U.S. Securities and Exchange Commission
Office of Inspector General
Enterprise Architecture Assessment

Final Assessment Results

March 31, 2008
Inspection Report No. 442

Prepared for:

Ms. Renée Stroud
U.S. Securities and Exchange Commission
Office of Inspector General
100 F Street NE
Washington, DC 20549

U.S. Securities and Exchange Commission
Office of Inspector General

Enterprise Architecture Assessment

Final Assessment Results
March 31, 2008
Inspection Report No. 442

Prepared by:

ECS

ECS Federal, Inc.
2750 Prosperity Avenue
Suite 510
Fairfax, VA 22031

In Performance of:

Contract # SECHQ1-03-D-0176
Task Order #0010

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

Office of Inspector General

To: Corey Booth, Chief Information Officer

        Diego Ruiz, Executive Director

From: H. David Kotz, Inspector General

Date: March 31, 2008

Re: Office of Inspector General – Enterprise Architecture Assessment (No. 442)

Attached is our final assessment report on Enterprise Architecture. Your comments to the draft report have been incorporated as appropriate.

Management concurred with all seven of our recommendations. We appreciate the courtesy and cooperation that was extended to our staff during this inspection.

Attachment

cc: Peter Uhlmann
        Jeffrey Thomas
        Daniel Lisewski
        Darlene Pryor

        Richard Hillman, GAO

TABLE OF CONTENTS

FIGURES

EXECUTIVE SUMMARY

In September 2007, the U.S. Securities and Exchange Commission (SEC) Office of Inspector General (OIG) awarded task order #0010 to contract SECHQ1-03-D-0176 to ECS Federal, Incorporated (ECS). The purpose of the task order was to evaluate the progress of the SEC's efforts to develop an information technology (IT) enterprise architecture (EA) as required by the Clinger-Cohen Act of 1996 and Office of Management and Budget (OMB) guidance.

ECS conducted the EA assessment between August 2007 and March 2008. In responding to the task order, the ECS team developed a six step methodology designed to evaluate the Commission's architecture, and its migration strategy, for compliance with OMB requirements and to make appropriate recommendations for improvements. The methodology consisted of six stages:

- Project planning;
- Artifact review and analysis;
- Interview preparation;
- Onsite interviews;
- Evaluation of results; and
- Analysis and reporting.

The results of our assessment are reported in two parts. Part one includes the results related to the SEC's overall status and compliance with Federal EA mandates and objectives. The OMB Federal Enterprise Assessment Framework (Version 2.2) was used as the basis for this portion of the review. Part two pertains to the SEC's progress in implementing the four specific recommendations made during the previous OIG audit in 2005 (1). We relied on an extensive evaluation of SEC documentation, as well as interviews with SEC personnel, to formulate our assessments with respect to each of the issues addressed in this report.

With respect to the SEC's overall status and progress in meeting EA mandates and objectives, we found that the SEC has made progress in developing and documenting a comprehensive EA program. It was clear to us that the SEC EA program has been well thought out, but the program has not been satisfactorily integrated into the SEC's overall IT strategy.

Using the OMB Federal Enterprise Assessment Framework (1) as a guide, we found that the SEC generally performed well in the Completion Capabilities Areas, very well in the Use Capabilities Areas, but poorly in the Results Capability Areas. We also found that the SEC has somewhat of a hybrid EA program. While the business leaders interviewed (OEA, SO, OFM, and OIT) find great value in EA, it appears as if at the highest levels of the Capital Planning and Investment Control (CPIC), EA is not used to its fullest potential. The offices the IG Assessors met with where Office of the Secretary (OS), Office of Compliance Inspections and Examinations (OCIE), Office of Financial Management (OFM) and Office of Information Technology (OIT). We believe this to be reflective of an EA program that has been well designed and documented from the ground up, but not yet fully accepted by the senior policy makers, nor fully integrated into the overall IT strategy of the SEC.

For example, we observed that senior business line policy-makers frequently promote new projects due to an emergent business requirement or audit. They are presented as urgent projects and are funded without adequate consideration of the EA. This is where commission leaders (specifically at the highest levels of the CPIC) could take better advantage of EA. Involving EA in the process could lead to cost savings in future years when integration or sustainment of a particular technology could be more advantageous – an issue that the ITCPC clearly recognizes. This, of course, requires an investment in EA prior to fulfilling a business requirement so EA could be in the position to properly design and direct the incorporation of the new mandate into its streamlined architecture, thereby reducing costs.

With respect to the recommendations made during the previous OIG audit in 2005, we found that the SEC has made some progress towards obtaining business owner validation and support of the current "as-is" enterprise architecture. As noted above, the SEC Office of Information Technology (OIT) has developed and documented a coherent EA program. However, it is clear that the program has not been completely embraced by the business line community. We believe that, going forward, the success of the SEC EA program will depend largely on incremental "cultural" and perception changes within the business lines. We believe the OIT EA personnel are making important strides towards promoting these changes, and we have observed anecdotal evidence that their efforts are beginning to succeed.

We also found that the SEC OIT EA group has made significant progress in establishing a communications strategy to introduce EA successfully throughout the SEC. OIT EA personnel have established an intranet site to help with the promulgation and distribution of information related to the EA. While communications are much improved on the intranet, a lot of the information is dated. In addition to the portal, the OIT EA has undertaken several outreach initiatives including periodic briefings, newsletters and brown bag lunches designed to demonstrate the value of EA to the business line constituency.

With respect to the establishment of an EA program plan to ensure adequate compliance with EA policies and procedures, we are satisfied with the SEC's progress. SEC OIT EA personnel have established a comprehensive EA program plan. It was clear to the assessment team that the plan was carefully designed and thoroughly documented, but could be improved by senior level ITCPC support.

Lastly, with respect to completion of a comprehensive "as-is" architecture with parallel mappings to the requirements of the Federal Enterprise Architecture (FEA) reference models, we noted that, while the design is complete (and fully documented) the integration and implementation with the business line has been slow, and has not yet been completed. Again, we saw anecdotal evidence of progress in this area, and we believe that the process of integration is underway, but in the early stages of completion.

In summary, we believe that the SEC has developed and documented an excellent EA program for the type and size of the organization. The "as-is" and "to-be" architectures are clearly defined, the transition strategies have been documented, and the program is being effectively managed. However, until the EA program is fully embraced by the senior level business lines, the SEC will not see the full benefits of the program. As described below – at the core of the Federal Enterprise Architecture

Program – the architecture must be business driven. Without the full support of the senior business leaders, the SEC will not realize the full effects of EA.

Support from high level agency policy makers will help to encourage the acceptance of the EA by the business lines, and help to facilitate the cost savings and other benefits on an integrated EA program. Without this support it is possible to dismiss cost savings and cost avoidance as unnecessary, while in reality it is one of the main priorities/goals of EA.

Although we see signs of progress in the EA's use and acceptance by the business lines on an operational level, we assess that the integration process needs to be significantly improved.

Commission management concurred with our seven recommendations. Their formal written response is included as Appendix C.

BACKGROUND

The Office of Management and Budget's (OMB) Office of E-Government (E-Gov) and Information Technology (IT) in concert with the General Services Administration (GSA) and the Federal Chief Information Officers (CIO) Council, established the FEA Program to build a comprehensive business-driven blueprint of the entire Federal government. The FEA Program Management Office (PMO), located within OMB's Office of E-Gov and IT, provides federal agencies with a common language and framework to describe and analyze IT investments, enhance collaboration, and ultimately transform the Federal government into a citizen-centered, results-oriented, and market-based organization, as set forth in the President's Management Agenda (PMA) (2).

The FEA PMO has adopted three core principles to guide its strategic direction. <u>First</u>, the FEA must be business-driven. That it, the FEA is most useful when it is closely aligned with government strategic plans and executive level direction. Agency mission statements, presidential management directives and agency business owners give direction to each agency's enterprise architecture (EA) and to the FEA. <u>Secondly</u>, the FEA must be proactive and collaborative across the Federal government. Adoption of the FEA is achieved through active participation by the EA community in its development and use. The FEA community is responsible for the development, evolution and adoption of the FEA. Lastly, the architecture improves the effectiveness and efficiency of government information resources. Architecture development is an integral part of the capital investment process. No IT investment should be made <u>without</u> a business-approved architecture.

EA is intended to be used by organizations to perform strategic planning, and develop "blueprints" of their future-state. EA is used by the Federal government as a management tool to ensure planning and budgeting activities are aligned with the strategic goals of the organization, and to identify opportunities for collaboration and re-use of resources across an agency and across the government. As part of the President's Management Agenda (PMA) (3), the EA programs for 24 Federal government agencies are reviewed and scored annually against criteria within OMB's Enterprise Architecture Assessment Framework (EAAF).

In 2005, the SEC Office of the Inspector General (OIG) sponsored an evaluation of the SEC's progress in implementing the FEA. KPMG commenced the evaluation (1) in early 2005, but was unable to complete the effort due to an organizational conflict of interest. Nonetheless, their report identified several areas of concern and offered four recommendations.

In September 2007, the SEC OIG awarded a task order to ECS Federal, Incorporated (ECS), to evaluate the progress of the SEC's efforts to develop an information technology enterprise architecture as required by the Clinger-Cohen Act of 1996 and OMB guidance.

In support of this effort, ECS conducted the current assessment between August 2007 and March 2008. In responding to the task order, the ECS team developed a six step methodology designed to evaluate the Commission's architecture, and its migration strategy, for compliance with OMB requirements and to make appropriate recommendations for improvements. The methodology -- which is discussed in detail at Tab 3 -- consisted of project planning; artifact review and analysis;

interview question and test formulation; onsite interviews and testing; evaluation of results; and analysis and reporting.

The results of our assessment are reported in two parts. <u>Part one</u> includes the results related to the SEC's overall status and progress in meeting EA mandates and objectives. The OMB Federal Enterprise Assessment Framework (Version 2.2) was used as the basis for our review. The Framework assesses the maturity of agencies' EA programs in 13 different categories by scoring them on a scale from 1 to 5. Each of the 13 areas is aggregated into 1 of 3 higher-level categories: Completion, Use, and Results. <u>Part two</u> pertains to the Commission's progress in implementing the 4 specific recommendations made during the previous OIG audit in 2005.

OBJECTIVE AND METHODOLOGY

The objectives of the assessment were twofold. First, the assessment sought to evaluate the effectiveness of controls and processes for managing the SEC's enterprise architecture and to determine the status of the SEC's efforts to further develop its architecture since the issuance of a prior OIG report in fiscal year 2005. The second objective of the assessment was to evaluate the SEC's specific progress in implementing the following recommendations made as a result of the prior OIG review:

- The SEC's progress towards obtaining business owner validation and support of the current "as-is" EA;

- The SEC's progress in establishing a communication strategy to introduce EA successfully throughout the Commission;

- The establishment of an EA program plan to ensure adequate compliance with EA policies and procedures; and.

- The development of a complete the "as-is" architecture with parallel mappings to the requirements of the FEA reference models.

The ECS team adhered to the following six-step process for completing the assessment. This method was designed to yield the best possible information upon which to base our assessment and report the results.
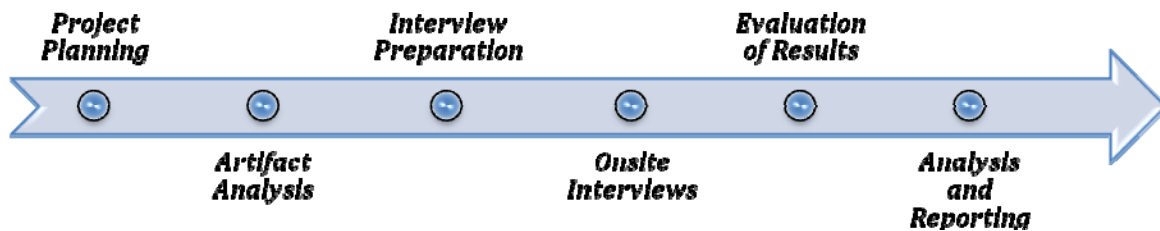
Figure 1 - Assessment Methodology

The Project Planning stage of the assessment was performed in late October and early November 2007. During this stage, planning tasks such as the development of Rules of Engagement and a Project Plan were completed. The project plan provided a work breakdown structure (WBS) and a Gantt view of the schedule, resources, and dependencies of the project. The project plan was revised as needed and delivered to the SEC task manager.

The artifact analysis stage of the assessment was performed from early November 2007 through mid-December 2007. This portion of the project involved reviewing relevant documents and artifacts from the 2005 KPMG, LLC partial assessment and documentation and other artifacts

related to the SEC enterprise architecture. In addition, the applicable Federal statutory and regulatory requirements were reviewed.

As part of our assessment strategy, the assessment team developed a series of interview questions and tests designed to reveal the status of the EA with respect to each of the capability areas, and to provide insights into the specific issues identified in the Statement of Work (SOW). Most of the interviews were conducted onsite at the SEC's operations facility in Alexandria, VA or the SEC Headquarters building in downtown Washington, DC. The assessment included in-depth interviews with several SEC personnel. This stage of the assessment was performed from mid-January 2008 through late February 2008.

The assessment team reviewed and analyzed the business, data, application, and information technology infrastructure components that comprise the SEC's current and planned EA. The team also continued to research applicable documentation and artifacts throughout this portion of the assessment.

This evaluation of results stage of the assessment was performed from late February 2008 through early March 2008. During this phase of the assessment, we discussed and debated the assessment results, and developed a consensus with respect to our findings.

The results of our assessment are reported in two parts. Part one includes the results related to the SEC's overall status and progress in meeting EA mandates and objectives. The second group of results pertains to the Commission's progress in implementing the four specific recommendations made during the previous OIG audit in 2005. We relied on extensive evaluation of SEC documentation, as well as interviews with SEC personnel, in formulating our assessments with respect to the SEC's progress towards obtaining business owner validation and support of the current "as is" EA; the SEC's progress in establishing a communication strategy to introduce EA successfully throughout the Commission; the establishment of an EA program plan to ensure adequate compliance with EA policies and procedures; and the development of a complete the "as is" architecture with parallel mappings to the requirements of the FEA reference models.

Finally, the analysis and reporting stage of the assessment was performed from early to late March, 2008. During this stage of the assessment, the assessment team continued to research its findings and recommendations, formalized the assessment results, and developed this report. In the process of developing the report, several drafts were presented and discussed, in whole or in part, with SEC OIG and SEC OIT personnel.

ASSESSMENT CRITERIA

The following is a partial list of documents which were used to define a requirement, or assess compliance with a requirement:

- OMB Circular A-11 (4)
- The Government and Performance Results Act (GPRA) (5)
- The Clinger-Cohen Act (6)
- The SEC Lines of Business Chart (7)
- Visio diagram depicting the functions performed by the SEC Organization (7)
- The Master Function Chart (Red Level) (8)
- The Workflow Functions for General Applications (9)
- The SEC Big Picture (10)
- The SEC EA Portal Information (11)
- SEC Chart of Information Categories (12)
- The SEC Information Interchange Initiative (12)
- The SEC Target Information Architecture Version 11 (13)
- The Technology Discussions PowerPoint Presentation (14)
- OMB Information Reference Model (15)
- SEC document entitled the SRM and Our Definitions (16)
- The SRM Crosswalk of SEC FEA (17)
- SEC Enterprise Architecture Policy (SECR 24-1.6) (18)
- SEC IPv6 Compliance Master Document (19)
- SEC IPv6 Inventory (20)
- The SEC IPv6 Transition Plan (21)
- The SEC IPv6 Architecture (22)
- Procurement of an IPv6 Address Block (23)
- IPv6 Lab Diagram (24)
- IPv6 Technology Refresh document (25)

ASSESSMENT RESULTS

GENERAL RESULTS

This section describes the assessment teams findings related to the SEC's overall status and progress in meeting EA mandates and objectives.

COMPLETION CAPABILITIES AREA

As defined by the Federal EA Assessment Framework, the Completion Capability Areas are designed to assess agency maturity in developing baseline and target architectures in terms of Performance, Business, Data, Service Component, and Technology.

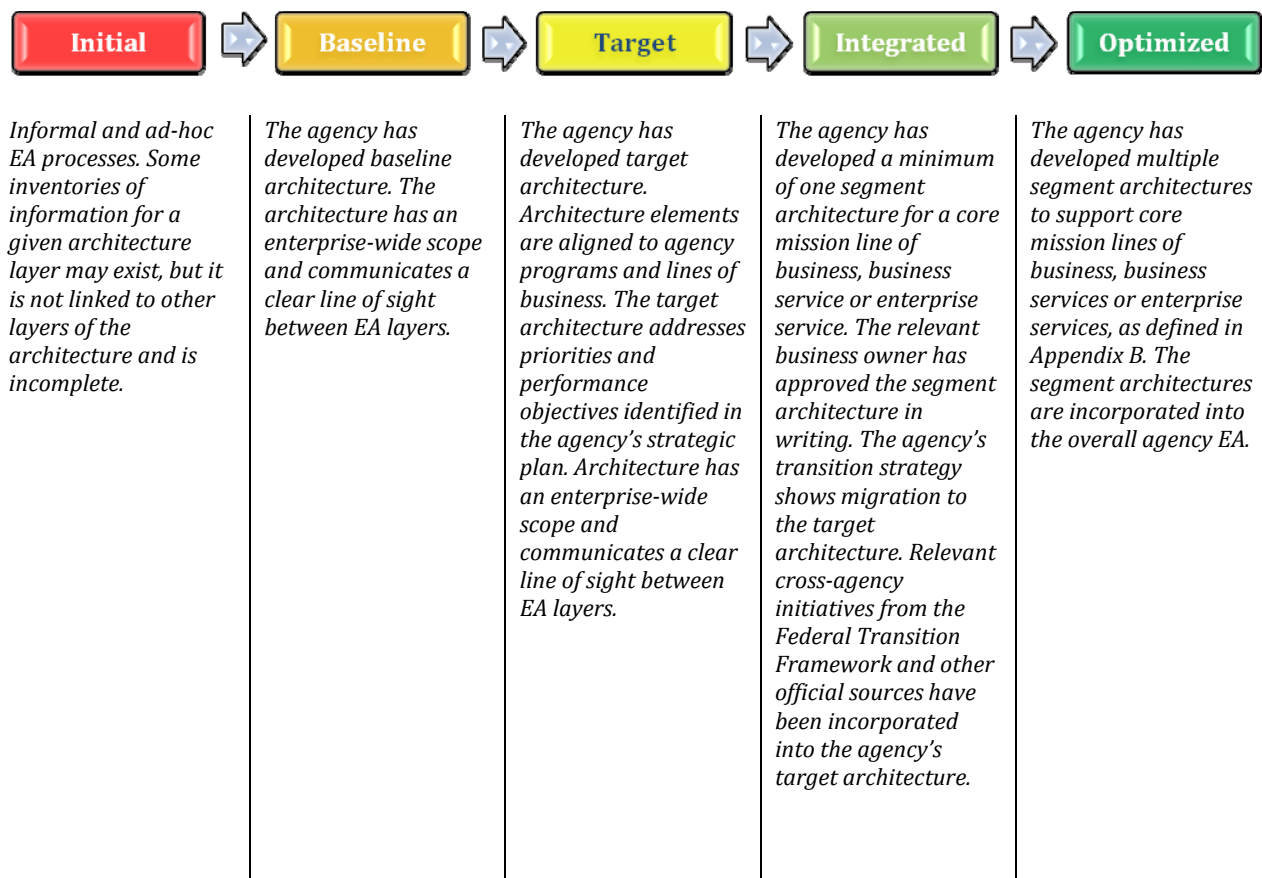The following criteria are established by the framework:

Initial	Baseline	Target	Integrated	Optimized
Informal and ad-hoc EA processes. Some inventories of information for a given architecture layer may exist, but it is not linked to other layers of the architecture and is incomplete.	*The agency has developed baseline architecture. The architecture has an enterprise-wide scope and communicates a clear line of sight between EA layers.*	*The agency has developed target architecture. Architecture elements are aligned to agency programs and lines of business. The target architecture addresses priorities and performance objectives identified in the agency's strategic plan. Architecture has an enterprise-wide scope and communicates a clear line of sight between EA layers.*	*The agency has developed a minimum of one segment architecture for a core mission line of business, business service or enterprise service. The relevant business owner has approved the segment architecture in writing. The agency's transition strategy shows migration to the target architecture. Relevant cross-agency initiatives from the Federal Transition Framework and other official sources have been incorporated into the agency's target architecture.*	*The agency has developed multiple segment architectures to support core mission lines of business, business services or enterprise services, as defined in Appendix B. The segment architectures are incorporated into the overall agency EA.*

Figure 2 - Completion Capability Area Criteria

Performance Architecture

The framework envisions the presence of measureable performance measurement indicators, based on the FEA Performance Reference Model (26) linked to and reflecting the agency's strategic plan. These indicators are then used to help track improved agency performance. According to the framework, the agency EA must also demonstrate how it furthers the agency's strategic objectives and aligns to well-defined performance goals.

We assess that the SEC EA Performance Architecture is at the INITIAL level of this completion capability area.

The SEC has not developed metrics to assess or track agency performance. The FEA-PMO suggests that a high-level process that has been developed through examination of best practices and built from existing management processes that are relevant to the Performance Reference Model. The recommended process is designed to develop IT performance information that can be used to improve IT decision-making and performance.

The process requires that IT initiatives must be developed in a *business-driven* context to be truly successful. As such the recommended process identifies key intersections with other processes related to IT performance. We assess that the SEC Performance Architecture is at the INITIAL stages in that it lacks a sufficient degree of integration with the business lines to achieve a higher score.

Business Architecture

The framework prescribes an inventory of agency business processes, aligned to the FEA Business Reference Model (BRM), linked to layers of the agency's EA and used to inform investment decision making. Segment architectures are developed for each agency line of business, including Services for Citizens, as well as Support Lines of Business. An effective EA must be business-driven, requiring alignment between the IT architecture layers and business processes.

We assess the SEC EA Business Architecture to be at the TARGET level of the completion capability area.

They have clearly and specifically defined their business lines into the following functional categories:

- Regulation and Policy Making
- Regulatory Oversight
- Enforcement Litigation and Judicial Activities
- Information and External Contact Management
- Internal Legal and Analytical Support
- Internal Operations and Infrastructure Services

The SEC has mapped each of these functions into the scheme prescribed by the Business Reference Model (BRM) (26) and the mapping schema provides line of sight between the business layer of the target architecture and other layers of the architecture.

The SEC clearly exceeds the requirements for the baseline level in that have mapped each of these functions into the scheme prescribed by the BRM and have established a clear line of sight be the business layer of the target architecture and other layers of the architecture. However, the SEC does not meet the stated requirements for the integrated capability level in that they have not completed the required minimum of one segment of the business architectures for the agencies core mission, nor has the relevant business owner authorized the segment in writing.

Data Architecture

The framework requires enterprise data (information) to be described at the level of business data entities, linked to the FEA Data Reference Model and other layers of agency EA. Enterprise data architecture is the key to identifying data sharing and exchange opportunities both within and across agencies. Within the SEC, the data architecture is frequently referred to as the information Architecture. For the purpose of our assessment, we considered these terms to be synonymous.

We assess the SEC EA Data (Information) Architecture to be at the TARGET level of the completion capability area.

The SEC has carefully defined and documented their existing and target data architectures (13). Moreover, the SEC has documented plans to use the Oracle SOA Suite Architecture, and has already taken several steps to implement the target data architecture in concert with both internal and external stakeholders. They have also defined their transition strategy for migrating agency data and are currently attempting to manage those data assets as an enterprise resource.

They exceed the baseline requirements, however, they have not achieved the integrated level; in that they have not yet fully implemented the data architecture on at least one core mission line of business.

Service Component Architecture

The framework envisions the agency services architecture to be linked to the FEA Service Component Reference Model and other layers of the agency EA. The service component architecture is the foundation for identifying opportunities for reuse both within and across agencies. Within the SEC, the service architecture is frequently referred to as the Operations Architecture. For the purpose of our assessment, we considered the terms to be synonymous.

We assess the SEC Service Component Architecture to be at the TARGET level of the completion capability area.

The SEC has developed a target architecture whose elements are aligned to SEC programs and lines of business. The target architecture addresses priorities and performance objectives identified in the SEC's strategic plan. Architecture has an enterprise-wide scope and communicates a clear line of sight between EA layers.

Technology Architecture

The framework stipulates that the technology architecture should contain an inventory of deployed and approved technologies linked to the FEA Technical Reference Model and other layers of the agency EA; providing a basis for standardization opportunities. The technology architecture then serves to provide a basis to identify opportunities for technology standardization both within and across agencies.

We assess the SEC Technology Architecture to be at the TARGET level of this completion capability area.

The SEC has identified their target technologies, products and standards as defined in Target Technical Architecture and mapped them to the FEA Technical Reference Model and the SEC Technical Reference Model. Additional artifacts were also provided to demonstrate a line of sight between the technology architecture and the other layers of the architecture. A partial list of these documents is found on page 9.

Transition Strategy

The transition strategy describes the agency's plan for migrating from its baseline architecture to its target architecture. The transition strategy defines projects, programs, timelines, and milestones and is the foundation for modernization and transformation activities from the baseline to target architecture.

We assess the SEC Transition Strategy to be at the TARGET level of this completion capability area.

The SEC has defined their programs and projects in support of their target architecture and has a documented sequencing plan integrating program and project dependencies, performance improvement, security planning activities, and enterprise transition states.

Recommendations

A. We recommend that the SEC develop EA metrics to assess or track the Commission's performance in implementing -- and tracking the performance of -- the SEC FEA program.

B. We recommend that the Information Technology (IT) Capital Planning Investment Control (CPIC) require periodic reports on EA progress overall, including specifically how EA can help to make strategic purchasing decisions that are more in line with a streamlined architecture that will help to reduce out-year costs.

USE CAPABILITY AREA

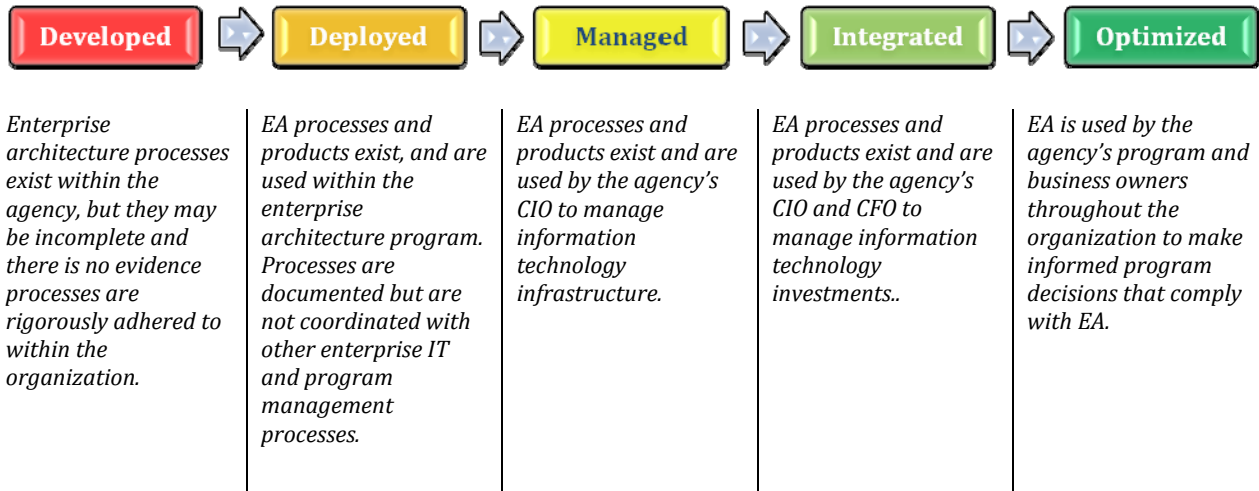The following criteria are established by the framework:

Developed	Deployed	Managed	Integrated	Optimized
Enterprise architecture processes exist within the agency, but they may be incomplete and there is no evidence processes are rigorously adhered to within the organization.	*EA processes and products exist, and are used within the enterprise architecture program. Processes are documented but are not coordinated with other enterprise IT and program management processes.*	*EA processes and products exist and are used by the agency's CIO to manage information technology infrastructure.*	*EA processes and products exist and are used by the agency's CIO and CFO to manage information technology investments..*	*EA is used by the agency's program and business owners throughout the organization to make informed program decisions that comply with EA.*

Figure 3 - Use Capability Area Criteria

EA Governance and EA Program Management

According to the applicable portions of the framework, the SEC must govern and manage the implementation and use of EA policies and processes. This includes the appointment of a Chief Architect (CA), allocation of resources and the sponsorship of EA at the executive level. The agency's EA Program Management Office governs the development, implementation and maintenance of the EA. Effective governance and program management assures agency compliance with EA processes and procedures and facilitates executive support.

We assess that this area is at the DEPLOYED level of the Use Capability Area.

In November 2002, the U. S. Securities and Exchange Commission established policy SECR 24-1.6 which directed development of EA and mandated its use for systems development and capital planning. It also prescribed that "all Divisions and Program Offices shall assign representatives to participate actively in and contribute to the development of the EA components relevant to their subject areas" and direct the implementation of a target architecture.

One manifestation of this policy, along with the SEC EA Project Charter signed in May 2003, has been the SEC EA Working Group. However, the EA Working Group has been inactive. Additionally SECR 24-1.6 requires EA to be fully integrated with the SEC's IT capital planning process, serving to inform, guide, and manage IT investment decisions.

The SEC does not always take advantage of the knowledge within EA to make purchasing decisions. The policy requires EA to be the primary, authoritative information source for all IT planning. However, it appears that some emergent requirements (often resulting from a time sensitive business initiative or an audit finding) are occasionally implemented without regards to the EA. These requirements may result in higher long-term sustainment costs (due to technology incompatibilities, dedicated support costs, etc.).

We also noted during our assessment that a CA had not been appointed. This was corrected during our assessment.

EA Change Management and EA Deployment

The framework envisions that the SEC should have the ability to effectively manage changes to EA artifacts, including documents and any EA repositories. The agency should have the ability to deploy EA content out to their user community, including deployment of a repository, communications and training. Change and configuration management is essential to ensure EA work products and processes remain current since EA serves as a tool for strategic planning and IT investing. EA products and processes must be clearly understood by, and available to, business stakeholders and IT stakeholders.

We assess the EA Change Management and EA Deployment to be at the MANAGED level of the Use Capability Area.

We believe that the agency's architecture is effectively communicated to users throughout the SEC, including constituents outside of CIO/IT community. The SEC EA group has established an intranet site that provides numerous artifacts and guidelines related to the SEC's enterprise architecture.

In addition, training is available, and provided to personnel through the SEC to improve their understanding of EA concepts and processes. These resources are available to users throughout the SEC, including business users, and users are informed of changes, as necessary.

Although current EA information is readily available to participants in these processes, as well as the broader agency, we have not seen evidence that the repository and its interfaces are used by participants or support staff for the CPIC, Systems Development Life Cycle (SDLC), and strategic planning processes.

Collaboration and Reuse

The framework mandates that agencies have the ability to effectively federate lower-level segment architectures (including content, structure and policies) with higher-level agency-wide EA initiatives.

Effectively federated architectures should promote collaboration and reuse opportunities within the agency. An effective agency-wide EA must incorporate the content of all of the agency's constituent organizational units, such as bureaus and offices, or else EA becomes just another "stovepipe" within the enterprise.

We assess the Collaboration and Reuse to be at the MANAGED level of the use capability area.

The SEC EAs are using compatible EA frameworks and modeling standards. The SEC EA represents an aggregation of bureau, program, segment, and other sub-unit architectures. The agency has identified, though not yet integrated or consolidated, common processes, data, services, and supporting technology at the appropriate levels within the agency (i.e., services provided at the agency level are identified, while some services remain at the bureau/sub-unit level).

CPIC Integration

The agency EA should be integrated with the agency's CPIC processes, including agency ability to align proposed investments to the approved transition strategy. Investment decisions should be made to achieve a more efficient and effective target state.

We assessed the CPIC Integration to be at the DEVELOPED level of the use capability area.

We found that the ITCPC members are well aware of the challenges that face the agency. The budget is getting smaller and the cost to operate the existing infrastructure is growing. The meeting minutes from the ITCPC meeting in September 2007 clearly illustrate the problem. Below are some quotes from the minutes that illustrate the problem:

- "The sum of all the work we have done over the past 2 to 3 years has generated a [sustainment] tail that at a time of flat budgets has limited our ability to take on new work."

- [A member] "noted that we could probably do a better job of requiring the business cases to be clearer about what exactly an investment is supposed to achieve. Even with that done well, over the last three years we have had only 2-3 investments with real cost savings and not too many more that even implied soft-ROI (better work) as an outcome."

- [A member] "stated that a budget that contained no reserve for new work is untenable. Things come up from the Congress, from OMB, or driven by the market and we have to have some ability to respond."

It is apparent that the ITCPC members do understand what needs to happen in order to solve the problem.

- "The members thought that if we are going to focus more on operating efficiencies then we need to establish the measurements by which to capture that."

- "It would seem that the situation in FY2009 is not likely to be any better; in fact, if steady state continues to increase then it will be even worse. At some point, less is just less."

- [A member] asked "why OIT had not considered the out-year costs when recommending projects for approval; [Another member] explained that it is included, although it is seldom scrutinized very closely because the whole agency has a one-year mindset."

Enterprise architecture was designed to solve the first set of problems and ones similar to them in addition to being the measuring stick that is being sought in the second set of bullets. However, the concern is that ITCPC decision makers are not seeing the true benefit of EA.

We believe that short term thinking instead of strategic, long term thinking seems to be the trend. As noted earlier, some IT investments are made outside the framework of the EA. This may result in future technology incompatibilities, as well as larger than necessarily sustainment costs.

We found that business integration must be "enforced" from the top down. Currently OIT is working from the bottom up. The ITCPC can command compliance by leveraging its control over the budget. If the ITCPC planners do not align business and IT, then EA runs the risk of succeeding "by chance" or getting to a certain point and then just existing. It is our opinion that EA is the cost savings measurement tool that ITCPC is looking for as a solution to a rapidly growing problem. We caution the ITCPC planners to look five years out and not focus on what they have to spend "now."

At other agencies business integration is not a tremendous problem because the budgetary controls are linked to EA compliance. However, SEC is not dependant on OMB compliance for funding, therefore it is hard to use FEA Framework 2.2 or any directive that does not directly affect funding as an improvement tool. We believe that the ITCPC bear the overall responsibility for Enterprise Architecture instead of OIT. The ITCPC should make decisions based upon EA input and metrics and frown upon funding projects that do not involve EA input from the planning stages. Until such a time when no IT investments are made without EA involvement at the root level, the EA program cannot be completely successful.

Recommendations

C. Reconstitute the EA Working Group as an EA Steering Committee - We recommend that the group be reconstituted as an EA Steering Committee, and that it meet on a regular basis to consider issues related to directing, overseeing, and approving EA activities within the SEC.

D. We recommend that the EA Steering Committee report to the IT CPC/Executive Operations Committee and that the ITCPC consider input from EA to make strategic purchasing decisions.

E. We recommend that the committee should have sub committees on Data Management, Technology Standards, IT Strategy, and other areas of focus as necessary.

F. We recommend EA be involved in all technology implementations, especially ones that are "fast-tracked" due to urgent need and audit report findings.

RESULTS CAPABILITY AREA

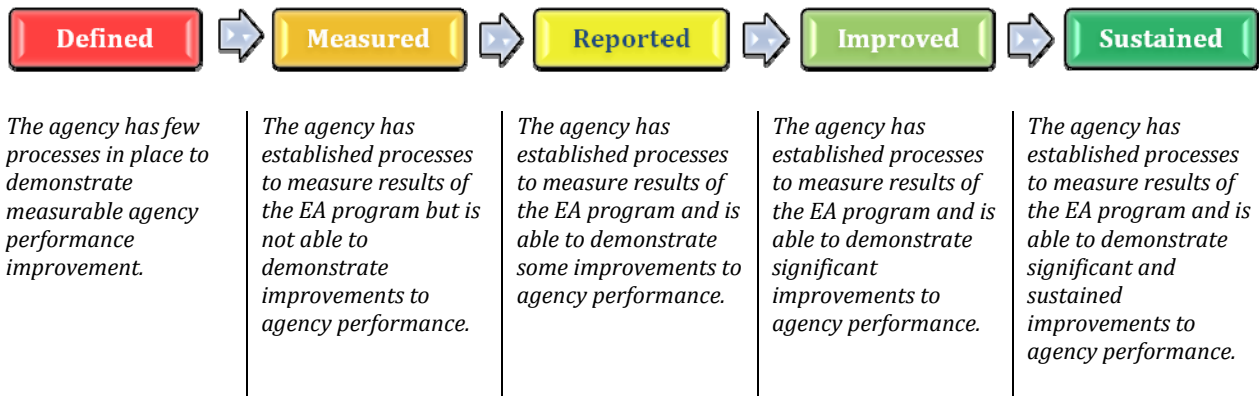The following criteria have been established by the framework:

Defined	Measured	Reported	Improved	Sustained
The agency has few processes in place to demonstrate measurable agency performance improvement.	*The agency has established processes to measure results of the EA program but is not able to demonstrate improvements to agency performance.*	*The agency has established processes to measure results of the EA program and is able to demonstrate some improvements to agency performance.*	*The agency has established processes to measure results of the EA program and is able to demonstrate significant improvements to agency performance.*	*The agency has established processes to measure results of the EA program and is able to demonstrate significant and sustained improvements to agency performance.*

Figure 4 - Results Capability Area Criteria

Cost Savings and Cost Avoidance

The framework envisions that the agencies enterprise architecture is achieving demonstrable benefits to the agency in cost savings and cost avoidance for IT investments. The agency should develop and submit an EA Program Results Analysis document clearly demonstrating the improvements to agency IT investment performance attributable to the EA program, and explain how the EA program activities resulted in cost savings, cost avoidance, and/or improved mission performance for the agency. The agency fulfills this requirement by demonstrating results in one of three ways: demonstrating the EA program has resulted in cost savings and/or cost avoidance; maintaining agency IT spending below a certain percentage of its overall discretionary budget authority; or achieving PART (27) scores above a certain level.

We assessed the SEC to be at the REPORTED level for this Results Capability Area.

It is not possible to tell if the agency enterprise architecture is achieving demonstrable benefits to the agency in cost savings and cost avoidance for IT investments. This is due partly to the fact that the agency's IT funding is not tied to performance metrics. If a particular EA initiative were to save $100,000, for example, it would not reduce the budget by $100,000, but make the funding available for other uses. This makes it particularly difficult for the agency to accurately measure cost savings and avoidance.

Our assessment is based on not being able to show a more effective IT portfolio without increasing the FY budget. We recommend the SEC more closely track the results of EA implementation and use these metrics to sway purchase decisions. We believe that EA is making an impact, however it is not able to be realized due to the previously mentioned shortcoming. Support from the highest level agency policy makers is required to fully realize the cost savings of Enterprise Architecture. Without this support it is possible to dismiss cost savings and cost avoidance as unnecessary, while in reality it is one of the main priorities/goals of Enterprise Architecture.

Performance Improvement

The framework envisions that the agency transition strategy should include well-defined and objectively measurable performance milestones. These performance milestones must enable the agency to determine whether it is meeting its mission and performance objectives, defined by the

business owners who have ultimate responsibility for agency performance. The transition strategy should include performance milestones indicating an agency's success in achieving performance targets. This ensures the agency's EA is actionable and will produce improvements to the agency's mission performance.

We assess that the SEC is at the DEFINED level since it cannot achieve a higher level without business integration.

Our assessment is based on interviews performed with SEC business owners. Additionally there are no performance architecture metrics from which to base performance. We believe that high level policy makers should take responsibility for measuring performance improvements. Without very senior level policy maker mandates there is no driving force that requires performance improvement, a key indicator of a successful EA.

Measuring EA Program Value

The framework envisions EA value measurement as a continuous, customer-focused process integrated with each phase of the Performance Improvement Lifecycle. The principal goals of EA value measurement are to document EA value to agency decision-makers and to identify opportunities to improve EA products and services. EA value measurement tracks architecture development and use, and monitors the impact of EA products and services on IT investment decisions, collaboration and reuse, standards compliance, stakeholder satisfaction, and other measurement areas and indicators.

We assess that the SEC is at the DEFINED level of this Results Capability Area.

We find that EA provides substantive value to the SEC; however the full effects are not realized. Scoring against FEA 2.2 specifically, the SEC remains "defined." Looking at the SEC EA program value overall, paints a different picture. The SEC is not following FEA 2.2 framework by measuring its value, however there is clearly value where the EA program is concerned.

Lower level business lines find EA extremely helpful. This was apparent from the interview with the OCIE where the OEA reported that EA assistance was invaluable. Additionally the OFM reported due to EA the bulk of their work was already done for them with certain projects. OIT reported that EA greatly assists because they look years down the road. OIT needs to do more than just make the solution work once; rather they have to support it as well. Additionally EA allows the organization to look at the big picture and optimize the solution.

However, ECS finds the SEC to be at or near the very beginning stages of measurement of the Enterprise Architecture due mostly to the fact that to date Enterprise Architecture is not utilized to its potential where it is meant to be used – at the CPIC/ITCPC level. The very nature of Enterprise Architecture is to assist the business owners and capital investment planners in making substantive decisions in regards to investment planning and purchasing decisions. ECS believes that the ITCPC should make EA a high priority in order to start showing the real value of EA – long term cost savings and avoidance. If the ITCPC does not make EA a high priority, their priority numbers 1, 2, and 3 will still be looming next year and so will the sustainment costs the projects created. EA

shows great value at an operational level within the SEC, however if scored against FEA 2.2 it is in its infancy due to its under-utilization at senior levels.

IPv6 Planning

The framework states that the agency's EA (including Transition Strategy) must incorporate Internet Protocol version 6 (IPv6) into the agency's target architecture. Federal agencies are required to implement IPv6 within their network backbone by June 2008.

We assess that the SEC is at the REPORTED level of the Results Capability Area.

This assessment is based on documentation that shows a transition plan that is currently in progress. The SEC has setup a lab, designated IPv6 DNS and other servers for testing, as well as successfully tested IPv6 connectivity by tunneling IPv4 traffic within native IPv6 networks. The SEC plans on the beginning of the decommissioning process of IPv4 services and servers incrementally in June of 2008 and will complete the task over time as the IPv4 services go to zero.

It is our opinion that the SEC has progressed with the IPv6 initiative due in part to the OMB 05-22 memorandum and not necessarily because the FEA framework requires it. We reached this conclusion because the SEC does not have the executive level support needed to attain a 300 level score in any of the Results Capability Areas except for IPv6 and finds it odd that IPv6 would be different. As recommended previously it is our opinion that senior level policy makers at the SEC take ownership of the enterprise architecture and use it to its potential in order to measure the success of the project and assist in capital investment planning.

Recommendations

G. We recommend that high level policy makers establish a process that ensures participation from the EA team prior to approving any IT initiatives.

N.B.: Without very senior level policy maker mandates there is no driving force that requires performance improvement, a key indicator of a successful EA.

SPECIFIC RESULTS

These results pertain to the SEC's progress in implementing the four specific recommendations made during the previous OIG audit in 2005. We relied on extensive evaluation of SEC documentation, as well as interviews with SEC personnel, in formulating our assessments with respect to the following issues: the SEC's progress towards obtaining business owner validation and support of the current "as is" EA; the SEC's progress in establishing a communication strategy to introduce EA successfully throughout the Commission; the establishment of an EA program plan to ensure adequate compliance with EA policies and procedures; and the development of a complete "as is" architecture with parallel mappings to the requirements of the FEA reference models.

BUSINESS OWNER VALIDATION

The SEC has made some progress towards obtaining business owner validation and support of the current "as-is" enterprise architecture, however, this process has clearly not been completed. The SEC OIT has developed and documented a comprehensive EA program. However, the program has not yet been embraced by the business line community. We believe that, going forward, the success of the SEC EA program will depend largely on incremental "cultural" and perception changes within the business lines at the senior level. We saw anecdotal evidence of progress in this area, and believe that this process is underway, however would be aided by senior level policy makers' mandate. OIT is working hard to integrate to the business, but reciprocation is needed.

ESTABLISHMENT OF COMMUNICATION STRATEGY

Assessment Results related to the SEC's progress in establishing a communications strategy to introduce EA successfully throughout the Commission.

We found that the SEC OIT has made significant progress in establishing a communications strategy to introduce EA successfully throughout the Commission. OIT personnel have established a comprehensive intranet site to help with the promulgation and distribution of information related to the EA. While communications are much improved on the intranet, a lot of the information is dated and could stand to be refreshed more frequently. In addition to the portal, OIT EA has undertaken several outreach initiatives including periodic briefings, newsletters and brown bag lunches designed EA's their value to the business line constituency. This is a marked improvement from 2005.

ESTABLISHMENT OF EA PROGRAM PLAN

Assessment Results regarding the SEC's establishment of an EA program plan to ensure adequate compliance with EA policies and procedures.

With respect to the establishment of an EA program plan to ensure adequate compliance with EA policies and procedures, we were satisfied with the progress. SEC OIT EA personnel have established a comprehensive EA program plan. The technical plan has obviously been carefully designed and documented. It is our opinion that OIT EA can go only so far on its own. Reciprocation is needed by the senior level business side of the commission in order to take it to the next level.

COMPLETION OF AS-IS ARCHITECTURE

Lastly, with respect to completion of a comprehensive "as-is" architecture with parallel mappings to the requirements of the FEA reference models, we noted that, while the design is complete, and fully documented, the integration and implementation with the business line has been slow, and has not yet been completed. As with item 1 above, we saw anecdotal evidence of progress in this area, and we believe that further progress would be aided by senior level policy maker support.

We note generally that the OIT EA group has done a very good job of designing the to-be architecture; however, these models have not been fully accepted by the senior level business owners. We see progress at the periphery, but SEC EA program remains largely unimplemented. We believe that the success of the EA program at the SEC will depend largely on senior level policy makers' decisions to integrate and include EA within its arsenal of tools which it uses to guide the agency down the road to success.

CONCLUSIONS

Throughout the assessment, several themes emerged which we believe reflect the current state of the SEC Enterprise Architecture program.

First, we found that the SEC has developed and documented a coherent EA program. The "as-is" and "to-be" architectures have been clearly defined, the transition strategies identified, and the program is being effectively managed – as effectively as it can within OIT. We were impressed with the knowledge and commitment of the EA staff.

From a compliance standpoint, however, the program suffers greatly from a lack of integration with the senior SEC business lines. The primary goal of an Enterprise Assessment program is to guide and inform strategic IT investments. This function is done at the most senior level in the SEC by the ITCPC. It appears to ECS that the ITCPC fully understands the challenges it faces with the increasing sustainment costs of the Commissions IT infrastructure. The integration of EA will help the ITCPC gain better visibility into these costs, and provide the tools to effectively manage these costs.

From an operational standpoint it is clear to ECS that EA provides great value. EA is greatly assisting business lines below the ITCPC level. Progress was most evident in speaking with OFM, OS, OIT and OCIE where EA's input, documentation and service was invaluable. This is where they hybrid model comes into play. From the bottom up the EA program is greatly valued, while from the top down, the area which it was designed for – IT investment planning – it does not appear to be effectively used.

The program generally performed well in the Completion Capabilities Areas, very well in the Use Capabilities Areas, but poorly in the Results Capability Areas. We believe this to be reflective of an EA program that has been well designed and documented, but not yet fully accepted by the senior business lines nor fully integrated into the overall IT strategy of the SEC. For example, we observed that the business line policy-makers frequently promote new projects due to an emergent business requirement or audit. They are presented as urgent projects and are funded without adequate consideration of the EA. This is where Commission leaders should take advantage of EA. Involving EA in the process could lead to the cost savings in future years when sustaining more compatible technologies may be less expensive. This, of course, requires an investment in EA prior to a business requirement or audit mandate so EA could be in the position to properly design and direct the incorporation of the new mandate into its streamlined architecture, thereby reducing costs.

With respect to the establishment of an EA program plan to ensure adequate compliance with EA policies and procedures, we were completely satisfied with the progress. SEC OIT EA personnel have established a comprehensive EA program plan. It was clear to the assessment team that the plan was carefully designed and thoroughly documented.

Lastly, with respect to completion of a comprehensive "as-is" architecture with parallel mappings to the requirements of the FEA reference models, we noted that, while the design is complete (and fully documented) the integration and implementation with the business line has been slow, and has not

yet been completed. Again, we saw anecdotal evidence of progress in this area, and we believe that the process of integration is underway.

In sum, we believe that the SEC has developed and documented an outstanding Enterprise Architecture program. However, until the EA program is fully embraced by the business lines, the SEC will not see the full benefits of the program. Although we see progress in the EA's use and acceptance by the operational business lines, we believe that the integration process needs to be significantly improved.

DISCUSSION OF MANAGEMENT COMMENTS

Commission management concurred with all seven of our recommendations. Their formal written response is included as Appendix C.

APPENDIX A

REFERENCES

1. **(OMB), U.S. Office of Management and Budget.** *Federal Enterprise Architecture Program EA Assessment Framework Version 2.2.* Washington, DC : U.S. Office of Management and Budget (OMB), 2007. ***.

2. —. *President's Management Agenda.* Washington, DC : U.S. Office of Management and Budget (OMB), 2002. PDF Document.

3. **(KPMG) KPMG, LLC.** *Enterprise Architecture Assessment Report.* Washington, DC : (KPMG) KPMG, LLC, 2005.

4. **(OMB), U.S. Office of Management and Budget.** *OMB Circular A-11: Preparation and Submission of Budget Estimates.* Washington, DC : U.S. Office of Management and Budget (OMB), 1999. ***.

5. **(Congress), 103rd Congress of the United States.** *Public Law 103-62: Government Performance and Results Act.* Washington, DC : Congress of the United States (Congress), 1993.

6. **(Congress), Congress of the United States.** *The Information Technology Management Reform Act of 1996.* Washington, DC : Congress of the United States (Congress), 1996.

7. **(SEC), U.S. Securities and Exchange Commission.** *SEC Lines of Business (SEC EA Portal).* Washington, DC : U.S. Securities and Exchange Commission (SEC), 2007.

8. —. *Master Function Chart (Red Level).* Washington, DC : U.S. Securities and Exchange Commission (SEC), 2007. Visio Document.

9. —. *WorkFlow Functions for General Applications.* Washington, DC : U.S. Securities and Exchange Commission (SEC), 2007. Excel File.

10. —. *SEC Big Picture Version 7.* Washington, DC : U.S. Securities and Exchange Commission (SEC), 2006. Visio Document.

11. —. *SEC Portal Information.* Washington, DC : U.S. Securities and Exchange Commission (SEC), 2008. HTML Document.

12. —. *Information Categories.* Washington, DC : U.S. Securities and Exchange Commission (SEC), 2007. Word and Visio Documents.

13. —. *SEC Target Version 11.* Washington, DC. : U.S. Securities and Exchange Commission (SEC), 2006. PowerPoint Presentation.

14. —. *Technology Discussion.* Washington, DC : U.S. Securities and Exchange Commission (SEC), 2007. PowerPoint Presentation.

15. **(OMB), U.S. Office of Management and Budget.** *Information Reference Model.* Washington, DC : U.S. Office of Management and Budget (OMB), 2006. PowerPoint Presentation. ***.

16. **(SEC), U.S. Securities and Exchange Commission.** *SRM and Our Definitions.* Washington, DC : U.S. Securities and Exchange Commission (SEC), 2007. Excel Document.

17. —. *SRM Crosswalk of SEC FEA.* Washington, DC : U.S. Securities and Exchange Commission (SEC), 2007. Excel Document.

18. —. *Enterprise Architecture Policy (SECR 24-1.6).* Washington, DC : U.S. Securities and Exchange Commission (SEC), 2002. PDF Docuement.

19. **(SEC), U.S. Securities and Exchnage Commission.** *IPV6 Compliance Documentation.* Washington, DC : U.S. Securities and Exchnage Commission (SEC), 2007.

20. **(SEC), U.S. Securities and Exchange Commission.** *IPv6 Inventory.* Washington, DC : U.S. Securities and Exchange Commission (SEC), 2006.

21. —. *IPV6 Transition Plan.* Washington, DC : U.S. Securities and Exchange Commission (SEC), 2007.

22. —. *IPv6 Architecture.* Washington, DC : U.S. Securities and Exchange Commission (SEC), 2007. Microsoft Word Document.

23. **(SEC), U.S. Securities anExchange Commission.** *Procurement of an IPv6 Address Block.* Washington, DC : U.S. Securities anExchange Commission (SEC), 2007. Microsoft Word Document.

24. **(SEC), U.S. Securities and Exchange Commission.** *IPv6 Lab.* Washington, DC : U.S. Securities and Exchange Commission (SEC), 2007. Microsoift Visio Diagram.

25. —. *IPv6 Technology Refresh.* Washington, DC : U.S. Securities and Exchange Commission (SEC), 2006. Microsoft Word Document.

26. **(OMB), U.S. Office of Management and Budget.** *FEA Consolidated Reference Model Document Verison 2.1.* Washington, DC : U.S. Office of Management and Budget (OMB), 2007. ***.

27. —. *Program Assessment Rating Tool.* Washington, DC : U.S. Office of Management and Budget (OMB), 2008.

28. **(SEC), U.S. Securities and Exchange Commission.** *Target Technical Architecture.* Washington, DC : U.S. Securities and Exchange Commission (SEC), 2007. PowerPoint Presentation.

29. —. *SEC Techncial Reference Model.* Washington, DC : U.S. Securities and Exchange Commission (SEC), 2005. Microsoft Word Document.

30. —. *SEC Tech Roadmap.* Washington, DC : U.S. Securities and Exchange Commission (SEC), 2007. Excel Spreadsheet.

31. —. *SEC Enterprise Architecture 2008 - 2015: Foundations for the Future.* Washington, DC : U.S. Securities and Exchange Commission (SEC), 2007.

32. —. *Master Function and Subfunction and Components Definition.* Washington, DC : U.S. Securities and Exchange Commission (SEC), 2007. PDF Document.

33. —. *Information Interchange Initiative.* Washington, DC : U.S. Securities and Exchange Commission (SEC), 2006. PowerPoint Document.

34. —. *Functions Performed by SEC Organization (Primary and Secondary).* Washington, DC : U.S. Securities and Exchange Commission (SEC), 2007. PDF Document.

35. —. *Enterprise Architecture Project Charter.* Washington, DC : U.S. Securities and Exchange Commission (SEC), 2003.

36. **(OMB), U.S. Office of Management and Budget.** *Results of FY 2007 Federal Enterprise Architecture Assessment.* Washington, DC : U.S. Office of Management and Budget (OMB), 2007.

37. —. *OMB Memorandum 05-23: Improving Information Technology (IT) Project Planning and Execution.* Washington, DC : U.S. Office of Management and Budget (OMB), 2005.

38. —. *OMB Circular A-130: Management of Federal Information Resources.* Washington, DC : U.S. Office of Management and Budget (OMB), 1985. ***.

39. —. *FEA Performance Reference Model.* Washington, DC : U.S. Office of Management and Budget (OMB), 2007.

40. —. *Data Reference Model Version 2.0.* Washington, DC : U.S. Office of Management and Budget (OMB), 2005. PDF Docuement. ***.

41. —. *Cost Savings Achieved Through E-Government and Line of Business Initiatives.* Washington, DC : Office of Management and Budget (OMB), 2006. ***.

42. **(ECS) ECS Federal, Inc.** *SEC EA Project Plan.* Washington, DC : (ECS) ECS Federal, Inc., 2008. Microsoft Project. Submitted to SEC via email February 5, 2008.

43. —. *SEC EA Assessment Project Plan.* Washington, DC : (ECS) ECS Federal, Inc., 2008.

44. —. *Enterprise Architecture Rules of Engagement.* Reston, VA : (ECS) ECS Federal, Inc., 2007.

APPENDIX B

LIST OF RECOMMENDATIONS

Recommendation A
We recommend that the SEC develop EA metrics to assess or track the Commission's performance in implementing -- and tracking the performance of -- the SEC FEA program.

Recommendation B
We recommend that the ITCPIC require periodic reports on EA progress overall, including specifically how EA can help to make strategic purchasing decisions that are more in line with a streamlined architecture that will help to reduce out-year costs.

Recommendation C
Reconstitute the EA Working Group as an EA Steering Committee - We recommend that the group be reconstituted as an EA Steering Committee, and that it meet on a regular basis to consider issues related to directing, overseeing, and approving EA activities within the SEC.

Recommendation D
We recommend that the EA Steering Committee report to the IT CPC/Executive Operations Committee and that the ITCPC consider input from EA to make strategic purchasing decisions.

Recommendation E
We recommend that the committee should have sub committees on Data Management, Technology Standards, IT Strategy, and other areas of focus as necessary.

Recommendation F
We recommend EA be involved in all technology implementations, especially ones that are "fast-tracked" due to urgent need and audit report findings.

Recommendation G
We recommend that high level policy makers establish a process that ensures participation from the EA team prior to approving any IT initiatives.

APPENDIX C

MANAGEMENT'S COMMENTS
MEMORANDUM

March 28, 2008

TO: David Kotz
            Inspector General

FROM: Corey Booth
            Chief Information Officer

Re: Comments to Draft Enterprise Architecture (EA) Assessment

Thank you for your office's hard work on this audit, and for providing us the opportunity to review and comment on the findings and recommendations contained in your report. The purpose of your review was to evaluate the progress of the Securities and Exchange Commission's (SEC's) efforts to develop an information technology enterprise architecture (EA), as required by the Clinger-Cohen Act of 1996 and OMB guidance. The report assesses our EA program's implementation to date, and how the EA program has been integrated into the SEC's management, governance, and IT investment decision-making processes. We provided your office our technical comments on this report separately.

We appreciate and concur with OIG's assessment that our EA Program has significantly advanced since OIG's previous review in 2004, and that we have developed and documented a well-designed EA program. We have clearly defined the "as-is" and "to-be" architectures, and the SEC has identified the transition strategies required to move between the two. More importantly, we have used our EA program and framework to guide our decisions to undertake a number of strategic initiatives that have been driven by, or have been heavily informed by, our EA Program. Examples include the introduction of a new suite of enterprise document management and business process management tools.

We generally concur with the audit report's recommendations, which taken as a whole assert that the SEC needs to more explicitly integrate the EA program with the agency's capital planning and investment control (CPIC) process and other core management processes, and that the SEC's business leadership needs to be more actively involved in EA-related strategy setting. For example, although the SEC already has metrics to track agency performance pursuant to recommendation A, we agree that the SEC needs to strengthen the relationship between the Government Performance Results Act (GPRA) program, the CPIC process, and the commission's EA program. Doing so would more explicitly tie IT investments to those metrics where appropriate. Likewise, as we continue to refine the mechanics of IT investment selection and oversight, we also recognize the need to more explicitly reflect architectural considerations associated with those investments. Accomplishing these goals will require the SEC to design a more formalized and broadly participative EA governance model, along the lines outlined in the report's recommendations.

■ECS

We look forward to working with the IT Capital Planning Committee, the Information Officers' Council, and the Office of the Executive Director to pursue the improvement opportunities your team has identified. We appreciate OIG's ongoing support for helping us build a more effective information technology program for the Commission.

APPENDIX C

MANAGEMENT'S COMMENTS (cont.)
MEMORANDUM

March 31, 2008

TO: David Kotz
Inspector General

FROM: Diego T. Ruiz
Executive Director

SUBJECT: Comments on Draft Assessment Results for OIG's Enterprise Architecture
Assessment

On behalf of the SEC's IT Capital Planning Committee, which I chair, I want to thank
you for the opportunity to provide comments on the OIG Enterprise Architecture
Assessment. The purpose of the report was to evaluate the SEC's progress in developing
an information technology enterprise architecture as required by the Clinger-Cohen Act
and Office of Management and Budget guidance.

I am pleased that the report assesses that "the SEC has developed and documented an
excellent Enterprise Architecture program for the type and size of the organization." The
report outlines the progress the agency has made since the last review of the EA program
was conducted in 2004, and acknowledges the strides that have been made in developing
and documenting an EA program that is well designed and well thought out. In addition,
the report highlights the need for the SEC to further develop the architecture from a
business-driven perspective in order for it to meet fully the intended goals of the Federal
Enterprise Architecture.

We generally concur with the recommendations contained in the audit report, and share
the belief that a strong EA program is an invaluable tool in guiding and informing
strategic IT investments. We also concur that there are improvements that can be made
in more fully integrating EA into the SEC's capital planning process.

The report makes specific recommendations regarding the importance of metrics to
assess agency performance. Because we strongly believe that it is crucial to track results
in order to improve performance, the SEC places great value on performance metrics and
measurement programs. These are used extensively in the strategic management of the
organization and are extremely valuable in ensuring the accountability of agency
management. The agency's strategic goals and performance measures are discussed in
great detail in the Performance and Accountability Report, including one measure that
directly tracks our adherence to the SEC's Capital Planning and Investment Control
process. I am happy to report that for the last two years in a row, the SEC's PAR has
received the Association of Government Accountants' Certificate of Excellence in
Accountability Reporting award.

The report also makes several recommendations concerning the need to more fully integrate EA considerations into the IT investment process. Although time did not permit a thorough examination of the specific governance structures proposed in the report, we concur that improvements can and should be made in ensuring that EA is an integral part of the process by which SEC management makes IT investment decisions and oversees those investments. Over the next several weeks, the CPC will work closely with OIT to underscore the importance of EA in the decision-making processes that support the development and implementation of the SEC's strategy, budget, and program control processes.

Thank you for the opportunity to comment on OIG's assessment of the SEC's enterprise architecture program. I look forward to working closely with your office to ensure the Commission derives the full benefits of its EA program.

2