General Ledger requirements.</i> GSA’s financial management system must reflect an agency-wide financial classification structure that is consistent with SGL requirements at the transaction level.	FFMIA, A-127, JFMIP
<i>Actively pursue delinquent accounts.</i> GSA and its Services must effectively record and regularly monitor the status of receivables, and it must refer delinquent debt that is more than 120 days old to the U.S. Treasury for possible payment offset and/or referral to a commercial debt collection agency.	DCIA
<i>Make IT capital decisions using mandated vehicles, techniques, and decision rules.</i> A cross organizational board of GSA central office (including the CIO), Service, and regional executives should make decisions concerning GSA’s financial management systems (NEAR, Pegasys, and the financially related feeders and operational systems) using the same techniques as used in making other asset acquisition and management decisions—that is, considering cost, benefits, and risks.	Clinger-Cohen, A-130, GSA performance plan

Target GSA Financial Management Architecture

Table 3: Summary of Tenets for GSA’s Financial Management Enterprise Architecture

<p><i>Maximize the use of e-business technologies to strategically improve performance and communication.</i> GSA must design or reengineer business processes to maximize the effective and strategic use of e-business (e-government) technologies, including the Internet and electronic payments and collections.</p>	<p>OMB briefing, GSA annual report</p>
<p><i>Align systems and processes with—and support—business-line missions and objectives.</i> Before to acquiring or developing new financial systems or automating any financial processes, GSA and its Services must ensure that the initiative directly supports its business-line missions and goals.</p>	<p>Clinger-Cohen, A-130, CIO Council, GSA performance plan</p>
<p><i>Develop and use the enterprise architecture as an IT strategic planning and management tool.</i> The CIO must maintain an enterprise architecture that documents the current and target architectures and enforces appropriate IT standards, ensuring interoperability, portability, and scalability in systems across GSA. A portfolio of IT assets structured in an enterprise architecture format provides information demonstrating the impact of alternative IT investment strategies and funding levels, and identifies opportunities for sharing resources.</p>	<p>Clinger-Cohen, A-130, CIO Council</p>
<p><i>Require consistent cost and benefit evaluations for IT asset decision-making.</i> Using analysis standards outlined in OMB Circular A-94, GSA should make decisions about IT capital assets (NEAR, Pegasys)—including when significant changes occur in project plans—on the basis of cost and benefit analysis reflecting the entire life of the asset.</p>	<p>Clinger-Cohen, A-130</p>
<p><i>Use a standard system development life-cycle model to manage IT assets—including the technology architecture.</i> GSA and its Services should adopt standard models and methods (based on each system’s unique, full life cycle) for managing and understanding its IT assets and IT decision-making.</p>	<p>Clinger-Cohen, A-130</p>
<p><i>Hold the CIO responsible for the agency’s information technology architecture.</i> The GSA CIO must maintain an enterprise architecture documenting the current and target architecture and must enforce appropriate IT standards, ensuring interoperability, portability, and scalability in systems across GSA. The CIO must also communicate and cooperate with the functional users (such as the financial management community) to ensure the information technology architecture meets their needs.</p>	<p>Clinger-Cohen, A-130, GSA annual report, GSA performance plan</p>
<p><i>Implement commercial or government off-the-shelf solutions when practical.</i> GSA should use COTS or GOTS software unless analysis documents that other approaches are more cost-effective.</p>	<p>Clinger-Cohen, A-130</p>
<p><i>Design, acquire, and implement major information systems in segments with narrow scope and brief duration.</i> For its financial management system and other major projects, GSA can reduce risk, promote flexibility and interoperability, increase accountability, and better address the evolving mission needs of its business lines by segmenting large projects into smaller, more manageable parts.</p>	<p>Clinger-Cohen, A-130</p>
<p><i>Establish unified financial and operational management system.</i> GSA must have a unified system for processing, managing, and reporting financial data. This required unified system encompasses financial applications and the financial portion of mixed systems. A unified system is characterized by common data definitions, processes, and internal controls.</p>	<p>A-127, CIO Council, GSA performance plan</p>
<p><i>Incorporate efficient transaction entry procedures.</i> The GSA central office, Services, and regions must eliminate unnecessary duplication of transaction entry; GSA must enter data only once and update other parts of the system electronically.</p>	<p>A-127, GSA annual report</p>
<p><i>Manage information systems as a portfolio of assets.</i> GSA executives should be able to evaluate IT initiatives in the context of other related IT assets. A portfolio of assets provides information demonstrating the impact of alternative IT investment strategies and funding levels, and it identifies opportunities for sharing resources.</p>	<p>A-130</p>
<p><i>Incorporate IT security into all layers of the enterprise architecture.</i> GSA’s CIO must establish a level of security for all systems and architecture elements commensurate with the risk and magnitude of harm resulting from potential loss. A security plan review must be part of an agency’s enterprise architecture documentation.</p>	<p>A-130</p>

Performance Goals:

Target GSA Financial Management Architecture

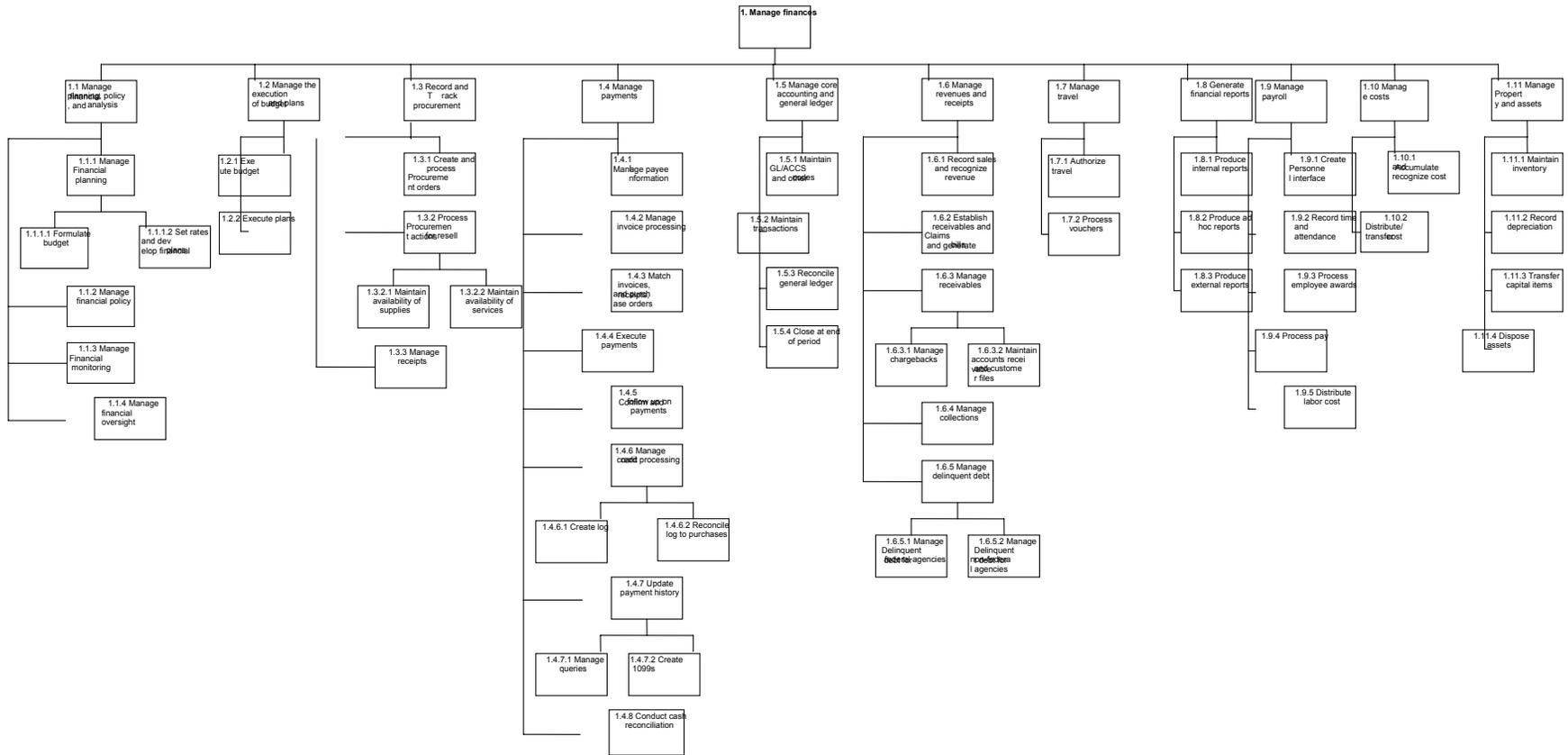
Performance Goals are a crucial area for GSA Financial Management and the Target Architecture. Performance Goals are an output of the Business Cases created for the Business Drivers and provide the measuring tool to judge the outputs of the Agency as Outcomes to the GSA clients. GSA financial management processes and systems are the primary data inputs to these management measuring tools. Business outputs are measured by their ability to be audited and tracked as well as the processes themselves being measured. As a result the GSA Financial Management Target Architecture will have performance linkages, such as cycle time and accuracy improvements on vendor payments, that reflect the health (positive outcomes) of the organization as well as the reliability (procedural audit).

Function Organizational Descriptor:

The GSA Financial Management Functional Hierarchy shown in Figure 5 will be responsible for executing the Application Architecture presented later in this document. GSA will standardize business processes across the Services where possible and the financial business sub functions will be similar today and tomorrow. However the activities under the sub functions will represent the future activities of the GSA financial business processes, and it is anticipated that these will undergo significant change as activities based management is adopted and bi-directional data flow become the norm at GSA. It is recognized that this will be an evolutionary and ever changing functional representation of the GSA Financial Management process. There will be a migration from a transaction tracking and review role to an activity management and business process transaction data production role inside the activities of these Financial Management business processes. This change in focus is going to mandate a skill set change in the current finance staff, which will enhance both the work force skill sets and the work place environment. This target business environment will be obtained because there will be no redundant or duplicate systems and the finance specialist will be focused on “What if” types of inquires not the current “ Why are these numbers wrong?” research. There will also be greater teaming within the Regions between business management and finance staff for process data sharing and problem solving. The traditional Business Silo business function hierarchy will be replaced with enhanced cross organizational business teams solving client issues and client delivery of GSA service offerings. The necessary external reports (FASAB, GPRA, OMB, Treasury, etc.) and internal management reports will be produced by these activity focused business functions.

Target GSA Financial Management Architecture

Figure 5: GSA Financial Management Functional Hierarchy Business Functions and Subfunctions



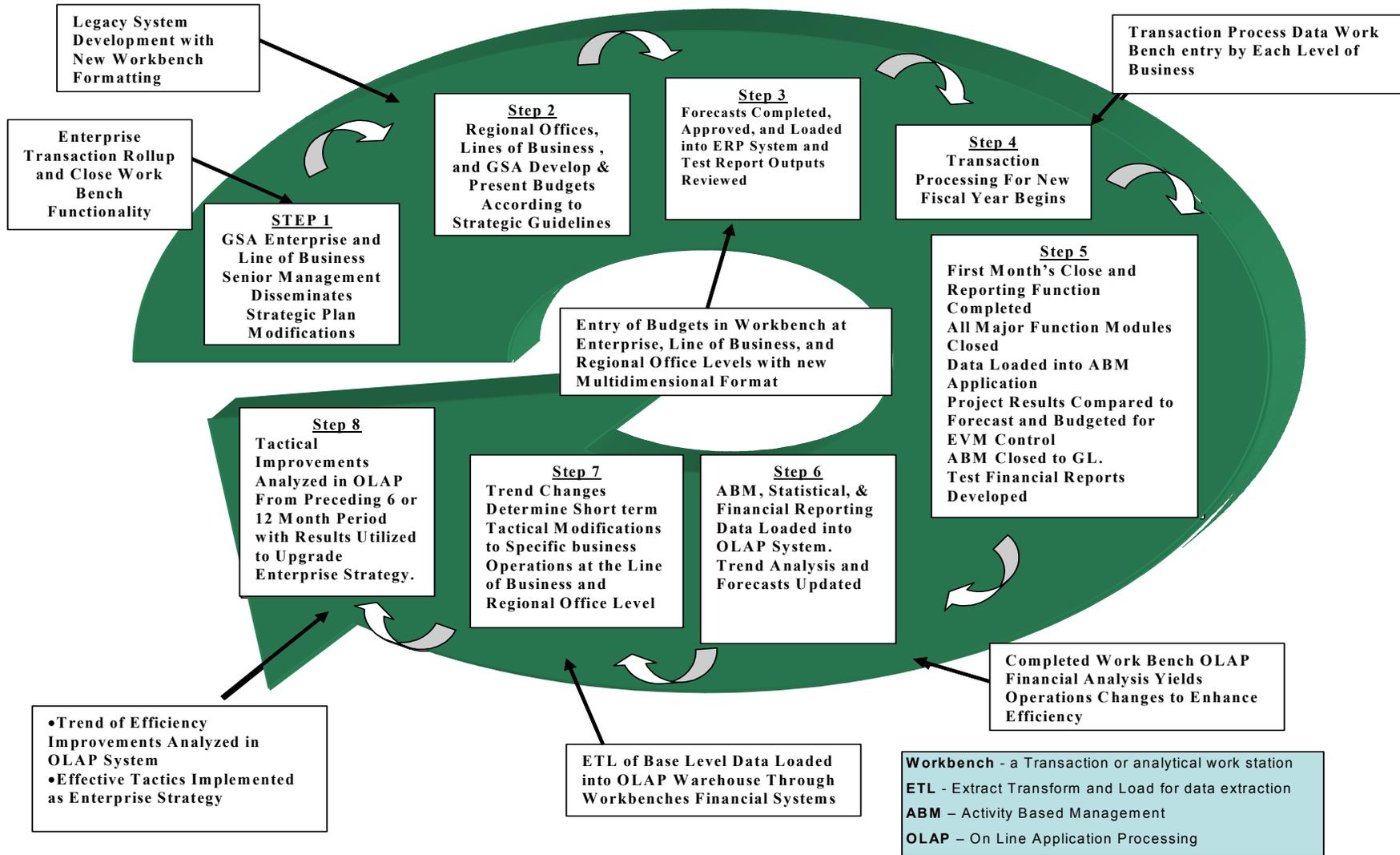
Target GSA Financial Management Architecture

Business Process and Activity Descriptors:

The current business functions and sub functions flows of GSA Financial Management as pictured in Figure 6 will continue to illustrate the major future business flows of GSA Financial Management. The Financial Management Target Business Architecture will strive to emulate current finance best practices. The architecture will also model the current best practice of centralized financial control: i.e. one General Ledger (GL), one chart of accounts etc. The GSA business analytical staff will operate with extensive data feeds to its on-line analytical systems to provide actionable management reports. The six GSA Financial Management business drivers reinforce this requirement in terms of their demand for cycle time reduction and quantifiable outcomes.

Target GSA Financial Management Architecture

Figure 7 Financial Business Architecture Process Cycle



Target GSA Financial Management Architecture

These processes will be supplemented with an Activities Based Management (ABM) application software package and intense business process re-engineering. During the transition phase of the Enterprise Architecture build-out, GSA Financial Management will be able to achieve another industry best practice: activity specification and quantification. (See Table 4 for an activity based example). This example points out the difference between overhead allocated funds and activity specific funding and tracking. This activity based focus will change the Service and OCFO organizational structure from a data entry focus to a transaction based activity with an analytical and forecasting focus, which supports the GSA Financial Management target business environment.

Table 4 Activities Based Management Example

Monthly Status of Funds Report		Activity Based Status of Funds Report	
Personnel Compensation and Benefits		Develop Fin Mgmt Architecture	750,000
Salaries Benefits	1,400,000	Develop OGP Architecture	110,000
Awards	18,000	Review 300b for EA	60,000
Travel	22,000	Develop GISRA Report	550,000
OtherExpenses	2,400,000	Conduct int.& ext. tests	625,000
		Update Security Policy	85,000
		Develop Security Profile for Desktop Computers	50,000
		Conduct Annual Security Training	375,000
		Operate Customer Data Warehouse	850,000
		Update Technical Standards	100,000
		Update Architecture Repository	285,000
Total Obligations	3,840,000	Total	3,840,000

Section 5: Target Financial Management Data Architecture

The Target Financial Management Data Architecture addresses:

1. Data interactions with business processes
2. Complete information requirements definitions
3. Consistency:
 - i. Focus on Standards and Data Definitions
 - ii. Common GSA Financial Management Definitions
4. The Target Financial Management Data Architecture baseline

The Target Financial Management Data Architecture includes:

1. An Entity Relationship Diagram (ERD)
2. Entity Definitions
3. Data Classes
4. Transaction Data Inputs to Finance Process Reporting

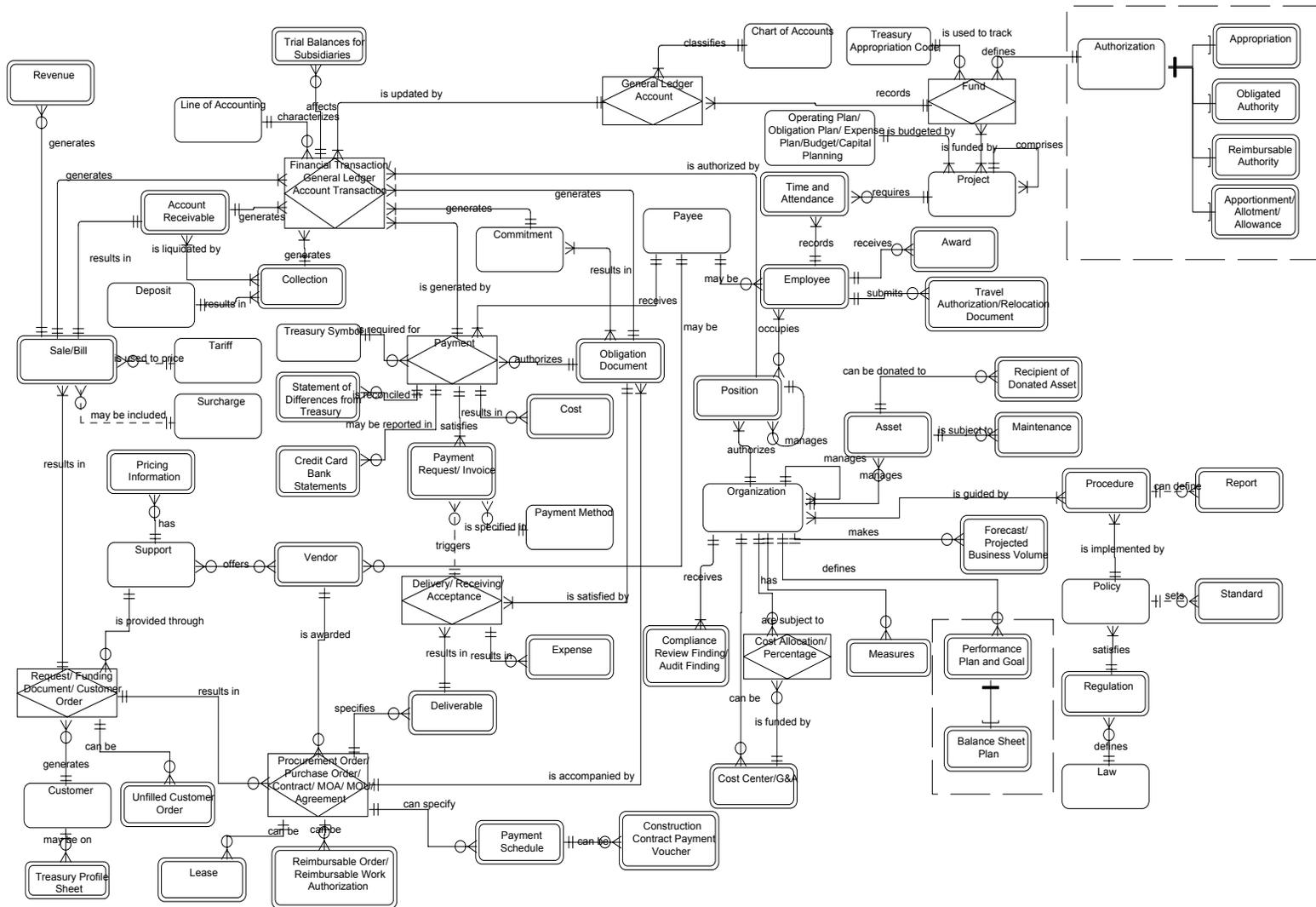
Data Interactions with Business Processes:

The target financial management data architecture has as its baseline the current consolidated GSA financial management enterprise architecture. These data architecture baselines will allow for data architecture expansion into increased business process information definition needs and required data documentation and illustration. Successful Enterprise Architecture requires a tight match between the business activities and their detailed information requirements. Included in this Data Architecture are the Entity Relationship Diagrams (Figure 8), the Data Entity Definitions (Table 5), and the summary Transaction Data Inputs needed for Finance Process Reporting (Figure 9).

A key contribution of the Data Target Architecture is a focus on creating single Vendor Account information and customer numbers across the GSA and its Services. In addition, the focus on process re-engineering and an activity focus will allow data to be captured once, used many times, and updates synchronized across business functions and client requirements. This simplifying of data occurrences and coordination of usage will enhance the capability of systems like Customer Relationship Management (CRM).

Target GSA Financial Management Architecture

Figure 8: Target Financial Management Data Entity Relationship Diagram



Target GSA Financial Management Architecture

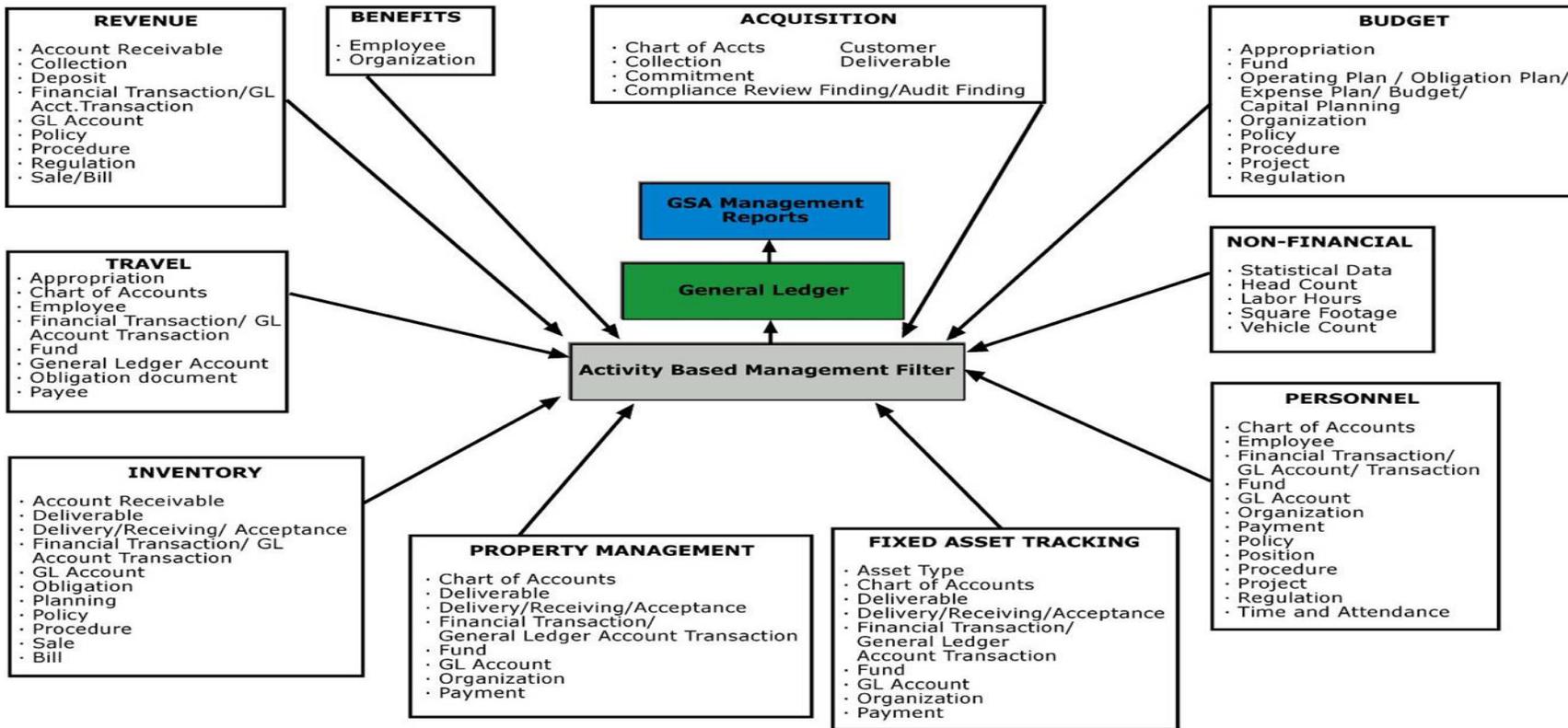
Table 5: Target Financial Management Data Entity Definitions (Partial)

Data Entity	Description
Account Receivable	It represents an amount due GSA on account, from customers who have purchased goods or received services.
Apportionment/Allotment/Allowance	An authorization to spend up to a specified amount. This is set for regions' budgeting.
Appropriation	An authority for a federal agency to incur obligations and make payments out of the Treasury for specified purposes and of a certain amount. The authority generally derives from authorizing legislation followed by an appropriation act and is issued to agencies in the form of a Treasury Warrant (FMS 6200).
Asset	A set of information about an asset necessary for its management and accounting during its entire life (identifier, useful life, salvage value, method of depreciation, expense vs. cost of good).
Authorization	An authority to spend.
Award	A recognition given to an employee for excellent performance.
Balance Sheet Plan	A financial plan detailing the expected balance sheet impact of expected financial activity of an organization.
Chart of Accounts	A category used to classify transactions and activities so they can be summarized and reported in a meaningful manner.
Collection	A payment received by GSA in satisfaction of an account receivable or as income for goods or services provided by GSA but not previously established in the accounts receivable subsidiary.
Commitment	A plan to request goods and services. Commitments reserve funds for subsequent obligations.
Compliance Review Finding/Audit Finding	A result of an examination of financial management practices to determine whether financial management policies are being carried out.
Construction Contract Payment Voucher	A payment voucher unique to construction type contracts.
Cost	The amount or equivalent paid or charged for something.

Target GSA Financial Management Architecture

Creating an agency wide annual financial cycle is also part of this financial management architecture and is in response to current best practices. GSA Finance is creating an annual calendar for budgeting, revenue forecasting, asset and inventory analysis, etc. which also allow the simultaneous analysis of multiple year data and performance. As an example, all enterprise Architecture inputs will have to be received by mid February in order to be processed in the annual fiscal budget process. The financial “applications” grouping reflected in Figure 9 highlight the new reporting entities and their associated data classes. needed by the interoperable financial management system.

Figure 9: Financial Data Inputs with Sample Data Classes Supporting Financial Process Reporting



Section 6: Target Financial Management Applications Architecture

The Target Financial Applications Architecture addresses:

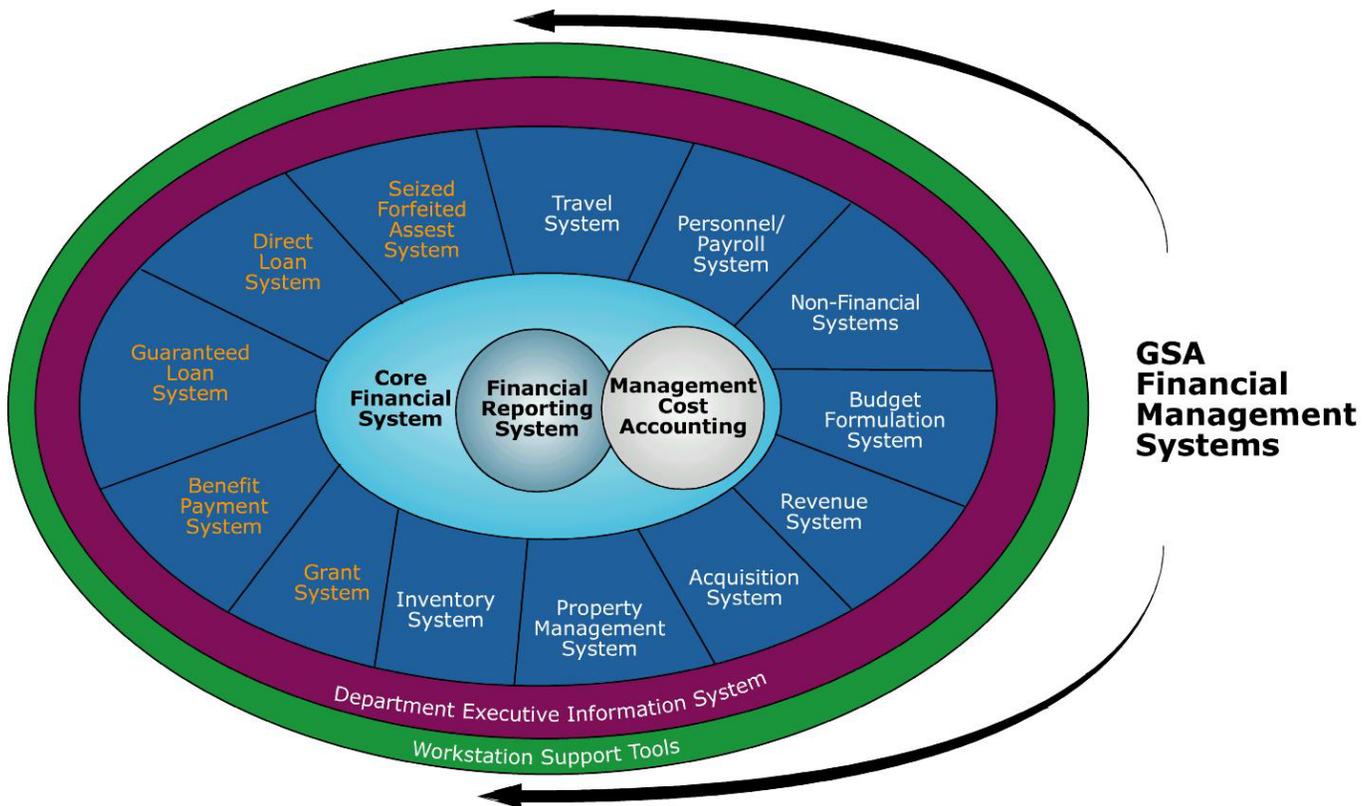
1. Establishment of Application Systems and Modules and their Relationships to Business Functions Sub-functions and Corporate Data
2. Application Architecture Influencers
 - a. Business Operations Processes
 - b. Data Structure and Standards
 - c. Interface Requirements
 - d. Technologies Employed¹

The Target Financial Applications Architecture includes:

1. Application Architecture Compliant with JFMIP
2. Single Solution for each Finance Application (this does not equate to a single application) Revenue, Acquisitions, GL, etc.

The GSA Target Financial Applications Architecture is the jumping off point for expanded single system focus as represented in the applications architecture (Figure 10). It is also JFMIP compliant (Table 6).

Figure 10: GSA Financial Management Applications Architecture



¹ Table 6 specifies in some detail the exact nature of these Application Requirements details.

Application Architecture Compliant with JFMIP:

Table 6: JFMIP Application Architecture Requirements

JFMIP Application Architecture Requirements
1) Be modular in design, utilize open-systems architecture, and be upgradeable by Core system module to accommodate changes in laws, regulations, best practices and new technology. (TA-01)
2) Be a commercially available product, subject to regular maintenance based on vendor developed and scheduled software releases. (TA-02)
3) Include internal transaction processing controls, including the capability in the event of a system failure to automatically: (TA-03)
4) Enforce internal database consistency during all on-line and batch update operations, including distributed databases, if applicable. (TA-04)
5) Have fully documented restart capabilities for the application’s on-line and batch processing components.(TA-05)
6) Include complete installation, operating, and system maintenance documentation (TA-06)
7) Include revised documentation concurrent with the distribution of new software releases. (TA-07)
8) Employ common error-handling routines across functional modules and present error messages that allow the user or system operator to respond to reported problems. (TA-08)
9) Common error message text must be customizable by the agency. (TA-09)
10) Generate output information to formats specified by functional requirements (TA-10)
11) Be customizable to meet agency specific business/accounting needs using agency supplied application configuration and operating parameters. (TA-11)
12) Provide fault-free performance in the processing of date and date-related data (TA-12)
13) Include an integrated relational, Structured Query Language compliant database. (TA-13)
14) Simultaneously process on-line transactions and transactions submitted via system interface. (TA-14)
15) Support the e-Gov Integrated Acquisition Environment (IAE) initiative. (TA-15)

As evidenced by best practices, the establishment of a strong activities focused financial core leads to a robust extension of financial systems integration into the various business areas. The JFMIP Interoperability Requirements² are very specific about planning for this integration. Numerous simplification processes occur when this financial and business integration occurs. This is the reason for the success of interoperable financial management systems in companies over \$100 million in sales in the private sector, to which GSA is comparable. The data from the transaction systems are used by online report applications to provide useful decision support tools for managers. Thus the traditional transaction applications are replaced by solution sets which generate actionable reports for GSA managers. It is anticipated that GSA Payroll and Travel will be integrated into E-Payroll and E-Travel and that these types of solution sets will become ubiquitous

² Page 70 JFMIP Core Systems Requirements

Target GSA Financial Management Architecture

Figure 11: Integrated Financial Components for Application Services to Business Functions (Functions 1-5.2)

System Application	1.1 Manage financial planning, policy, and analysis	1.1.1 Manage financial planning	1.1.1.1 Formulate budget	1.1.1.2 Set rates and develop financial plans	1.1.2 Manage financial policy	1.1.3 Manage financial monitoring	1.1.4 Manage financial oversight	1.2 Manage the execution of budget and plans	1.2.1 Execute budget	1.2.2 Execute plans	1.3 Record and track procurement	1.3.1 Create and process procurement orders	1.3.2 Process procurement actions for resell	1.3.2.1 Maintain availability of supplies	1.3.2.2 Maintain availability of services	1.3.3 Manage receipts	1.4 Manage payments	1.4.1 Manage payee information	1.4.2 Manage invoice processing	1.4.3 Match invoices, receipts, and purchase orders	1.4.4 Execute payments	1.4.5 Confirm and follow up on payments	1.4.6 Manage credit card processing	1.4.6.1 Create log	1.4.6.2 Reconcile log to purchases	1.4.7 Update payment history	1.4.7.1 Manage queries	1.4.7.2 Create 1099s	1.5 Manage core accounting and general ledger	1.5.1 Maintain GL/ACCS and other codes	1.5.2 Maintain transactions	1.5.3 Reconcile general ledger	
Core Financial System	X	X	X	X	X	X	X	X	X	X		X								X	X				X	X		X	X	X	X		
Financial Reporting System	X	X	X	X	X	X	X	X	X	X		X	X	X							X	X		X		X	X		X	X	X	X	
Managerial Cost Accounting	X	X		X	X	X	X			X		X										X				X	X		X	X	X	X	
Revenue System	X	X		X	X	X	X			X		X											X				X						
Acquisition System	X	X		X	X	X	X			X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Budget Formulation System	X	X	X	X	X	X	X	X	X	X		X															X						
Non-Financial Systems										X									X								X						
Personnel/Payroll System	X	X		X	X	X	X			X					X		X	X	X								X	X	X		X	X	
Travel System				X						X																	X				X	X	
Benefit Payment System	X	X		X	X	X	X			X					X		X	X	X			X					X	X			X		
Inventory System	X	X	X	X	X	X	X			X	X	X	X	X		X			X	X	X	X		X	X	X	X			X	X	X	X
Fixed Assets	X	X	X	X	X	X	X				X									X				X	X		X			X	X	X	X
Property Management System	X	X	X	X	X	X	X			X	X	X	X			X					X						X			X	X	X	X

Figure 11 and Figure 12 show that Target Interoperable Financial Application solutions match a required GSA Business Function.

Figure 12: Integrated Financial Components for Application Services to Business Functions (Functions 5.4-11.2)

Target GSA Financial Management Architecture

System Application	1.5.4 Close at end of period	1.6 Manage revenues and receipts	1.6.1 Record sales and recognize revenue	1.6.2 Establish receivables and claims and generate bills	1.6.3 Manage receivables	1.6.3.1 Manage charge backs	1.6.3.2 Maintain accounts receivable and customer files	1.6.4 Manage collections	1.6.5 Manage delinquent debt	1.6.5.1 Manage delinquent debt for federal agencies	1.6.5.2 Manage delinquent debt for non-federal agencies	1.7 Manage travel	1.7.1 Authorize travel	1.7.2 Process vouchers	1.8 Generate financial reports	1.8.1 Produce internal reports	1.8.2 Produce ad hoc reports	1.8.3 Produce external reports	1.9 Manage payroll	1.9.1 Create personnel interface	1.9.2 Record time and attendance	1.9.3 Process employee awards	1.9.4 Process pay	1.9.5 Distribute labor cost	1.10 Manage costs	1.10.1 Accumulate and recognize cost	1.10.2 Distribute/transfer cost	1.11 Manage property and assets	1.11.1 Maintain inventory	1.11.2 Record depreciation	1.11.3 Transfer capital items	1.11.4 Dispose assets		
Core Financial System	X	X	X	X	X	X	X								X	X	X		X		X	X	X	X	X	X	X	X	X	X	X	X	X	
Financial Reporting System		X	X		X	X	X								X	X	X	X	X						X			X						X
Managerial Cost Accounting	X	X	X	X	X	X	X	X	X	X	X				X	X	X		X		X	X	X	X	X	X	X	X	X	X	X	X	X	X
Revenue System	X	X	X	X	X	X	X	X	X	X	X				X	X	X																	
Acquisition System	X	X				X								X	X	X	X									X	X							
Budget Formulation System	X														X	X	X																	
Non-Financial Systems																X	X																	
Personnel/Payroll System	X														X	X	X			X	X	X	X	X		X	X							
Travel System	X											X	X	X		X	X		X	X						X	X							
Benefit Payment System	X					X									X	X	X			X	X					X	X							
Inventory System	X														X	X	X									X	X	X	X					X
Fixed Assets	X														X	X	X									X	X	X	X	X	X	X	X	X
Property Management System	X														X	X	X									X	X	X	X	X	X	X	X	X

Target GSA Financial Management Architecture

Single Solution for each Finance Application (this does not equate to a single application) Revenue, Acquisitions, GL, etc.:

Financial transactions will be originated using external feeder applications. These feeder systems fall into two categories. The first category consists of those feeder systems considered legacy systems based on older computing technologies. The second, and more important category, for the long term success of the Target financial system are interoperable financial management systems Customer Relationship Management (CRM), Activities Based Management, and On Line Analytical Processing (OLAP) systems. Of these three Target system types, OLAP is most critical to generating the business intelligence required to obtain extended JFMIP conformance.

While the Target financial system provides the necessary functions to support the GSA’s mandated function of providing proper financial controls, the interoperable financial management systems and CRM systems will provide the greatest value to the GSA in transaction processing. The interoperable financial management system will provide robust automated systems to improve management of the supply chain. Interoperable financial management systems help track the flow of finished materials into GSA, the integration of these components into final products and services and the costs and processes associated with running the business and delivery of products and services to the customer. The CRM system will provide robust automated systems to improve the customer experience with GSA. CRM systems help track all aspects of customer interactions with GSA including pending orders, problem transactions, requests for support, and contracts. These interoperable systems will also facilitate the budget preparation and allocation process for GSA. This is a major requirement of the Target financial Management Architecture.

Given the focus and difficulty of creating the current baseline of application simplicity, Table 7 illustrates the amount of consolidation that will occur from NEAR and the other Service feeder systems.

Table 7: GSA’s Integrated Financial Management System

Current Applications Architecture	Target Applications Architecture
-CSC -FAIM -FEDBIL -Autobil -SIBAC1 - BSIBAC-TIRES -TAP -RWA -TOPS -NABAS - RWA Loads & Conversions -Fedstrip, NEAR Billing -204 -420 -488 -489 -102 -103 -105 -225 -226 -289 -177 -189 -190 -191 -198 -406 -107 -127 -256 -261 -410 -115 -159 -459 -259 -559 -659 -101/122 -128 -165 -465 -665 -113 -117	A/R Billing
-TIRES -358 -258 -958 -536 -456	Cost Allocation
-TIRES -136 -186 -436 -210	Asset Management
FMIS -TIRES	Planning & Analysis
-STAR -Autobil-STAR -FMIS -TAP -TIRES -RWA -CAPS - 458 - -658 -483 -536 -510 -429 -148 -456 -656 -158 -156 -358 -956	Reporting

Section 7: Target Financial Management Technical Architecture

The Target Financial Management Technical Architecture addresses the following technical infrastructure Requirements:

1. Adopt Mandatory JFMIP
2. NIST Security
3. Section 508 Accessibility
4. Privacy
5. Incorporates E-Gov Initiatives

The Target Financial Management Technical Architecture includes:

1. Network Descriptions
2. Hardware and Software Components
3. System Interactions
4. Interoperability Assurances

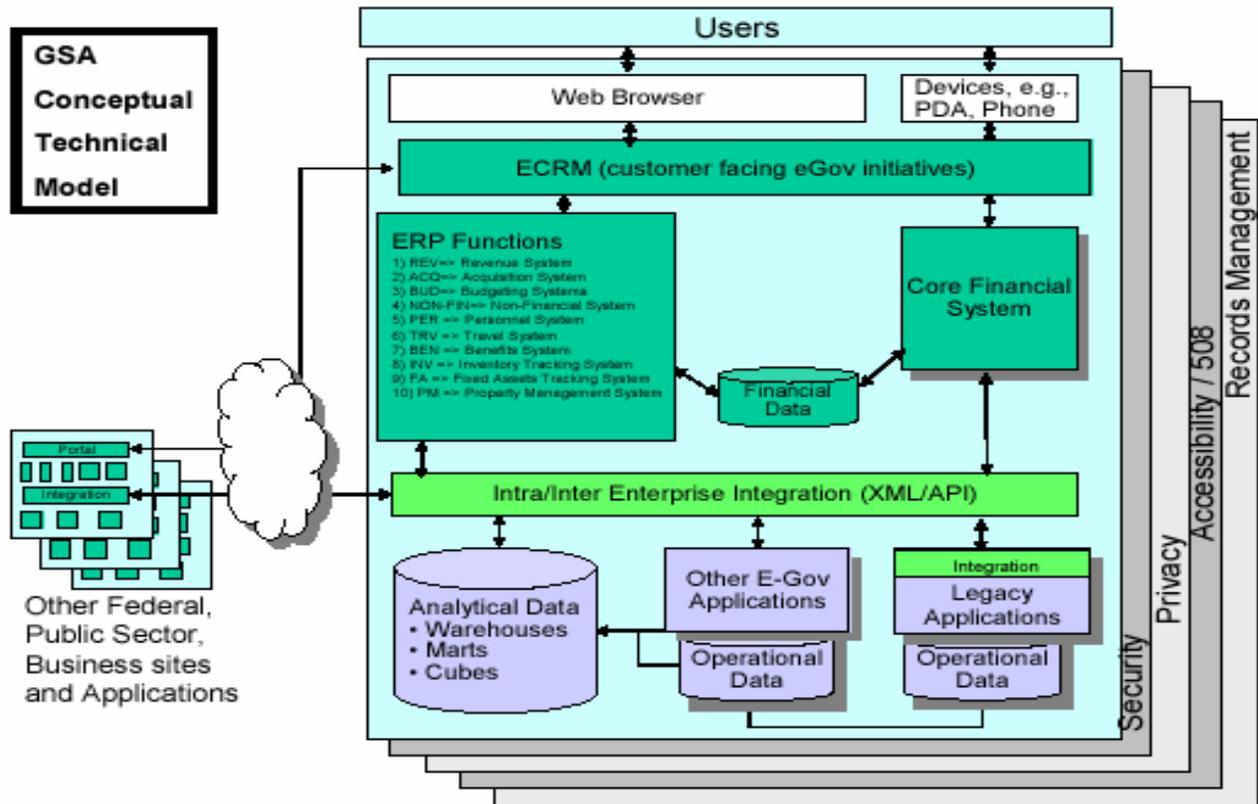
The Technical Infrastructure Requirements of the Target Financial Management Technical Architecture are very broad and will be specific to providing the right information to the right place at the right time. An overriding requirement is to meet all of the mandatory JFMIP stipulations. There is an ever-widening set of Security requirements that come out of NIST's Computer Security Resource Center. Section 508 is now a mandatory and will require some duplicate effort in report presentation. Privacy concerns need also to be addressed as the amount and specificity of supplier and Industry Partner information grows. In addition, the growth of the E-Gov initiatives and GSA's significant participation will add another dimension to traditional means of information and report presentation. Compliance with E-Gov architecture guidelines will also be necessary so as to reflect diverse presentation and access requirements. Finally, records management and E-Records will produce increased strain on any infrastructure and must be considered.

Target GSA Financial Management Architecture

Technical Infrastructure Requirements:

The Technical Target Financial Management Architecture also needs to consider various detailed network configurations (landline and wireless); various web server environments, and interoperability and expansion requirements. These are highlighted in Figure 13.

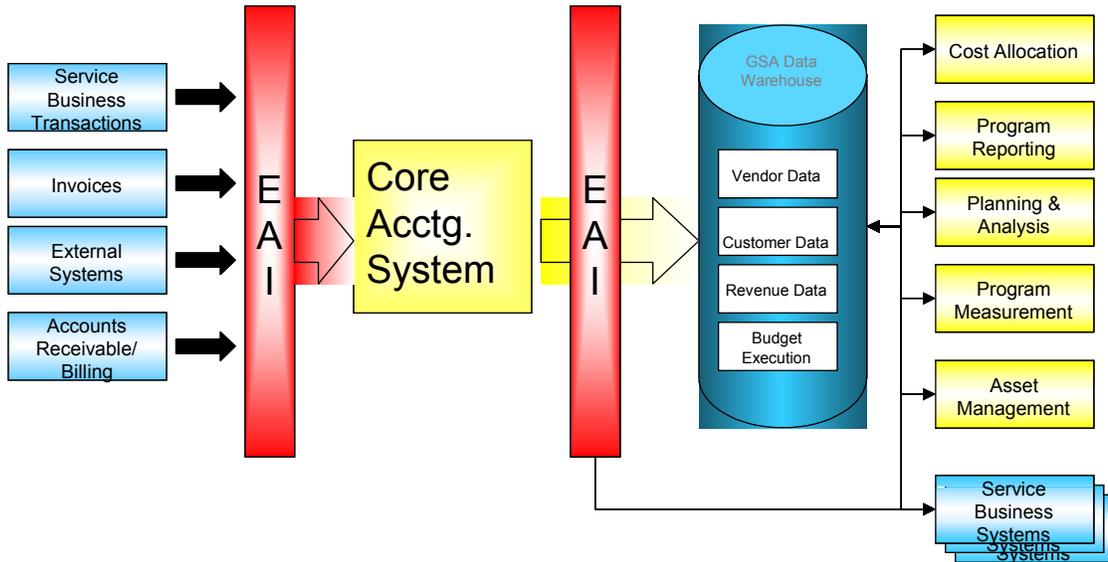
Figure 13: Technical Financial Management Architecture (Conceptual)



Target GSA Financial Management Architecture

In Figure 14 we have illustrated our Technical Systems Architecture, which focuses on the Services ability to interact with the target solution to get the data they need to operate their businesses. This view provides the optimized flexibility for GSA users.

Figure 14: Target Financial Management Technical Systems Architecture

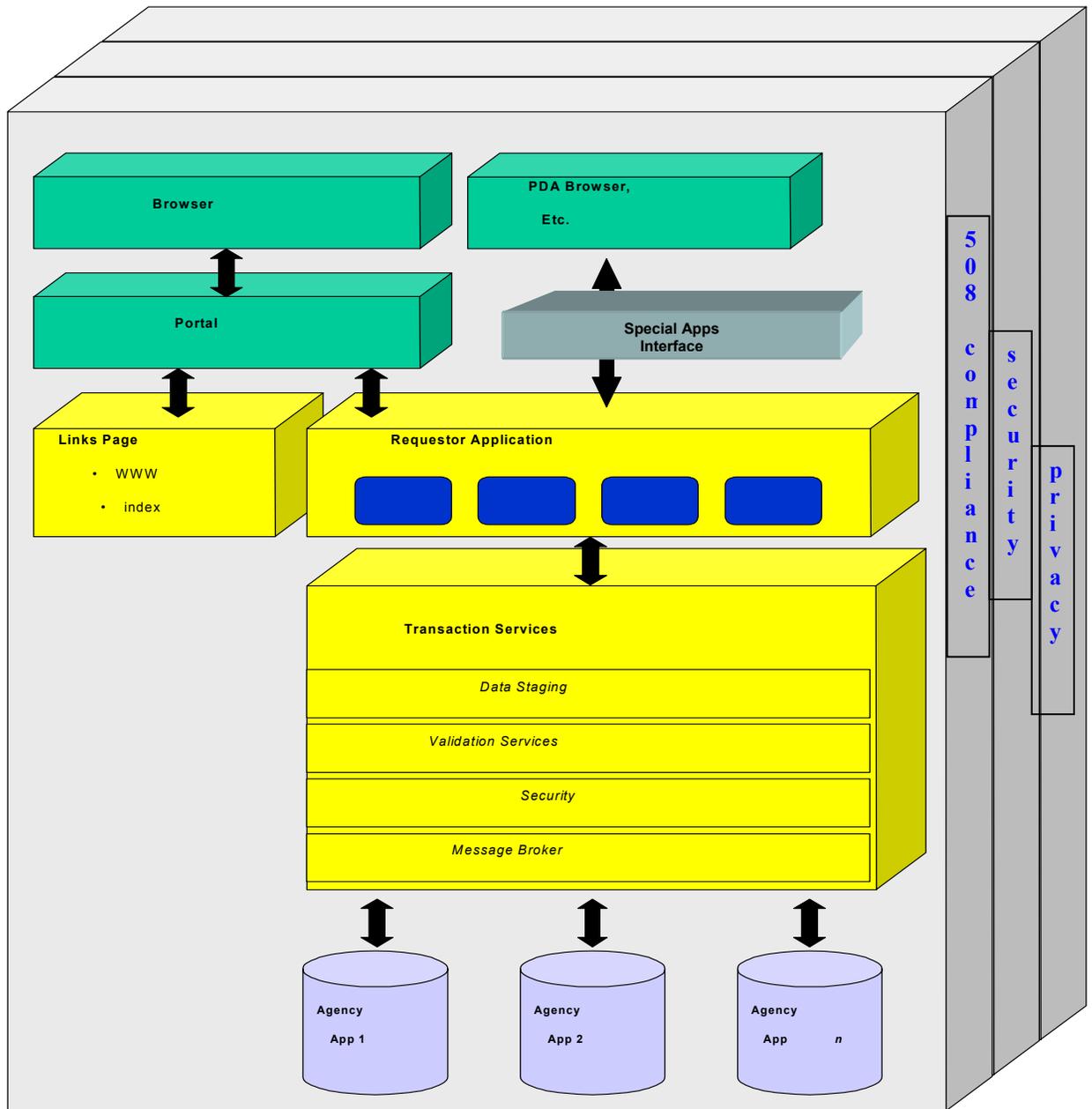


Target GSA Financial Management Architecture

Finally we have demonstrated GSA E-Gov target compliance with an illustration of the Citizen/ Business User/ Customer and other Client E-Gov requirements view in Figure 15.

Figure 15: GSA E-Gov Architecture

Citizen/Business User/Customer Agencies



Section 8: Target Financial Management Architecture Summary

The GSA Interoperable Financial Management System is an Activity Based Financial Management System that is JFMIP compliant and provides GSA OCFO and the Services rock solid transaction data that is auditable, actionable, and traceable. The detailed cost, revenue, cycle time, and outcome forecast information provide a platform for Services to determine unit costs, energy consumption details, customer satisfaction detail, and other information to manage their business efficiently and effectively management information. This detail will also allow for the generation of Program Earned Value Reports with sufficient cost and schedules data. This in-depth Earned Value Management (EVM) and detailed granular output and outcome reporting will allow the attainment of the six GSA Financial Management Business Drivers and put GSA into a Best in Class performer.

The accomplishment of data and information standards and classes, with emphasis on world-class transaction processing, and world-class analytics, will achieve the goal of an efficient GSA operation as well as allowing for fast, accurate closings and auditable results.

The financial process redesign and focus on analytics will also improve the work force and workplace. It will accomplish this by providing a more networked and self-organizing environment which will reward associates for their individual and team contributions.

This will result in better business outputs for GSA as it picks up the challenge of the President's Management Agenda as reflected in the GSA Strategic Goals.

Section 9: List of Referenced Materials (partial)

LMI GSA Current Financial Management Assessment:

- Introduction
- Business Architecture
- Functional Requirements
- Entity Relationship Diagrams Analysis
- Data Architecture
- Technical Architecture
- Applications Architecture
- Applications Entities Relationships
- Current Assessment
- Target Recommendations
- Workshop Recommendations
- FTS Current Architecture
- FSS Current Architecture
- PBS Current Architecture

GSA Planning Documents:

- GSA Strategic Plan (4-2002)
- GSA IT Strategic Plan (10-02)
- GSA Performance Plan (2001)
- FTS Performance Plan (2001)
- FSS Performance Plan (2001)
- PBS Performance Plan
- FTS 3GS Requirements
- Various GSA Web Sites

Guidance Material:

- FFMIA Overview
- JFMIP Core Financial Systems
- GAO Review
 - Financial Management Audits (2000, 2001)
- GSA IG Report (1-02)

Private Industry Finance Material

Various INTEROPERABLE FINANCIAL MANAGEMENT SYSTEMS Financial Systems Web Sites

- AMS Momentum, SAP, Oracle, People Soft
- “Activities-Based Cost Management in Government”- Gary Cokins
- “Enterprise Resource Planning Systems, Systems, Life Cycle, Electronic Commerce, and Risk” - Daniel E. O’Leary,

ICH Architecture Reference Material