

May 2000

**Information Technology
Investment Management:
An Overview of GAO's
Assessment Framework**

Exposure Draft



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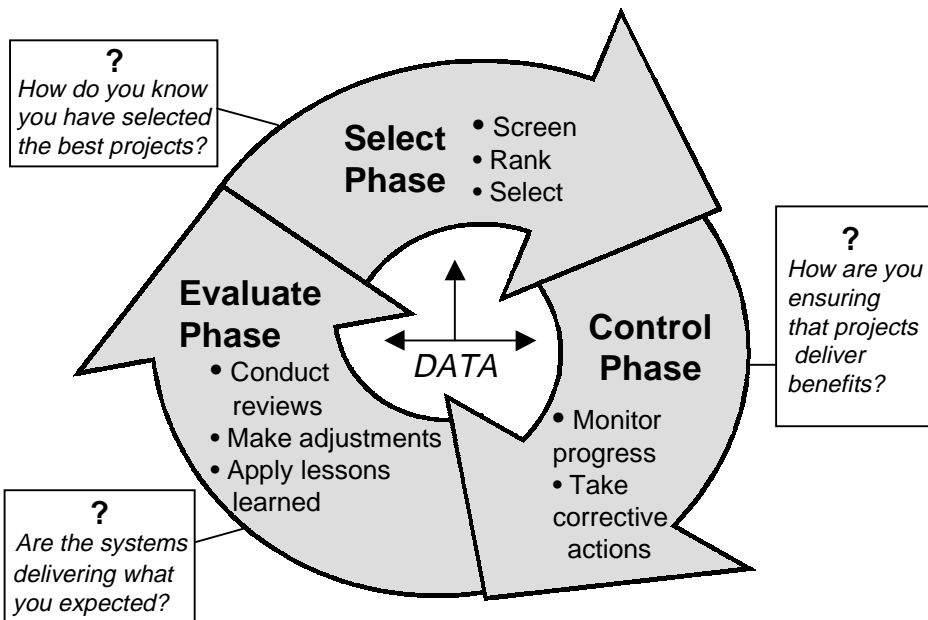
Information Technology Investment Management: Overview

The Federal IT Investment Management Environment

Agency investments in information technology (IT) are critical in providing more effective and cost-efficient government services to the public. Annual federal spending on IT has grown to nearly \$38 billion a year. These expenditures—representing investments in telecommunications and networks, new operating systems and software, continued support and operations of existing infrastructure, and data centers—directly affect agencies' abilities to achieve improvements in mission performance, management decision-making and oversight, and operational efficiencies. The centrality of IT to mission performance, especially in today's growing interconnected and digital age, makes it important for agencies to develop decision-making processes to assure that funds are invested and managed to achieve high value outcomes at acceptable costs.

The Congress has recognized the need for added diligence in IT investment management in the Clinger-Cohen Act (CCA). In CCA, requirements for capital planning and investment control of IT investments are defined and a select/control/evaluate (S/C/E) approach is mandated. (See figure 1.) Immediately following passage of CCA, GAO and the Office of Management and Budget developed guidance that brought structure to the general approach and provided a unified basis for communication and evaluation of an agency's IT investment practices.

Figure 1: The Select/Control/Evaluate Approach



This structured method for IT investment management defines three phases of the investment management process. In the select phase, the costs and benefits of all available projects are assessed and the optimal portfolio of projects is selected. During the control phase, the portfolio is monitored and corrective action is applied where needed. In the evaluate phase, implemented projects are reviewed to assure that they are producing the benefits expected and adjustments are made where appropriate. Within an organization, all phases may

be underway at once as they are applied to projects at different stages of their lifecycle.

Our reviews to date indicate that, while almost all federal agencies have created some type of IT investment management process, none have implemented stable processes which address all three phases of the S/C/E approach. One barrier has been the lack of specific guidance regarding what processes are required in order to build a stable, reliable IT investment management organization. The S/C/E approach provides sound advice, but does not provide a comprehensive discussion of the organizational processes involved. Contextual factors—organizational prerequisites that must be in place for the investment management process to remain robust and stable—also are absent from the existing approach. In addition, the S/C/E framework does not address the need for continuing improvement and clearly defined requisites for moving from the current investment management state to a more advanced state.

ITIM Framework: Stages and Critical Processes

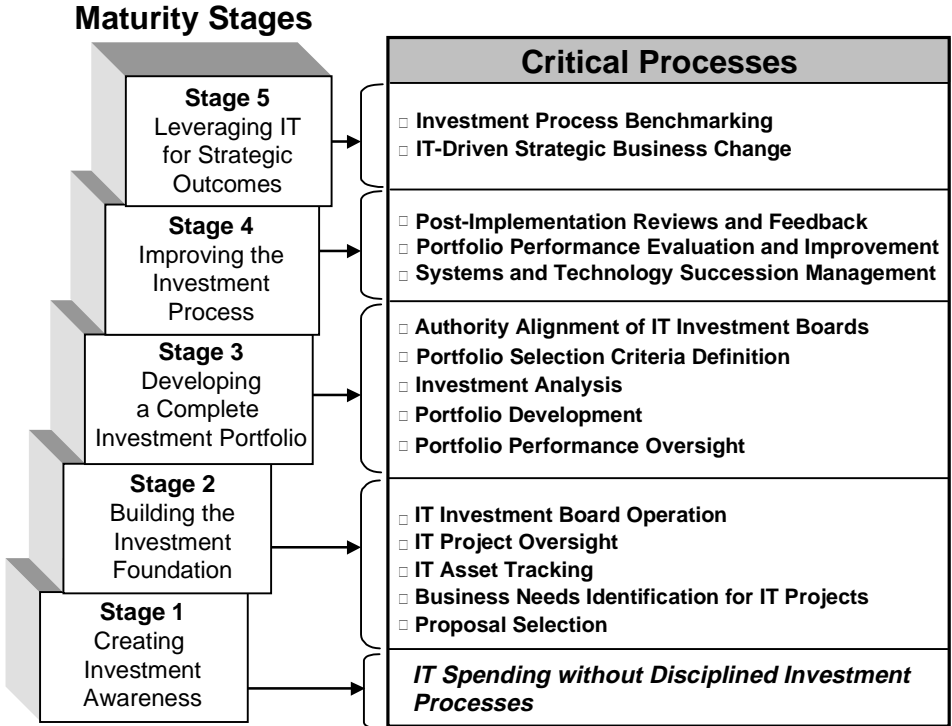
We have developed the IT Investment Management (ITIM) Framework to provide a common framework for discussing and assessing IT capital planning and investment management practices at federal agencies. ITIM enhances previous federal IT investment management guidance by embedding the S/C/E approach within a framework which explicitly describes the *organizational processes* required to carry out good IT investment management. The ITIM framework provides the following advances over prior guidance:

- more complete description of what is expected from agencies with respect to IT investment management,

- better communication to oversight agencies and to the Congress regarding the capability of an agency to effectively manage its IT investments, and
- more comprehensive definition of the IT investment management processes critical for success.

In short, ITIM extends the S/C/E approach into a growth and maturity framework. The maturity stages (see figure 2) represent steps toward achieving both a stable and a mature IT investment management process. As agencies improve their IT investment management capabilities, their capability and process maturity increases. With the exception of Stage 1, each maturity stage is composed of critical processes that must be implemented and institutionalized for the organization to satisfy the requirements of the maturity stage. These critical processes are largely confirmed by our prior and ongoing research on leading organizations, insights gained from our reviews of federal agencies, and reviews by IT professionals in industry and the public sector. By establishing the current level of maturity of an organization, managers are able to refer to the framework to determine specific steps that would contribute to improving IT management performance.

Figure 2: ITIM Maturity Stages and Critical Processes



ITIM defines the underlying key practices needed to effectively implement each critical process. These key practices are executable tasks that can be tailored to the unique agency situation. Key practices are organized into five types, called core elements. When addressed together, these core elements provide the institutional and implementation support required for the critical process to be successfully implemented.

We have provided ITIM as a guide to sound IT investment management practices. Individual organizations may find that specific practices must be adapted for effective use within their organization. However, the critical processes and stages of maturity represent fundamental principles of good IT investment management.

For More Information

For more detailed information, please refer to the ITIM framework document (GAO/AIMD-10.1.23, May 2000). An electronic version of the ITIM Framework document is available from GAO's World Wide Web server at the following address:
http://www.gao.gov/special.pubs/10_1_23.pdf

If you have any questions about ITIM or the IT investment management approach, please contact:

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