

AUDIT REPORT
12-19

**Enhanced Architecture Maturity Could Better Guide GPO's
Transformation**

September 28, 2012

Date

September 28, 2012

To

Chief Information Officer

From

Inspector General

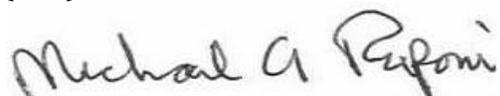
Subject

Audit Report – Enhanced Architecture Maturity Could Better Guide GPO's Transformation

Report Number 12-19

Enclosed please find the subject final report. Please refer to the "Results in Brief" for the overall audit results. Our evaluation of your response has been incorporated into the body of the report. We consider management's comments responsive to the recommendations. The recommendations are resolved and will remain open pending our verification of the completion of the agreed upon corrective actions.

We appreciate the courtesies extended to the audit staff. If you have any questions or comments about this report, please do not hesitate to contact me at (202) 512-0039.



Michael A. Raponi
Inspector General

Enclosure

cc:

Acting Public Printer
Assistant Public Printer, Operations
General Counsel

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Office of Inspector General

Report Number 12-19

September 28, 2012

Enhanced Architecture Maturity Could Better Guide GPO's Transformation

Introduction

The Office of Inspector General (OIG) initiated an audit to determine to what extent GPO has assurance that its Enterprise Architecture is used to guide and constrain ongoing development and support of GPO's strategic transformation.

GPO defines the transformation process as a move from a print centric to a content centric model and includes content management systems, business information systems, and digital production systems.

Throughout its 150-year history, the GPO has transformed the way it publishes government information to keep pace with the technology of the time. The trend towards producing government documents through electronic publishing technology and providing public government documents through the Internet has affected all of GPO's programs, reducing the production, procurement, and sales of printed products. These have historically provided GPO with a vital source of revenue to supplement its annual budget. GPO is making strategic, operational, and cultural changes to help ensure GPO stays relevant and efficient, and meets its customers' needs.

As the GPO undergoes this transformation, a key element is the use of Enterprise Architecture. Enterprise Architecture is the "blueprint" for defining an organization's current (baseline) and desired (target) environment. Enterprise Architecture is essential for evolving information systems, developing new systems, and inserting emerging technologies that optimize mission value.

GPO reports that approximately 97 percent of all U.S. Government documents are now born digital, published to the Web, and will never be printed by the Federal Government. Internet and intranet search are the preferred methods for obtaining information. GPO has determined it will utilize all available technology to assist Federal agencies in disseminating information about their operations in a fast, secure, and permanent manner.

GPO's Enterprise Architecture is managed by the Enterprise Architecture Program Office which is comprised of a Chief Architect who reports to the Chief Information Officer (CIO), two dedicated full time staff members, and two contractors. Under the Chief Technology Officer, GPO's Office of Programs,

Strategy and Technology is responsible for the management, ongoing development, and support of Federal Digital System (FDsys).

We reviewed GAO's Enterprise Architecture Management Maturity Framework, which organizes architecture management best practices into seven stages of maturity¹. This framework is based on A Practical Guide to Federal Enterprise Architecture, published by the federal Chief Information Officer Council². We interviewed the current and former Chief Architect and staff of the Enterprise Architecture Program Office, and staff responsible for FDsys Enterprise Architecture. We compared GAO's framework with the ongoing efforts of GPO's Enterprise Architecture program.

We also compared GAO's framework to FDsys architecture because GPO's Office of Programs, Strategy and Technology is responsible for the management, ongoing development, and support of FDsys.

We performed our work at GPO headquarters in Washington, D.C., from July to August 2012 and reviewed documents that were made available to us during that period. We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objective. Our objective, scope and methodology are detailed in Appendix B.

Results in Brief

Efforts to develop a fully mature Enterprise Architecture have been underway since 2008. GPO has developed and implemented an Enterprise Architecture policy, created the Enterprise Architecture Program Office, appointed a Chief Architect, uses an automated tool that contains reference models to assist in developing an Enterprise Architecture, and from 2008 to 2010 established an Architect Review Board. In 2010, GPO performed a self assessment using GAO's framework and determined a maturity level of Stage 4 in the GAO framework. The highest level of maturity is Stage 6. Stage 4 represents completing and using an initial Enterprise Architecture version for targeted results.

We compared GPO's progress with GAO's framework. Based on both our audit and GPO's self assessment in 2010, GPO had not fully expanded and evolved the Enterprise Architecture and its use for transformation and optimization.

¹ GAO, Information Technology: A Framework for Assessing and Improving Enterprise Architecture Management (Version 2.0), GAO-10-846G (Washington, D.C.: August 2010).

² CIO Council, A Practical Guide to Federal Enterprise Architecture, Version 1.0 (February 2001).

Currently, we believe the maturity of GPO's Enterprise Architecture is less than what was reported in GPO's self assessment in 2010.

We found similar results with the architecture maturity level of FDsys which has not yet evolved to support transformation or optimization. In fiscal year 2012, FDsys was funded for development at approximately \$4 million.

Without a matured Enterprise Architecture, GPO assumes the risk that it will invest in IT that is duplicative, not well integrated, costly, not supportive of the agency's strategic goals and mission, or not responsive to emerging technologies. Once it is completed, GPO will have a better vision of its transformation. For example, the "as-is" and "to-be" views of the performance, business, data, services, technology, and security architectures, as well as well-defined plans for transitioning from the "as-is" to the "to-be" views are achieved. Also, GPO would be focused on continuously improving the quality of its suite of Enterprise Architecture artifacts and the people, processes, and tools used to govern their development, maintenance, and use.

Since 2010, we believe progress was slowed, in large part, because of the collapse of the Architect Review Board in 2010. We were told as board members were reassigned or left GPO, replacements were not identified and the board eventually discontinued its efforts and has not convened since the collapse noted above.

Recommendations

To enhance the utility and maturity of GPO's Enterprise Architecture, we recommend the:

1. CIO identify, develop, and implement a framework to evolve GPO's Enterprise Architecture and its use to support GPO's transformation and optimization.
2. CIO reevaluate, modify if necessary, GPO Directive 705.31, "GPO Enterprise Architecture Policy" and reestablish and convene the Architect Review Board.
3. Chief Technology Officer coordinate with the CIO to ensure the FDsys architecture is aligned with GPO's Enterprise Architecture.

Management's Response

The CIO concurs with the recommendations. GPO will focus on complying with the spirit of the GAO maturity model as authority allows. Directive 705.31 must be updated to reflect a revised "right-sized" EA approach which takes into

account cross-governmental EA best practices such as those set forth by GAO and OMB's Federal Enterprise Architecture Program Management Office but does not stipulate full compliance.

Currently, FDsys technologies are aligned with the EA Technical Reference Model. However, an improved coordination to achieve more detailed design documentation would be helpful towards improving the baseline architectures.

The complete text of management's response is in Appendix C.

Background

Within the Federal government, numerous rules and regulations govern the development and execution of IT policy. These guidelines have been established to better manage strategic plans, enhance IT acquisition practices, justify IT expenditures, measure IT performance, integrate new technologies, and manage information resources. Below is an overview of such rules and regulations as they pertain to Enterprise Architecture.

Overview of Select Federal Guidance and Legislation

In 1996, Congress enacted the Clinger-Cohen Act³ to address longstanding problems related to Federal IT management. In part, Clinger-Cohen requires each agency's CIO to develop, facilitate the implementation of, and maintain an agency-wide Enterprise Architecture program that integrates agency business processes with agency goals. Agencies Enterprise Architecture programs establish baselines for as-is and target to-be architectures, transition plans for affected agency management and investment decisions coordinated across boards or committees.

The Federal CIO Council began developing the Federal Enterprise Architecture Framework in accordance with the priorities enunciated in Clinger-Cohen. In September 1999, the Federal CIO Council published the Federal Enterprise Architecture Framework to provide Federal agencies with a common construct for their architectures, and facilitate the coordination of system investments among Federal agencies. A Federal Enterprise Architecture Framework model describes an agency's business, the data necessary to conduct the business, applications to manage the data, technology to support the applications, and security measures that ensure the protection of information resources.

OMB has issued guidance, OMB Circular A-130⁴, which establishes policy for the management of Federal information resources, and requires Federal agencies to align their IT investments to their Enterprise Architecture. OMB Circular A-130 requires agencies to document and submit their initial Enterprise Architectures to the OMB, as well as updates when significant changes occur. Agencies Enterprise Architectures describe current and future plans and models as well as providing a roadmap to enable agency operations support of associated technology and processes. Such roadmaps include an agency's capital planning and investment control processes, Enterprise Architecture planning processes, and system life cycle methodologies.

³ Public Law No. 104-106, Division E, February 10, 1996. The law, initially titled the Information Technology Management Reform Act of 1996, was subsequently renamed the Clinger-Cohen Act of 1996 in P. L. 104-208, September 30, 1996.

⁴ OMB, Management of Federal Information Resources, Circular No.A-130 (Nov. 28, 2000).

GPO Management Directive

GPO Directive 705.31, "GPO Enterprise Architecture Policy", dated December 8, 2008, states that in its 2004 report, GAO recommended that GPO implement an Enterprise Architecture as "an essential part of a successful organizational transformation" and that GPO demonstrate its commitment to managing Enterprise Architecture development and maintenance. The Enterprise Architecture Program Office was established to serve the strategic and business needs of the agency. To achieve these goals, the Enterprise Architecture Program Office reports it is using cross governmental best practices set forth by the GAO and OMB.

GPO Directive 705.31 establishes the Architecture Review Board (ARB). The ARB:

- (1) ensures that the acquisition of information technology throughout the agency aligns with the agency's Enterprise Architecture and strategic priorities;
- (2) provides oversight for the development of technology standards, and the interoperability requirements;
- (3) reviews and approves significant changes to the Enterprise Architecture;
- (4) reviews business and system initiatives for compliance with GPO Enterprise Architecture to support interoperability and data sharing and minimize redundancy;
- (5) provides guidance and assistance in the development, maintenance, and management of GPO's Technical Reference Model;
- (6) directs Enterprise Architecture program reviews and milestone reviews of project deliverables and work products for Enterprise Architecture compliance as part of the SDLC process to: (a) ensure alignment with business and program management objectives, (b) verify that technical requirements are satisfied, (c) assess the viability of architectural designs, (d) promote component and data reuse, and (e) verify alignment with standards;
- (7) renders decisions and resolves Enterprise Architecture related issues as requested by the Configuration Control Board, IT project teams, and Project Management Office.;

CIO designates the Chief Architect or the CIO's designee to chair the ARB. Membership of this standing board includes Operational Managers from Business Units, Support Organizations, Office of the CIO, and IT Security.

Additional members are selected on an as-needed basis (i.e. subject matter experts, project managers, etc.).

The GPO Directive references GAO's "Information Technology: A Framework for Assessing and Improving Enterprise Architecture Management" (April 2003).

Framework for Assessing and Improving Enterprise Architecture Management

GAO extends A Practical Guide to Federal Enterprise Architecture, published by the CIO Council, by arranging the core elements in that guide into a matrix of seven hierarchical stages and four critical success attributes.

In August 2010, GAO issued A Framework for Assessing and Improving Enterprise Architecture Management, an update of a 2003 version. The GAO Framework consists of 59 key framework elements, referred to as core elements. A core element is a practice or condition that should be performed or met. The GAO framework is made up of seven stages of management maturity, each of which includes all the core elements that are resident in previous stages.

Prior Audits

We identified one report issued by the GAO that is relevant to this audit. In 2004, GAO conducted a review⁵ in response to both a mandate requiring GAO to examine the state of printing and dissemination of public government information and a congressional request that GAO conduct a general management review of GPO focusing on the inevitable transformation of GPO's.

In part, GAO concluded that GPO did not have an Enterprise Architecture at the time. The CIO organization was in the process of documenting GPO's business processes and supporting IT architecture (the "as-is" enterprise architecture). In doing this work, GPO was focusing on those business items of greater interest to two sets of critical customers—the Congress and users of the Federal Register. At the time, the CIO hired a manager to lead the effort who has significant experience in the development and institutionalization of Enterprise Architecture and related processes.

GAO recommend that GPO begin an effort to create and implement a comprehensive plan for the development of an Enterprise Architecture that addresses completion of GPO's current or "as-is" architecture, development of a target or "to-be" architecture, and development of a capital investment plan for transitioning from the current to the target architecture.

⁵ GAO, Actions to Strengthen and Sustain GPO's Transformation, GAO-04-830, (June 2004).

GPO's Self Assessment

In 2010, GPO performed a self assessment using GAO's framework. GPO reported completing 40 core elements. The self assessment reveals GPO had not fully expanded and evolved the Enterprise Architecture and its use for transformation and achieved optimization. The self assessment results are summarized below:

Stage 0: Creating Awareness.

- Complete

Stage 1: Establishing Institutional Commitment and Direction.

- Completed six of the eight applicable core elements.

Stage 2: Creating the Management Foundation for Enterprise Architecture Development and Use.

- Completed eight of the ten applicable core elements.

Stage 3: Developing Initial Enterprise Architecture Versions.

- Completed 13 of the 13 applicable core elements.

Stage 4: Completing and Using an Initial Enterprise Architecture Version for Targeted Results.

- Completed eight of the nine applicable core elements.

Stage 5: Expanding and Evolving the Enterprise Architecture and Its Use for Institutional Transformation.

- Completed two of the six applicable core elements.

Stage 6: Continuously Improving the Enterprise Architecture and Its Use to Achieve Corporate Optimization.

- Completed three of the seven applicable core elements.

Results and Recommendations

While senior managers are committed and have taken action to develop GPO's Enterprise Architecture, further effort is needed to reach a fully mature Enterprise Architecture. Both GPO's own self assessment in 2010 and our audit reveals GPO had not fully expanded and evolved the Enterprise Architecture and its use for transformation and optimization. Without a fully matured Enterprise Architecture, GPO assumes the risk that it will invest in IT that is duplicative, not well integrated, costly, not supportive of the agency's mission, or not responsive to emerging technologies.

GAO's framework identifies 59 core elements. We determined 53 core elements apply to GPO.

Finding 1: Enterprise Architecture

We found that GPO completed or partially completed 13 of the 53 applicable core elements. Since 2010, progress was slowed because of the collapse of the Architect Review Board. As board members were reassigned or left GPO, replacements were not identified and the board eventually discontinued its efforts and has not convened since the collapse. We were told that the Architecture Review Board is in the process of being reconvened as part of a three element technology management approach that involves the interaction of the Technology Configuration Control Board, the SIC, and a Technology Strategy Board where Enterprise Architecture decisions will be made. The Technology Configuration Control Board is currently in operation and has supported several technology approval for the TRM, and passed several architectural review cases to Enterprise Architecture Program Office in the past four months.

Without a matured Enterprise Architecture, GPO assumes the risk that it will invest in IT that is duplicative, not well integrated, costly, not supportive of the agency's strategic goals and mission, or not responsive to emerging technologies. Once it is completed, GPO will have a better vision of its transformation. For example,

- By completing Stage 5: "Expanding and Evolving the Enterprise Architecture and Its Use for Institutional Transformation" of the GAO framework, the "as-is" and "to-be" views of the performance, business, data, services, technology, and security architectures, as well as well-defined plans for transitioning from the "as-is" to the "to-be" views are achieved.
- By completing Stage 6: "Continuously Improving the Enterprise Architecture and Its Use to Achieve Corporate Optimization" of the GAO framework GPO would be focused on continuously improving the quality

of its suite of Enterprise Architecture products and the people, processes, and tools used to govern their development, maintenance, and use

Status of GPO's Progress toward Completing the Seven Stages of GAO's Framework

We used the criteria in the GAO framework to evaluate GPO's progress in developing an Enterprise Architecture. The seven stages we assessed are:

- Stage 0: Creating Awareness. At this stage, either an organization does not have plans to develop and use an Enterprise Architecture or it has plans that do not demonstrate an awareness of the management discipline needed to successfully develop, maintain, and do not use an Enterprise Architecture. While Stage 0 organizations may have initiated some activity, their efforts are largely ad hoc and unstructured and lack the institutional leadership necessary for successful development, maintenance, and use as defined in Stage 1.
- Stage 1: Establishing Institutional Commitment and Direction. At this stage, the organization grounds development and compliance in policy and recognizes it as a corporate asset by vesting ownership of the architecture with top executives lines of business owners and chief "X" officers (CXO) as members of a chartered architecture executive committee who are provided with knowledge and understanding of the architecture concepts and governance principles needed to lead and direct the effort.
- Stage 2: Creating the Management Foundation for Enterprise Architecture Development and Use. At this stage, the organization establishes operational program office, including a corporate program office that is headed by the chief architect, who reports to the executive committee.
- Stage 3: Developing Initial Enterprise Architecture Versions. At this stage, steps are taken to engage stakeholders in the process and implement human plans, to include hiring and training staff and acquiring contractor expertise.
- Stage 4: Completing and Using an Initial Enterprise Architecture Version for Targeted Results. At this stage, an organization has developed a version of its corporate Enterprise Architecture that has been approved by the executive committee, to include "as-is" and "to-be" views of the performance, business, data, services, technology, and security architectures, as well as an initial version of a plan for transitioning from the "as-is" to the "to-be" views.
- Stage 5: Expanding and Evolving the Enterprise Architecture and Its Use for Institutional Transformation. At this stage, the scope is extended to the entire organization, and it is supported by a full complement of segment and federation member architectures, all of which include "as-is" and "to-be" views

of the performance, business, data, services, technology, and security architectures, as well as well defined plans for transitioning from the “as-is” to the “to-be” views.

- Stage 6: Continuously Improving the Enterprise Architecture and Its Use to Achieve Corporate Optimization. At this stage, an organization is focused on continuously improving the quality of its suite of products and the people, processes, and tools used to govern their development, maintenance, and use. By achieving this stage of maturity, the organization has established a truly enterprise-wide blueprint to inform both “board room” strategic planning and decision making and “on-the-ground” implementation of these changes through a range of capital investment and maintenance projects and other corporate initiatives.

With the exception of the first stage (Stage 0), to implement each of the seven maturity stages of the GAO framework, GPO must complete four critical success attributes: (1) demonstrate commitment, (2) provide the capability to meet the commitment, (3) demonstrate satisfaction of commitment, and (4) verify satisfaction of commitment.

Each attribute contains core elements that contribute to the effective implementation and institutionalization of the critical success attribute. Collectively, these attributes form the basis by which an organization can institutionalize management of any given function or program. Collectively, these attributes form the basis by which an organization can institutionalize the management of any given function or program, such as Enterprise Architecture management.

Table 1 below depicts our assessment of Attribute 1: Demonstrates Commitment. These are the efforts and activities to show enterprise-wide commitment to perform the function, initiative, or program by, for example, establishing policies, providing resources, and involving organizational leaders. Our assessment indicates if the core element is complete (yes), not addressed at the time of our audit (no), and GPO was able to demonstrate some action was taken to address the element (partial).

Table 1: Assessment of the GPO's Efforts against GAO's Framework – Attribute 1

Attribute	Stage 1: Establishing Enterprise Architecture institutional commitment and direction	Stage 2: Creating the management foundation for Enterprise Architecture development and use	Stage 3: Developing initial Enterprise Architecture versions	Stage 4: Completing and using an initial Enterprise Architecture version for targeted results	Stage 5: Expanding and evolving the Enterprise Architecture and its use for institutional transformation	Stage 6: Continuously improving the Enterprise Architecture and its use to achieve corporate optimization
Attribute 1: Demonstrates Commitment	(1) Written and approved organization policy exists for Enterprise Architecture development, maintenance, and use	(9) Enterprise Architecture budgetary needs are justified and funded.	(19) Organization business owner and CXO representatives are actively engaged in architecture development.	(33) Executive committee has approved the initial version of corporate Enterprise Architecture	(44) Organization head has approved current version of the corporate Enterprise Architecture.	(53) Enterprise Architecture is used by executive leadership to inform organization strategic planning and policy formulation.
	Yes	No	Yes	No	No	No
	(2) Executive committee representing the enterprise exists and is responsible and accountable for Enterprise Architecture.			(34) Key stakeholders have approved the current version of subordinate architectures.	(45) Organization component heads or segment owners have approved current version of their respective subordinate architectures.	
	No			N/A	No	
	(3) Executive committee is taking proactive steps to address Enterprise Architecture cultural barriers.			(35) Enterprise Architecture is integral to the execution of other institutional management disciplines.		
	No			Yes		

Table 2 below depicts our assessment of Attribute 2: Provides Capability to Meet Commitment. These are the efforts and activities to put in place the capability (people, processes, and tools) needed to execute the function, initiative, or program.

Table 2: Assessment of the GPO's Efforts against GAO's Framework – Attribute 2

Attribute	Stage 1: Establishing Enterprise Architecture institutional commitment and direction	Stage 2: Creating the management foundation for Enterprise Architecture development and use	Stage 3: Developing initial Enterprise Architecture versions	Stage 4: Completing and using an initial Enterprise Architecture version for targeted results	Stage 5: Expanding and evolving the Enterprise Architecture and its use for institutional transformation	Stage 6: Continuously improving the Enterprise Architecture and its use to achieve corporate optimization
Attribute 2: Provides Capability to Meet Commitment	(4) Executive committee members are trained in Enterprise Architecture principles and concepts.	(10) Enterprise Architecture program office(s) exists.	(20) Enterprise Architecture human capital plans are being implemented.	(36) Program office human capital needs are met.	(46) Integrated repository tools and common Enterprise Architecture framework and methodology are used across the enterprise.	(54) Enterprise Architecture human capital capabilities are continuously improved.
	No	Yes	No	No	No	No
	(5) Chief architect exists.	(11) Key program office leadership positions are filled.	(21) Program office contractor support needs are being met.		(47) Corporate and subordinate architecture program offices operate as a single virtual office that shares resources enterprise-wide.	(55) Enterprise Architecture methodologies and tools are continuously improved.
	Yes	No	No		N/A	No
	(7) Enterprise Architecture framework(s) is adopted.	(12) Program office human capital plans exist.	(22) Program office staff are trained in Enterprise Architecture framework, methodology, and tools.			(56) Enterprise Architecture management processes are continuously improved and reflect the results of external assessments.
	Yes	No	No			No
		(13) Enterprise Architecture development and maintenance methodology exists.	(23) Methodologies and tools exist to determine investment compliance with corporate and subordinate architectures.			
		No	Yes			
		(14) Automated Enterprise Architecture tools exist.	(24) Methodologies and tools exist to determine subordinate architecture alignment with the corporate Enterprise Architecture.			
		No	N/A			
			(25) Enterprise Architecture - related risks are proactively identified, reported, and mitigated.			
			Partial			

Table 3 below depicts our assessment of Attribute 3: Demonstrates Satisfaction of Commitment. These are the products, results, and outcomes that demonstrate that the function, initiative, or program is being performed.

Table 3: Assessment of the GPO’s Efforts against GAO’s Framework – Attribute 3

Attribute	Stage 1: Establishing Enterprise Architecture institutional commitment and direction	Stage 2: Creating the management foundation for Enterprise Architecture development and use	Stage 3: Developing initial Enterprise Architecture versions	Stage 4: Completing and using an initial Enterprise Architecture version for targeted results	Stage 5: Expanding and evolving the Enterprise Architecture and its use for institutional transformation	Stage 6: Continuously improving the Enterprise Architecture and its use to achieve corporate optimization
Attribute 3: Demonstrates Satisfaction of Commitment	(6) Enterprise Architecture purpose is clearly stated.	(15) Enterprise Architecture program management plan exists and reflects relationships with other management disciplines.	(26) Initial versions of corporate “as-is” and “to-be” Enterprise Architecture and sequencing plan are being developed.	(37) Initial versions of corporate “as-is” and “to-be” Enterprise Architecture and sequencing plan exist.	(48) Corporate Enterprise Architecture and sequencing plan are enterprise-wide in scope.	(57) Enterprise Architecture products are continuously improved and updated.
	No	Yes	Partial	Partial	No	No
		(16) Work breakdown structure and schedule to develop Enterprise Architecture exist.	(27) Initial version of corporate Enterprise Architecture describing the enterprise in terms of performance, business, data, services, technology, and security is being developed.	(38) Initial version of corporate Enterprise Architecture captures performance, business, data, services, technology, and security views.	(49) Corporate Enterprise Architecture and sequencing plan are aligned with subordinate architectures.	
		No	Yes	No	N/A	
		(17) Enterprise Architecture segments, federation members, and/or extended members have been identified and prioritized.	(28) One or more segment and/or federation member architectures is being developed.	(39) One or more segment and/or federation member architectures exists and is being implemented.	(50) All segment and/or federated architectures exist and are horizontally and vertically integrated.	
		Yes	No	No	No	
			(29) Architecture products are being developed according to the Enterprise Architecture content framework.		(51) Corporate and subordinate architectures are extended to align with external partner architectures.	
			No		N/A	
			(30) Architecture products are being developed according to a defined Enterprise Architecture methodology.			
			No			
			(31) Architecture products are being developed using Enterprise Architecture tools.			
			No			

Table 4 below depicts our assessment of Attribute 4: Verifies Satisfaction of Commitment. These are the efforts and activities to verify, via quantitative and qualitative measurement, that the function, initiative, or program has been satisfactorily performed.

Table 4: Assessment of the GPO's Efforts against GAO's Framework – Attribute 4

Attribute	Stage 1: Establishing Enterprise Architecture institutional commitment and direction	Stage 2: Creating the management foundation for Enterprise Architecture development and use	Stage 3: Developing initial Enterprise Architecture versions	Stage 4: Completing and using an initial Enterprise Architecture version for targeted results	Stage 5: Expanding and evolving the Enterprise Architecture and its use for institutional transformation	Stage 6: Continuously improving the Enterprise Architecture and its use to achieve corporate optimization
Attribute 4: Verifies Satisfaction of Commitment	(8) Enterprise Architecture performance and accountability framework is established.	(18) Program office readiness is measured and reported.	(32) Architecture development progress is measured and reported.	(40) Enterprise Architecture product quality is measured and reported.	(52) Enterprise Architecture products and management processes are subject to independent assessment.	(58) Enterprise Architecture quality and results measurement methods are continuously improved.
	No	No	No	No	No	No
				(41) Enterprise Architecture results and outcomes are measured and reported.		(59) Enterprise Architecture continuous improvement efforts reflect the results of external assessments.
				No		No
				(42) Investment compliance with corporate and subordinate architectures is measured and reported.		
				No		
				(43) Subordinate architecture alignment with the corporate Enterprise Architecture is measured and reported.		
				N/A		

See appendix A for detailed comments related to each core element.

Finding 2: FDsys

FDsys is an important aspect of GPO. It provides public access to Federal Government information at no charge through its FDsys. FDsys, formerly GPO Access, provides electronic access to information products produced by the Federal Government. The information provided on the FDsys site is the official published version. The collection includes publications from Congress and Federal agencies that are submitted to GPO in digital form, gathered from Federal Government Web sites, and created by scanning previously printed publications. Some of the materials included are:

- Budget of the United States Government
- Code of Federal Regulations
- Congressional Bills and Public and Private Laws
- Congressional Documents, Reports, Hearings and Record
- Economic Indicators and Report of the President
- Federal Register
- GAO Reports and Comptroller General Decisions
- Public Papers of the Presidents of the United States
- United States Code

In fiscal year 2012, FDsys was funded for development at approximately \$4 million. Operational support was funded at approximately \$1.4 million. FDsys is not developed within a subordinate architecture approach, therefore all Enterprise Architecture development and maintenance should come from the GPO Enterprise Architecture.

GPO's Office of Programs, Strategy and Technology is responsible for the management, ongoing development, and support of FDsys. GPO's Enterprise Architecture Program Office is not responsible for FDsys architecture. Therefore, we assessed GPO's efforts related to FDsys against GAO's Framework.

We found similar results with the architecture maturity level of FDsys. For FDsys, GPO completed or partially completed 12 of the 53 applicable core elements. As a result, Enterprise Architecture for FDsys has not yet evolved to support transformation or optimization. Table 5 below shows completed and partially completed core elements.

Table 5: FDsys Completed or Partially Completed Core Elements

Attribute	Stage 1: Establishing Enterprise Architecture institutional commitment and direction	Stage 2: Creating the management foundation for Enterprise Architecture development and use	Stage 3: Developing initial Enterprise Architecture versions	Stage 4: Completing and using an initial Enterprise Architecture version for targeted results	Stage 5: Expanding and evolving the Enterprise Architecture and its use for institutional transformation	Stage 6: Continuously improving the Enterprise Architecture and its use to achieve corporate optimization
Attribute 1: Demonstrates Commitment	(1) Written and approved organization policy exists for Enterprise Architecture development, maintenance, and use. (Complete)		(19) Organization business owner and CXO representatives are actively engaged in architecture development. (Complete)	(35) Enterprise Architecture is integral to the execution of other institutional management disciplines. (Complete)		
Attribute 2: Provides Capability to Meet Commitment	(5) Chief architect exists. (7) Enterprise Architecture framework(s) is adopted. (Complete)	(10) Enterprise Architecture program office(s) exists. (Complete)	(25) Enterprise Architecture -related risks are proactively identified, reported, and mitigated. (Partial)			
Attribute 3: Demonstrates Satisfaction of Commitment		(15) Enterprise Architecture program management plan exists and reflects relationships with other management disciplines. (Complete) (17) Enterprise Architecture segments, federation members, and/or extended members have been identified and prioritized. (Complete)	(26) Initial versions of corporate "as-is" and "to-be" Enterprise Architecture and sequencing plan are being developed. (Partial) (27) Initial version of corporate Enterprise Architecture describing the enterprise in terms of performance, business, data, services, technology, and security is being developed. (Complete)	(37) Initial versions of corporate "as-is" and "to-be" Enterprise Architecture and sequencing plan exist. (Partial)		
Attribute 4: Verifies Satisfaction of Commitment						

The difference between GPO's enterprise-wide Enterprise Architecture and FDsys resulted from GPO not providing us a business case for FDsys development for FY 2012. Therefore, the criteria for the existence of methodologies and tools to determine investment compliance with corporate and subordinate architectures, the 23rd core element, were not satisfied.

Recommendations

To enhance the utility and maturity of GPO's Enterprise Architecture, we recommend that the:

1. CIO identify, develop, and implement a framework to evolve GPO's Enterprise Architecture and its use to support GPO's transformation and optimization.
2. CIO reevaluate, modify if necessary, GPO Directive 705.31, "GPO Enterprise Architecture Policy" and reestablish and convene the Architect Review Board.
3. Chief Technology Officer coordinate with the CIO to ensure the FDsys architecture is aligned with GPO's Enterprise Architecture.

Management's Response

The CIO concurs with the recommendations. GPO will focus on complying with the spirit of the GAO maturity model as authority allows. Directive 705.31 must be updated to reflect a revised "right-sized" EA approach which takes into account cross-governmental EA best practices such as those set forth by GAO and OMB's Federal Enterprise Architecture Program Management Office but does not stipulate full compliance.

Currently, FDsys technologies are aligned with the EA Technical Reference Model. However, an improved coordination to achieve more detailed design documentation would be helpful towards improving the baseline architectures.

The complete text of management's response is in Appendix C.

Evaluation of Management's Response

Management's planned actions are responsive to the recommendations. The recommendations are resolved but will remain open for reporting purposes pending our review and verification of the implemented process.

Appendix A - Assessment of the GPO's Efforts against GAO's Framework (Enterprise-Wide)

Stage	Core Element	Satisfied?	Comments
Stage 1: Establishing Enterprise Architecture institutional commitment and direction	(1) Written and approved organization policy exists for Enterprise Architecture development, maintenance, and use.	Yes	GPO Directive 705.31, GPO Enterprise Architecture Policy, issued on December 8, 2008
	(2) Executive committee representing the enterprise exists and is responsible and accountable for Enterprise Architecture.	No	ARB is not an active board.
	(3) Executive committee is taking proactive steps to address Enterprise Architecture cultural barriers.	No	ARB is not an active board. Meetings are not documented in the SharePoint website
	(4) Executive committee members are trained in Enterprise Architecture principles and concepts.	No	No evidence of training.
	(5) Chief architect exists.	Yes	While the position existed, the Chief Architect position description does not reflect the OPM defined 2210 job series Enterprise Architect.

Appendix A - Assessment of the GPO's Efforts against GAO's Framework (Enterprise-Wide)

Stage	Core Element	Satisfied?	Comments
	(6) Enterprise Architecture purpose is clearly stated.	No	GPO Directive 705.31, GPO Enterprise Architecture Policy, requires a Balance Score Card strategic performance management tool. A Balance Score Card is not being applied to the Enterprise Architecture program.
	(7) Enterprise Architecture framework(s) is adopted.	Yes	The current Enterprise Architecture framework is a variation of the Federal Enterprise Architecture Framework. A distinct Business Architecture, Application Architecture, Data Architecture, and Technical Architecture are being pursued.
	(8) Enterprise Architecture performance and accountability framework is established.	No	The Enterprise Architecture program has not embarked on System Audits or a recent comprehensive self evaluation of maturity.
Stage 2: Creating the management foundation for Enterprise Architecture development and use	(9) Enterprise Architecture budgetary needs are justified and funded.	No	Enterprise Architecture is not viewed as a capital asset. GPO could not provide cost estimates from Enterprise Architecture.
	(10) Enterprise Architecture program office(s) exists.	Yes	The Enterprise Architecture Program Office is responsible for the daily administration, implementation and management of the GPO Enterprise Architecture program.
	(11) Key program office leadership positions are filled.	No	We were told the approach prescribed in the GAO Framework does not apply to an agency with GPO's size and available resources.

Appendix A - Assessment of the GPO's Efforts against GAO's Framework (Enterprise-Wide)

Stage	Core Element	Satisfied?	Comments
	(12) Program office human capital plans exist.	No	Current staffing does not consists of Enterprise Architects.
	(13) Enterprise Architecture development and maintenance methodology exists.	No	GPO could not demonstrate a consistent, complete, aligned, integrated, and usable artifact.
	(14) Automated Enterprise Architecture tools exist.	No	We were told much of what is in the repository was unfinished and not published. The information is not assimilated to support organizational transformation by creating a holistic view of the "as-is" and "to-be" state of GPO.
	(15) Enterprise Architecture program management plan exists and reflects relationships with other management disciplines.	Yes	Mission, Vision, Goals and Objectives are stated.
	(16) Work breakdown structure and schedule to develop Enterprise Architecture exist.	No	GPO could not demonstrate a work breakdown structure was developed.

Appendix A - Assessment of the GPO's Efforts against GAO's Framework (Enterprise-Wide)

Stage	Core Element	Satisfied?	Comments
	(17) Enterprise Architecture segments, federation members, and/or extended members have been identified and prioritized.	Yes	Enterprise Architecture Sequencing Plans dated April 2012 shows identification and prioritization of key application gaps and proposed high level solutions.
	(18) Program office readiness is measured and reported	No	Measures are not tracked.
Stage 3: Developing initial EA versions	(19) Organization business owner and CXO representatives are actively engaged in architecture development.	Yes	Senior managers are briefed.
	(20) Enterprise Architecture human capital plans are being implemented.	No	Current staffing consists of Database Administrators.
	(21) Program office contractor support needs are being met.	No	We were told that Database Administrators roles are to provide database administration and database architecture support.
	(22) Program office staff are trained in Enterprise Architecture framework, methodology, and tools.	No	Enterprise Architecture training is not conducted.

Appendix A - Assessment of the GPO's Efforts against GAO's Framework (Enterprise-Wide)

Stage	Core Element	Satisfied?	Comments
	(23) Methodologies and tools exist to determine investment compliance with corporate and subordinate architectures.	Yes	Methodologies and tools exist to determine investment compliance.
	(24) Methodologies and tools exist to determine subordinate architecture alignment with the corporate Enterprise Architecture.	N/A	GPO does not employ subordinate architectures.
	(25) Enterprise Architecture - related risks are proactively identified, reported, and mitigated.	Partial	One system was identified to have risk identification through an alternatives analysis.
	(26) Initial versions of corporate "as-is" and "to-be" Enterprise Architecture and sequencing plan are being developed.	Partial	We identified an Enterprise Architecture Sequencing Plan, TRM, Application Inventory, and a Human Capital as-is Business Process diagram.

Appendix A - Assessment of the GPO's Efforts against GAO's Framework (Enterprise-Wide)

Stage	Core Element	Satisfied?	Comments
	(27) Initial version of corporate Enterprise Architecture describing the enterprise in terms of performance, business, data, services, technology, and security is being developed.	Yes	We identified sequencing plans for conceptual models for the business layer, information layer, application layer, and technology layer.
	(28) One or more segment and/or federation member architectures is being developed.	No	GPO could not demonstrate segment architectures is being developed.
	(29) Architecture products are being developed according to the EA content framework.	No	GPO could not demonstrate products are being developed according to the EA content framework.
	(30) Architecture products are being developed according to a defined Enterprise Architecture methodology.	No	GPO could not demonstrate products are being developed according to a defined Enterprise Architecture methodology.
	(31) Architecture products are being developed using Enterprise Architecture tools	No	The sequencing plan is not updated for the Composition System Replacement.

Appendix A - Assessment of the GPO's Efforts against GAO's Framework (Enterprise-Wide)

Stage	Core Element	Satisfied?	Comments
	(32) Architecture development progress is measured and reported.	No	GPO could not demonstrate architecture development progress is measured and reported.
Stage 4: Completing and using an initial Enterprise Architecture version for targeted results	(33) Executive committee has approved the initial version of corporate Enterprise Architecture.	No	GPO could not demonstrate it has an approved initial version of Enterprise Architecture.
	(34) Key stakeholders have approved the current version of subordinate architectures.	N/A	GPO does not employ subordinate architectures.
	(35) Enterprise Architecture is integral to the execution of other institutional management disciplines.	Yes	The management disciplines Enterprise Architecture is supporting per the Appendix of projects are as follows: Information Technology and Systems, Acquisitions, Office of the Chief Technology Officer, Plant Operations, Library Services & Content Management, Human Capital, Finance & Administration, Publication & Information Sales.
	(36) Program office human capital needs are met.	No	GPO could not demonstrate human capital needs are met through its use Database Administrators instead of Enterprise Architects.

Appendix A - Assessment of the GPO's Efforts against GAO's Framework (Enterprise-Wide)

Stage	Core Element	Satisfied?	Comments
	(37) Initial versions of corporate "as-is" and "to-be" Enterprise Architecture and sequencing plan exist.	Partial	GPO uses IBM System Architect software for its sequencing plan and application inventory.
	(38) Initial version of corporate Enterprise Architecture captures performance, business, data, services, technology, and security views	No	GPO could not demonstrate Enterprise Architecture captures performance, business, data, services, technology, and security views
	(39) One or more segment and/or federation member architectures exists and is being implemented.	No	Chief Architect is not listed attending the SIC committee.
	(40) Enterprise Architecture product quality is measured and reported.	No	GPO could not demonstrate quality metrics and reporting.
	(41) Enterprise Architecture results and outcomes are measured and reported.	No	GPO could not demonstrate that results and outcomes are measured and reported.

Appendix A - Assessment of the GPO's Efforts against GAO's Framework (Enterprise-Wide)

Stage	Core Element	Satisfied?	Comments
	(42) Investment compliance with corporate and subordinate architectures is measured and reported.	No	While we identified a business case for Library Services and Content Management from 2010 and a case for Official Journals of Government from 2009, GPO could not demonstrate any current compliance.
	(43) Subordinate architecture alignment with the corporate EA is measured and reported.	N/A	GPO does not employ subordinate architectures.
Stage 5: Expanding and evolving the Enterprise Architecture and its use for institutional transformation	(44) Organization head has approved current version of the corporate Enterprise Architecture.	No	A current version of the corporate Enterprise Architecture is not approved.
	(45) Organization component heads or segment owners have approved version of their respective subordinate architectures.	No	While in GPO's 2010 self assessment it was noted that most segment owners have approved their segment architectures, GPO could not demonstrate these actions were current.

Appendix A - Assessment of the GPO's Efforts against GAO's Framework (Enterprise-Wide)

Stage	Core Element	Satisfied?	Comments
	(46) Integrated repository tools and common Enterprise Architecture framework and methodology are used across the enterprise.	No	The Strategic Investment Committee meeting minutes revealed that items under consideration include an Enterprise Architecture tool suite. They believe the software will allow a process flow between project scoping, business analyses, requirements, design, build, and deploy. It was stated that GPO does not currently have a requirements management tool.
	(47) Corporate and subordinate architecture program offices operate as a single virtual office that shares resources enterprise wide.	N/A	GPO does not employ subordinate architectures.
	(48) Corporate Enterprise Architecture and sequencing plan are enterprise wide in scope.	No	The Sequencing Plan Appendix E list projects for the following BU's: Information Technology and Systems, Acquisitions, Office of the Chief Technology Officer, Plant Operations, Library Services & Content Management, Human Capital, Finance & Administration, Publication & Information Sales. We do not believe this directly relates to the "as-is" and "to-be" architectures.
	(49) Corporate Enterprise Architecture and sequencing plan are aligned with subordinate architectures.	N/A	GPO does not employ subordinate architectures.

Appendix A - Assessment of the GPO's Efforts against GAO's Framework (Enterprise-Wide)

Stage	Core Element	Satisfied?	Comments
	(50) All segment and/or federated architectures exist and are horizontally and vertically integrated.	No	GPO could not demonstrate architecture integration.
	(51) Corporate and subordinate architectures are extended to align with external partner architectures.	N/A	GPO does not employ subordinate architectures.
	(52) Enterprise Architecture products and management processes are subject to independent assessment.	No	An independent assessment has not been conducted since the GAO's audit in 2004.
Stage 6: Continuously improving the Enterprise Architecture and its use to achieve corporate optimization	(53) Enterprise Architecture is used by executive leadership to inform organization strategic planning and policy formulation.	No	GPO could not demonstrate Enterprise Architecture is used by executive leadership to inform organization strategic planning and policy formulation.
	(54) Enterprise Architecture human capital capabilities are continuously improved.	No	GPO could not demonstrate human capital capabilities are continuously improved.

Appendix A - Assessment of the GPO's Efforts against GAO's Framework (Enterprise-Wide)

Stage	Core Element	Satisfied?	Comments
	(55) Enterprise Architecture methodologies and tools are continuously improved.	No	GPO could not demonstrate methodology and tools were continuously improved.
	(56) Enterprise Architecture management processes are continuously improved and reflect the results of external assessments.	No	GPO could not demonstrate external assessments were conducted.
	(57) Enterprise Architecture products are continuously improved and updated.	No	Since 2010, GPO could not demonstrate continuous improvement.
	(58) Enterprise Architecture quality and results measurement methods are continuously improved.	No	GPO could not demonstrate Enterprise Architecture quality measurements are conducted.
	(59) Enterprise Architecture continuous improvement efforts reflect the results of external assessments.	No	GPO could not demonstrate external assessments were conducted.

Appendix B - Objectives, Scope, and Methodology

We performed fieldwork from June 2012 through August 2012 at the GPO Central Office in Washington, D.C. We conducted the audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence that will provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Objectives

This audit was conducted to determine to what extent does GPO have assurance that its Enterprise Architecture program is used to guide and constrain ongoing development and support of GPO's strategic transformation.

Scope and Methodology

We reviewed GAO's framework which organizes architecture management best practices into stages of maturity. This framework is based on A Practical Guide to Federal Enterprise Architecture, published by the federal Chief Information Officer Council. We analyzed GPO's Enterprise Architecture plans and products, including program management and other plans, key architecture principles, work breakdown structures and corresponding milestones, Enterprise Architecture Board charters and meeting minutes, and Enterprise Architecture status reports. We also analyzed relevant policies and procedures, including GPO's Enterprise Architecture policy and the Information Technology Life Cycle Management policies. We reviewed architecture documents related to the "as is" and "to be" architectures. We interviewed the chief architect and his staff.

We compared our analyses with the EA management maturity framework practices to determine the extent to which GPO was employing such management practices. We also compared GAO's framework with the ongoing efforts related to FDsys.

Management Controls Reviewed

We limited our assessment of internal controls to those related to the Enterprise Architecture Program Office. We assess compliance with the Government Accountability Office Enterprise Architecture Maturity Model 2.0. Based on our review we made recommendations to strengthen and improve the controls discussed in the Results section of this report.

Computer-generated data

To assess the reliability of Enterprise Architecture data we talked to agency officials. We interviewed the Chief Architect to determine if the data from the Enterprise Architecture system was reliable. The purpose of the EA data as defined by the Chief Architect is collaborating and representing enterprise architecture, technical information to management in GPO. The scope of the audit was not for the technical quality of the data, but the existence of the data. We also compared common data elements for consistency. We determined that the data were sufficiently reliable for the purpose of this report.

Appendix C – Management’s Response



To: Office of Inspector General, Government Printing Office

From: Charles E. Riddle, Jr.
Chief Information Officer
Office of the Chief Information Officer
Information Technology and Systems

Date: September 27, 2012

Subject: IT&S response to the revised Draft Audit Report Number 12-19: Enhanced Architecture
Maturity Could Better Guide GPO’s Transformation

Attached please find the updated IT&S response to the revised subject draft report.

We appreciate the opportunity to provide input to the report. If you have any questions or comments about this report, please do not hesitate to contact me at (202) 512-1040.

A handwritten signature in black ink, appearing to read 'CRiddle', is positioned above the printed name.

Chuck Riddle
Chief Information Officer

Enclosure

cc:

Acting Public Printer

Assistant Public Printer, Operations

General Counsel

Chief Technology Officer

Appendix C – Management’s Response

IT&S response to OIG Recommendations

1. *CIO identify, develop, and implement a framework to evolve GPO’s Enterprise Architecture and its use to support GPO’s transformation and optimization.*

IT&S response: Concur.

Expected Date of Disposition: March 31, 2013

Comments: GPO will focus on complying with the spirit of the GAO maturity model as CIO authority allows. This will allow GPO EA sufficient flexibility to tailor these best practices into a practical, outcome-based approach that achieves the benefits of EA that are proportionate to the needs and resources of the agency.

2. *CIO reevaluate, modify if necessary, GPO Directive 705.31, “GPO Enterprise Architecture Policy” and reestablish and convene the Architect Review Board.*

IT&S response: Concur.

Expected Date of Disposition: December 31, 2012

Comments: Directive 705.31 must be updated to reflect a revised “right-sized” EA approach which takes into account cross-governmental EA best practices such as those set forth by GAO and OMB’s Federal Enterprise Architecture (FEA) Program Management Office but does not stipulate full compliance. A draft charter for the ARB has been developed that conforms to current CIO authorities. The EA division will execute architecture review responsibilities under a monthly board synchronized with the Program Engineering Deliverables for major projects. This will have to be coordinated so as not to overstep the current authorities of the CIO related to Strategic Investment activities and decisions performed by other Agency entities.

3. *Chief Technology Officer coordinate with the CIO to ensure the FDSys architecture is aligned with GPO’s Enterprise Architecture.*

IT&S response: Concur.

Expected Date of Disposition: February 27, 2013

Comments: Currently, FDSYS technologies are aligned with the EA Technical Reference Model. However, improved coordination to achieve more detailed design documentation would be helpful towards improving the baseline architecture. As such, IT&S recommends that EA conduct an architecture review for FDSys to gain a more detailed understanding of the design documentation.

Summary

As the Chief Information Officer for the Government Printing Office (GPO), I agree that Enterprise Architecture (EA) can be a useful practice to aid in the strategic transformation of the GPO from a print centric, paper-based operation to a content centric model that fully leverages digital production and business information systems in the fulfillment of our mission. I do not believe however that EA is a “one size fits all”

Appendix C – Management’s Response

proposition, and that in order to be effective, it must be tailored appropriately to meet the objectives and resources of the specific organization

The departure of the former GPO Chief Architect and subsequent dissolution of the Architecture Review Board left a significant EA void at GPO. However, it was clear that the resources and funding previously made available to that program were no longer possible. Shortly after coming to GPO, I re-established the Enterprise Architecture function and assigned a full time Chief Architect to manage an EA rebuilding effort with the goal of “right-sizing” the EA approach for GPO. In other words, to develop a tailored EA approach that could be supported over the long term that would be sized and scoped appropriately in light of reduced funding and resources available to the agency. Given that this makes a standardized view and evaluation of EA and Capital Investment processes difficult, EA will be tasked to create a framework for evaluating over all technology investment and Enterprise Architecture for GPO’s IT infrastructure in conjunction with the CTO. This approach will fulfill top-level planning objectives for EA and IT Capital Planning, while avoiding the overhead intensive approach employed in the Executive Branch of Government.

Additional Comments:

OIG Method

The GAO Maturity model is used by GAO to review Executive Branch Agencies who have directed appropriations for their efforts and other accompanying regulation for implementation. Such a tool, while valid for a large Executive Branch Program, is less useful in evaluating a Small Legislative branch Agency. IT&S believes that this approach is too focused toward Executive Branch management structures, open to interpretation, and present an overly pessimistic view of a Legislative Branch agency. A method tailored for our agency will have to be measured against GPO selected EA outcomes in the context of our specific Organization and Authorities. It is likely that we might include some of the GAO elements in evaluating our future approach, but using the entire model is problematic.

OIG Findings

GPO IT&S/Enterprise Architecture Division (EAD) is in the process of revising policy and process to complement GPO Organizational Structure and processes, and updating existing Architecture Information. Given that the Chief Architect departed and was gapped for over two years, and significant organizational changes took place in the interim, that the previous technical review board ceased operating is not surprising.

We do agree that high-level outcomes from the maturity model should be considered as part of a revised EA policy and process. These policy and process changes are currently underway and must consider a changed GPO management structure, as well as a leaner GPO operation with much tighter constraints on resources. GPO’s previous efforts on Enterprise Architecture have been in response to GAO Recommendations for such a program, and we have made a concerted effort from 2005 to 2010, and from January 2012 to the present in attempting to gain benefits from establishing an EA program.

Key Deliverables that were created by the Previous EA Organization, prior to 2010, include the following:

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- EA Current Application, Business, and Technology Data
- EA Target Architecture Framework
- Technical Reference Model (TRM)
- EA Sequencing Plan
 - Architecture Transition Views
- GPO Functional Value Chain Segments
 - Select Segment Process Representations

Further work is necessary in enabling informed decision making, capital investment, and tracking progress against the Target Architecture, and this work is being done in conjunction with The Chief Technology Officer, Chief Financial Officer, and the Business Area Managers supporting the Public Printer.

GPO EA is currently working with a newly established Technical Change Control Board Chaired by the Engineering Management Division to review and capture new initiatives and technologies prior to implementation. Additionally, the update of key EA deliverables has been enabled by coordinating with this body. At the Strategic-level, efforts to manage Technology Review and Planning are being coordinated with the Chief Technology Officer in a forum that will Review new enterprise technical projects and informs the CFO’s Strategic Investment Council on Technical Plans, Risks and Architectural considerations. These coordinated efforts align with the current less centralized management structure and approach being used at GPO, and would be consistent with the goals of EA and Capital Investment Planning and Investment Control guidelines.

In supporting the spirit of EA processes at the GPO, IT&S intends to continue support of Enterprise Architecture Planning processes in conjunction with the Business Areas and the Chief Technology Officer. The key products that will be the focus of EA efforts are sustaining the following products:

- EA Current Application, Business, and Technology Data
- EA Target Architecture Framework
- Technical Reference Model (TRM)
- EA Sequencing Plan
 - Architecture Transition Views
 - Project Mapping to new Target Architecture Framework
- GPO Functional Value Chain Segments
 - Select Segment Process Representations

These products along with regular architecture reviews of Major programs as part of the *technical* oversight bodies:

Appendix C – Management’s Response

- Technology Change Control Board (TCCB)
- Technology innovation Council (TIC)
- CFO Strategic Investment Council

Key EA Deliverables from these bodies would be as follows:

- EA Project Reviews (ARB supporting TIC)
- Approved Target Architectures (TIC,TCCB)
- Approved TRM Additions (TCCB)
- Approved Capital Investments (SIC)

The EA Division would interoperate with these bodies to oversee Agency EA and line-of-sight to Strategic Objectives as depicted below in Figure 1:

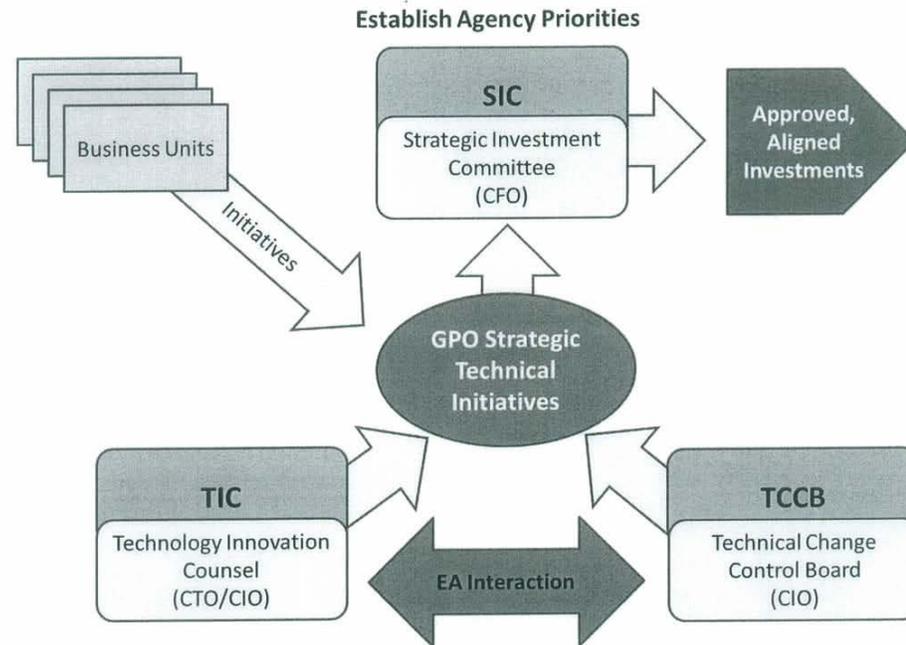


Figure 1: High-Level EA/CPIC Approach

This scheme requires senior management buy-in, and cooperation across the GPO, but such an approach, while not in compliance with GAO guidelines, would be in keeping with the Spirit of EA and CPIC objectives for federal agencies.

Key Outcomes that would be achieved would include:

Appendix C – Management’s Response

- Technical Projects linked to Strategic Plans
- Cheaper more sustainable Technology footprint
- Improved Technical Skill utilization and planning
- Technical and Architectural Risk Review and Mitigation
- Improved Planning and execution of Major Projects
- Improved transition to new technical capabilities

All of these outcomes are the main reason Enterprise Architecture was recommended by GAO, created and implemented across the government originally, and these results are what GPO needs to assist us in achieving a new technical vision. Ultimately, IT&S agrees that GPO must execute its technology investment efficiently in order to get the rapid results that are needed to transform our statutory publishing and printing operations. GPO IT&S is coordinating with other agency technical activities to achieve this.

Appendix D - Status of Recommendations

Recommendation	Resolved	Unresolved	Open/ECD*	Closed
1	X		March 31, 2013	
2	X		December 31, 2012	
3	X		February 27, 2013	

*Estimated Completion Date.

Appendix E - Report Distribution

Acting Public Printer
Assistant Public Printer, Operations
General Counsel

Major Contributors to the Report

Daniel Rose, Lead Information Technology Specialist