IT Management Frameworks: A Foundation for Success

An Overview

State chief information officers (CIOs) and information technology (IT) managers are increasingly required to justify services, account for costs, and identify and deliver value to the enterprise. Proficient capital planning and astute investment management are necessary for satisfying the expectations of constituents and the examinations of funding and oversight bodies. An effective and efficient IT investment management process emphasizes the importance of thorough planning, competent risk management, strict accountability for meeting business/program goals and objectives and asset performance expectations, and cost-effective life-cycle management. The intent is to improve the management of IT, so that it enables more efficient delivery of services to the public, employees, and other governments.

This need has led to the development of several IT management frameworks to improve the efficiency of organizational IT planning. Below are four successful frameworks, one developed at the state level, one adapted from the private sector, and the others, adaptations of federal models that can be applied in the state IT environment.

Successful Frameworks:

There are a number of successful IT management frameworks that represent a variety of management approaches emphasizing different disciplines. These include investment management, service oriented management, and line of business or process management. Providing a foundation for successful business practices and management of resources, states can choose a model that best fits their organizational needs.

(1) North Carolina Framework for Managing IT Investments – Part of an overall program for the improved management of technology.

(2) Government Accountability Office IT Investment Management Framework (ITIM) – A maturity model composed of five progressive stages of maturity that an agency can achieve in its IT investment management capabilities.

(3) The IT Infrastructure Library (ITIL) – A comprehensive, consistent and coherent set of best practices for delivering information technology service management.
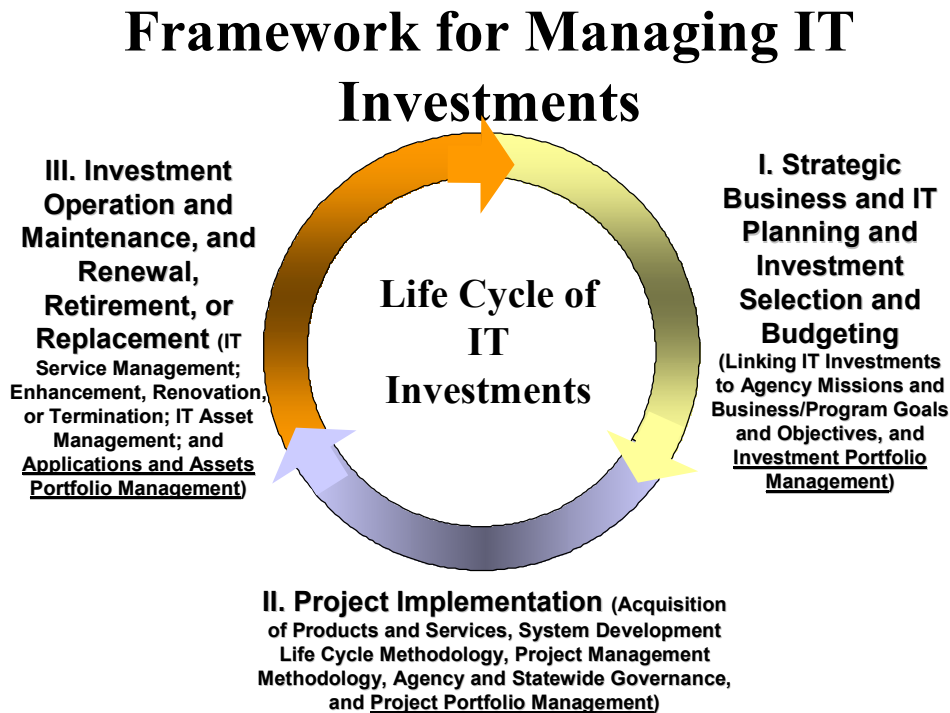
(4) The Federal Business Reference Model (BRM) – The foundation of the Federal Enterprise Architecture (FEA), whose purpose is to identify opportunities to simplify processes,

re-use federal IT investments and unify work across the agencies and within the lines of business of the federal government.

North Carolina Framework for Managing IT Investments

The North Carolina Framework for Managing IT Investments involves three major phases. (See Figure 1.)

Figure 1. *Framework for Managing IT Investments*

Framework for Managing IT Investments

III. Investment Operation and Maintenance, and Renewal, Retirement, or Replacement (IT Service Management; Enhancement, Renovation, or Termination; IT Asset Management; and <u>Applications and Assets Portfolio Management</u>)

Life Cycle of IT Investments

I. Strategic Business and IT Planning and Investment Selection and Budgeting (Linking IT Investments to Agency Missions and Business/Program Goals and Objectives, and <u>Investment Portfolio Management</u>)

II. Project Implementation (Acquisition of Products and Services, System Development Life Cycle Methodology, Project Management Methodology, Agency and Statewide Governance, and <u>Project Portfolio Management</u>)

(Source: North Carolina Office of Information Technology Services.)

Purpose/Function(s) Supported
The Framework is part of an overall program for the improved management of technology, so that it is acquired, implemented, and employed more cost-effectively. The Framework outlines an approach for helping business/program and IT executives and managers: a) keep track of technology assets; b) plan goals for using technology to meet business/program requirements; c) determine when and how best to acquire and implement new technology; d) develop approaches and performance measures for maintaining and operating in-place technology; and e) decide when to discard, replace, or renovate duplicative, insecure, risky, or inefficient technology.

Origination
The Framework was developed from an extensive review of current literature and other references to provide a conceptual overview for the management of IT, with an emphasis on IT investments.

Summary of Features

The Framework offers two primary features. One, a systemic and comprehensive view of the full IT investment life cycle. Therefore, the major components can be explained by their contribution to the coherent whole, as well as their individual and unique functions. Two, it gives an overview of the individual phases, with major objectives and activities of each.

Benefits

The Framework provides a conceptual scheme for the selection, implementation, operation, and retirement/replacement of IT investments. More specifically, IT assets must be:

- Justified on the need to fill a gap in the ability of agencies and the state to meet strategic program goals or business objectives or modernize technical infrastructure to provide more and better services at less costs.
- Selected and funded so that they offer the least life-cycle costs of alternative approaches, meet risk-adjusted cost and schedule parameters, can be accomplished within personnel and fiscal resource limitations/availabilities, and provide desired and measurable benefits and value.
- Implemented in ways that demonstrate satisfactory progress toward achieving baseline cost, schedule, and performance/benefit goals.
- Operated proficiently to meet service level objectives, and maintenance and enhancements must be planned and conducted to optimize performance and cost-effectiveness over their useful lives.
- Reviewed continuously, and as appropriate, they must be replaced, retired, or renovated based on how close actual operating and maintenance costs are to desired budgets, whether performance and service levels meet operational goals, whether they continue to satisfy agency and user requirements, whether they present unacceptable security vulnerabilities, and whether they are at-risk for failure.

Limitations

The Framework addresses primarily the issues and challenges related to overall IT investment management. It does not approach other major success factors for the management of IT, such as personnel management, business and technical architectures, security management, financial management, system development and project management methodologies, quality management and maturity models, applications development management, etc.

References

A summary view of the Framework is described in the North Carolina Statewide IT Plan that is available from the state CIO's Web page at http://www.scio.state.nc.us/, or directly at http://www.scio.state.nc.us/sitPlan.asp.

Government Accountability Office IT Investment Management Framework (ITIM)

The IT Investment Management Framework (ITIM) [as described in *Information Technology Investment Management: A Framework for Assessing and Improving Process Maturity (GAO-04-394G)*] is a maturity model composed of five progressive stages of maturity that an agency can achieve in its IT investment management capabilities. These maturity stages are cumulative; that is, in order to attain a higher stage of maturity, the agency must have institutionalized all of the requirements for that stage in addition to those for all of the lower stages. The framework can be

used both to assess the maturity of an agency's investment management processes and as a tool for organizational improvement. For each maturity stage, the ITIM describes a set of critical processes that must be in place for the agency to achieve that stage. Figure 2 shows the five stages and lists the critical processes for each stage.

Figure 2. *Five Stages and Critical Processes for Each Stage of the Maturity Model*

Maturity stages	Critical processes
Stage 5: Leveraging IT for strategic outcomes	- Optimizing the investment process - Using IT to drive strategic business change
Stage 4: Improving the investment process	- Improving the portfolio's performance - Managing the succession of information systems
Stage 3: Developing a complete investment portfolio	- Defining the portfolio criteria - Creating the portfolio - Evaluating the portfolio - Conducting postimplementation reviews
Stage 2: Building the investment foundation	- Instituting the investment board - Meeting business needs - Selecting an investment - Providing investment oversight - Capturing investment information
Stage 1: Creating investment awareness	- IT spending without disciplined investment processes

(Source: Government Accountability Office (GAO))

Purpose/Function(s) Supported

ITIM identifies critical IT investment processes, establishes the presence or absence of these critical processes in an organization, assesses an organization's IT investment management capability and maturity, and offers recommendations for improvement. Used in this way, ITIM can be a valuable tool that (1) supports organizational self-assessment and improvement and (2) provides a standard against which an evaluation of an organization can be conducted.

Origination

The ITIM was issued by the Government Accountability Office (GAO) as an exposure draft in May 2000 and then released in final form, Version 1.1, in March 2004. Since its initial issuance, it has been used by GAO in about a dozen evaluations, has been used either as an assessment tool or a process model by over ten federal agencies, and has been used by auditor generals in several countries. The ITIM has its earliest origins in a GAO Executive Guide, Improving Mission Performance Through Strategic Information Management and Technology-Learning from Leading Organizations (GAO/AIMD-94-115) that summarized the findings of a private sector best practice review and established investment management as a critical function. The Clinger-Cohen Act of 1996 codified the requirement for federal chief information officers to establish processes to effectively select, control and evaluate IT investments. In the same year GAO issued Assessing Risks and Returns: A Guide for Evaluating Federal Agencies' IT Investment Decision-making (GAO/AIMD-10.1.13) that laid out an extensive series of questions to use in the evaluation of an agency's investment management capability. The questions were developed along the lines of the select-control-evaluate approach found in the Clinger-Cohen Act, but it did not provide a sense of which deficiency to address first.

The ITIM is built off the model presented in the 1996 GAO report and on lessons learned since that report was published. In addition, the most recent release incorporates, to some extent, the use of an agency's enterprise architecture (EA) in the investment management process. Most significantly, however, the ITIM is organized into a five-stage maturity model in which the most fundamental processes are found in Stage 2 (Stage 1 has no specific processes) and investment management capability (and maturity) grows as an organization implements processes found in Stages 3, 4, and 5.

Summary of Features

The Stages of Maturity
ITIM is comprised of five stages of maturity. Each stage builds upon the lower stages and enhances the organization's ability to manage its IT investments. Figure 2 shows the five ITIM stages and gives a brief description of each stage.

Stage 1: Creating Investment Awareness
Stage 1 is characterized by ad hoc, unstructured, and unpredictable investment processes. For example, in a Stage 1 organization, there is generally little relationship between the success or failure of one project and the success or failure of another project. If an IT project succeeds and is seen as a good investment, it is largely due to exceptional actions on the part of the project team, and thus its success might be difficult to repeat. Investment processes that are important for success may be known, but only to isolated teams; this process knowledge is not widely shared or institutionalized. The unstructured and unpredictable investment processes that characterize a Stage 1 organization also mean that even if it recognizes that a given project is in trouble, it may not have adequate processes to consistently address and resolve the project's problems.

Stage 2: Building the Investment Foundation
One focus of Stage 2 maturity is to establish basic selection capabilities. Basic selection capabilities are driven by the development of project selection criteria, including benefit and risk criteria, and an awareness of organizational priorities when identifying projects for funding. No longer are projects being funded solely on an ad hoc basis. The basic selection processes established in Stage 2 lay the foundation for more mature selection capabilities in Stage 3. Therefore, the organization also focuses on defining and developing its IT investment board(s), identifying the business needs or opportunities to be addressed by each IT project, and using this knowledge in the selection of new IT proposals. An equally important focus is to attain repeatable, successful IT investment control techniques at the project level.

Stage 3: Developing a Complete Investment Portfolio
Stage 3 critical processes depend specifically on the successful implementation of Stage 2 critical processes. In order to operate successfully at Stage 3, the organization must have in place the structure and repeatability of the project-centric management processes described above. In addition, the project-specific performance data being used for oversight and reselection in Stage 2 are crucial for the successful management of the investment portfolio. The critical focus for Stage 3 maturation is to establish a consistent, well-defined perspective on the IT investment portfolio and to maintain mature, integrated selection (and reselection), control, and evaluation processes. These processes will be evaluated during post implementation reviews (PIR). Once IT projects have been selected and are meeting their scheduled performance expectations—as outlined in Stage 2—the organization needs to develop an IT investment portfolio using an investment process that is consistent with its EA and employs sound selection criteria.

Stage 4: Improving the Investment Process

An organization at Stage 4 maturity is focused on using evaluation techniques to improve its IT investment processes and portfolio(s) while maintaining mature control and selection processes. At this stage, the organization should also regularly analyze its investment portfolio(s) to ensure that its investments continue to be aligned with the most current version of its architecture, since small changes in either an investment itself or in the EA may have occurred over time without being recognized in periodic selection/reselection decisions. As described in Stage 3, post implementation reviews (PIRs) typically identify lessons learned from an investment and determine whether the benefits anticipated in the business case for the investment have been achieved. Analyzing a number of PIRs serves as a basis for creating recommendations for changing and improving IT investment processes.

Stage 5: Leveraging Information Technology for Strategic Outcomes

Once an organization has mastered the selection, control, and evaluation processes, it seeks to shape its strategic outcomes by (1) using its EA as a critical frame of reference to ensure alignment with the target architecture, (2) learning from other organizations, (3) continuously improving the manner in which it uses IT to support and improve its business outcomes, and (4) focusing on flexibility and becoming a more agile organization that relies on its architecture for its vision of the future and the ITIM as a critical means for implementing it. Thus, an organization with Stage 5 maturity benchmarks its IT investment processes relative to other "best-in-class" organizations and conducts proactive monitoring for breakthrough information technologies that will allow it to significantly change and improve its business performance.

Benefits

ITIM offers organizations a road map for improving their IT investment management processes in a systematic and organized manner. These process improvements are intended to:

- Improve the likelihood that investments will be completed on time, within budget, and with the expected functionality,
- Promote better understanding and management of related risks,
- Ensure that investments are selected based on their merits by a well informed decision-making body,
- Implement ideas and innovations to improve process management, and
- Increase the business value and mission performance of investments.

ITIM can also be used as a tool for organizational improvement and as a standard against which to judge the maturity of an organization's IT investment management process. For example, ITIM can be used to support assessments to help ensure compliance with industry standards or acceptable practices, independent reviews of organizational maturity by oversight bodies, or other external IT process reviews.

Limitations

The purpose of ITIM is to describe and improve an organization's IT investment management processes so that the strategic plans and decisions that it makes can and will be supported by highly effective investments. However, like other assessment tools, the framework has its limitations and boundaries. For example, while strategic planning and executive decision making can greatly influence an organization's performance, the framework does not evaluate these. If IT plans and business plans are linked, there is a high likelihood that investment decisions will be closely aligned with the business.

Similarly, performance measures that are created and used to guide the organization and its activities are an integral part of controlling the expenditures on an investment and can be viewed as maturing in parallel with the IT investment management processes. However, this guide does not describe in detail the development or implementation of these measures.

In addition, the framework does not address IT acquisition (e.g., which type of contract to use or how best to conduct price negotiations, etc.) as a separate investment management step. While they are important, the primary purpose of acquisition-related activities is to support the execution of the investment decisions that are made by the IT investment board(s). Thus, one would expect that the acquisition aspects of project development would be embedded in the project proposal and analysis steps within the framework. Alternatively, the acquisition strategy might be part of the project's risk assessment (i.e., the risks of pursuing various acquisition alternatives).

Finally, organizations selecting ITIM as an assessment tool should:
- Become familiar with generally accepted capital decision-making approaches and associated analytical tools;
- Become familiar with the concepts associated with EA management;
- Receive training to become familiar with the basic concepts behind maturity models; and
- Have experience using standardized assessment tools to assess organizations.

References
Information Technology Investment Management: A Framework for Assessing and Improving Process Maturity, GAO-04-394G (Washington, D.C.: March 2004).

The IT Infrastructure Library (ITIL)

The IT Service Management (ITSM) Framework is an approach that shifts the focus from running IT within a business to managing the business of IT. ITSM focuses on customer needs, is based on an internationally recognized set of processes, and is enabled and supported by best practices.

ITSM is the discipline whose basic elements are contained in the IT Infrastructure Library (ITIL). ITIL is a comprehensive, consistent and coherent set of best practices for delivering ITSM.

ITIL offers the following:
- Open, best practice for IT service management
- Created through sponsorship by United Kingdom (U.K.) Government
- Written by consultants, vendors and users
- Independently managed by the IT Service Management Forum
- Accredited education and examination scheme
- ISO9000 compliant

ITIL is used by major corporations and governments worldwide. Originally developed in the United Kingdom, this model is just now being introduced into the United States.

Purpose/Function(s) Supported
The purpose of ITSM is to enable the IT organization to deliver high quality IT services, based on specific customer needs, at the most cost effective manner. Additionally, ITSM enables the

management of services throughout their lifecycle, monitors the performance of services and their underlying agreements, manages the evolution of services, and allows the organization to adjust the service offerings to changing business needs.

The Service Management approach focuses on developing and delivering IT services that meet the required cost and performance targets specified in service level agreements (SLAs). A few typical examples of such services are key application systems, call centers, and enterprise electronic mail.

Unlike the traditional approach to managing mainframe-centric data centers, which concentrated on managing the myriad of hardware and software elements contained therein, service management incorporates these tactical goals and then extends beyond this traditional approach. It does this in order to aggregate and abstract important management information about the quality of services delivered to IT customers and IT's ability to meet the business needs of their customers in a cost-effective manner.

IT Service Management functions are generally presented as two core process areas. These two areas are Service Delivery and Service Support.

> The Service Delivery processes are:
> - Service Level Management – the process of negotiating, defining and agreeing on IT service levels, and the ongoing management of service levels
> - Financial Management for IT Services – the identification and accounting of the costs of delivering IT services
> - Capacity Management – ensuring that adequate capacity is available to meet the requirements of the business
> - Availability Management – ensuring that the IT infrastructure remains available within defined service levels
> - IT Service Continuity Management – the identification, reduction, and avoidance of the risk of service failures, as well as the planning for recovery of IT services in cases of failure

These processes take a primarily strategic view, thus guiding the relationship between customer and supplier. This strategic view also accounts for the planning orientation of Service Delivery processes. The successful implementation of these processes requires organizational commitment, and can be most useful if Service Support processes are in place.

> The Service Support processes are:
> - Service Desk (a function not a process) – single point of contact between service providers and users, and the focal point for reporting incidents and making service requests.
> - Incident Management – the process for restoring normal service operations as quickly as possible.
> - Problem Management – the process for identifying underlying causes of incidents, and for proactively preventing incident occurrences
> - Change Management – the process of making changes to the IT infrastructure in a controlled manner.
> - Configuration Management – the process of identifying, defining, maintaining and verifying all Configuration Items (CIs) and their relationships.

- Release Management – the process of achieving secure, managed rollout of new or changed CIs.

These processes are essentially tactical processes, which are customer focused and implement the mechanisms for providing the services that support the business.

Origination

ITIL began as a project undertaken by the government of the United Kingdom (U.K.) in the early 1980s. The government was looking for innovative ways to improve IT service efficiency, and put the British Central Computer and Telecommunications Agency (CCTA) in charge of the project. CCTA is currently known as Office of Government Commerce (OGC).

The CCTA's approach to increasing efficiency focused on improving IT processes. The team recruited consultants, vendors and users to design a set of best-practice-based IT processes, which were then documented using a common glossary of terms and published in an integrated series of 40 books. This series, recently updated and repackaged as seven books, is the IT Infrastructure Library. ITIL is a set of best practices for IT Service Management.

This framework defines how Service Management is applied within specific organizations and has emerged as the most widely accepted approach to the management and delivery of IT services in the world.

The framework has been developed by the OGC in recognition of organizations' growing dependency on IT. The ethos behind ITIL recognizes the importance of IT in order to satisfy corporate aims and meet business needs, this leads to an increased requirement for high quality IT services which ITIL seeks to deliver.

Drawn from the public and private sectors internationally it is supported by a comprehensive qualification scheme, accredited training organizations and implementation/ assessment tools. The best practice processes promoted in ITIL both support and are supported by the British Standards Institution's Standard for IT Service Management (BS15000).

Summary of Features

Given that each organization is unique in terms of business, culture, structure, environment, maturity, and processes, ITIL does not provide a prescriptive formula for service improvements. Rather, ITIL offers a structured, scalable framework which can be adapted to achieve:

- Reliable and consistent service levels
- Reduced numbers of incidents and quicker resolution times
- Change enabled services, able to quickly adapt to changing needs
- Agreed and measurable service levels
- Better tracking and reporting
- Established standards and guidance in service provision
- Better utilization of skills and resources

Furthermore ITIL, and ITSM, enable organizations to reduce Total Cost of Ownership (TCO) of IT assets, and enforces a process orientation which enables better business to IT alignment and increased flexibility at a lower cost. ITIL also tends to create partnerships between customers and providers.

Benefits

The implementation of ITSM creates benefits for both the customer and the service provider. Key benefits include:

- Improved quality service provision
- Cost justifiable services
- Services that meet business, customer and user demands
- Integrated centralized processes
- Clear performance indicators
- Flexibility in service provision
- Clarity of the activities, and costs, associated with the provision of IT services
- Management of customer expectations via service levels and improved customer satisfaction
- Specific support of critical business functions by IT
- Establishment of the value of IT based on specific performance measures
- Greater ability to plan for new services by having a better understanding of IT service capabilities
- Greater control and visibility of changes to the environment
- Gains in operational efficiencies

Limitations

ITIL, and ITSM, provide specific operational guidance for IT process related to delivering services to the customer. The main limitations of ITSM are in the areas of personnel, metrics, controls and security. Also, while ITSM has a strong reliance on tools for successful implementation, there is little specific tool guidance within the framework.

Other issues related to the implementation of ITSM, are due more to organizational obstacles, rather than framework shortcomings, and may include:

- Lack of clear IT strategy and objectives
- Political implication of information sharing within large organizations
- Tension between IT organization and other IT service providers
- Ineffective communication between service provider teams
- Cultural resistance to the adoption of process discipline

References

The IT Service Management Forum (*it*SMF) is the only internationally recognized and independent organization dedicated to IT Service Management.
<http://www.itsmf.com/>

The Office of Government Commerce (OGC) works with government to improve procurement and project/program management.
<www.itil.co.uk>

The Federal Business Reference Model (BRM)

The Federal Business Reference Model (BRM) serves as the foundation of the Federal Enterprise Architecture (FEA). The purpose of the FEA is to identify opportunities to simplify processes, re-use federal IT investments and unify work across the agencies and within the lines of business of the Federal government. Because the BRM is based on business functions and describes the

Federal government around common business areas instead of the stove-piped, agency-by-agency view previously used at the federal level, it promotes agency collaboration and the analysis of common business functions across agency boundaries.

Purpose/Function(s) Supported

The BRM describes the Federal government's lines of business, including operations and services for the citizens, independent of the agencies, bureaus and offices that perform them. It serves as the main viewpoint for the analysis of data, service components and technology.

Origination

The FEA is a business and performance-based framework for cross-agency, government-wide improvement. It provides a new way of describing, analyzing, and improving the federal government and its ability to serve the citizen. The lack of an FEA to support cross-agency collaboration was cited in 2001 as a key barrier to the success of the 24 Presidential Priority E-Government initiatives approved by the President's Management Council in October 2001.

Led by the Office of Management and Budget (OMB), the purpose of the FEA is to identify opportunities to simplify processes, re-use federal IT investments and unify work across the agencies and within the lines of business of the Federal government. The outcome of this effort will be a more citizen-centered, customer-focused government that maximizes technology investments to better achieve mission outcomes.

The FEA consists of the Business Reference, Performance Reference, Service Component Reference, Data Reference, and Technical Reference Models.

Summary of Features

The Federal BRM uses a functionally driven approach to describe the business of the Federal government. It identifies four business areas that provide a high-level view of the operations the Federal government performs. The four business areas comprise a total of 39 external and internal lines of business and 153 sub-functions. The four business areas include Services for Citizens (mission and purpose of government), Mode of Delivery (the mechanisms the government uses to achieve its purpose), Support Delivery of Services (support functions necessary to conduct government operations), and Management of Government Resources (the resource management functions that support all areas of the government's business).

The Commonwealth of Virginia has used the Federal BRM to build its own Enterprise Business Model (EBM), using a functionally driven approach to describe the business of the Virginia state government. It identifies the same four business areas that are contained in the Federal BRM. The four business areas comprise a total of 39 external and internal lines of business (not all the same as the BRM) and183 functions (with many changes from the BRM sub-functions).

Benefits

The FEA, through its support of the 24 Presidential Priority e-Gov Initiatives and other cross-agency, citizen-focused federal e-Gov efforts, is a key component of the citizen-focused transformation in the Federal government.

With the FEA, OMB is provided with a greatly enhanced cross-agency analytical capability. OMB is no longer solely dependent on the agency-by-agency analyses that have characterized the budget allocation process in the past. Through the line-of-business perspective the FEA provides,

OMB will be able to see redundancies, gaps, and opportunities for collaboration across the federal agencies.

From a state perspective, the FEA provides a methodology for transforming states to a citizen-focused approach. The BRM served as the starting point for developing Virginia's EBM, representing the business functions of the Commonwealth independent of the organizations that perform those functions. The Virginia EBM provides a set of common terms and definitions that are based on the business functions of state government and serves as the foundation for building the Enterprise Business Architecture (EBA) for the Commonwealth. The "AS IS" component of the Virginia EBA was created by mapping state agency business functions to the EBM. The "AS IS" EBA makes it relatively easy to identify potential opportunities for collaboration, re-alignment of support functions, or sharing of best business practices, processes, templates, forms, or common applications that cross many federal and state programs and funding sources.

Limitations

From a state perspective, the FEA BRM represents the business functions of the Federal government and does not reflect some business functions that are applicable to state governments. For example, Virginia dropped four lines of business used in the Federal BRM while adding five lines, and the Virginia EBM contains 30 more business functions than the BRM.

References

Federal Enterprise Architecture Business Reference Model
<**http://www.whitehouse.gov/omb/egov/a-3-brm.html**>

Virginia Enterprise Business Model
<http://165.176.249.10/cnp/vita/cots/ea/library/enterpriseBusinessArchitectureDocuments.cfm>

Where Can I Find Additional Resources?

North Carolina Framework for Managing IT Investments
> A summary view of the Framework is described in the North Carolina Statewide IT Plan that is available from the state CIO's Web page at http://www.scio.state.nc.us/, or directly at http://www.scio.state.nc.us/sitPlan.asp.

GAO IT Investment Management Framework (ITIM)
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> Federal Enterprise Architecture Business Reference Model
> <**http://www.whitehouse.gov/omb/egov/a-3-brm.html**>

Virginia Enterprise Business Model
<http://165.176.249.10/cnp/vita/cots/ea/library/enterpriseBusinessArchitectureDocuments.cfm>