United States General Accounting Office

GAO

Report to Congressional Requesters

January 2004

# INFORMATION TECHNOLOGY MANAGEMENT

## Governmentwide Strategic Planning, Performance Measurement, and Investment Management Can Be Further Improved


GAO-04-49

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Highlights

Highlights of GAO-04-49, a report to congressional requesters

## Why GAO Did This Study

Over the years, the Congress has promulgated laws and the Office of Management and Budget and GAO have issued policies and guidance, respectively, on (1) information technology (IT) strategic planning/performance measurement (which defines what an organization seeks to accomplish, identifies the strategies it will use to achieve desired results, and then determines how well it is succeeding in reaching results-oriented goals and achieving objectives) and (2) investment management (which involves selecting, controlling, and evaluating investments).

To obtain an understanding of the government's implementation of these key IT management policies, congressional requesters asked GAO to determine the extent to which 26 major agencies have in place practices associated with key legislative and other requirements for (1) IT strategic planning/ performance measurement and (2) IT investment management.

## What GAO Recommends

GAO is making a number of recommendations, including that each agency take action to address IT strategic planning, performance measurement, and investment management practices that are not fully in place. In commenting on a draft of the report, most agencies generally agreed with our findings and recommendations.

www.gao.gov/cgi-bin/getrpt?GAO-04-49.

To view the full product, including the scope and methodology, click on the link above. For more information, contact David Powner at (202) 512-9286 or pownerd@gao.gov.

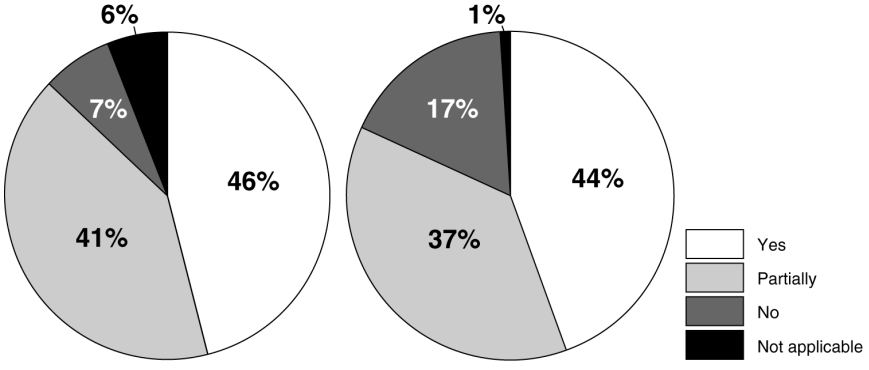
## What GAO Found

Agencies' use of 12 IT strategic planning/performance measurement practices—identified based on legislation, policy, and guidance—is uneven (see figure, below left). For example, agencies generally have IT strategic plans and goals, but these goals are not always linked to specific performance measures that are tracked. Without enterprisewide performance measures that are tracked against actual results, agencies lack critical information about whether their overall IT activities are achieving expected goals.

Agencies' use of 18 IT investment management practices that GAO identified is also mixed (see figure, below right). For example, the agencies largely have IT investment management boards, but no agency had the practices associated with the control phase fully in place. Executive-level oversight of project-level management activities provides organizations with increased assurance that each investment will achieve the desired cost, benefit, and schedule results.

Agencies cited a variety of reasons for not having practices fully in place, such as that the chief information officer position had been vacant, that not including a requirement in guidance was an oversight, and that the process was being revised, although they could not always provide an explanation. Regardless of the reason, these practices are important ingredients for ensuring effective strategic planning, performance measurement, and investment management, which, in turn, make it more likely that the billions of dollars in government IT investments are wisely spent.

**Percentage of Agencies' Use of IT Strategic Planning/Performance Measurement Practices (left) and Investment Management Practices (right)[a]**




Source: GAO.

[a]Percentages do not add up to 100 percent due to rounding.

Note: Yes—the practice was in place. Partially—the agency has some, but not all, aspects of the practice in place. Examples of circumstances in which the agency would receive this designation include when (1) some, but not all, of the elements of the practice were in place; (2) the agency documented that it has the information or process in place but it was not in the prescribed form (e.g., in a specific document as required by law or the Office of Management and Budget); (3) the agency's documentation was in draft form; or (4) the agency had a policy related to the practice but evidence supported that it had not been completely or consistently implemented. No—the practice was not in place. Not applicable—the practice was not relevant to the agency's particular circumstances.

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## Abbreviations

| | |
|---|---|
| CFO | chief financial officer |
| CIO | chief information officer |
| COTS | commercial-off-the-shelf |
| DHS | Department of Homeland Security |
| DOD | Department of Defense |
| EPA | Environmental Protection Agency |
| FISMA | Federal Information Security Management Act |
| GISRA | Government Information Security Reform Act |
| GPRA | Government Performance and Results Act |
| GSA | General Services Administration |
| HHS | Department of Health and Human Services |
| HUD | Department of Housing and Urban Development |
| IRM | information resources management |
| IT | information technology |
| IV&V | independent verification and validation |
| NARA | National Archives and Records Administration |
| NASA | National Aeronautics and Space Administration |
| NRC | Nuclear Regulatory Commission |
| NSF | National Science Foundation |
| OMB | Office of Management and Budget |
| OPM | Office of Personnel Management |
| SBA | Small Business Administration |
| SSA | Social Security Administration |
| USAID | U.S. Agency for International Development |
| VA | Department of Veterans Affairs |

GAO
Accountability * Integrity * Reliability

**United States General Accounting Office**
**Washington, D.C. 20548**

January 12, 2004

The Honorable Susan M. Collins
Chairman
Committee on Governmental Affairs
United States Senate

The Honorable Tom Davis
Chairman
Committee on Government Reform
House of Representatives

The Honorable Adam H. Putnam
Chairman
Subcommittee on Technology, Information Policy,
Intergovernmental Relations and the Census
Committee on Government Reform
House of Representatives

According to the President's most recent budget, the federal government spends billions of dollars annually on information technology (IT)—reportedly investing about $50 billion in fiscal year 2002 and expecting to invest about $60 billion in fiscal year 2004.[1] Despite this substantial investment, the government's management of information resources has produced mixed results. Although agencies have taken constructive steps to implement modern strategies, systems, and management policies and practices, our most recent high-risk and performance and accountability series identified continuing high-risk system modernization efforts and governmentwide information and technology management challenges.[2]

For years, the Congress has been working to increase the effectiveness of information and technology management in the federal government by passing legislation and providing oversight. For example, the Paperwork Reduction Act of 1995 applied life-cycle management principles to

[1]Office of Management and Budget, *Budget of the U.S. Government, Fiscal Year 2004, Report on IT Spending for the Federal Government for Fiscal Years 2002, 2003, and 2004.* We did not verify these data.

[2]U.S. General Accounting Office, *High-Risk Series: An Update*, GAO-03-119 (Washington, D.C.: January 2003) and *Major Management Challenges and Program Risks: A Governmentwide Perspective*, GAO-03-95 (Washington, D.C.: January 2003).

information and technology management and required that agencies indicate in strategic information resources management (IRM) plans how they are applying information resources to improve the productivity, efficiency, and effectiveness of government programs.[3] The Clinger-Cohen Act of 1996 amended the Paperwork Reduction Act, establishing agency chief information officers (CIO) who report directly to the agency head and are responsible for information resources management activities. Among other things, the Clinger-Cohen Act also (1) required senior executive involvement in IT decision making and (2) imposed much-needed discipline in acquiring and managing technology resources.

To obtain a broad view of the government's implementation of key IT management, you requested that we determine the extent to which agencies have in place practices associated with key legislative and other requirements for (1) IT strategic planning/performance measurement and (2) IT investment management. To address these objectives, we identified and reviewed major legislative requirements and executive orders pertaining to IT strategic planning/performance measurement, which defines what an organization seeks to accomplish, identifies the strategies it will use to achieve desired results, and then determines—through measurement—how well it is succeeding in reaching results-oriented goals and achieving objectives; and IT investment management, which involves selecting, controlling, and evaluating investments. Specifically, we identified 30 important IT management practices in these areas using legislative requirements, such as the Paperwork Reduction Act and the Clinger-Cohen Act, and policy and guidance issued by the Office of Management and Budget (OMB)[4] and GAO.[5] We selected 26 organizations

[3]The Paperwork Reduction Act of 1995 revised the information resources management responsibilities established under the Paperwork Reduction Act of 1980, as amended in 1986.

[4]Office of Management and Budget, Circular A-11, *Preparation, Submission, and Execution of the Budget* (July 27, 2002) and Circular A-130, *Management of Federal Information Resources* (Nov. 28, 2000).

[5]U.S. General Accounting Office, *Information Technology Investment Management: A Framework for Assessing and Improving Process Maturity*, GAO/AIMD-10.1.23, Exposure Draft (Washington, D.C.: May 2000).

for our review (23 major departments and agencies identified in 31 U.S.C. 901[6] and the 3 military services).

## Results in Brief

Agencies' use of IT strategic planning/performance measurement practices is uneven—46 percent of the practices are in place, 41 percent are partially in place, and 7 percent are not in place.[7] The lack of full implementation of these practices is of concern because effective strategic planning is important to ensure that agencies' IT goals are aligned with the strategic goals of the agency. Also important is having measures in place to monitor whether, or the extent to which, IT is supporting the agency. The agencies generally have IRM plans or IT strategic plans, but these plans do not always address important IRM elements, such as information collection, records management, or privacy. In addition, although agencies generally have goals associated with IT, these goals are not always linked to specific performance measures. Moreover, many agencies do not monitor actual-versus-expected performance against enterprisewide IT performance measures in their IRM plans. Agencies cited a variety of reasons why the strategic planning/performance measurement practices are not in place, including that there was a lack of support from agency leadership, that the agency had not been developing IRM plans until recently and recognized that the plans needed further refinement, or that the process is being revised. In addition, the agencies in our review could not always identify why the practices were not fully in place. Regardless of the reason, these practices were generally derived from legislative requirements and governmentwide policies and are fundamental ingredients to effective IT planning and performance measurement; therefore, it is important that they be implemented.

Agencies' use of IT investment management practices is also mixed in that 44 percent of the practices are in place, 37 percent are partially in place, and 17 percent are not in place.[8] Only by effectively and efficiently

[6]This section of the United States Code requires 24 departments and agencies to establish chief financial officers. We did not include the Federal Emergency Management Agency in our review, even though it is one of the 24 departments and agencies, because this agency has been transferred to the Department of Homeland Security.

[7]Six percent were not applicable.

[8]One percent were not applicable. Percentages do not add up to 100 percent due to rounding.

managing their IT resources through a robust investment management process can agencies gain opportunities to make better allocation decisions among many investment alternatives and further leverage their investments. As part of their investment management process, the agencies largely have IT investment management boards in place that are responsible for making decisions on selecting investments. However, many of these boards do not have written policies and procedures covering oversight or control of projects that cover such critical areas as corrective action plans and the tracking of such actions to resolution. Having these policies and procedures is a critical element of the control phase of a comprehensive IT investment management process, which helps ensure that investments are on track and are continuing to meet mission needs. As in the strategic planning/performance measurement area, agencies were not always able to explain why certain IT investment management practices were not in place. However, among the reasons cited were that the CIO position had been vacant, that not including a given requirement in an investment management guide was an oversight, and that the investment management process was being revised. Nevertheless, the full implementation of the investment management practices would bring more rigor and structure to how agencies select and manage their IT investments.

We are making a number of recommendations, including that each agency take action to address IT strategic planning, performance measurement, and investment management practices that are not fully in place.

We received written or oral comments on a draft of this report from 25 of the agencies[9] in our review. Most agencies generally agreed with our findings and recommendations, and some provided additional documentation and information that we incorporated into the report, as appropriate.

## Background

Advances in the use of IT and the Internet are continuing to change the way that federal agencies communicate, use, and disseminate information; deliver services; and conduct business. For example, electronic government (e-government) has the potential to help build better relationships between government and the public by facilitating timely and

[9]DOD submitted a single letter that included comments from the Departments of the Air Force, Army, and Navy.

efficient interaction with citizens. To help the agencies more effectively manage IT, the Congress has established a statutory framework of requirements and roles and responsibilities relating to information and technology management. Nevertheless, the agencies face significant challenges in effectively planning for and managing their IT. Such challenges can be overcome through the use of a systematic and robust management approach that addresses critical elements, such as IT strategic planning and investment management.

## Federal Government's Statutory Framework for Information and Technology Management

The Congress established a statutory framework to help address the information and technology management challenges that agencies face. Under this framework, agencies are accountable for effectively and efficiently developing, acquiring, and using IT in their organizations. In particular, the Paperwork Reduction Act of 1995 and the Clinger-Cohen Act of 1996 require agency heads, acting through agency CIOs, to, among other things,

- better link their IT planning and investment decisions to program missions and goals;
- develop and maintain a strategic IRM plan that describes how IRM activities help accomplish agency missions;
- develop and maintain an ongoing process to establish goals for improving IRM's contribution to program productivity, efficiency, and effectiveness; methods for measuring progress toward these goals; and clear roles and responsibilities for achieving these goals;
- develop and implement a sound IT architecture;
- implement and enforce IT management policies, procedures, standards, and guidelines;
- establish policies and procedures for ensuring that IT systems provide reliable, consistent, and timely financial or program performance data; and
- implement and enforce applicable policies, procedures, standards, and guidelines on privacy, security, disclosure, and information sharing.

Moreover, under the government's current legislative framework, OMB has important responsibilities for providing direction on governmentwide information and technology management and overseeing agency activities in these areas. Among OMB's responsibilities are

- ensuring agency integration of IRM plans, program plans, and budgets for the acquisition and use of IT and the efficiency and effectiveness of interagency IT initiatives;
- developing and maintaining a governmentwide strategic IRM plan;
- developing, as part of the budget process, a mechanism for analyzing, tracking, and evaluating the risks and results of all major capital investments made by an executive agency for information systems;[10]
- directing and overseeing the implementation of policy, principles, standards, and guidelines for the dissemination of and access to public information;
- encouraging agency heads to develop and use best practices in IT acquisitions; and
- developing and overseeing the implementation of privacy and security policies, principles, standards, and guidelines.

Further, in 2002, the Congress passed, and the President signed, legislation intended to improve the collection, use, and dissemination of government information and to strengthen information security. Specifically, Public Law 107-347, the E-Government Act of 2002, which was enacted in December 2002, includes provisions to promote the use of the Internet and other information technologies to provide government services electronically. The E-Government Act also contains the Federal Information Security Management Act (FISMA) of 2002, which replaced and strengthened the Government Information Security Reform legislative provisions (commonly referred to as "GISRA").[11] Among other provisions,

[10]This responsibility is in addition to OMB's role in assisting the President in reviewing agency budget submissions and compiling the President's budget, as discussed in 31 U.S.C. chapter 11.

[11]*Government Information Security Reform*, *Title X*, *Subtitle G*, *Floyd D. Spence National Defense Authorization Act for Fiscal Year 2001*, P.L. 106-398, Oct. 30, 2000.

FISMA requires each agency, including national security agencies, to (1) establish an agencywide risk-based information security program to be overseen by the agency CIO and ensure that information security is practiced throughout the life cycle of each agency system; and (2) develop, maintain, and annually update an inventory of major information systems (including major national security systems) operated by the agency or under its control.

## Federal IT Challenges

Even with the framework laid out by the Congress, the federal government faces enduring IT challenges. Specifically, in January 2003, we reported on a variety of challenges facing federal agencies in continuing to take advantage of the opportunities presented by IT.[12] Unless and until the challenges outlined below are overcome, federal agencies are unlikely to optimize their use of IT, which can affect an organization's ability to effectively and efficiently implement its programs and missions.

- *Pursuing opportunities for e-government.* E-government offers many opportunities to better serve the public, make government more efficient and effective, and reduce costs. Federal agencies have implemented a wide array of e-government applications, including using the Internet to collect and disseminate information and forms; buy and pay for goods and services; submit bids and proposals; and apply for licenses, grants, and benefits. Although substantial progress has been made, the government has not yet fully reached its potential in this area. Recognizing this, a key element of the President's Management Agenda is the expansion of e-government to enhance access to information and services, particularly through the Internet. In response, OMB established a task force that selected a strategic set of initiatives to lead this expansion. Our review of the initial planning projects associated with these initiatives found that important aspects—such as collaboration and customer focus—had not been thought out for all of the projects and that major uncertainties in funding and milestones were not uncommon. Accordingly, we recommended that OMB take

[12]GAO-03-95.

steps as overseer of the e-government initiatives to reduce the risk that the projects would not meet their objectives.[13]

- *Improving the collection, use, and dissemination of government information.* The rapid evolution of IT is creating challenges in managing and preserving electronic records. Complex electronic records are increasingly being created in a decentralized environment and in volumes that make it difficult to organize them and make them accessible. Further, storage media themselves are affected by the dual problems of obsolescence and deterioration. These problems are compounded as computer hardware and application software become obsolete, since they may leave behind electronic records that can no longer be read. Overall responsibility for the government's electronic records lies with the National Archives and Records Administration (NARA). Our past work has shown that while NARA has taken some action to respond to the challenges associated with managing and preserving electronic records, most electronic records remain unscheduled; that is, their value had not been assessed and their disposition had not been determined.[14] In addition, records of historical value were not being identified and provided to NARA; as a result, they were at risk of being lost. We recommended that NARA develop strategies for raising agency management's awareness of the importance of records management and for performing systematic inspections. In July 2003 we testified that although NARA has made progress in addressing these issues, more work remains to be done.[15]

  The growth of electronic information—as well as the security threats facing our nation—are also highlighting privacy issues. For example, online privacy has emerged as one of the key—and most contentious—issues surrounding the continued evolution of the Internet. In addition, our survey of 25 departments and agencies about their implementation of the Privacy Act—which regulates how federal agencies may use the personal information that individuals supply when obtaining

[13]U.S. General Accounting Office, *Electronic Government: Selection and Implementation of the Office of Management and Budget's 24 Initiatives*, GAO-03-229 (Washington, D.C.: Nov. 22, 2002).

[14]U.S. General Accounting Office, *Information Management: Challenges in Managing and Preserving Electronic Records*, GAO-02-586 (Washington, D.C.: June 17, 2002).

[15]U.S. General Accounting Office, *Electronic Records: Management and Preservation Pose Challenges*, GAO-03-936T (Washington, D.C.: July 8, 2003).

government services or fulfilling obligations—found that a key characteristic of the agencies' 2,400 systems of records is that an estimated 70 percent contained electronic records.[16] Our survey also found that although compliance with Privacy Act provisions and related OMB guidance was generally high in many areas, according to agency reports, it was uneven across the federal government. To improve agency compliance and address issues reported by the agencies, we made recommendations to OMB, such as to direct agencies to correct compliance deficiencies, to monitor agency compliance, and to reassess its guidance.

- *Strengthening information security.* Since September 1996, we have reported that poor information security is a high-risk area across the federal government with potentially devastating consequences.[17] Although agencies have taken steps to redesign and strengthen their information system security programs, our analyses of information security at major federal agencies have shown that federal systems were not being adequately protected from computer-based threats. Our latest analyses of audit reports published from October 2001 through October 2002 continue to show significant weaknesses in federal computer systems that put critical operations and assets at risk.[18] In addition, in June 2003 we testified that agencies' fiscal year 2002 reports and evaluations required by GISRA found that many agencies have not implemented security requirements for most of their systems, such as performing risk assessments and testing controls.[19] In addition, the usefulness of agency corrective action plans may be limited when they do not identify all weaknesses or contain realistic completion dates.

  One of the most serious problems currently facing the government is cyber critical infrastructure protection, which is protecting the

[16]U.S. General Accounting Office, *Privacy Act: OMB Leadership Needed to Improve Agency Compliance*, GAO-03-304 (Washington, D.C.: June 30, 2003).

[17]U.S. General Accounting Office, *Information Security: Opportunities for Improved OMB Oversight of Agency Practices*, GAO/AIMD-96-110 (Washington, D.C.: Sept. 24, 1996).

[18]U.S. General Accounting Office, *Computer Security: Progress Made, but Critical Federal Operations and Assets Remain at Risk*, GAO-03-303T (Washington, D.C.: Nov. 19, 2002).

[19]U.S. General Accounting Office, *Information Security: Continued Efforts Needed to Fully Implement Statutory Requirements*, GAO-03-852T (Washington, D.C.: June 24, 2003).

information systems that support the nation's critical infrastructures, such as national defense and power distribution. Since the September 11 attacks, warnings of the potential for terrorist cyber attacks against our critical infrastructures have increased. In addition, as greater amounts of money are transferred through computer systems, as more sensitive economic and commercial information is exchanged electronically, and as the nation's defense and intelligence communities increasingly rely on commercially available information technology, the likelihood increases that information attacks will threaten vital national interests. Among the critical infrastructure protection challenges the government faces are (1) developing a national critical infrastructure protection strategy, (2) improving analysis and warning capabilities, and (3) improving information sharing on threats and vulnerabilities. For each of the challenges, improvements have been made and continuing efforts are in progress, but much more is needed to address them. In particular, we have identified and made numerous recommendations over the last several years concerning critical infrastructure challenges that still need to be addressed. As a result of our concerns in this area, we have expanded our information security high-risk area to include cyber critical infrastructure protection.[20]

- *Constructing and enforcing sound enterprise architectures.* Our experience with federal agencies has shown that attempts to modernize IT environments without blueprints—models simplifying the complexities of how agencies operate today, how they want to operate in the future, and how they will get there—often result in unconstrained investment and systems that are duplicative and ineffective. Enterprise architectures offer such blueprints. Our reports on the federal government's use of enterprise architectures in both February 2002 and November 2003 found that agencies' use of enterprise architectures was a work in progress, with much to be accomplished.[21] Nevertheless, opportunities exist to significantly improve this outlook if OMB were to adopt a governmentwide, structured, and systematic approach to

[20]U.S. General Accounting Office, *High-Risk Series: Protecting Information Systems Supporting the Federal Government and the Nation's Critical Infrastructures*, GAO-03-121 (Washington, D.C.: January 2003).

[21]U.S. General Accounting Office, *Information Technology: Leadership Remains Key to Agencies Making Progress on Enterprise Architecture Efforts*, GAO-04-40 (Washington, D.C.: Nov. 17, 2003) and *Information Technology: Enterprise Architecture Use across the Federal Government Can Be Improved*, GAO-02-6 (Washington, D.C.: Feb. 19, 2002).

promoting enterprise architecture use, measuring agency progress, and identifying and pursuing governmentwide solutions to common enterprise architecture challenges that agencies face. Accordingly, we made recommendations to OMB to address these areas.

- *Employing IT system and service management practices.* Our work and other best-practice research have shown that applying rigorous practices to the acquisition or development of IT systems or the acquisition of IT services improves the likelihood of success. In other words, the quality of IT systems and services is governed largely by the quality of the processes involved in developing or acquiring each. For example, using models and methods that define and determine organizations' software-intensive systems process maturity that were developed by Carnegie Mellon University's Software Engineering Institute, which is recognized for its expertise in software processes, we evaluated several agencies' software development or acquisition processes. We found that agencies are not consistently using rigorous or disciplined system management practices. We have made numerous recommendations to agencies to improve their management processes, and they have taken, or plan to take, actions to improve.[22] Regarding IT services acquisition, we identified leading commercial practices for outsourcing IT services that government entities could use to enhance their acquisition of IT services.[23]

- *Using effective agency IT investment management practices.* Investments in IT can have a dramatic impact on an organization's performance. If managed effectively, these investments can vastly improve government performance and accountability. If not, however, they can result in wasteful spending and lost opportunities for improving delivery of services to the public. Using our information

[22]For example, see U.S. General Accounting Office, *Information Technology: Inconsistent Software Acquisition Processes at the Defense Logistics Agency Increase Project Risks*, GAO-02-9 (Washington, D.C.: Jan. 10, 2002); and *HUD Information Systems: Immature Software Acquisition Capability Increases Project Risks*, GAO-01-962 (Washington, D.C.: Sept. 14, 2001).

[23]U.S. General Accounting Office, *Information Technology: Leading Commercial Practices for Outsourcing of Services*, GAO-02-214 (Washington, D.C.: Nov. 30, 2001).

technology investment management maturity framework,[24] we evaluated selected agencies and found that while some processes have been put in place to help them effectively manage their planned and ongoing IT investments, more work remains.[25]

## IT Challenges Are Interdependent

Complicating the government's ability to overcome these IT management challenges are these challenges' interdependencies. As a result, the inability of an organization to successfully address one IT management area can reduce the effectiveness of its success in addressing another management function. For example, a critical aspect of implementing effective e-government solutions and developing and deploying major systems development projects is ensuring that robust information security is built into these endeavors early and is periodically revisited.

The government's many IT challenges can be addressed by the use of effective planning and execution, which can be achieved, in part, through strategic planning/performance measurement, and investment management. For example, strong strategic planning is focused on using IT to help accomplish the highest priority customer needs and mission goals, while effective performance measurement helps determine the success or failure of IT activities. Finally, IT investment management provides a systematic method for minimizing risks while maximizing the return on investments and involves a process for selecting, controlling, and evaluating investments. These processes, too, are interdependent. For example, the investment management process is a principal mechanism to ensure the effective execution of an agency's IT strategic plan.

[24]U.S. General Accounting Office, *Information Technology Investment Management: A Framework for Assessing and Improving Process Maturity*, Exposure Draft, GAO/AIMD-10.1.23 (Washington, D.C.: May 2000).

[25]For example, U.S. General Accounting Office, *Information Technology: Departmental Leadership Crucial to Success of Investment Reforms at Interior*, GAO-03-1028 (Washington, D.C.: Sept. 12, 2003); *Bureau of Land Management: Plan Needed to Sustain Progress in Establishing IT Investment Management Capabilities*, GAO-03-1025 (Washington, D.C.: Sept. 12, 2003); *United States Postal Service: Opportunities to Strengthen IT Investment Management Capabilities*, GAO-03-3 (Washington, D.C.: Oct. 15, 2002); *Information Technology: DLA Needs to Strengthen Its Investment Management Capability*, GAO-02-314 (Washington, D.C.: Mar. 15, 2002); and *Information Technology: INS Needs to Strengthen Its Investment Management Capability*, GAO-01-146 (Washington, D.C.: Dec. 29, 2000).

## Objectives, Scope, and Methodology

Our objectives were to determine the extent to which federal agencies are following practices associated with key legislative and other requirements for (1) IT strategic planning/performance measurement and (2) IT investment management.

To address these objectives, we identified and reviewed major legislative requirements and executive orders pertaining to IT strategic planning, performance measurement, and investment management. Specifically, we reviewed

- the Paperwork Reduction Act of 1995;
- the Clinger-Cohen Act of 1996;
- the E-Government Act of 2002;
- the Federal Information Security Management Act of 2002;
- Executive Order 13011, Federal Information Technology; and
- Executive Order 13103, Computer Software Piracy.

Using these requirements and policy and guidance issued by OMB[26] and GAO,[27] we identified 30 IT management practices that (1) can be applied at the enterprise level and (2) were verifiable through documentation and interviews. These 30 practices focused on various critical aspects of IT strategic management, performance measurement, and investment management, including the development of IRM plans, the identification of goals and related measures, and the selection and control of IT investments, respectively.

[26]Office of Management and Budget, Circular A-11, *Preparation, Submission, and Execution of the Budget* (July 2002) and Circular A-130, *Management of Federal Information Resources* (Nov. 30, 2000).

[27]U.S. General Accounting Office, *Information Technology Investment Management: A Framework for Assessing and Improving Process Maturity*, GAO/AIMD-10.1.23, Exposure Draft (Washington, D.C.: May 2000).

We selected 26 major departments and agencies for our review (23 entities identified in 31 U.S.C. 901 and the 3 military services).[28] At our request, each agency completed a self-assessment on whether and how it had implemented the 30 IT management practices. We reviewed the completed agency self-assessments and accompanying documentation, including agency and IT strategic plans, agency performance plans and reports required by the Government Performance and Results Act, and IT investment management policy and guidance, and interviewed applicable agency IT officials to corroborate whether the practices were in place. We did not evaluate the effectiveness of agencies' implementation of the practices. For example, we did not review specific IT investments to determine whether they were selected, controlled, and reviewed in accordance with agency policy and guidance. However, we reviewed applicable prior GAO and agency inspector general reports and discussed whether agency policies had been fully implemented with applicable agency IT officials.

On the basis of the above information, we assessed whether the practices were in place, using the following definitions:

- Yes—the practice was in place.
- Partially—the agency has some, but not all, aspects of the practice in place. Examples of circumstances in which the agency would receive this designation include when (1) some, but not all, of the elements of the practice were in place; (2) the agency documented that it has the information or process in place but it was not in the prescribed form (e.g., in a specific document as required by law or OMB); (3) the agency's documentation was in draft form; or (4) the agency had a policy related to the practice but evidence supported that it had not been completely or consistently implemented.
- No—the practice was not in place.

[28]The Departments of Agriculture, the Air Force, the Army, Commerce, Defense, Education, Energy, Health and Human Services, Housing and Urban Development, the Interior, Justice, Labor, the Navy, State, Transportation, the Treasury, and Veterans Affairs; and the Environmental Protection Agency, General Services Administration, National Aeronautics and Space Administration, National Science Foundation, Nuclear Regulatory Commission, Office of Personnel Management, Small Business Administration, Social Security Administration, and U.S. Agency for International Development.

- Not applicable—the practice was not relevant to the agency's particular circumstances.

We also collected information from the Department of Homeland Security (DHS) but found that since it had been established so recently, it was too early to judge its IT strategic planning, performance measurement, and investment management. As a result, although we provided information on what DHS was doing with respect to these areas, we did not include it in our assessment.

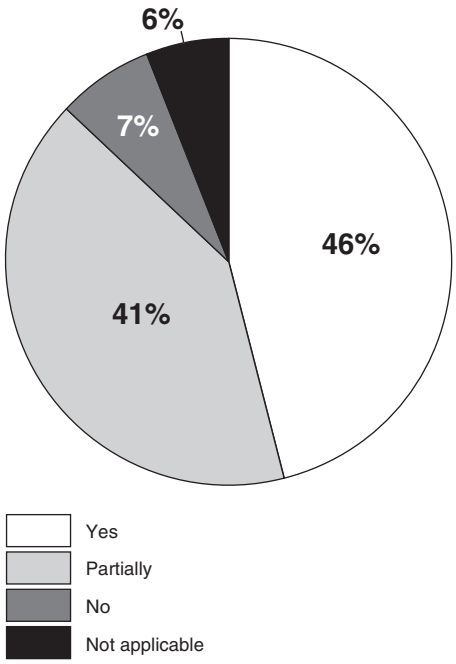
We also interviewed officials from OMB's Office of Information and Regulatory Affairs regarding OMB's role in establishing policies and overseeing agencies' implementation of the identified practices.

We performed our work at the agencies' offices in greater Washington, D.C. We conducted our review between April and mid-December 2003 in accordance with generally accepted government auditing standards.

## Agencies' Use of IT Strategic Planning/Performance Measurement Practices Is Uneven

The use of IT strategic planning/performance measurement practices is uneven (see fig. 1), which is of concern because a well-defined strategic planning process helps ensure that an agency's IT goals are aligned with that agency's strategic goals. Moreover, establishing performance measures and monitoring actual-versus-expected performance of those measures can help determine whether IT is making a difference in improving performance. Among the practices or elements of practices that agencies largely have in place were those pertaining to establishing goals and performance measures. On the other hand, agencies are less likely to have fully documented their IT strategic planning processes, developed comprehensive IRM plans, linked performance measures to their enterprisewide IT goals, or monitored actual-versus-expected performance for these enterprisewide goals. Agencies cited various reasons, such as the lack of support from agency leadership, for not having strategic practices/performance measurement practices in place. Without strong strategic management practices, it is less likely that IT is being used to maximize improvement in mission performance. Moreover, without enterprisewide performance measures that are being tracked against actual results, agencies lack critical information about whether their overall IT activities, at a governmentwide cost of billions of dollars annually, are achieving expected goals.

**Figure 1: Percentage of Agencies' Use of IT Strategic Planning/Performance Measurement Practices**




Source: GAO.

Note: Yes—the practice was in place. Partially—the agency has some, but not all, aspects of the practice in place. Examples of circumstances in which the agency would receive this designation include when (1) some, but not all, of the elements of the practice were in place; (2) the agency documented that it has the information or process in place but it was not in the prescribed form (e.g., in a specific document as required by law or OMB); (3) the agency's documentation was in draft form; or (4) the agency had a policy related to the practice but evidence supported that it had not been completely or consistently implemented. No—the practice was not in place. Not applicable—the practice was not relevant to the agency's particular circumstances.

## Governmentwide Progress Demonstrated, but More Work Remains

Critical aspects of the strategic planning/performance measurement area include documenting the agency's IT strategic planning processes, developing IRM plans, establishing goals, and measuring performance to evaluate whether goals are being met. Although the agencies often have these practices, or elements of these practices, in place, additional work remains, as demonstrated by the following examples:

- *Strategic planning process.* Strategic planning defines what an organization seeks to accomplish and identifies the strategies it will use to achieve desired results. A defined strategic planning process allows

an agency to clearly articulate its strategic direction and to establish linkages among planning elements such as goals, objectives, and strategies.

About half of the agencies fully documented their strategic planning processes. For example, the General Services Administration (GSA) documented an IT governance structure that addresses the roles and responsibilities of various organizations in strategic planning and investment management. In addition, in its IT strategic plan, GSA describes how it developed the plan, including its vision, business-related priorities, and goals. In contrast, the Department of Agriculture has not completely documented its IT strategic planning process or integrated its IT management operations and decisions with other agency processes. According to Agriculture IT officials, the department's ongoing budget and performance integration initiative is expected to result in a more clearly defined and integrated IT strategic management planning process. Such a process provides the essential foundation for ensuring that IT resources are effectively managed.

- *Strategic IRM plans.* The Paperwork Reduction Act requires that agencies indicate in strategic IRM plans how they are applying information resources to improve the productivity, efficiency, and effectiveness of government programs. An important element of a strategic plan is that it presents an integrated system of high-level decisions that are reached through a formal, visible process. The plan is thus an effective tool with which to communicate the mission and direction to stakeholders. In addition, a strategic IRM plan that communicates a clear and comprehensive vision for how the agency will use information resources to improve agency performance is important because IRM encompasses virtually all aspects of an agency's information activities.

  Although the Paperwork Reduction Act also requires agencies to develop IRM plans in accordance with OMB's guidance, OMB does not provide cohesive guidance on the specific contents of IRM plans. OMB Circular A-130 directs that agencies have IRM plans that support agency strategic plans, provide a description of how IRM helps accomplish agency missions, and ensure that IRM decisions are integrated with organizational planning, budgets, procurement, financial management, human resources management, and program decisions. However, Circular A-130 does not provide overall guidance on the plan's contents. As a result, although agencies generally

provided OMB with a variety of planning documents to meet its requirement that they submit an IRM plan, these plans were generally limited to IT strategic or e-government issues and did not address other elements of IRM, as defined by the Paperwork Reduction Act. Specifically, these plans generally include individual IT projects and initiatives, security, and enterprise architecture elements but do not often address other information functions, such as information collection, records management, and privacy, or the coordinated management of all information functions.

OMB IT staff agreed that the agency has not set forth guidance on the contents of agency IRM plans in a single place, stating that its focus has been on looking at agencies' cumulative results and not on planning documents. In addition, these staff also noted that agencies account for their IRM activities through multiple documents (e.g., Information Collection Budgets[29] and Government Paperwork Elimination Act[30] plans). However, the OMB IT staff stated that they would look at whether more guidance is needed to help agencies in their development of IRM plans, but have not yet made a commitment to provide such guidance. Half the agencies indicated a need for OMB to provide additional guidance on the development and content of IRM plans.

Strong agency strategic IRM plans could also provide valuable input to a governmentwide IRM plan, which is also required by the Paperwork Reduction Act. As we reported last year, although OMB designated the CIO Council's strategic plan for fiscal years 2001-2002 as the governmentwide strategic IRM plan, it does not constitute an effective and comprehensive strategic vision.[31] Accordingly, we recommended that OMB develop and implement a governmentwide strategic IRM plan that articulates a comprehensive federal vision and plan for all aspects

[29]Each year, OMB's Office of Information and Regulatory Affairs publishes an Information Collection Budget by gathering data from executive branch agencies on the total number of burden hours it approved for collection of information at the end of the fiscal year and agency estimates of the burden for the coming fiscal year.

[30]In fulfilling its responsibilities under this act, OMB requires agencies to report to OMB on their plans for providing the public with the option of submitting, maintaining, and disclosing required information electronically, instead of on paper.

[31]U.S. General Accounting Office, *Information Resources Management: Comprehensive Strategic Plan Needed to Address Mounting Challenges*, GAO-02-292 (Washington, D.C.: Feb. 22, 2002).

of government information. In April 2003, we testified that OMB had taken a number of actions that demonstrate progress in fulfilling the Paperwork Reduction Act's requirement of providing a unifying IRM vision.[32] However, more remains to be done. In particular, we reported that although OMB's strategies and models are promising, their ability to reduce paperwork burden and accomplish other objectives depends on how OMB implements them.

One element required by the Clinger-Cohen Act to be included in agency IRM plans is the identification of a major IT acquisition program(s), or any phase or increment of that program, that significantly deviated from cost, performance, or schedule goals established by the program. However, few agencies met this requirement. In these cases, a common reason cited for not including this information was that it was not appropriate to have such detailed information in a strategic plan because such plans should be forward thinking and may not be developed every year. Agencies also identified other mechanisms that they use to track and report cost, schedule, and performance deviations. Because agencies generally do not address this Clinger-Cohen Act requirement in their IRM plans, they may benefit from additional guidance from OMB on how to address this requirement.

- *IT goals.* The Paperwork Reduction Act and the Clinger-Cohen Act require agencies to establish goals that address how IT contributes to program productivity, efficiency, effectiveness, and service delivery to the public. We have previously reported that leading organizations define specific goals, objectives, and measures, use a diversity of measure types, and describe how IT outputs and outcomes impact operational customer and agency program delivery requirements.[33]

  The agencies generally have the types of goals outlined in the Paperwork Reduction Act and the Clinger-Cohen Act. For example, the Social Security Administration (SSA) set a goal of achieving an average of at least a 2 percent per year improvement in productivity, and it

[32]U.S. General Accounting Office, *Paperwork Reduction Act: Record Increase in Agencies' Burden Estimates*, GAO-03-619T (Washington, D.C.: April 11, 2003).

[33]U.S. General Accounting Office, *Executive Guide: Measuring Performance and Demonstrating Results of Information Technology Investments*, GAO/AIMD-98-89 (Washington, D.C.: March 1998).

expects that advances in automation will be a key to achieving this goal along with process and regulation changes. In addition, the Department of Veterans Affairs' (VA) latest departmental strategic plan has a goal that includes using business process reengineering and technology integration to speed up delivery of benefit payments, improve the quality of health care provided in its medical centers, and administer programs more efficiently. The VA goal includes strategies such as using its enterprise architecture as a continuous improvement process, implementing e-government solutions to transform paper-based electronic collections to electronic-based mechanisms, and establishing a single, high-performance wide area data network. Five agencies do not have one or more of the goals required by the Paperwork Reduction Act and the Clinger-Cohen Act. For example, the Department of Labor's single IT strategic goal—to provide better and more secure service to citizens, businesses, government, and Labor employees to improve mission performance—which it included in its fiscal year 2004 performance plan, does not address all required goals. Further, in contrast to other agencies, Labor does not have goals in its IRM plan. It is important that agencies specify clear goals and objectives to set the focus and direction of IT performance.

- *IT performance measures.* The Paperwork Reduction Act, the Clinger-Cohen Act, and Executive Order 13103 require agencies to establish a variety of IT performance measures, such as those related to how IT contributes to program productivity, efficiency, and effectiveness, and to monitor the actual-versus-expected performance of those measures. As we have previously reported, an effective performance management system offers a variety of benefits, including serving as an early warning indicator of problems and the effectiveness of corrective actions, providing input to resource allocation and planning, and providing periodic feedback to employees, customers, stakeholders, and the general public about the quality, quantity, cost, and timeliness of products and services.[34]

  Although the agencies largely have one or more of the required performance measures, these measures are not always linked to the agencies' enterprisewide IT goals. For example, the Department of Defense (DOD), Air Force, and Navy have a variety of enterprisewide IT goals but do not have performance measures associated with these

[34]GAO/AIMD-98-89.

goals. Each of these organizations are in the process of developing such measures. To illustrate, the Air Force's August 2002 information strategy includes nine goals, such as providing decision makers and all Air Force personnel with on-demand access to authoritative, relevant, and sufficient information to perform their duties efficiently and effectively, but does not have performance measures for these goals. The Air Force recognizes the importance of linking performance measures to its goals and is developing such measures, which it expects to complete by the fourth quarter of fiscal year 2004.

Leading organizations use performance measures to objectively evaluate mission, business, and project outcomes. Such organizations also focus on performance measures for gauging service to key management processes and tailoring performance measures to determine whether IT is making a difference in improving performance. Few agencies monitored actual-versus-expected performance for all of their enterprisewide IT goals. Specifically, although some agencies tracked actual-versus-expected outcomes for the IT performance measures in their performance plans or accountability reports and/or for specific IT projects, they generally did not track the performance measures specified in their IRM plans. For example, although the Department of Health and Human Services' (HHS) IT strategic plan identifies enterprisewide goals and performance measures, these measures generally do not identify quantified outcomes (e.g., the measures indicate that the outcome will be a percentage transaction increase or cost decrease in certain areas but do not provide a baseline or target). In addition, the HHS plan does not describe how the department will monitor actual-versus-expected performance for these measures. HHS's Director of Business Operations in its IRM office reported that the department recognizes the need to develop an integrated program for monitoring performance against the enterprisewide measures in the IT strategic plan. He stated that HHS has recently begun an initiative to establish such a process. By not measuring actual-versus-expected performance, agencies lack the information to determine where to target agency resources to improve overall mission accomplishment.

- *Benchmarking.* The Clinger-Cohen Act requires agencies to quantitatively benchmark agency process performance against public- and private-sector organizations, where comparable processes and organizations exist. Benchmarking is used by entities because there may be external organizations that have more innovative or more efficient

processes than their own processes. Our previous study of IT performance measurement at leading organizations found that they had spent considerable time and effort comparing their performance information with that of other organizations.[35]

Seven agencies have mechanisms—such as policies and strategies—in place related to benchmarking their IT processes. For example, DOD's information resources and IT directive states that DOD components shall routinely and systematically benchmark their functional processes against models of excellence in the public and private sector and use these and other analyses to develop, simplify, or refine the processes before IT solutions are applied. In general, however, agencies' benchmarking decisions are ad hoc. Few agencies have developed a mechanism to identify comparable external private- or public-sector organizations and processes and/or have policies related to benchmarking; however, all but 10 of the agencies provided examples of benchmarking that had been performed. For example, the Small Business Administration (SBA) does not have benchmarking policies in place, but the agency provided an example of a benchmarking study performed by a contractor that compared SBA's IT operations and processes against industry cost and performance benchmarks and best practices and resulted in recommendations for improvement.

## Practice-Specific Analysis

Table 1 provides additional detail on each strategic planning/performance measurement practice and our evaluation of whether each agency had the practice in place. The table indicates that work remains for the agencies to have each of the practices fully in place as well as that several agencies reported that they were taking, or planned to take, actions to address the practices or elements of practices.

[35]GAO/AIMD-98-89.

**Table 1: IT Strategic Planning/Performance Measurement Practices[a]**

**Practice 1.1:** The agency has documented its IT strategic management process, including, at a minimum,
- the responsibilities and accountability for IT resources across the agency, including the relationship between the chief information officer (CIO), chief financial officer (CFO), and mission/program officials; and
- the method by which the agency defines program information needs and develops strategies, systems, and capabilities to meet those needs.

| Results | | Comments |
|---|---|---|
| Yes | 12 | • Yes—the Departments of the Air Force, Army, Commerce, Defense (DOD), Education, Energy, Labor, Navy, and Veterans Affairs (VA) and the General Services Administration (GSA), the Office of Personnel Management (OPM), and the Social Security Administration (SSA) have this practice in place. |
| Partially | 11 | • Partially—the Departments of Agriculture,[c] Health and Human Services (HHS),[c] Interior, Justice, and Transportation, and the Environmental Protection Agency (EPA), the National Aeronautics and Space Administration (NASA),[c] and the Small Business Administration (SBA) do not have a completely documented IT strategic planning process. The Department of Housing and Urban Development (HUD)[c] does not clearly describe the roles and responsibilities of the CFO and program managers in IT strategic planning. The Nuclear Regulatory Commission's (NRC) roles and responsibilities in its IT strategic management process are not clearly defined. The Department of the Treasury's[c] documentation supporting this practice is in draft form. |
| No | 1 | • No—the National Science Foundation (NSF) does not have this practice in place. |
| NA | 2 | • NA (not applicable)—the Department of State and the U.S. Agency for International Development (USAID) are transitioning to a joint strategic planning process that will support their common policy objectives. The first step in this process was the August 2003 issuance of a State/USAID strategic plan. Because a new joint IT strategic planning process is also being implemented, it is too early to evaluate whether the new process will address this practice. |

**Practice 1.2:** The agency has documented its process to integrate IT management operations and decisions with organizational planning, budget, financial management, human resources management, and program decisions.

| Results | | Comments |
|---|---|---|
| Yes | 13 | • Yes—Air Force, Army, Commerce, DOD, Education, GSA, Labor, Navy, NSF, OPM, SBA, SSA, and VA have this practice in place. |
| Partially | 10 | • Partially—Agriculture[c] and EPA have not completely documented the integration of their IT management operations and decisions with other agency processes. Energy,[c] HUD, NASA,[c] and Justice have not documented how their IT management operations and decisions are integrated with human resources management. HHS[c] has not documented how its IT management operations and decisions are integrated with its budget processes. NRC reported that improvement is needed in how IT planning is integrated with the budget and human resources management. Transportation's[c] IT human capital planning is not yet integrated with the agency's human capital planning. Treasury's[c] documentation pertaining to this practice is in draft form. |
| No | 1 | • No—Interior does not have this practice in place. |
| NA | 2 | • NA—this practice is not applicable to State and USAID for reasons outlined in practice 1.1. |

**Practice 1.3:** The agency requires that information security management processes be integrated with strategic and operational planning processes.

| Results | | Comments |
|---|---|---|
| Yes | 24 | • Yes—Agriculture, Air Force, Army, Commerce, DOD, Education, Energy, EPA, GSA, HHS, HUD, Interior, Justice, Labor, NASA, Navy, NSF, OPM, SBA, SSA, State, Transportation, USAID, and VA have this practice in place. |
| Partially | 2 | • Partially—NRC and Treasury's[c] documentation supporting this practice is in draft form. |
| No | 0 | |
| NA | 0 | |

*(Continued From Previous Page)*

**Practice 1.4:** The agency has a process that involves the CFO, or comparable official, to develop and maintain a full and accurate accounting of IT-related expenditures, expenses, and results.

| Results | | Comments |
|---|---|---|
| Yes | 15 | • Yes—Agriculture, Commerce, Energy, GSA, HUD, Interior, Justice, NASA, NRC, NSF, OPM, SSA, Transportation, Treasury, and VA reported that they have this practice in place.[b] |
| Partially | 11 | • Partially—prior GAO or inspector general work indicates that Army, Air Force, DOD, EPA, and Navy do not capture and report on the full costs of their programs. State and USAID reported that IT internal costs are not consistently captured. HHS reported that not all internal costs are captured and that the CFO is not involved in the process used to derive its IT costs. Education and Labor's CFOs are not involved in the process used to derive their IT costs. SBA reported that not all costs are captured for nonmajor systems. |
| No | 0 | |
| NA | 0 | |

**Practice 1.5:** The agency prepares an enterprisewide strategic information resources management (IRM) plan that, at a minimum,
- describes how IT activities will be used to help accomplish agency missions and operations, including related resources; and
- identifies a major IT acquisition program(s) or any phase or increment of that program that has significantly deviated from the cost, performance, or schedule goals established for the program.

| Results | | Comments |
|---|---|---|
| Yes | 2 | • Yes—Commerce and NSF have this practice in place. |
| Partially | 22 | • Partially—Agriculture, Air Force, Army, EPA, GSA, HHS, HUD, Interior, Justice, Labor, NASA, OPM, and SBA's IRM plans do not include resources and major IT acquisition programs that deviated from cost, schedule, or performance goals. Education, Energy, Navy, SSA, and Transportation's IRM plans do not include major IT acquisition programs that deviated from cost, schedule, or performance goals. DOD and NRC's draft IRM plans do not include resources and major IT acquisition programs that deviated from cost, schedule, or performance goals in their IRM plans. Treasury and VA's draft IRM plans do not include resources or major IT acquisition programs that deviated from cost, schedule, or performance goals in their IRM plans. |
| No | 0 | |
| NA | 2 | • NA—this practice is not applicable to State and USAID for reasons outlined in practice 1.1. |

**Practice 1.6:** The agency's performance plan required under Government Performance and Results Act (GPRA) includes
- a description of how IT supports strategic and program goals,
- the resources and time periods required to implement the information security program plan required by the Federal Information Security Management Act (FISMA), and
- a description of major IT acquisitions contained in the capital asset plan that will bear significantly on the achievement of a performance goal.

| Results | | Comments |
|---|---|---|
| Yes | 0 | • Partially—no agency's performance plan, except VA's, includes time periods, and none includes resources required to implement the information security program plan required by FISMA. In addition, Agriculture, DOD, HHS, and Interior's plans also do not include a description of major IT acquisitions contained in their capital asset plans that bear significantly on the achievement of a performance goal. |
| Partially | 23 | • NA—this practice is not applicable to Air Force, Army, and Navy because they are not required to produce such plans. |
| No | 0 | |
| NA | 3 | |

*(Continued From Previous Page)*

**Practice 1.7:** The agency has a documented process to
- develop IT goals in support of agency needs,
- measure progress against these goals, and
- assign roles and responsibilities for achieving these goals.

| Results | | Comments |
|---|---|---|
| Yes | 4 | • Yes—Army, GSA, OPM, and SSA have this practice in place.<br>• Partially—Agriculture,[c] NRC, and NSF do not have a documented process for assigning roles and responsibilities for achieving their enterprisewide IT goals. DOD[c] and HHS[c] have not established a documented process for measuring progress against their enterprisewide IT goals. Energy has this process in place for some, but not all, of its IT goals and performance measures. Air Force,[c] Education, and Navy[c] do not have a documented process to measure against their enterprisewide IT goals or to assign roles and responsibilities for achieving these goals. Treasury's[c] documentation in support of this practice is in draft form. Transportation is piloting a process. VA's[c] documentation supporting this practice does not explicitly address how IT goals are developed and roles and responsibilities assigned.<br>• No—Commerce,[c] EPA, HUD,[c] Interior, Justice,[c] Labor, NASA, and SBA do not have this practice in place.<br>• NA—this practice is not applicable to State and USAID for reasons outlined in practice 1.1. |
| Partially | 12 | |
| No | 8 | |
| NA | 2 | |

**Practice 1.8:** The agency has established goals that, at a minimum, address how IT contributes to
- program productivity,
- efficiency,
- effectiveness, and
- service delivery to the public (if applicable).

| Results | | Comments |
|---|---|---|
| Yes | 19 | • Yes—Agriculture, Air Force, Army, Commerce, DOD, Education, EPA, GSA, HHS, HUD, Interior, Justice, NASA, NSF, OPM, SBA, SSA, Treasury, and VA have this practice in place.<br>• Partially—Navy does not have an IT goal associated with service delivery to the public. Energy, Labor, and Transportation do not have a goal associated with how IT contributes to program productivity. NRC's documentation in support of this practice is in draft form.<br>• NA—this practice is not applicable to State and USAID for reasons outlined in practice 1.1. |
| Partially | 5 | |
| No | 0 | |
| NA | 2 | |

*(Continued From Previous Page)*

**Practice 1.9:** The agency has established IT performance measures and monitors actual-versus-expected performance that at least addresses
- how IT contributes to program productivity,
- how IT contributes to the efficiency of agency operations,
- how IT contributes to the effectiveness of agency operations,
- service delivery to the public (if applicable),
- how electronic government initiatives enable progress toward agency goals and statutory mandates,
- the performance of IT programs (e.g., system development and acquisition projects), and
- agency compliance with federal software piracy policy.

| Results | | Comments |
|---|---|---|
| Yes | 0 | • Partially—Agriculture,[c] HHS,[c] Interior, NASA, OPM, and VA[c] generally do not track actual-versus-expected performance for enterprisewide measures in their IRM plans. Commerce,[c] EPA, Justice, SBA, and Treasury have some enterprisewide IT performance measures in their performance plans or accountability reports in which actual-versus-expected performance is tracked but do not have measures for the enterprisewide IT goals in their IRM plans. SBA also does not have performance measures associated with program productivity, efficiency, effectiveness, and performance of IT programs. Moreover, Treasury's[c] IRM plan is in draft form. Air Force[c] has not developed measures for the enterprisewide goals in its information strategy and does not have measures associated with program productivity, electronic government, and service delivery to the public. Army[c] has neither performance measures for all of the objectives related to its enterprise IT goals nor measures associated with service delivery to the public. Navy[c] has not developed measures for the enterprisewide goals in its IRM plan and does not have measures related to how IT contributes to the effectiveness and efficiency of agency operations, service delivery to the public, or e-government. Education does not have measures related to how IT contributes to program productivity and the effectiveness and efficiency of agency operations and does not track actual-versus-expected performance of measures identified in its IRM plan. GSA did not provide evidence that it tracked actual versus expected performance for one of its IT goals in its IRM plan. HUD[c] does not have performance measures related to how IT contributed to program productivity and does not track actual-versus-expected performance for enterprisewide measures in its IRM plan. Labor does not have performance measures associated with program productivity and efficiency. Energy and NRC's performance measures are not linked to the enterprisewide IT goals contained in their IRM plans. In addition, Energy does not have a measure associated with program productivity. Transportation's[c] performance measures are generally not linked to the goals contained in its IRM plan, and it does not track actual-versus-expected performance for its enterprisewide measures. SSA reported that it has performance measures associated with the overall performance of its IT programs but provided no supporting documentation. Finally, no agency has performance measures related to the effectiveness of controls to prevent software piracy.<br>• No—DOD[c] does not have this practice in place but is working on developing such measures.<br>• NA—this practice is not applicable to State and USAID for reasons outlined in practice 1.1. |
| Partially | 23 | |
| No | 1 | |
| NA | 2 | |

**Practice 1.10:** The agency has developed IT performance measures that align with and support the goals in the GPRA performance plan.

| Results | | Comments |
|---|---|---|
| Yes | 22 | • Yes—Agriculture, Commerce, Education, Energy, EPA, GSA, HHS, HUD, Interior, Justice, Labor, NASA, NRC, NSF, OPM, SBA, SSA, State, Transportation, Treasury, USAID, and VA have this practice in place.<br>• No—DOD does not have this practice in place.<br>• NA—this practice is not applicable to the Air Force, Army, and Navy because they are not required to produce such plans. |
| Partially | 0 | |
| No | 1 | |
| NA | 3 | |

*(Continued From Previous Page)*

**Practice 1.11:** The agency developed an annual report, included as part of its budget submission, that describes progress in achieving goals for improving the efficiency and effectiveness of agency operations and, as appropriate, the delivery of services to the public through the effective use of IT.

| Results | | Comments |
|---|---|---|
| Yes | 25 | • Yes—Agriculture, Air Force, Army, Commerce, DOD, Education, Energy, EPA, GSA, HHS, HUD, Interior, Justice, Labor, NASA, Navy, NRC, NSF, OPM, SSA, State, Transportation, Treasury, USAID, and VA have this practice in place.<br>• Partially—SBA has not reported progress on achieving its goals for improving the efficiency and effectiveness of agency operations. |
| Partially | 1 | |
| No | 0 | |
| NA | 0 | |

**Practice 1.12:** The agency requires that its IT management processes be benchmarked against appropriate processes and/or organizations from the public and private sectors in terms of cost, speed, productivity, and quality of outputs and outcomes where comparable processes and organizations in the public or private sectors exist.

| Results | | Comments |
|---|---|---|
| Yes | 7 | • Yes—Air Force, Army, DOD, Education, Navy, NRC, and VA have this practice in place.<br>• Partially—Agriculture, Commerce, Energy, GSA, Interior, NASA, SBA, SSA, and Transportation provided an example of a process that they have benchmarked, but benchmarking is being performed on an ad hoc basis.<br>• No—EPA, HHS,[c] HUD,[c] Justice, Labor, NSF, OPM, State, Treasury,[c] and USAID do not have this practice in place. |
| Partially | 9 | |
| No | 10 | |
| NA | 0 | |

Source: GAO.

[a]Due to its recent establishment, we did not include DHS as a part of this analysis.

[b]We have previously reported that agencies are making progress to address financial management system weaknesses but that agency management does not yet have the full range of information needed for accountability, performance reporting, and decision making. In addition, for fiscal year 2002, auditors reported that 19 agency systems were not compliant with the Federal Financial Management Improvement Act, including Agriculture, Commerce, Education, HUD, Interior, and NASA. (*Financial Management: Sustained Efforts Needed to Achieve FFMIA Accountability,* GAO-03-1062, Sept. 30, 2002).

[c]The agency reported that it was taking, or planned to take, action to address this practice or elements of the practice.

Note: Yes—the practice was in place. Partially—the agency has some, but not all, aspects of the practice in place. Examples of circumstances in which the agency would receive this designation include when (1) some, but not all, of the elements of the practice were in place; (2) the agency documented that it has the information or process in place but it was not in the prescribed form (e.g., in a specific document as required by law or OMB); (3) the agency's documentation was in draft form; or (4) the agency had a policy related to the practice, but evidence supported that it had not been completely or consistently implemented. No—the practice was not in place. NA (not applicable)—the practice was not relevant to the agency's particular circumstances.

Agency IT officials could not identify why practices were not in place in all cases, but in those instances in which reasons were identified, a variety of explanations were provided. For example, reasons cited by agency IT officials included that they lacked the support from agency leadership, that the agency had not been developing IRM plans until recently and recognized that the plan needed further refinement, that the process was

being revised (in at least one case because of changes that are needed to reflect a loss of component organizations to the new DHS), and that requirements were evolving. In other cases, the agency reported that it had the information but it was not in the format required by legislation. For instance, FISMA requires agencies to include in the performance plans required by the Government Performance and Results Act the resources, including budget, staffing, and training, and time periods to implement its information security program. None of the agencies included this information in their performance plans.[36] However, the agencies commonly reported that they had this information but that it was in another document. Nevertheless, this does not negate the need for having the agency report to the Congress in the required form. This is particularly important since, as in the example of the FISMA requirement, the reporting requirement involves a public document, whereas other reports may not be publicly available.

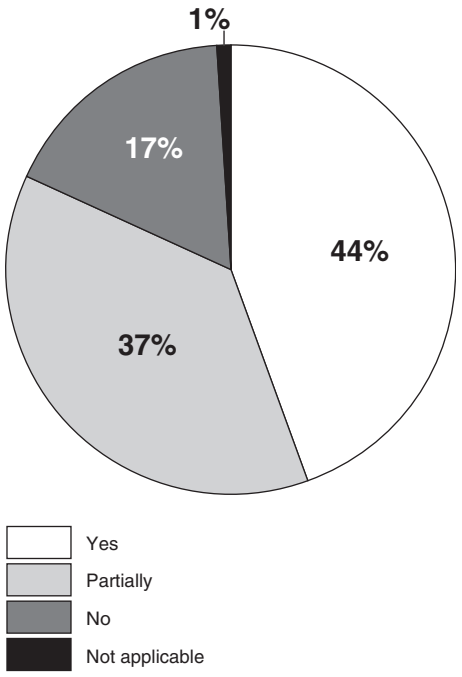
In the case of DHS, while we did not include the department in our assessment and in table 1, the department is in the process of developing its first IT strategic plan. According to DHS, it expects to complete this plan by mid-February 2004.

## Agencies' Use of IT Investment Management Practices Is Mixed

The use of IT investment management practices is mixed (as shown in fig. 2), which demonstrates that agencies do not have all the processes in place to effectively select, control, and evaluate investments. An IT investment management process is an integrated approach to managing investments that provides for the continuous identification, selection, control, life-cycle management, and evaluation of IT investments. Among the investment management practices that are most frequently in place are having investment management boards and requiring that projects demonstrate that they are economically beneficial. Practices less commonly in place are those requiring that IT investments be performed in a modular, or incremental, manner and that they be effectively controlled. Only by effectively and efficiently managing their IT resources through a robust investment management process can agencies gain opportunities to make better allocation decisions among many investment alternatives and further leverage their IT investments.

[36]VA included the time periods to implement its information security program in its performance plan.

**Figure 2: Percentage of Agencies' Use of IT Investment Management Practices[a]**




Source: GAO.

[a]Percentages do not add up to 100 percent due to rounding.

Note: Yes—the practice was in place. Partially—the agency has some, but not all, aspects of the practice in place. Examples of circumstances in which the agency would receive this designation include when (1) some, but not all, of the elements of the practice were in place; (2) the agency documented that it has the information or process in place but it was not in the prescribed form (e.g., in a specific document as required by law or OMB); (3) the agency's documentation was in draft form; or (4) the agency had a policy related to the practice, but evidence supported that it had not been completely or consistently implemented. No—the practice was not in place. Not applicable—the practice was not relevant to the agency's particular circumstances.

## Governmentwide Progress Demonstrated, but More Work Remains

Critical aspects of IT investment management include developing well-supported proposals, establishing investment management boards, and selecting and controlling IT investments. The agencies' use of practices associated with these aspects of investment management is wide-ranging, as follows:

- *IT investment proposals.* Various legislative requirements, an executive order, and OMB policies provide minimum standards that govern agencies' consideration of IT investments. In addition, we have issued

guidance to agencies for selecting, controlling, and evaluating IT investments.[37] Such processes help ensure, for example, that investments are cost-beneficial and meet mission needs and that the most appropriate development or acquisition approach is chosen.

The agencies in our review have mixed results when evaluated against these various criteria. For example, the agencies almost always require that proposed investments demonstrate that they support the agency's business needs, are cost-beneficial, address security issues, and consider alternatives. To demonstrate, the Department of Transportation requires that proposed projects complete a business case to indicate that the project (1) will meet basic requirements in areas such as mission need, affordability, technical standards, and disabled access requirements, (2) is economically beneficial, and (3) has considered alternatives.

One element in this area that agencies were not as likely to have fully in place was the Clinger-Cohen Act requirement that agencies follow, to the maximum extent practicable, a modular, or incremental, approach when investing in IT projects. Incremental investment helps to mitigate the risks inherent in large IT acquisitions/developments by breaking apart a single large project into smaller, independently useful components with known and defined relationships and dependencies. An example of such an approach is DOD's policy stating that IT acquisition decisions should be based on phased, evolutionary segments that are as brief and narrow in scope as possible and that each segment should solve a specific part of an overall mission problem and deliver a measurable net benefit independent of future segments.[38] However, 14 agencies do not have a policy that calls for investments to be done in a modular manner. For example, although the Environmental Protection Agency (EPA) reported that it worked with program offices to try to segment work so that the scope and size of each project is manageable, it does not have a policy that calls for

[37]GAO/AIMD-10.1.23 and U.S. General Accounting Office, *Assessing Risks and Returns: A Guide for Evaluating Federal Agencies' IT Investment Decision-making*, GAO/AIMD-10.1.13 (Washington, D.C.: February 1997).

[38]We have previously reported that certain DOD system acquisitions were not utilizing incremental management best practices or were just beginning to do so. For example, see U.S. General Accounting Office, *DOD Systems Modernization: Continued Investment in Standard Procurement System Has Not Been Justified*, GAO-01-682 (Washington, D.C.: July 31, 2001).

investments to be done in a modular manner. The absence of a policy calls into question whether EPA is implementing incremental investment in a consistent and effective manner.

- *Investment management boards.* Our investment management guide states that establishing one or more IT investment boards is a key component of the investment management process. According to our guide, the membership of this board should include key business executives and should be responsible for final project funding decisions or should provide recommendations for the projects under its scope of authority. Such executive-level boards, made up of business-unit executives, concentrate management's attention on assessing and managing risks and regulating the trade-offs between continued funding of existing operations and developing new performance capabilities.

  Almost all of the agencies in our review have one or more enterprise-level investment management boards. For example, HUD's Technology Investment Board Executive Committee and supporting boards have responsibility for selecting, controlling, and evaluating the department's IT investments. HUD's contractor-performed maturity audits also have helped the department validate its board structure and its related investment management processes. However, the investment management boards for six agencies are not involved, or the agency did not document the board's involvement, in the control phase. For example, the National Science Foundation (NSF) has a CIO advisory group that addresses only the select phase of the IT investment management process. NSF's CIO explained that the agency reviews the progress of its major information system projects through other means, such as meetings with management. In providing comments on a draft of this report, the CIO stated that he believes that NSF has a comprehensive set of management processes and review structures to select, control, and evaluate IT investments and cited various groups and committees used as part of this process. However, NSF's summary of its investment management process and memo establishing the CIO advisory group include only general statements related to the oversight of IT investments, and NSF provided no additional documentation demonstrating that its investment management board plays a role in the control and evaluation phases. Our investment management guidance identifies having an IT investment management board(s) be responsible for project oversight as a critical process. Maintaining responsibility for oversight with the same body that selected the investment is crucial to

fostering a culture of accountability by holding the investment board that initially selected an investment responsible for its ongoing success.

In addition, 17 agencies do not fully address the practice that calls for processes to be in place that address the coordination and alignment of multiple investment review boards. For example, we recently reported that the Department of the Interior has established three department-level IT investment boards and begun to take steps to ensure that investment boards are established at the bureau level.[39] However, at the time of our review, the department (1) could not assert that department-level board members exhibited core competencies in using Interior's IT investment approach and (2) had limited ability to oversee investments in its bureaus. We made recommendations to Interior to strengthen both the activities of the department-level boards and the department's ability to oversee investment management activities at the bureaus.

- *Selection of IT investments.* During the selection phase of an IT investment management process, the organization (1) selects projects that will best support its mission needs and (2) identifies and analyzes each project's risks and returns before committing significant funds. To achieve desired results, it is important that agencies have a selection process that, for example, uses selection criteria to choose the IT investments that best support the organization's mission and prioritizes proposals.

  Twenty-two agencies use selection criteria in choosing their IT investments. In addition, about half the agencies use scoring models[40] to help choose their investments. For example, the working group and CIO office officials that support the Department of Education's investment review board used a scoring model as part of deciding which IT investments to recommend for the board's consideration and approval. This model contained two main categories of criteria: (1) value criteria that measured the impact and significance of the

[39]GAO-03-1028.

[40]With a scoring model, the assessment body typically attaches numerical scores and "relative value" weights to each of the individual selection criteria. Investments are then assessed relative to these scores and then against weights associated with each individual criterion. Finally, the weighted scores are summed to create a numerical value for each investment.

initiative, given project goals and the strategic objectives of the department; and (2) health criteria that measured the potential for the success of the initiative and helped to assess both the performance and the associated risks that are involved in project and contract management. In the case of DOD, in February 2003 we reported that it had established some, and was establishing other IT investment criteria, but these criteria had not been finalized.[41] Accordingly, we recommended, and DOD concurred, that DOD establish a standard set of criteria. In September we reported that this recommendation had not been implemented.[42] DOD officials stated that the department was developing the criteria but that the proposed governance structure had not yet been adopted.

- *Control over IT investments.* During the control phase of the IT investment management process, the organization ensures that, as projects develop and as funds are spent, the project is continuing to meet mission needs at the expected levels of cost and risk. If the project is not meeting expectations or if problems have arisen, steps are quickly taken to address the deficiencies. Executive level oversight of project-level management activities provides the organization with increased assurance that each investment will achieve the desired cost, benefit, and schedule results.

  Although no agencies had the practices associated with the control phase fully in place, some have implemented important aspects of this phase. For example, Labor requires project managers to prepare a control status report based on a review schedule established during the selection phase, which is reviewed by the Office of the CIO and its technical review board as part of determining whether to continue,

[41]U.S. General Accounting Office, *DOD Business Systems Modernization: Improvements to Enterprise Architecture Development and Implementation Efforts Needed*, GAO-03-458 (Washington, D.C.: Feb. 28, 2003).

[42]U.S. General Accounting Office, *DOD Business Systems Modernization: Important Progress Made to Develop Business Enterprise Architecture, but Much Work Remains*, GAO-03-1018 (Washington, D.C.: Sept. 19, 2003).

modify, or cancel the initiative.[43] For initiatives meeting certain criteria, the technical review board makes recommendations to the management council, which serves as the department's top tier executive investment review council, is chaired by the Assistant Secretary of Administration and Management, and consists of component agency heads.

Nevertheless, in general, the agencies are weaker in the practices pertaining to the control phase of the investment management process than in the selection phase. In particular, the agencies did not always have important mechanisms in place for agencywide investment management boards to effectively control investments, including decision-making rules for project oversight, early warning mechanisms, and/or requirements that corrective actions for under-performing projects be agreed upon and tracked. For example, the Department of the Treasury does not have a department-level control process; instead, each bureau may conduct its own reviews that address the performance of its IT investments and corrective actions for under-performing projects. In a multitiered organization like Treasury, the department is responsible for providing leadership and oversight for foundational critical processes by ensuring that written policies and procedures are established, repositories of information are created that support IT investment decision making, resources are allocated, responsibilities are assigned, and all of the activities are properly carried out where they may be most effectively executed. In such an organization, the CIO is specifically responsible for ensuring that the organization is effectively managing its IT investments at every level. Treasury IT officials recognize the department's weaknesses in this area and informed us that they are working on developing a new capital planning and investment control process that is expected to address these weaknesses. Similarly, the Department of Energy is planning on implementing the investment control process outlined in its September 2003 capital planning and investment control guide in fiscal year 2004, which addresses important elements such as corrective action plans. However, this guide does not document the role of Energy's investment management boards in this process.

[43]The technical review board, which serves as the department's first-tier investment review board, is chaired by the deputy CIO, and its members consist of IRM managers and administrative officers from each component.

## Practice-Specific Analysis

Table 2 provides additional detail on each investment management practice and our evaluation of whether each agency had the practice in place. The table indicates those practices in which improvement is needed as well as which agencies reported that they were taking, or planned to take, actions to address the practices or elements of practices.

**Table 2: IT Investment Management Practices[a]**

**Practice 2.1:** The agency has a documented IT investment management process that, at a minimum,
- specifies the roles of key people (including the CIO) and groups within the IT investment management process,
- outlines significant events and decision points,
- identifies external and environmental factors that influence the process,
- explains how the IT investment management process is coordinated with other organizational plans and processes, and
- describes the relationship between the investment management process and the agency's enterprise architecture.

| Results | | Comments |
|---|---|---|
| Yes | 12 | • Yes—Commerce, Education, Energy, GSA, HUD, Interior, Justice, OPM, SBA, SSA, State, and USAID have this practice in place. |
| Partially | 14 | • Partially—Agriculture and Labor do not describe the relationship between their investment management processes, and their enterprise architectures in their IT capital planning and investment control guide. Air Force, EPA, and VA documentation related to this practice is in draft form. In addition, Air Force's[c] draft portfolio management document does not identify external and environmental factors or describe the relationship between the investment management process and the enterprise architecture. DOD[c] is piloting a draft IT portfolio management policy, but this policy does not address how this process relates to its other organizational plans and processes and its enterprise architecture or identify external and environmental factors. HHS[c] does not address how this process relates to its other organizational plans and processes and its enterprise architecture or identify external and environmental factors. NRC's current and draft capital planning and investment control policies do not address how this process relates to its other organizational plans and processes and its enterprise architecture or identify external and environmental factors. Army and NASA's[c] investment management policies and guidance do not describe the relationship of this process to its enterprise architecture. Navy[c] recognizes the need to clarify roles and responsibilities related to IT investment management, and its IT capital planning guide does not identify external and environmental factors. NSF does not have an IT investment management guide, and its summary of its policy does not address how this process relates to its other organizational plans and processes and its enterprise architecture or identify external and environmental factors. Transportation reported that there was little integration between its capital planning and investment control process and the budget. Treasury[c] does not have a capital planning and investment control guide, and its documentation supporting this practice is in draft form. |
| No | 0 | |
| NA | 0 | |

*(Continued From Previous Page)*

**Practice 2.2:** The agency established one or more agencywide IT investment management boards responsible for selecting, controlling, and evaluating IT investments that, at a minimum,
- have final project funding decision authority (or provide recommendations) over projects within their scope of authority, and
- are composed of key business unit executives.

| Results | | Comments |
|---|---|---|
| | 14 | • Yes—Agriculture, Commerce, Education, GSA, HHS, HUD, Interior, Labor, OPM, SBA, SSA, State, Transportation, and VA have this practice in place. |
| | 10 | • Partially—Treasury[c] and USAID have not completely implemented this practice. Air Force, Army,[c] Energy, NASA, NRC, and NSF's IT investment management boards are not responsible for controlling and evaluating IT investments, or this role has not been fully documented. EPA's documentation in support of this practice is in draft form. Navy's[c] IT investment management board governance process is not completely implemented. |
| | 2 | |
| | 0 | • No—DOD[b,c] does not have this practice in place. Justice[c] reported that it is piloting an IT investment management board, but did not provide documentation on the responsibilities, processes, or makeup of this board. |

**Practice 2.3:** The agencywide board(s) work processes and decision-making processes are described and documented.

| Results | | Comments |
|---|---|---|
| Yes | 9 | • Yes—Agriculture, Commerce, Education, HUD, Interior, Labor, SBA, State, and Transportation have this practice in place. |
| Partially | 6 | • Partially—Army has not consistently implemented this practice. GSA did not have policies and procedures for each of its IT investment management boards. HHS has not established procedures for the development, documentation, and review of IT investments. EPA and VA's documentation related to this practice is in draft form. USAID has not completely implemented this practice. |
| No | 11 | • No—Air Force, DOD,[b,c] Energy, Justice,[c] NASA, Navy,[c] NRC, NSF, OPM, SSA,[c] and Treasury[c] do not have this practice in place. |
| NA | 0 | |

**Practice 2.4:** If more than one IT investment management board exists in the organization (e.g., at the component level), the organization has
- documented policies and procedures that describe the processes for aligning and coordinating IT investment decision making,
- criteria for determining where in the organization different types of IT investment decisions are made, and
- processes that describe how cross-functional investments and decisions (e.g., common applications) are handled.

| Results | | Comments |
|---|---|---|
| Yes | 2 | • Yes—GSA and Labor have this practice in place. |
| Partially | 10 | • Partially—Agriculture does not have documented policies and processes for aligning and coordinating IT investment decision making or processes for describing how cross-functional investments and decisions are made. Air Force, Army, Commerce, Education, HHS,[c] and Transportation[c] do not have documented policies and procedures for aligning and coordinating investment decision making among their investment management boards. Interior[b] has not fully implemented its governance process for aligning and coordinating its IT investment decision making. OPM did not describe its criteria for determining major systems or describe how cross-functional investments and decisions are handled. SBA did not address whether its enterprisewide board can invoke final decision-making authority over its program office boards. |
| No | 7 | |
| NA | 7 | • No—DOD,[b,c] Energy, NASA, Navy,[c] Treasury,[c] and VA[c] do not have this practice in place. Justice[c] reported that it is piloting an IT investment management board but did not provide supporting documentation.<br>• NA—EPA, HUD, NRC, NSF, SSA, State, and USAID do not have multiple IT investment management boards. |

*(Continued From Previous Page)*

**Practice 2.5:** As part of its investment management process, the agency has available an annually updated comprehensive inventory of its major information systems that includes major national security systems and interfaces.

| Results | | Comments |
|---|---|---|
| Yes | 21 | • Yes—Agriculture, Air Force, Commerce, Education, EPA, GSA, HUD, Interior, Justice, Labor, Navy, NRC, NSF, OPM, SBA, SSA, State, Transportation, Treasury, USAID, and VA have this practice in place. |
| Partially | 5 | • Partially—Army's[c] inventory is not complete and does not include interfaces. A DOD inspector general report stated that DOD's inventory may not capture the universe of current DOD business management systems. Energy and NASA's inventories do not include interfaces. HHS reported that its Exhibit 300s fulfill the requirements of this practice but did not provide supporting documentation. |
| No | 0 | |
| NA | 0 | |

**Practice 2.6:** A standard, documented procedure is used so that developing and maintaining the inventory is a repeatable event, which produces inventory data that are timely, sufficient, complete, and compatible.

| Results | | Comments |
|---|---|---|
| Yes | 21 | • Yes—Agriculture, Air Force, Commerce, DOD, Education, EPA, GSA, HUD, Interior, Justice, Labor, Navy, NSF, OPM, SBA, SSA, State, Transportation, Treasury, USAID, and VA have this practice in place. |
| Partially | 1 | • Partially—Army's documentation is in draft form. |
| No | 4 | • No—Energy,[c] HHS, NASA, and NRC do not have this practice in place. |
| NA | 0 | |

**Practice 2.7:** The IT asset inventory is used as part of managerial decision making.

| Results | | Comments |
|---|---|---|
| Yes | 12 | • Yes—Agriculture, Army, Commerce, Education, GSA, HUD, Labor, Navy, SSA, State, Transportation, and VA have this practice in place. |
| Partially | 11 | • Partially—DOD, Energy, EPA, Interior,[b] NRC,[c] NSF, OPM, SBA, and USAID do not explicitly document how their IT asset inventory is used to identify asset duplication. Air Force reported that its inventory is not being consistently used to identify asset duplication. Justice[c] reported that it has begun to use its IT asset inventory to identify asset duplication as part of a pilot of its new IT investment management process. |
| No | 3 | • No—HHS, NASA, and Treasury[c] do not have this practice in place. |
| NA | 0 | |

*(Continued From Previous Page)*

**Practice 2.8:** Proposed IT investments are required to document that they have addressed the following items during project planning:
- that the project supports the organization's business and mission needs and meets users' needs,
- whether the function should be performed by the public or private sector,
- whether the function or project should be performed or is being performed by another agency,
- that alternatives have been considered, and
- how security will be addressed.

| Results | | Comments |
|---|---|---|
| Yes | 25 | • Yes—Agriculture, Air Force, Army, Commerce, DOD, Education, Energy, EPA, GSA, HUD, Interior, Justice, Labor, NASA, Navy, NRC, NSF, OPM, SBA, SSA, State, Transportation, Treasury, USAID, and VA have this practice in place.<br>• Partially—the HHS policy addressing the element related to whether the function or project should be performed by the private sector or another government agency is in draft form. This information is normally contained in the Exhibit 300s, but HHS did not provide us with this documentation. |
| Partially | 1 | |
| No | 0 | |
| NA | 0 | |

**Practice 2.9:** In considering a proposed IT project, the agency requires that the project demonstrate that it is economically beneficial through the development of a business case that at least addresses costs, benefits, schedule, and risks.

| Results | | Comments |
|---|---|---|
| Yes | 25 | • Yes—Agriculture, Air Force, Army, Commerce, Education, Energy, EPA, GSA, HHS, HUD, Interior, Justice, Labor, NASA, Navy, NRC, NSF, OPM, SBA, SSA, State, Transportation, Treasury, USAID, and VA have this practice in place.<br>• Partially—DOD has not consistently implemented this practice. |
| Partially | 1 | |
| No | 0 | |
| NA | 0 | |

**Practice 2.10:** In considering a proposed IT project, the agency requires that the project demonstrate that it is consistent with federal and agency enterprise architectures.

| Results | | Comments |
|---|---|---|
| Yes | 20 | • Yes—Air Force, Army, Commerce, Education, Energy, EPA, GSA, HHS, HUD, Interior, Labor, Navy, NRC, NSF, OPM, SSA, State, Transportation, Treasury, and VA have this practice in place.<br>• Partially—the agencies are required to include how major IT investments align with the agency's enterprise architecture and the federal enterprise architecture in their budget Exhibit 300s. However, the following agencies do not have policies requiring compliance with the agency enterprise architectures, which is a core element in our Enterprise Architecture Management Framework. Agriculture and NASA[b,c] do not have approved policies related to this practice but require compliance as part of their IT investment management reviews for the fiscal year 2005 budget cycle. Justice and USAID do not have a policy requiring that IT projects comply with their enterprise architecture. SBA's policy requiring compliance with its enterprise architecture is in draft form. DOD[b,c] does not have a policy requiring compliance with its business enterprise architecture. |
| Partially | 6 | |
| No | 0 | |
| NA | 0 | |

*(Continued From Previous Page)*

**Practice 2.11:** The agency requires that the proposed IT investment, at a minimum,
- support work processes that it has simplified or redesigned to reduce costs and improve effectiveness, and
- make maximum use of commercial-off-the-shelf (COTS) software.

| Results | | Comments |
|---|---|---|
| Yes | 11 | • Yes—Air Force, Army, DOD, GSA, Justice, Labor, NASA, Navy, NSF, SSA, and VA have this practice in place.<br>• Partially—Education, HHS, Interior, and SBA do not require that proposed IT investments support work processes that have been simplified or redesigned. NRC has policies related to this practice but reported that they have not been fully integrated into its investment decision making. Energy's business case guidelines address this practice, but Energy reported that consideration of these factors is not required for selection and approval. EPA's policy related to COTS is in draft form.<br>• No—Agriculture,[c] Commerce, HUD, OPM, State, Transportation, Treasury,[c] and USAID do not have this practice in place. |
| Partially | 7 | |
| No | 8 | |
| NA | 0 | |

**Practice 2.12:** The agency has established project selection criteria distributed throughout the organization that include, at a minimum,
- cost, benefit, schedule, and risk elements;
- measures such as net benefits, net risks, and risk-adjusted return on investment; and
- qualitative criteria for comparing and prioritizing alternative information systems investment projects.

| Results | | Comments |
|---|---|---|
| Yes | 6 | • Yes—Agriculture, GSA, Energy, NASA, Transportation, and VA have this practice in place.<br>• Partially—Commerce,[c] Education, HUD,[c] Justice, Labor, Navy, SBA,[b] State, and USAID have project selection criteria that do not include net risk and risk-adjusted return on investment. DOD[b] has established some IT investment criteria, but these criteria are not finalized or part of an investment review process. EPA has project selection criteria that do not include net risks, risk-adjusted return on investment, or qualitative criteria. EPA's documentation in support of this practice is also in draft form. Interior's project selection criteria do not include cost and schedule. Air Force[c] and Army's[c] project selection criteria do not include cost, benefit, schedule, and risk elements or measures such as net benefits, net risks, and risk-adjusted return on investment. OPM has not consistently implemented this practice. SSA's[b] criteria is high-level and not explicit.<br>• No—HHS,[c] NRC, NSF, and Treasury[c] do not have this practice in place. |
| Partially | 16 | |
| No | 4 | |
| NA | 0 | |

*(Continued From Previous Page)*

**Practice 2.13:** The agency has established a structured selection process that, at a minimum,
- selects IT proposals using selection criteria;
- identifies and addresses possible IT investments and proposals that are conflicting, overlapping, strategically unlinked, or redundant;
- prioritizes proposals; and
- is integrated with budget, financial, and program management decisions.

| Results | | Comments |
|---|---|---|
| Yes | 8 | • Yes—Agriculture, Commerce, Education, GSA, HUD, Labor, SBA, and State have this practice in place.<br>• Partially—Air Force's[c] documentation in support of this practice is in draft form and does not include prioritizing proposals across the enterprise or the use of a scoring model. Army's prioritized list is limited to investments to address capability shortfalls. DOD[c] is piloting a draft IT portfolio management policy that includes a selection process. EPA's documentation of its selection processes is in draft form. Energy, Interior, and Transportation do not prioritize their IT proposals. Justice[c] does not use a scoring model or prioritize or rank its IT proposals. NASA[c] does not have a process for identifying possible conflicting, overlapping, strategically unlinked, or redundant proposals; does not use a scoring model; and does not prioritize or rank its IT proposals. Navy generally does not use its IT investment management boards outlined in its governance process as part of its IT investment selection process and does not use a scoring model or prioritize or rank its IT proposals. NRC does not select IT proposals using selection criteria, prioritize proposals, or document how its selection process is integrated with budget, financial, and program management decisions. OPM has not consistently implemented this practice. SSA[b] does not use a scoring model. USAID[c] does not have a process for identifying possible conflicting, overlapping, strategically unlinked, or redundant proposals. VA does not have a process to identify and address possible conflicting, overlapping, strategically unlinked, or redundant IT investments and does not prioritize IT proposals for selection.<br>• No—HHS,[c] Treasury,[c] and NSF do not have this practice in place. |
| Partially | 15 | |
| No | 3 | |
| NA | 0 | |

**Practice 2.14:** Agency policy calls for investments to be modularized (e.g., managed and procured in well-defined useful segments or modules that are short in duration and small in scope) to the maximum extent achievable.

| Results | | Comments |
|---|---|---|
| Yes | 9 | • Yes—Air Force, Army, Education, Justice, NASA, Navy, NRC, SBA, and VA have this practice in place.<br>• Partially—DOD had not consistently implemented this practice. HHS and NSF's documentation supporting this practice is in draft form.<br>• No—Agriculture, Commerce,[c] Energy, EPA, GSA,[c] HUD, Interior, Labor, OPM, SSA, State, Transportation,[c] Treasury, and USAID do not have this practice in place. |
| Partially | 3 | |
| No | 14 | |
| NA | 0 | |

*(Continued From Previous Page)*

**Practice 2.15:** The agencywide investment management board(s) has written policies and procedures for management oversight of IT projects that cover, at a minimum,
- decision-making rules for project oversight that allow for terminating projects, when appropriate;
- current project data, including expected and actual cost, schedule, and performance data, to be provided to senior management periodically and at major milestones;
- criteria or thresholds related to deviations in cost, schedule, or system capability actuals versus expected project performance; and
- the generation of an action plan to address a project's problem(s) and track resolution.

| Results | | Comments |
|---|---|---|
| Yes | 0 | • Partially—Agriculture[c] reported that it has not implemented the corrective action plan element in a consistent manner. Air Force,[c] NASA,[c] and SSA[c] have control processes but do not explicitly document the role, responsibility, and authority of their enterprisewide IT investment management boards in the control phase. Army,[c] DOD,[b,c] and Navy's control processes do not involve enterprisewide IT investment management boards. Commerce[c] does not have decision-making rules to guide oversight of IT investments and projects are not required to submit reports of deviations in system capability. Education has not consistently required corrective actions or tracked corrective actions related to control phase reviews. GSA does not have clear decision-making rules, require projects to report on deviations in system capability, or require that corrective actions be tracked to resolution. HHS[c] does not have decision-making rules to guide oversight of IT investments, review projects at major milestones, or systematically track corrective actions. HUD[c] does not require reports of deviations of system capability or monitor projects at key milestones. Interior[b] does not have decision-making rules for oversight of IT investments, require reports of deviations of system capability, or require corrective action plans. Justice[b,c] reported that it is piloting an IT investment management board that includes the control phase but has not provided documentation supporting that all of the practice elements are addressed. Labor and Transportation have evaluation criteria to assess investments during the control phase, but do not have decision-making rules to guide their investment management boards' decisions. OPM has not consistently implemented this practice. State's draft documentation does not require projects to be reviewed at key milestones. USAID[c] does not have decision-making rules, require reports on deviations in system capability, and review projects at major milestones, and its policy for requiring action plans is in draft form. VA's[c] policies and procedures on decision-making rules, criteria or thresholds for system capability, and the generation of action plans have not been fully documented. |
| Partially | 20 | |
| No | 6 | • No—SBA[b,c] and Treasury[c] do not have this practice in place. Energy plans to implement a control process in fiscal year 2004, but its new capital planning and investment review guide does not address the role of its investment management boards in the process. EPA[c] is implementing its control process in fiscal year 2004. NRC's current and draft capital planning and investment control documentation do not address the elements of this practice and do not explicitly document the role, responsibility, and authority of its enterprisewide IT investment management board in this process. NSF's investment management board is not responsible for the control process. NSF reported that it uses other mechanisms to implement this practice but provided no supporting documentation. |
| NA | 0 | |

*(Continued From Previous Page)*

**Practice 2.16:** The agencywide investment management board(s) established an oversight mechanism of funded investments that, at a minimum,
- determines whether mission requirements have changed;
- determines whether the investment continues to fulfill ongoing and anticipated mission requirements;
- determines whether the investment is proceeding in a timely manner toward agreed-upon milestones;
- employs early warning mechanisms that enable it to take corrective action at the first sign of cost, schedule, or performance slippages; and
- includes the use of independent verification and validation (IV&V) reviews of under-performing projects, where appropriate.

| Results | | Comments |
|---|---|---|
| Yes | 2 | • Yes—GSA and VA have this practice in place.<br>• Partially—Agriculture[c] reported that its oversight of IT investments has not been consistently implemented. Air Force,[c] NASA,[c] and SSA[c] have control processes but did not explicitly document the role, responsibility, and authority of their enterprisewide IT investment management boards in this process. Army,[c] DOD,[b,c] and Navy's control processes do not involve enterprisewide IT investment management boards. Commerce and Labor do not employ an early warning mechanism. State[c] has procedures for control phase reviews, but they are not fully implemented. Education, HHS, and HUD do not have a process for using IV&V reviews. Interior[b,c] does not have a process to determine whether investments are proceeding in a timely manner toward agreed-upon milestones, employ an early warning mechanism, or use IV&V reviews. Justice[b,c] reported that it is piloting an IT investment management board that includes the control phase but did not provide documentation supporting that all of the practice elements are addressed. OPM has not consistently implemented this practice. SBA[b] did not provide evidence that it had implemented all of the oversight mechanisms in its investment management guide and did not use IV&V reviews. Transportation and USAID do not employ an early warning system or have a process for using IV&V reviews.<br>• No—Treasury[c] does not have this practice in place. Energy plans to implement a control process in fiscal year 2004, but its new capital planning and investment review guide does not address the role of its investment management boards in the process. EPA[c] is implementing its control process in fiscal year 2004. NRC's current and draft capital planning and investment control documentation does not address the elements of this practice and does not explicitly document the role, responsibility, and authority of its enterprisewide IT investment management board in this process. NSF's investment management board is not responsible for the control process. NSF reported that it uses other mechanisms to implement this practice but provided no supporting documentation. |
| Partially | 19 | |
| No | 5 | |
| NA | 0 | |

**Practice 2.17:** Corrective actions for under-performing projects are agreed upon, documented, and tracked by the agencywide investment management board(s).

| Results | | Comments |
|---|---|---|
| Yes | 5 | • Yes—Commerce, HUD, Labor, Transportation, and VA have this practice in place.<br>• Partially—Agriculture[c] and SBA[b] reported that they have not consistently implemented this practice. Air Force,[c] NASA,[c] and SSA have control processes but did not explicitly document the role, responsibility, and authority of their enterprisewide IT investment management boards in this process. SSA[c] also did not provide support that it was tracking corrective actions. Army,[c] DOD,[b] and Navy's control processes do not involve enterprisewide IT investment management boards. Education has not consistently required corrective actions or tracked corrective actions related to control phase reviews. GSA and HHS[c] do not systematically track corrective actions. State[c] has procedures for control phase reviews, but they are not fully implemented.<br>• No—Interior,[c] Justice, OPM, Treasury,[c] and USAID do not have this practice in place. Energy plans to implement a control process in fiscal year 2004, but its new capital planning and investment review guide does not address the role of its investment management boards in the process. EPA[c] is implementing its control process in fiscal year 2004. NRC's current and draft capital planning and investment control documentation does not address the elements of this practice and does not explicitly document the role, responsibility, and authority of its enterprisewide IT investment management board in this process. NSF's investment management board is not responsible for the control process. NSF reported that it uses other mechanisms to implement this practice, but provided no supporting documentation. |
| Partially | 12 | |
| No | 9 | |
| NA | 0 | |

*(Continued From Previous Page)*

**Practice 2.18:** The agencywide investment management board(s) requires that postimplementation reviews be conducted to
- validate expected benefits and costs, and
- document and disseminate lessons learned.

| Results | | Comments |
|---|---|---|
| Yes | 6 | • Yes—Agriculture, GSA, HUD, Labor, OPM, and VA have this practice in place. |
| Partially | 17 | • Partially—Army, DOD, NASA,[c] Navy, NRC, NSF, and SSA's[c] evaluation processes do not involve an enterprisewide IT investment management board. NSF also does not define what is to be included in a postimplementation review and SSA[b] reported that such reviews are not done regularly. Commerce[c] reported that postimplementation reviews have not been consistently completed and are not required to be reported to its investment management board. Air Force's[c] documentation in support of this practice is in draft form and does not document the role of its IT investment management boards in this process. Education[c] reported that postimplementation reviews were not always performed. Energy,[c] Justice,[b,c] Transportation,[c] and USAID have a policy related to this practice, but it has not been implemented. Also, Energy's processes do not involve an enterprisewide IT investment management board. HHS, SBA,[b,c] and State[c] have a policy related to this practice but did not provide evidence that it has been completely implemented. In addition, HHS's policy does not specifically address validating expected benefits and costs. |
| No | 3 | • No—EPA[c] is implementing its evaluation process in fiscal year 2004. Interior[c] and Treasury[c] do not have this practice in place. |
| NA | 3 | |

Source: GAO.

[a]Due to its recent establishment, we did not include DHS as a part of this analysis.

[b]We have an outstanding recommendation related to this practice.

[c]The agency reported that it was taking, or planned to take, action to address this practice, or elements of the practice.

Note: Yes—the practice was in place. Partially—the agency has some, but not all, aspects of the practice in place. Examples of circumstances in which the agency would receive this designation include when (1) some, but not all, of the elements of the practice were in place; (2) the agency documented that it has the information or process in place but it was not in the prescribed form (e.g., in a specific document as required by law or OMB); (3) the agency's documentation was in draft form; or (4) the agency had a policy related to the practice, but evidence supported that it had not been completely or consistently implemented. No—the practice was not in place. Not applicable—the practice was not relevant to the agency's particular circumstances.

Among the variety of reasons cited for practices not being fully in place were that the CIO position had been vacant, that not including a requirement in the IT investment management guide was an oversight, and that the process was being revised. However, in some cases the agencies could not identify why certain practices were not in place.

Regarding DHS, although we did not include the department in our assessment or table 2, the department has investment management processes that it has put in place or is in the process of putting in place.

## Conclusions

Federal agencies did not always have in place important practices associated with IT laws, policies, and guidance. At the governmentwide level, agencies generally have IT strategic plans or information resources

management (IRM) plans that address IT elements, such as security and enterprise architecture, but do not cover other aspects of IRM that are part of the Paperwork Reduction Act, such as information collection, records management, and privacy. This may be attributed, in part, to OMB not establishing comprehensive guidance for the agencies detailing the elements that should be included in such a plan. There were also numerous instances of individual agencies that do not have specific IT strategic planning, performance measurement, or investment management practices fully in place. Agencies cited a variety of reasons for not having these practices in place, such as that the CIO position had been vacant, not including a requirement in guidance was an oversight, or that the process was being revised. Nevertheless, not only are these practices based on law, executive orders, OMB policies, and our guidance, but they are also important ingredients for ensuring effective strategic planning, performance measurement, and investment management, which, in turn, make it more likely that the billions of dollars in government IT investments will be wisely spent. Accordingly, we believe that it is important that they be expeditiously implemented by individual agencies.

## Recommendations

To help agencies in developing strategic IRM plans that fully comply with the Paperwork Reduction Act of 1995, we recommend that the Director, OMB, develop and disseminate to agencies guidance on developing such plans. At a minimum, such guidance should address all elements of IRM, as defined by the Paperwork Reduction Act. As part of this guidance, OMB should also consider the most effective means for agencies to communicate information about any major IT acquisition program(s) or phase or increment of that program that significantly deviated from cost, performance, or schedule goals established by the program. One option for communicating this information, for example, could be through the annual agency performance reports that are required by the Government Performance and Results Act.

We are also generally making recommendations to the agencies in our review regarding those practices that are not fully in place unless, for example, (1) we have outstanding recommendations related to the practice, (2) the agency has a draft document addressing the practice, or (3) implementation of the practice was ongoing. Appendix I contains these recommendations.

## Agency Comments and Our Evaluation

We received written or oral comments on a draft of this report from OMB and 25 of the agencies in our review.[44] We also requested comments from the Department of Homeland Security and the Office of Personnel Management, but none were provided.

Regarding OMB, in oral comments on a draft of this report, representatives from OMB's Office of Information and Regulatory Affairs and Office of the General Counsel questioned the need for additional IRM plan guidance because they do not want to be prescriptive in terms of what agencies include in their plans. We continue to believe that agencies need additional guidance from OMB on the development and content of their IRM plans because OMB Circular A-130 does not provide overall guidance on the contents of agency IRM plans and half the agencies indicated a need for OMB to provide additional guidance on the development and content of IRM plans. Further, additional guidance would help to ensure that agency plans address all elements of IRM, as defined by the Paperwork Reduction Act. A strategic IRM plan that communicates a clear and comprehensive vision for how the agency will use information resources to improve agency performance is important because IRM encompasses virtually all aspects of an agency's information activities.

In commenting on a draft of the report, most of the agencies in our review generally agreed with our findings and recommendations. The agencies' specific comments are as follows:

- Agriculture's CIO stated that the department concurred with the findings in this report and provided information on action it was taking, or planned to take, to implement the recommendations. Agriculture's written comments are reproduced in appendix II.

- The Secretary of Commerce concurred with the recommendations in this report and stated that, in response, the department is updating its policies and procedures. Commerce's written comments are reproduced in appendix III.

- DOD's Deputy Assistant Secretary of Defense (Deputy CIO) stated that the department concurred or partially concurred with the

[44]DOD submitted a single letter that included comments from the Departments of the Air Force, Army, and Navy.

recommendations in this report. DOD also provided additional documentation and information on actions that it is taking, or planned to take, to address these recommendations. We modified our report based on these comments and documentation, as appropriate. DOD's written comments, along with our responses, are reproduced in appendix IV.

- Education's Assistant Secretary for Management/CIO stated that the agency generally agreed with our assessment of the department's use of IT strategic planning/performance measurement and investment management practices. Education provided additional comments and documentation related to two of our practices. We modified our report on the basis of these comments and documentation, as appropriate. Education's written comments, along with our responses, are reproduced in appendix V.

- Energy's Director of Architecture and Standards provided e-mail comments stating that the department believes that GAO fairly depicted where the department currently stands in the IT investment management process. The director also provided other comments that were technical in nature and that we addressed, as appropriate.

- EPA's Assistant Administrator/CIO generally agreed with our findings and recommendations on the need to complete work currently under way to formalize the documentation of IT management practices. However, EPA questioned our characterization of the agency's IT management and strategic planning and provided other comments, which we addressed, as appropriate. EPA's written comments, along with our responses, are reproduced in appendix VI.

- GSA's CIO stated that the agency generally agreed with the findings and recommendations in the report. GSA provided suggested changes and additional information and documentation related to nine of our practices and two recommendations. We modified our report on the basis of these comments and documentation, as appropriate. GSA's written comments, along with our responses, are reproduced in appendix VII.

- HHS's Acting Principal Deputy Inspector General stated that the department concurred with the findings and recommendations of the report. HHS's written comments are reproduced in appendix VIII.

- HUD's Assistant Secretary for Administration/CIO stated that the department was in agreement with the recommendations in this report. HUD's written comments are reproduced in appendix IX.

- Interior's Acting Assistant Secretary for Policy, Management and Budget stated that the recommendations in our report would further improve the department's IT investment management. Interior's written comments are reproduced in appendix X.

- Justice's CIO stated that, overall, the department concurred with the findings and recommendations in this report, noting that our recommendations will assist in further defining IT strategic planning, performance measurement, and investment management practices. Justice's written comments, along with our response, are reproduced in appendix XI.

- Labor's Assistant Secretary for Administration and Management/CIO reported that the department generally concurred with this report and provided suggested changes in two areas, which we addressed, as appropriate. Labor's written comments, along with our responses, are reproduced in appendix XII.

- NASA's Deputy Administrator reported that the agency generally concurred with the recommendations in this report and provided additional information on actions that it is taking, or planned to take, to address these recommendations. NASA's written comments, along with our response, are reproduced in appendix XIII.

- NSF's CIO provided e-mail comments disagreeing with three areas of this report. First, NSF did not agree with our assessment of practice 1.1, stating that the agency has a comprehensive agency-level planning framework that includes a suite of planning documents and internal and external oversight activities that it believes addresses IT planning requirements. However, our review of the planning documents cited by NSF in its self-assessment found that it did not address the elements of the practice. In particular, the agency did not describe the responsibility and accountability for IT resources or the method that it uses to define program information needs and how such needs will be met. Moreover, in our exit conference with NSF officials, the CIO indicated agreement with our assessment. Since NSF provided no additional documentation, we did not modify the report. Second, the CIO disagreed with our characterization of the agency's enterprisewide investment management

board. We modified the report to reflect the CIO's comments; however, we did not change our overall assessment of the role of the board because NSF's summary of its investment management process and memo establishing the CIO advisory group include only general statements related to the oversight of IT investments, and NSF provided no additional documentation demonstrating that its investment management board plays a role in the control and evaluation phases. Third, the CIO stated that NSF has established processes, management, and oversight controls over IT investments. However, NSF provided limited documentation on the control phase of its investment management process. In particular, NSF's summary of its investment management process and memo establishing the CIO advisory group include only general statements related to the oversight of IT investments, and NSF provided no additional documentation demonstrating that its investment management board plays a role in the control and evaluation phases. Accordingly, we did not modify the report.

- NRC's Executive Director for Operations stated that this report provides useful information and agreed that the practices are important for ensuring effective use of government IT investments but had no specific comments. NRC's written comments are reproduced in appendix XIV.

- SBA's GAO liaison provided e-mail comments questioning the need to have its enterprise investment management board have final decision-making authority over IT investments. Our IT investment management guidance states that enterprise-level IT investment boards be capable of reviewing lower-level board actions and invoking final decision-making authority over all IT investments.[45] In particular, if disputes or disagreements arise over decision-making jurisdiction about a specific IT investment project, the enterprise board must be able to resolve the issue. Accordingly, we did not modify the report. SBA also provided technical comments that we incorporated, as appropriate.

- SSA's Commissioner generally agreed with the recommendations in the report and provided comments on each recommendation that we addressed, as appropriate. SSA's written comments, along with our responses, are reproduced in appendix XV.

[45]GAO/AIMD-10.1.23.

- State's Assistant Secretary/Chief Financial Officer stated that the findings in the report are consistent with discussions held with its IT staff and provided additional information on four practices. On the basis of this additional information, we modified our report, as appropriate. State's written comments, along with our response, are reproduced in appendix XVI.

- A program analyst in the Department of Transportation's Office of the CIO provided oral comments that were technical in nature that we addressed, as appropriate.

- The Acting Director, Budget and Administrative Management in Treasury's Office of the CIO, provided oral comments stating that the department concurred with our findings and recommendations. The official further stated that the department recognized its shortcomings and was working to correct them.

- USAID's Assistant Administrator, Bureau for Management, did not address whether the agency agreed or disagreed with our overall findings or recommendations but commented on our evaluation of two practices, which we addressed, as appropriate. USAID's written comments, along with our response, are reproduced in appendix XVII.

- The Secretary of VA stated that the department concurred with the recommendations in the report and provided comments on actions that it has taken, or planned to take, in response. We modified the report based on these comments, as appropriate. VA's written comments, along with our responses, are reproduced in appendix XVIII.

As agreed with your offices, unless you publicly announce the contents of this report earlier, we plan no further distribution until 30 days from the report date. At that time, we will send copies of this report to the secretaries of the Departments of Agriculture, the Air Force, the Army, Commerce, Defense, Education, Energy, Health and Human Services, Homeland Security, Housing and Urban Development, the Interior, Justice, Labor, the Navy, State, Transportation, the Treasury, and Veterans Affairs; the administrators of the Environmental Protection Agency, General Services Administration, National Aeronautics and Space Administration, Small Business Administration, and U.S. Agency for International Development; the commissioners of the Nuclear Regulatory Commission and the Social Security Administration; and the directors of the National

Science Foundation, Office of Management and Budget, and Office of Personnel Management. We will also make copies available to others upon request. In addition, this report will be available at no charge on the GAO Web site at http://www.gao.gov.

If you have any questions on matters discussed in this report, please contact me at (202) 512-9286 or Linda J. Lambert, Assistant Director, at (202) 512-9556. We can also be reached by e-mail at pownerd@gao.gov and lambertl@gao.gov, respectively.

Other contacts and key contributors to this report are listed in appendix XIX.

David A. Powner
Director, Information Technology
Management Issues

# Recommendations to Departments and Agencies

## Agriculture

To improve the department's information technology (IT) strategic planning/performance measurement processes, we recommend that the Secretary of Agriculture take the following six actions:

- document the department's IT strategic management processes and how they are integrated with other major departmental processes, such as the budget and human resources management;
- include in the department's annual performance plan the resources and time periods required to implement the information security program plan required by the Federal Information Security Management Act (FISMA) and include a description of major IT acquisitions contained in its capital asset plan that bear significantly on its performance goals;
- implement a process for assigning roles and responsibilities for achieving the department's IT goals;
- develop performance measures related to the effectiveness of controls to prevent software piracy;
- track actual-versus-expected performance for the department's enterprisewide IT performance measures in its information resources management (IRM) plan; and
- develop a mechanism for benchmarking the department's IT management processes, when appropriate.

To improve the department's IT investment management processes, we recommend that the Secretary of Agriculture take the following four actions:

- include a description of the relationship between the IT investment management process and the department's enterprise architecture in its IT capital planning and investment control guide and require that IT investments be in compliance with the agency's enterprise architecture;
- document the alignment and coordination of responsibilities of the department's various IT investment management boards for decision making related to IT investments, including cross-cutting investments;
- establish a policy requiring that proposed IT investments support work processes that have been simplified or redesigned to reduce costs and

improve effectiveness and that makes maximum use of commercial-off-the-shelf (COTS) software; and

- establish a policy requiring modularized IT investments.

## Air Force

To improve the department's IT strategic planning/performance measurement processes, we recommend that the Secretary of the Air Force take the following two actions:

- establish a documented process for measuring progress against the department's IT goals and assign roles and responsibilities for achieving these goals; and

- develop IT performance measures related to the IT goals in the department's information strategy, including measures such as those contained in practice 1.9 in our report, and track actual-versus-expected performance.

To improve the department's IT investment management processes, we recommend that the Secretary of the Air Force take the following four actions:

- include a description of the relationship between the IT investment management process and the department's enterprise architecture, and an identification of external and environmental factors in its portfolio management guide;

- include costs, benefits, schedule, and risk elements as well as measures such as net benefits, net risks, and risk-adjusted return-on-investment in the department's project selection criteria;

- implement a scoring model and develop a prioritized list of IT investments as part of its project selection process; and

- document the role, responsibility, and authority of its IT investment management boards, including work processes, alignment, and coordination of decision making among its various boards, and document processes for controlling and evaluating IT investments, such as those outlined in practices 2.15, 2.16, 2.17, and 2.18.

## Army

To improve the department's IT strategic planning/performance measurement processes, we recommend that the Secretary of the Army take the following action:

- complete the development of IT performance measures related to the Army's enterprisewide IT goals, including measures such as those in practice 1.9 in our report, and track actual-versus-expected performance.

To improve the department's IT investment management processes, we recommend that the Secretary of the Army take the following four actions:

- include a description of the relationship between the IT investment management process and the department's enterprise architecture in the department's IT capital planning and investment control guide;
- document the alignment and coordination of responsibilities of its various IT investment management boards for decision making related to IT investments;
- include costs, benefits, schedule, and risk elements as well as measures such as net benefits, net risks, and risk-adjusted return-on-investment in the department's project selection criteria; and
- involve the department's IT investment management boards in controlling and evaluating IT investments, including the development and documentation of oversight processes such as those in practices 2.15, 2.16, 2.17, and 2.18.

## Commerce

To improve the department's IT strategic planning/performance measurement processes, we recommend that the Secretary of Commerce take the following four actions:

- include in the department's annual performance plan the resources and time periods required to implement the information security program plan required by FISMA;
- document its process of developing IT goals in support of agency needs, measuring progress against these goals, and assigning roles and responsibilities for achieving these goals;

- develop performance measures related to the department's IT goals in its IRM plan, and track actual-versus-expected performance for these IT performance measures; and
- develop a mechanism for benchmarking the department's IT management processes, when appropriate.

To improve the department's IT investment management processes, we recommend that the Secretary of Commerce take the following eight actions:

- document the alignment and coordination of responsibilities of the department's various IT investment management boards for decision making related to IT investments;
- establish a policy requiring that proposed IT investments support work processes that have been simplified or redesigned to reduce costs and improve effectiveness and that makes maximum use of COTS software;
- include net risks and risk-adjusted return-on-investment in the department's project selection criteria;
- establish a policy requiring modularized IT investments;
- develop decision-making rules to help guide the investment management board's oversight of IT investments during the control phase;
- require that reports of deviations in systems capability in a project be submitted to the IT investment management board;
- develop an early warning mechanism that enables the investment management board to take corrective action at the first sign of cost, schedule, or performance slippages; and
- require postimplementation reviews be completed and the results reported to its investment management board.

## Defense

To improve the department's IT strategic planning/performance measurement processes, we recommend that the Secretary of Defense take the following three actions:

- include in the department's annual performance plan the resources and time periods required to implement the information security program plan required by FISMA, align its performance measures with the goals in the plan, and include a description of major IT acquisitions contained in its capital asset plan that bear significantly on its performance goals;

- establish a documented process for measuring progress against the department's IT goals;

- develop IT performance measures related to its IT goals, including, for example, the measures contained in practice 1.9 in our report and track actual-versus-expected performance.

To improve the department's IT investment management processes, we recommend that the Secretary of Defense take the following action:

- document, as part of its planned IT portfolio management process, how this process relates to other departmental processes and the department's enterprise architecture, and document the external and environmental factors that influence the process.

## Education

To improve the department's IT strategic planning/performance measurement processes, we recommend that the Secretary of Education take the following four actions:

- include in the department's annual performance plan the resources and time periods required to implement the information security program plan required by FISMA;

- establish and document a process for measuring progress against the department's IT goals in its IRM plan and for assigning roles and responsibilities for achieving these goals;

- develop performance measures related to how IT contributes to program productivity, the effectiveness and efficiency of agency operations, and the effectiveness of controls to prevent software piracy; and

- track actual-versus-expected performance for the department's enterprisewide IT performance measures in its IRM plan.

To improve the department's IT investment management processes, we recommend that the Secretary of Education take the following five actions:

- document the alignment and coordination of responsibilities of the department's various IT investment management boards for decision making related to IT investments;
- establish a policy requiring that proposed IT investments support work processes that have been simplified or redesigned to reduce costs;
- include net risks and risk-adjusted return-on-investment in the department's project selection criteria;
- develop a process to use independent verification and validation reviews, when appropriate; and
- track the resolution of corrective actions for under-performing projects and report the results to the investment management board.

## Energy

To improve the department's IT strategic planning/performance measurement processes, we recommend that the Secretary of Energy take the following six actions:

- document how its IT management operations and decisions are integrated with human resources management;
- include in the department's annual performance plan the resources and time periods required to implement the information security program plan required by FISMA;
- develop a goal related to how IT contributes to program productivity;
- develop performance measures related to how IT contributes to program productivity and the effectiveness of controls to prevent software piracy;
- develop and link performance measures to the department's enterprisewide goals in its IRM plan and track actual-versus-expected performance for these measures; and

- develop a mechanism for benchmarking the department's IT management processes, when appropriate.

To improve the department's IT investment management processes, we recommend that the Secretary of Energy take the following four actions:

- include interfaces in its inventory of the agency's major information systems, implement a standard, documented procedure to maintain this inventory, and develop a mechanism to use the inventory as part of managerial decision making;
- prioritize the department's IT proposals;
- establish a policy requiring modularized IT investments; and
- document the role, responsibility, and authority of its IT investment management boards, including work processes, alignment, and coordination of decision making among its various boards, and document the processes for controlling and evaluating IT investments, such as those in practices 2.15, 2.16, 2.17, and 2.18.

## Environmental Protection Agency

To improve the agency's IT strategic planning/performance measurement processes, we recommend that the Administrator of the Environmental Protection Agency take the following six actions:

- document the agency's IT strategic management processes and how they are integrated with other major departmental processes, such as the budget and human resources management;
- include in the agency's annual performance plan the resources and time periods required to implement the information security program plan required by FISMA;
- develop a documented process to develop IT goals in support of agency needs, measure progress against these goals, and assign roles and responsibilities for achieving these goals;
- develop performance measures related to the effectiveness of controls to prevent software piracy;

- track actual-versus-expected performance for the agency's measures associated with the IT goals in its IRM plan; and
- develop a mechanism for benchmarking the agency's IT management processes, when appropriate.

To improve the agency's IT investment management processes, we recommend that the Administrator of the Environmental Protection Agency take the following three actions:

- include net risks, risk-adjusted return-on-investment, and qualitative criteria in the agency's project selection criteria;
- establish a policy requiring modularized IT investments; and
- fully implement an IT investment management control phase, including the elements contained in practices 2.15, 2.16, and 2.17.

## General Services Administration

To improve the agency's IT strategic planning/performance measurement processes, we recommend that the Administrator of the General Services Administration take the following four actions:

- include in the agency's annual performance plan the resources and time periods required to implement the information security program plan required by FISMA;
- develop performance measures related to the effectiveness of controls to prevent software piracy;
- track actual-versus-expected performance for each of the agency's measures associated with the IT goals in its IRM plan; and
- develop a mechanism for benchmarking the agency's IT management processes, when appropriate.

To improve the agency's IT investment management processes, we recommend that the Administrator of the General Services Administration take the following four actions:

- develop work processes and decision-making processes for the agency's investment management boards;

- establish a policy requiring modularized IT investments;
- help guide the oversight of IT investments by developing clear decision-making rules for its IT investment management board and by requiring that IT projects report on deviations in system capability; and
- track the resolution of corrective actions for under-performing projects and report the results to the investment management board.

## Health and Human Services

To improve the department's IT strategic planning/performance measurement processes, we recommend that the Secretary of Health and Human Services take the following six actions:

- document the department's IT strategic management processes and how they are integrated with its budget processes;
- include in the department's annual performance plan the resources and time periods required to implement the information security program plan required by FISMA and include a description of major IT acquisitions contained in its capital asset plan that bear significantly on its performance goals;
- establish a documented process for measuring progress against the department's IT goals;
- develop performance measures related to the effectiveness of controls to prevent software piracy;
- track actual-versus-expected performance for its enterprisewide IT performance measures in its IRM plan; and
- develop a mechanism for benchmarking the department's IT management processes, when appropriate.

To improve the department's IT investment management processes, we recommend that the Secretary of Health and Human Services take the following 10 actions:

- revise the department's IT investment management policy to include (1) how this process relates to other agency processes, (2) an identification of external and environmental factors, (3) a description of the

relationship between the process and the department's enterprise architecture, and (4) the use of independent verification and validation reviews, when appropriate.

- develop procedures for the department's enterprisewide investment management board to document and review IT investments;
- document the alignment and coordination of responsibilities of the department's various IT investment management boards for decision making related to IT investments;
- implement a standard, documented procedure to maintain the department's inventory of major information systems and develop a mechanism to use the inventory as part of managerial decision making;
- establish a policy requiring that proposed IT investments support work processes that have been simplified or redesigned to reduce costs and improve effectiveness;
- implement a structured IT selection process that includes processes and criteria such as those in practices 2.12 and 2.13;
- develop decision-making rules to help guide the investment management board's oversight of IT investments during the control phase;
- require the investment management board to review projects at major milestones;
- track the resolution of corrective actions for under-performing projects and report the results to the investment management board; and
- revise the department's investment management policy to require postimplementation reviews to address validating benefits and costs, and conduct such reviews.

## Housing and Urban Development

To improve the department's IT strategic planning/performance measurement processes, we recommend that the Secretary of Housing and Urban Development take the following six actions:

- document the roles and responsibilities of the chief financial officer and program managers in IT strategic planning and how the department's IT management operations and decisions are integrated with human resources management;

- include in the department's annual performance plan the resources and time periods required to implement the information security program plan required by FISMA;

- develop a documented process to develop IT goals in support of agency needs, measure progress against these goals, and assign roles and responsibilities for achieving these goals;

- develop performance measures related to how IT contributes to program productivity and the effectiveness of controls to prevent software piracy;

- track actual-versus-expected performance for the department's enterprisewide IT performance measures in its IRM plan; and

- develop a mechanism for benchmarking the department's IT management processes, when appropriate.

To improve the department's IT investment management processes, we recommend that the Secretary of Housing and Urban Development take the following five actions:

- establish a policy requiring that proposed IT investments support work processes that have been simplified or redesigned to reduce costs and improve effectiveness and that makes maximum use of COTS software;

- include net risks and risk-adjusted return-on-investment in the department's project selection criteria;

- establish a policy requiring modularized IT investments;

- require IT projects to report on deviations in system capability and monitor IT projects at key milestones; and

- develop a process to use independent verification and validation reviews, when appropriate.

## Interior

To improve the department's IT strategic planning/performance measurement processes, we recommend that the Secretary of the Interior take the following six actions:

- document the department's IT strategic management processes and how they are integrated with other major departmental processes, including organizational planning, budget, financial management, human resources management, and program decisions;
- include in the department's annual performance plan the resources and time periods required to implement the information security program plan required by FISMA and include a description of major IT acquisitions contained in its capital asset plan that bear significantly on its performance goals;
- develop a documented process to develop IT goals in support of agency needs, measure progress against these goals, and assign roles and responsibilities for achieving these goals;
- develop performance measures related to the effectiveness of controls to prevent software piracy;
- track actual-versus-expected performance for the department's enterprisewide IT performance measures in its IRM plan; and
- develop a mechanism for benchmarking the department's IT management processes, when appropriate.

To improve the department's IT investment management processes, we recommend that the Secretary of the Interior take the following five actions:

- establish a policy requiring that proposed IT investments support work processes that have been simplified or redesigned to reduce costs and improve effectiveness;
- include cost and schedule in the department's project selection criteria and prioritize its IT proposals;
- establish a policy requiring modularized IT investments;

- require that corrective actions be undertaken, tracked, and reported to the investment management board for under-performing projects; and
- implement an evaluation process for IT investments that addresses the elements of practice 2.18.

## Justice

To improve the department's IT strategic planning/performance measurement processes, we recommend that the Attorney General take the following six actions:

- document the department's IT strategic management processes;
- document how the department's IT management operations and decisions are integrated with human resources management processes;
- include in the department's annual performance plan the resources and time periods required to implement the information security program plan required by FISMA;
- develop a documented process to develop IT goals in support of agency needs, measure progress against these goals, and assign roles and responsibilities for achieving these goals;
- develop performance measures related to the department's IT goals in its IRM plan, and track actual-versus-expected performance for these IT performance measures; and
- develop a mechanism for benchmarking the department's IT management processes, when appropriate.

To improve the department's IT investment management processes, we recommend that the Attorney General take the following five actions:

- develop work processes and procedures for the department's investment management boards, including aligning and coordinating IT investment decision making among its various boards;
- establish a policy requiring that IT investments be in compliance with the agency's enterprise architecture;

- include net risks and risk-adjusted return-on-investment in the department's project selection criteria;
- implement a scoring model and develop a prioritized list of investments as part of the department's project selection process; and
- require that corrective actions be undertaken, tracked, and reported to the investment management board for under-performing projects.

## Labor

To improve the department's IT strategic planning/performance measurement processes, we recommend that the Secretary of Labor take the following five actions:

- include in the department's annual performance plan the resources and time periods required to implement the information security program plan required by FISMA;
- develop a documented process to develop IT goals in support of agency needs, measure progress against these goals, and assign roles and responsibilities for achieving these goals;
- develop a goal related to how IT contributes to program productivity;
- develop performance measures related to how IT contributes to program productivity, efficiency, and the effectiveness of controls to prevent software piracy, and track actual-versus-expected performance; and
- develop a mechanism for benchmarking the department's IT management processes, when appropriate.

To improve the department's IT investment management processes, we recommend that the Secretary of Labor take the following five actions:

- include a description of the relationship between the IT investment management process and the department's enterprise architecture in the department's IT capital planning and investment control guide;
- include net risks and risk-adjusted return-on-investment in its project selection criteria;

- establish a policy requiring modularized IT investments;
- develop decision-making rules to help guide the investment management board's oversight of IT investments during the control phase; and
- develop an early warning mechanism that enables the investment management board to take corrective action at the first sign of cost, schedule, or performance slippages.

## National Aeronautics and Space Administration

To improve the agency's IT strategic planning/performance measurement processes, we recommend that the Administrator of the National Aeronautics and Space Administration take the following seven actions:

- document the agency's IT strategic management processes;
- document how the agency's IT management operations and decisions are integrated with human resources management processes;
- include in the agency's annual performance plan the resources and time periods required to implement the information security program plan required by FISMA;
- develop a documented process to develop IT goals in support of agency needs, measure progress against these goals, and assign roles and responsibilities for achieving these goals;
- develop performance measures related to the effectiveness of controls to prevent software piracy;
- track actual-versus-expected performance for the agency's enterprisewide IT performance measures in its IRM plan; and
- develop a mechanism for benchmarking the agency's IT management processes, when appropriate.

To improve the agency's IT investment management processes, we recommend that the Administrator of the National Aeronautics and Space Administration take the following four actions:

- revise the agency's IT investment management policy and guidance to describe the relationship of this process to the agency's enterprise architecture;
- include interfaces in its inventory of the agency's major information systems, implement a standard, documented procedure to maintain this inventory, and develop a mechanism to use the inventory as part of managerial decision making;
- within the agency's IT investment selection process, implement a mechanism to identify possible conflicting, overlapping, strategically unlinked, or redundant proposals; implement a scoring model; and develop a prioritized list of investments; and
- document the role, responsibility, and authority of its IT investment management boards, including work processes, alignment, and coordination of decision making among its various boards, and document the processes for controlling and evaluating IT investments, such as those in practices 2.15, 2.16, 2.17, and 2.18.

## National Science Foundation

To improve the agency's IT strategic planning/performance measurement processes, we recommend that the Director of the National Science Foundation take the following five actions:

- document the agency's IT strategic management processes;
- include in the agency's annual performance plan the resources and time periods required to implement the information security program plan required by FISMA;
- implement a process for assigning roles and responsibilities for achieving its IT goals;
- develop performance measures related to the effectiveness of controls to prevent software piracy; and
- develop a mechanism for benchmarking the agency's IT management processes, when appropriate.

To improve the agency's IT investment management processes, we recommend that the Director of the National Science Foundation take the following four actions:

- develop an IT investment management guide that includes a description of the relationship between the IT investment management process and the agency's other organizational plans and processes and its enterprise architecture, and identify external and environmental factors that influence the process in the agency's IT capital planning and investment control policy;
- implement a structured IT selection process that includes the elements of practices 2.12 and 2.13;
- involve the department's IT investment management board in controlling and evaluating IT investments, including the development and documentation of oversight processes such as those in practices 2.15, 2.16, 2.17, and 2.18; and
- define and document the elements of the agency's postimplementation reviews.

## Navy

To improve the department's IT strategic planning/performance measurement processes, we recommend that the Secretary of the Navy take the following three actions:

- develop a documented process to measure progress against the department's enterprisewide IT goals and assign roles and responsibilities for achieving these goals;
- develop an IT goal related to service delivery to the public; and
- develop IT performance measures related to the department's IT goals, including, at a minimum, measures contained in practice 1.9 in our report, and track actual-versus-expected performance.

To improve the department's IT investment management processes, we recommend that the Secretary of the Navy take the following four actions:

- include net risks and risk-adjusted return-on-investment in the department's project selection criteria;

- implement a structured IT selection process that includes the elements of practice 2.13;
- involve all elements of the department's IT investment management board governance process in selecting, controlling, and evaluating IT investments; and
- document the role, responsibility, and authority of its IT investment management boards, including work processes, alignment, and coordination of decision making among its various boards, and document the processes for controlling and evaluating IT investments, such as those outlined in practices 2.15, 2.16, 2.17, and 2.18.

## Nuclear Regulatory Commission

To improve the agency's IT strategic planning/performance measurement processes, we recommend that the Commissioner of the Nuclear Regulatory Commission take the following five actions:

- document the agency's roles and responsibilities for its IT strategic management processes and how IT planning is integrated with its budget and human resources planning;
- include in the department's annual performance plan the resources and time periods required to implement the information security program plan required by FISMA;
- develop a documented process to assign roles and responsibilities for achieving its enterprisewide IT goals;
- develop performance measures related to the effectiveness of controls to prevent software piracy; and
- develop performance measures for the agency's enterprisewide goals in its IRM plan, and track actual-versus-expected performance for these measures.

To improve the agency's IT investment management processes, we recommend that the Commissioner of the Nuclear Regulatory Commission take the following five actions:

- include a description of the relationship between the IT investment management process and the department's other organizational plans

and processes and its enterprise architecture, and identify external and environmental factors that influence the process in the agency's IT capital planning and investment control policy;

- develop work processes and procedures for the agency's investment management boards;
- implement a standard, documented procedure to maintain its IT asset inventory, and develop a mechanism to use the inventory as part of managerial decision making;
- develop a structured IT investment management selection process that includes project selection criteria, a scoring model, and prioritization of proposed investments; and
- document the role, responsibility, and authority of its IT investment management boards, including work processes and control, and evaluate processes that address the oversight of IT investments, such as what is outlined in practices 2.15, 2.16, 2.17, and 2.18.

## Office of Personnel Management

To improve the agency's IT strategic planning/performance measurement processes, we recommend that the Director of the Office of Personnel Management take the following four actions:

- include in the agency's annual performance plan the resources and time periods required to implement the information security program plan required by FISMA;
- develop performance measures related to the effectiveness of controls to prevent software piracy;
- track actual-versus-expected performance for the agency's enterprisewide IT performance measures in its IRM plan; and
- develop a mechanism for benchmarking the agency's IT management processes, when appropriate.

To improve the agency's IT investment management processes, we recommend that the Director of the Office of Personnel Management take the following four actions:

- develop work processes and procedures for the agency's investment management board, including establishing criteria for defining major systems and documenting a process for handling cross-functional investments;
- implement a policy requiring that proposed IT investments support work processes that have been simplified or redesigned to reduce costs and improve effectiveness and that makes maximum use of COTS software;
- establish a policy requiring modularized IT investments; and
- require that corrective actions be undertaken, tracked, and reported to the investment management board for under-performing projects.

## Small Business Administration

To improve the agency's IT strategic planning/performance measurement processes, we recommend that the Administrator of the Small Business Administration take the following five actions:

- document the agency's IT strategic management processes;
- include in the agency's annual performance plan the resources and time periods required to implement the information security program plan required by FISMA;
- develop a documented process to develop IT goals in support of agency needs, measure progress against these goals, and assign roles and responsibilities for achieving these goals;
- develop performance measures related to the agency's IT goals in its IRM plan, including, at a minimum, measures related to how IT contributes to program productivity, efficiency, effectiveness, the overall performance of its IT programs, and the effectiveness of controls to prevent software piracy, and track actual-versus-expected performance for these IT performance measures; and
- develop a mechanism for benchmarking the agency's IT management processes, when appropriate.

To improve the agency's IT investment management processes, we recommend that the Administrator of the Small Business Administration take the following two actions:

- document a process that the investment management board can invoke final decision-making authority over IT investments addressed by lower-level boards; and
- implement a policy requiring that proposed IT investments support work processes that have been simplified or redesigned to reduce costs.

## Social Security Administration

To improve the agency's IT strategic planning/performance measurement processes, we recommend that the Commissioner of the Social Security Administration take the following three actions:

- include in its annual performance plan the resources and time periods required to implement the information security program plan required by FISMA;
- develop performance measures related to the performance of the agency's IT programs and the effectiveness of controls to prevent software piracy; and
- develop a mechanism for benchmarking the agency's IT management processes, when appropriate.

To improve the agency's IT investment management processes, we recommend that the Commissioner of the Social Security Administration take the following four actions:

- develop work processes and procedures for the agency's investment management board;
- establish a policy requiring modularized IT investments;
- document the role, responsibility, and authority of its IT investment management board for the oversight of IT investments, such as what is outlined in practices 2.15, 2.16, and 2.18; and
- require that corrective actions be tracked and reported to the investment management board for under-performing projects.

## State

To improve the department's IT strategic planning/performance measurement processes, we recommend that the Secretary of State take the following two actions:

- include in the department's annual performance plan the resources and time periods required to implement the information security program plan required by FISMA; and
- develop a mechanism for benchmarking the department's IT management processes, when appropriate.

To improve the department's IT investment management processes, we recommend that the Secretary of State take the following five actions:

- implement a policy requiring that proposed IT investments support work processes that have been simplified or redesigned to reduce costs and improve effectiveness and that makes maximum use of COTS software;
- establish a policy requiring modularized IT investments;
- include risk-adjusted return-on-investment in the department's project selection criteria;
- revise the department's draft IT investment management policy to include reviewing projects at major milestones; and
- fully implement an IT investment management control phase, including the elements contained in practices 2.16 and 2.17.

## Transportation

To improve the department's IT strategic planning/performance measurement processes, we recommend that the Secretary of Transportation take the following five actions:

- document its IT strategic planning process;
- include in the department's annual performance plan the resources and time periods required to implement the information security program plan required by FISMA;

- develop a goal related to how IT contributes to program productivity;
- develop performance measures related to the department's IT goals in its IRM plan, and track actual-versus-expected performance for these IT performance measures; and
- develop a mechanism for benchmarking the department's IT management processes, when appropriate.

To improve the department's IT investment management processes, we recommend that the Secretary of Transportation take the following six actions:

- document the alignment and coordination of responsibilities of the department's various IT investment management boards for decision making related to IT investments;
- implement a policy requiring that proposed IT investments support work processes that have been simplified or redesigned to reduce costs and improve effectiveness and that makes maximum use of COTS software;
- prioritize the department's IT proposals;
- establish a policy requiring modularized IT investments;
- develop and document decision-making rules to help guide the investment management board's oversight of IT investments during the control phase; and
- as part of the department's control phase, employ an early warning mechanism, and use independent verification and validation reviews, when appropriate.

## Treasury

To improve the department's IT strategic planning/performance measurement processes, we recommend that the Secretary of the Treasury take the following four actions:

- include in the department's annual performance plan the resources and time periods required to implement the information security program plan required by FISMA;

- develop performance measures related to the effectiveness of controls to prevent software piracy;

- develop performance measures related to the department's IT goals in its IRM plan, and track actual-versus-expected performance for these IT performance measures; and

- develop a mechanism for benchmarking the department's IT management processes, when appropriate.

To improve the department's IT investment management processes, we recommend that the Secretary of the Treasury take the following eight actions:

- develop a capital planning and investment control guide that includes, for example, the elements of practice 2.1;

- develop work processes and procedures for the agency's IT investment management board, and document the alignment and coordination of responsibilities of its various boards for decision making related to investments, including the criteria for which investments—including cross-cutting investments—will be reviewed by the enterprisewide board;

- use the department's IT asset inventory as part of managerial decision making, including using it to identify the potential for asset duplication;

- establish a policy requiring that proposed IT investments support work processes that have been simplified or redesigned to reduce costs and improve effectiveness and that makes maximum use of COTS software;

- implement a structured IT selection process that includes the elements of practices 2.12 and 2.13;

- establish a policy requiring modularized IT investments;

- implement an IT investment management process that includes a control phase that addresses, for example, the elements of practices 2.15, 2.16, and 2.17; and

- implement an IT investment management process that includes an evaluation phase that addresses, for example, the elements of practice 2.18.

## U.S. Agency for International Development

To improve the agency's IT strategic planning/performance measurement processes, we recommend that the Administrator of the U.S. Agency for International Development take the following two actions:

- include in the agency's annual performance plan the resources and time periods required to implement the information security program plan required by FISMA; and
- develop a mechanism for benchmarking the agency's IT management processes, when appropriate.

To improve the agency's IT investment management processes, we recommend that the Administrator of the U.S. Agency for International Development take the following nine actions:

- develop work processes and procedures for the agency's IT investment management board;
- establish a policy requiring that IT investments be in compliance with the agency's enterprise architecture;
- develop a policy requiring that proposed IT investments support work processes that have been simplified or redesigned to reduce costs and improve effectiveness and that makes maximum use of COTS software;
- include net risks, risk-adjusted return-on-investment, and qualitative criteria in the agency's project selection criteria;
- within the agency's IT investment selection process, implement a mechanism to identify possible conflicting, overlapping, strategically unlinked, or redundant proposals;
- develop a policy requiring modularized IT investments;
- develop decision-making rules, review projects at major milestones, and require projects to report on deviations in system capability to help

guide the oversight of IT investments by the agency's investment management board during the control phase;

- as part of the agency's control phase, employ an early warning mechanism, and use independent verification and validation reviews, when appropriate; and
- require that corrective actions be undertaken, tracked, and reported to the investment management board for under-performing projects.

## Veterans Affairs

To improve the department's IT strategic planning/performance measurement processes, we recommend that the Secretary of Veterans Affairs take the following four actions:

- include in the department's annual performance plan the resources required to implement the information security program plan required by FISMA;
- develop a documented process to measure progress against the department's IT goals, and assign roles and responsibilities for achieving these goals;
- develop performance measures related to the effectiveness of controls to prevent software piracy; and
- track actual-versus-expected performance for the department's enterprisewide IT performance measures in its IRM plan.

To improve the department's IT investment management processes, we recommend that the Secretary of Veterans Affairs take the following two actions:

- document the alignment and coordination of responsibilities of the department's various IT investment management boards for decision making related to IT investments, including cross-cutting investments; and
- within the agency's IT investment selection process, implement a mechanism to identify possible conflicting, overlapping, strategically unlinked, or redundant proposals, and prioritize its IT investments.

# Comments from the Department of Agriculture

United States Department of Agriculture

Office of the Chief Information Officer

1400 Independence Avenue SW

Washington, DC 20250

DEC 3 2003

David A. Powner, Director
Information Technology Management Issues
General Accounting Office

Dear Mr. Powner:

The United States Department of Agriculture (USDA) has reviewed draft report number GAO-04-49 entitled "Information Technology Management – Government-wide Strategic Planning, Performance Measurement, and Investment Management Can Be Further Improved" and is in agreement with the findings. USDA is fully committed to meeting the Federal information technology challenges that are outlined in the report.

USDA is currently taking steps to implement the recommendations made in the report. For example, we are in the process of updating our Capital Planning and Investment Control guidance to reflect the improvements suggested by the GAO. Additional measures are being put in place to 1) improve the Department's IT strategic management/performance measurement processes; and 2) improve the Department's information technology (IT) investment management processes. We currently estimate that the six strategic management/performance measurement recommendations will be fully implemented by the end of fiscal year 2005 and the four investment management recommendations will be fully implemented by the end of fiscal year 2004.

Thank you for the opportunity to review and provide feedback on the draft report. If additional information is needed, please contact Dr. Gregory Parham of my staff on (202) 720-5865.

Sincerely,

for Scott Charbo
Chief Information Officer

AN EQUAL OPPORTUNITY EMPLOYER

# Comments from the Department of Commerce

**THE SECRETARY OF COMMERCE**
Washington, D.C. 20230

December 11, 2003

Mr. David A. Powner
Director, Information Technology Management Issues
United States General Accounting Office
Washington, DC 20548

Dear Mr. Powner:

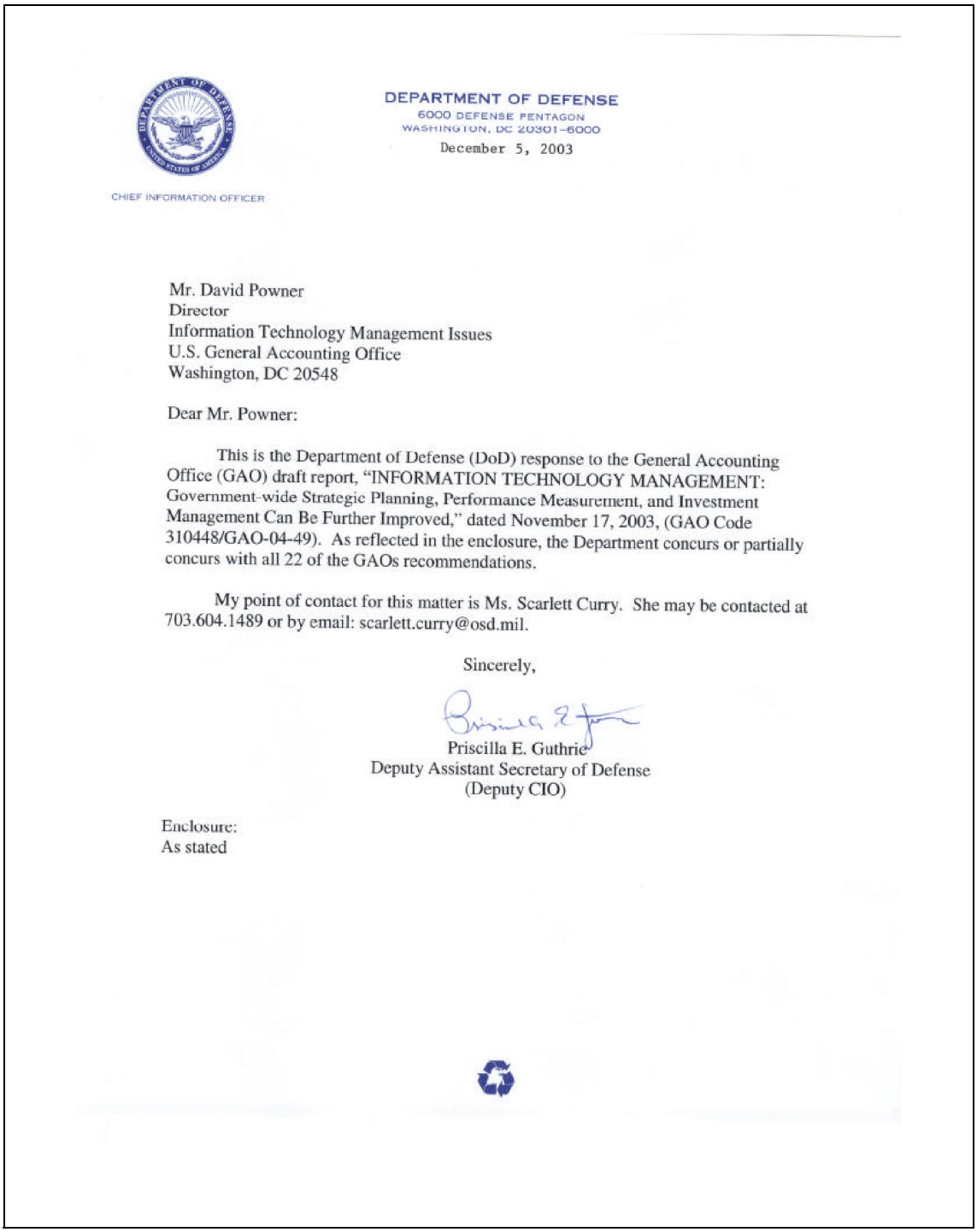
Thank you for the opportunity to comment on the GAO draft report "Information Technology Management: Governmentwide Strategic Planning, Performance Measurement, and Investment Management Can Be Further Improved." We appreciate the thoroughness of your review and believe that our information technology strategic planning and capital investment processes will benefit from your insights. We concur with the report's recommendations, and are updating the documentation for our relevant policies and procedures.

Sincerely,

Donald L. Evans

# Comments from the Department of Defense (including comments from the Departments of the Air Force, Army, and Navy)

Note: GAO comments supplementing those in the report text appear at the end of this appendix.



DEPARTMENT OF DEFENSE
6000 DEFENSE PENTAGON
WASHINGTON, DC 20301-6000

December 5, 2003

CHIEF INFORMATION OFFICER

Mr. David Powner
Director
Information Technology Management Issues
U.S. General Accounting Office
Washington, DC 20548

Dear Mr. Powner:

This is the Department of Defense (DoD) response to the General Accounting Office (GAO) draft report, "INFORMATION TECHNOLOGY MANAGEMENT: Government-wide Strategic Planning, Performance Measurement, and Investment Management Can Be Further Improved," dated November 17, 2003, (GAO Code 310448/GAO-04-49). As reflected in the enclosure, the Department concurs or partially concurs with all 22 of the GAOs recommendations.

My point of contact for this matter is Ms. Scarlett Curry. She may be contacted at 703.604.1489 or by email: scarlett.curry@osd.mil.

Sincerely,

Priscilla E. Guthrie
Deputy Assistant Secretary of Defense
(Deputy CIO)

Enclosure:
As stated

See comment 1.

GAO DRAFT REPORT DATED NOVEMBER 17, 2003
GAO-04-49 (GAO CODE 310448)

"INFORMATION TECHNOLOGY MANAGEMENT: Government - Wide Strategic Planning, Performance Measurement, and Investment Management Can Be Further Improved"

DEPARTMENT OF DEFENSE COMMENTS
TO THE GAO RECOMMENDATIONS

RECOMMENDATION 1: The GAO recommended that the Secretary of Defense, include in the department's annual performance plan, the resources and time periods required to implement the information security program plan required by FISMA and align its performance measures with the goals in the plan. (p. 62/GAO Draft Report)

DOD RESPONSE: Partially concur. FISMA requires that each agency include, as part of the performance plan, a description of the time periods and the resources that are necessary to implement the Agency's program. Although not included in the Department's performance plan (i.e., the Secretary's Annual Defense Report), DoD recently issued its FY 2003 FISMA Report that also responds to the E-Government Act as directed by the Office of Management and Budget (OMB) Memorandum M-03-19, "Reporting Instructions for the Federal Information Security Management Act and Updated Guidance on Quarterly IT Security Reporting." In an effort to confirm that DoD's approach would comply with FISMA legislation and meet OMB's direction, DoD briefed its planned FY 2003 FISMA reporting strategy to OMB in January 2003. Based on OMB's concurrence with the proposed DoD approach, DoD began data collection for system and network metrics. The resulting Report that is being provided to GAO under separate cover addresses, among other things: (a) DoD's total FY 2003 IT security spending, and (b) the process and metrics used to certify and accredit systems.

RECOMMENDATION 2: The GAO recommended that the Secretary of Defense establish a documented process for measuring progress against the department's IT goals. (p. 62/GAO Draft Report)

DOD RESPONSE: Concur. The Department has established a DoD Balanced Scorecard that includes IT goals and metrics, and has put in place a documented process internal to the Department for measuring progress against the Department's IT goals. The process, Performance Metric Data Validation and Verification, systematically identifies measures and data for tracking progress. The process is in the early stages of operation, and different IT metrics are at different stages of development, maturity, and reporting.

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Reporting of metrics is being incorporated into the IT Portfolio Management process now under development.

RECOMMENDATION 3: The GAO recommended that the Secretary of Defense develop IT performance measures related to its IT goals. (p. 62/GAO Draft Report)

DOD RESPONSE: Concur. The Department is identifying IT performance metrics and supporting measures related to its IT goals as part of the DoD Balanced Scorecard initiative (see response to Recommendation 2 above).

RECOMMENDATION 4: The GAO recommended that the Secretary of Defense document how the planned IT portfolio management process relates to other departmental processes and the department's enterprise architecture and the external and environmental factors that influence the process. (p. 62/GAO Draft Report)

DOD RESPONSE: Concur. By the 1st Quarter of FY 2004[1], the Department expects to issue a policy, "IT Portfolio Management," that addresses the role of the Global Information Grid Integrated Architecture in making IT investment decisions. Among other things, the draft policy specifies that architectures should be developed, maintained and applied to gain a better understanding of the capability gaps between the current and future environments (warfighting and business). It further conveys that it is the DoD policy to leverage each of the Department's principal decision support systems (i.e., the Joint Capabilities Integration and Development System (JCIDS); the Planning, Programming, Budgeting and Execution process; and the Defense Acquisition Systems). By the 3rd Quarter of FY 2004, the Department plans to issue a companion instruction that provides detailed procedures for implementing the above policies.

RECOMMENDATION 5: The GAO recommended that the Secretary of the Army complete the development of IT performance measures related to the Army's enterprise-wide IT goals, including measures such as those in practice 1.9 in our report and track actual-versus-expected performance. (p. 60/GAO Draft Report)

DOD RESPONSE: Concur. The Army is in the process of re-focusing performance measures to address enterprise-wide goals and current strategy, and projects collection of performance data and the use of this data to strategically manage by the 1st Quarter of CY 2005.

RECOMMENDATION 6: The GAO recommended that the Secretary of the Army include a description of the relationship between the IT investment management process

[1] Unless otherwise specified in this document, use of the word "Quarter" means by the end of the Quarter.

and the department's enterprise architecture in the department's IT capital planning and investment control guide. (p. 60/GAO Draft Report)

DOD RESPONSE: Concur. The Army Chief Information Officer (CIO) recognizes that the enterprise architecture is absolutely key to the logical and most effective investment of performance-based IT resources. The relationship between the IT investment management process and enterprise architecture is cyclical in nature. Both feed each other. At the macro level of detail, the enterprise architecture influences the IT investment strategy for current and subsequent fiscal years by impacting acquisition decisions. At the micro level of detail, the investment process provides funding for the architecture development work. Furthermore, with the new JCIDS process and the revised DoD Acquisition 5000 framework, architectures are now required within the acquisition framework and must support joint capabilities. The analysis of enterprise architecture will provide insight into whether a proposed architecture supports and maps to Army and Joint capabilities and concepts. The compilation and analysis of the proposed "to be" and the current "as is" is used to determine if the goals, objectives and capabilities of the Army and Joint services are being supported. Architecture further influences the IT investment strategy by identifying gaps and redundancies in capabilities. The gaps and redundancies identify programs, efforts and initiatives, which in turn need to be funded or cut. The relationship of the enterprise architecture to Army IT capital planning and investment management (CPIM) is key to the updated CPIM process scheduled for implementation by the 1st Quarter of CY 2005.

RECOMMENDATION 7: The GAO recommended that the Secretary of the Army document the alignment and coordination of responsibilities of its various IT investment management boards for decision making related to IT investments. (p. 60/GAO Draft Report)

DOD RESPONSE: Partially concur. The Army CIO has conducted and documented a Command, Control, Communications and Computers/IT investment strategy process for several Program Objective Memorandum cycles. Documentation supporting this fact was shared with the GAO review team in the form of a CIO executive board charter linking stakeholders across the Army including an example of enterprise-wide investment strategy guidance for the Army Title X program areas. Reference to this process is further made and institutionalized in the Army's capstone regulation AR 25-1/Army Information Management. The Army CIO will continue to maintain and clarify appropriate linkages as part of the governance for the IT CPIM process currently under development for implementation by the 1st Quarter of CY 2005.

RECOMMENDATION 8: The GAO recommended that the Secretary of the Army include costs, benefits, schedule, and risk elements as well as measures such as net

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benefits, net risks, and risk-adjusted return-on-investment in the department's project selection criteria. (p. 60/GAO Draft Report)

DOD RESPONSE: Concur. The Army CIO is establishing a new process that will complement the current IT portfolio investment management strategy. By the 1st Quarter of CY 2005, the Army's IT CPIM process will be designed to look across the Army's planned IT-related expenditures. Each planned IT-related expenditure will be analyzed to ensure alignment with the Army strategy, addressing a capability to reduce either an operational or institutional risk, and to provide the best possible results for programmed dollars. This prioritization of IT related expenditures, across functional areas, will ensure that Army IT expenditures are aligned with joint/DoD guidance to best support the Army's transformation strategy, as part of the Joint Team. Progress in this area will be measured using the Army's Strategic Readiness System with measures that are currently being developed.

RECOMMENDATION 9: The GAO recommended that the Secretary of the Army involve the department's IT investment management boards' in controlling and evaluating IT investments, including the development and documentation of oversight processes such as those in practices 2.15, 2.16, 2.17, and 2.18. (p. 60/GAO Draft Report)

DOD RESPONSE: Partially concur. The overarching Army CIO Executive Board is informed of IT investment control and management practices conducted by IT program and acquisition managers. Required oversight and management practices are contained in DoD and Army acquisition regulations that were either referenced or provided to the GAO review team during the audit process. The Army CIO continues to mature the IT practices referenced in the GAO recommendation as part of the IT CPIM process to be implemented by the 1st Quarter of CY 2005.

RECOMMENDATION 10: The GAO recommended that the Secretary of the Air Force establish a documented process for measuring progress against the department's IT goals and assign roles and responsibilities for achieving these goals. (p. 59/GAO Draft Report)

DOD RESPONSE: Concur. As referenced on page 26 of the report, the Air Force is already pursuing and expects to have guidance by the 4th Quarter of FY 2004.

RECOMMENDATION 11: The GAO recommended that the Secretary of the Air Force develop IT performance measures related to the IT goals in the department's information strategy. (p. 59/GAO Draft Report)

DOD RESPONSE: Concur. As referenced on page 26 of the report, the Air Force is already pursuing and expects to have guidance by the 4th Quarter of FY 2004.

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RECOMMENDATION 12: The GAO recommended that the Secretary of the Air Force include a description of the relationship between the IT investment management process and the department's enterprise architecture and an identification of external and environmental factors in its portfolio management guide. (p. 59/GAO Draft Report)

DOD RESPONSE: Concur. As referenced throughout the report, the Air Force has been coordinating an Air Force Information Technology Portfolio Management Guide. The Air Force will update the guide to address this recommendation and expects to have the guide by the 4th Quarter of FY 2004.

RECOMMENDATION 13: The GAO recommended that the Secretary of the Air Force include costs, benefits, schedule, and risk elements as well as measures such as net benefits, net risks, and risk-adjusted return-on-investment in the department's project selection criteria. (p. 59/GAO Draft Report)

DOD RESPONSE: Concur. As referenced throughout the report, the Air Force has been coordinating an Air Force Information Technology Portfolio Management Guide. The Air Force will update the guide to address this recommendation and expects to have the guide by the 4th Quarter of FY 2004.

RECOMMENDATION 14: The GAO recommended that the Secretary of the Air Force implement a scoring model and develop a prioritized list of IT investments as part of its project selection process. (p. 59/GAO Draft Report)

DOD RESPONSE: Concur. As referenced throughout the report, the Air Force has been coordinating an Air Force Information Technology Portfolio Management Guide. The Air Force will update the guide to address this recommendation and expects to have the guide by the 4th Quarter of FY 2004.

RECOMMENDATION 15: The GAO recommended that the Secretary of the Air Force document the role, responsibility, and authority of its IT investment management boards, including the work processes, alignment and coordination of decision making among its various boards, and processes for controlling and evaluating IT investments, such as those in practices 2.15, 2.16, 2.17, and 2.18. (p. 59/GAO Draft Report)

DOD RESPONSE: Concur. As referenced throughout the report, the Air Force has been coordinating an Air Force Information Technology Portfolio Management Guide. The Air Force will update the guide to address this recommendation and expects to have the guide by the 4th Quarter of FY 2004.

RECOMMENDATION 16: The GAO recommended that the Secretary of the Navy develop a documented process to measure progress against the department's enterprise-

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wide IT goals and assign roles and responsibilities for achieving these goals. (p. 75/GAO Draft Report)

DOD RESPONSE: Partially concur. In the newly released Department of the Navy (DON) Information Management/Information Technology (IM/IT) Strategic Plan, FY 2004-2005, the requirement to develop and track performance measures for our IM/IT goals and objectives is clearly defined. We will have this process implemented by the 4th Quarter of FY 2004.

RECOMMENDATION 17: The GAO recommended that the Secretary of the Navy develop an IT goal related to service delivery to the public. (p.75/GAO Draft Report)

See comment 2.

DOD RESPONSE: Partially concur. We agree with the recommendation, and Objective 5.5 of our newly released DON IM/IT Strategic Plan addresses the issue.

RECOMMENDATION 18: The GAO recommended that the Secretary of the Navy develop IT performance measures related to its IT goals. (p. 75/GAO Draft Report)

DOD RESPONSE: Partially concur. In the newly released DON IM/IT Strategic Plan, the requirement to develop and track performance measures for our IM/IT goals and objectives is clearly defined. We will have this process implemented by the 4th Quarter of FY 2004.

RECOMMENDATION 19: The GAO recommended that the Secretary of the Navy include net risks and risk-adjusted return-on-investment in the department's project selection criteria. (p. 75/GAO Draft Report)

See comment 3.

DOD RESPONSE: Partially concur. We believe that this requirement is already fulfilled in the Department's existing acquisition management process.

RECOMMENDATION 20: The GAO recommended that the Secretary of the Navy implement a structured IT selection process that includes the elements of practice 2.13. (p. 75/GAO Draft Report)

DOD RESPONSE: Concur. The DON is developing a Department-wide capital planning and investment management process for IM/IT. The planning for this process will be completed in the 2nd Quarter of FY 2004. We plan to implement the new process by the 2nd Quarter of FY 2005.

RECOMMENDATION 21: The GAO recommended that the Secretary of the Navy involve all elements of the department's IT investment management board governance

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process in selecting, controlling, and evaluating IT investments. (p. 75/GAO Draft Report)

DOD RESPONSE: Concur. The DON is developing a Department-wide capital planning and investment management process for IM/IT. The planning for this process will be completed in 2nd Quarter of FY 2004. We plan to implement the new process by the 2nd Quarter of FY 2005.

RECOMMENDATION 22: The GAO recommended that the Secretary of the Navy document the role, responsibility, and authority of its IT investment management boards, including the work processes, alignment and coordination of decision making among its various boards, and processes for controlling and evaluating IT investments, such as those in practices 2.15, 2.16, 2.17, and 2.18. (p. 75/GAO Draft Report)

DOD RESPONSE: Concur. The DON is developing a Department-wide capital planning and investment management process for IM/IT. The planning for this process will be completed in the 2nd Quarter of FY 04. We plan to implement the new process by the 2nd Quarter of FY 2005.

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The following are GAO's comments on the Department of Defense's (DOD) letter dated December 5, 2003.

## GAO Comments

1. DOD provided its annual report to the President and the Congress, which included its fiscal year 2004 performance plan. Based on a review of this plan, we modified our report.

2. We disagree that the cited objective fully addresses this issue. Specifically, although this objective addresses e-government, the wording of the objective, its description, and the discussion of related initiatives do not explicitly address service delivery to the public. Accordingly, we did not modify our report.

3. Our review of the acquisition management process documentation provided by the Navy did not support that the department's selection criteria include net risks and risk-adjusted return-on-investment. Accordingly, we did not modify our report.

# Comments from the Department of Education

Note: GAO comments supplementing those in the report text appear at the end of this appendix.

UNITED STATES DEPARTMENT OF EDUCATION

OFFICE OF MANAGEMENT

ASSISTANT SECRETARY

December 10, 2003

To: David A. Powner
Director, Information Technology Management Issues

From: William Leidinger
Assistant Secretary for Management and Chief Information Officer

Re: Draft Report: Information Technology Management
Government Strategic Planning, Performance Measurement, and Investment Management Can Be Further Improved

We thank you for the opportunity to review the Information Technology Management Report. In general, we agree with your assessment of our implementation of the various strategic planning and performance measurement practices as well as our investment management practices.

We have taken the position that IRM planning is subsumed in the Department's Strategic and Annual Plans (Goal 6.3), and occurs in the development and maintenance of the enterprise architecture. Our architecture is business driven and our IT investments are aligned with the architecture. We believe this approach meets the intent of both the Paperwork Reduction Act and the Clinger-Cohen Act.

See comment 1.

You specifically recommended that we develop measures related to how IT contributes to program productivity and the effectiveness and efficiency of agency operations. Currently, we require all of our major and significant IT investments to collect and track against business process performance measures, IT performance measures, and customer-based performance measures. We assess progress that is reviewed by the Department's senior management quarterly. We believe that this approach satisfies the requirement that we develop the measure you stipulate.

See comment 2.

Finally, specifically regarding IT Management practices 2.5 and 2.6 on pages 46 and 47, the Department does have a repeatable process for developing and maintaining an inventory of its major information systems. The Department has documented this procedure in Handbook OCIO-09, *Handbook for Information Technology Security General Support Systems and Major Applications Inventory Procedures*. This process is formally completed twice a year and includes documented Critical Infrastructure Protection questionnaires and Systems Inventory forms to support the contents of the Department's IT systems inventory.

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The following are GAO's comments on the Department of Education's letter dated December 10, 2003.

## GAO Comments

1. We agree that Education requires IT investments to have performance measures. However, our practice dealt with enterprise-level measures, such as those found in the department's IRM plan, not project-specific measures. Education reported that the performance measures in its IRM plan do not measure how IT contributes to program productivity and the efficiency and effectiveness of agency operations. Accordingly, we did not modify our report.

2. We modified our assessment of practice 2.6 in this report and deleted the related recommendation based on our evaluation of additional documentation provided by Education.

# Comments from the Environmental Protection Agency

Note: GAO comments supplementing those in the report text appear at the end of this appendix.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

DEC 9 2003

OFFICE OF
ENVIRONMENTAL INFORMATION

Mr. David Powner
Director, Information Technology Management Issues
U.S. General Accounting Office
441 G Street, NW
Washington, D.C. 20548

Dear Mr. Powner:

Thank you for the opportunity to respond to the U.S. General Accounting Office (GAO) draft Report to Congressional Requesters "Information Technology Management: Government-wide Strategic Planning, Performance Measurement, and Investment Management Can be Further Improved" (GAO-04-49). The U.S. Environmental Protection Agency (EPA) is pleased to note that the reviewers acknowledge that the Agency has established and employs best-practices for IT management for the majority of key dimensions of the report. We accept the reviewers' findings and recommendations that in some cases the Agency does need to complete work currently underway to formalize the documentation of those practices. We expect to promulgate a final version of new Agency-wide official procedures in the near future.

At the same time, EPA believes that the report does not adequately reflect both key dimensions of EPA's IT management and strategic planning, and current best-practices in general. The draft report includes reference to the importance of enterprise architectures ("*Constructing and enforcing sound enterprise architectures,*" p. 13). However, the sections regarding IRM strategic planning do not reflect how EPA's Enterprise Architecture (EA) constitutes the multi year, business driven, enterprise-wide comprehensive IRM strategic plan. The EA should, and for EPA does, derive first from strategic, line of business, performance and outcome-based needs. Those needs tie to the comprehensive range of IT assets (applications, data, services, hardware, software, security) from a strategic perspective (the multi year target), leading to the business-based priorities to move toward those goals (baseline and sequencing plans).

See comment 1.

As Chief Information Officer, I govern EPA's EA and the IT Capital Planning and Investment Control (CPIC) process to implement the architecture. This occurs through a formal integrated process in partnership with Agency senior executives, including the Chief Financial Officer. EPA requests that the reviewers reassess this dimension of their findings to acknowledge how EPA fulfills strategic planning mandates via our implementation of enterprise architecture and IT investment management practices. This also affects the recommendations regarding tracking actual-versus-expected performance as well as including net risks in project selection criteria and modularized IT investments which are all part of our EA and CPIC practice.

See comment 2.

In addition, for Practice 1.7 ("The agency has a documented process to: develop IT goals in support of agency needs, measure progress against these goals, and assign roles and responsibilities for achieving these goals," p. 32) the reviewers state EPA "does not have this practice in place." As noted above, EPA has a very rigorous process to accomplish this through the integration of our EA and CPIC processes. The finding should be corrected to include EPA in the "partially" category to acknowledge we do have the practice in place and are working on documentation.

Again, thank you for the opportunity to respond to this important report. EPA is proud of the successful implementation of many of the best practices in IT investment and infrastructure. If you have any questions relating to this information, please contact Steve Tiber, EPA-GAO Liaison, at 202-564-5184.

Sincerely,

Kimberly T. Nelson
Assistant Administrator and
Chief Information Officer

cc: Ramona Trovato
Michael W.S. Ryan
Mark Day
Maggie Mitchell

The following are GAO's comments on the Environmental Protection Agency's (EPA) letter dated December 9, 2003.

## GAO Comments

1. As we reported and EPA acknowledged, its documentation on IT strategic planning and investment management was not complete or finalized. For example, the partial rating we gave EPA for its IT management and strategic planning practices—practices 1.1 and 1.2—matched the agency's own self-assessment in these areas. Specifically, our review of planning documents cited by EPA in its self-assessment found that while the agency had documented agencywide roles and responsibilities for planning and managing IT resources and had documented its process to integrate the IT investment management process with the budget, EPA had not addressed other key elements of the practices. As an example, EPA had not fully documented the method by which it defines program information needs and develops strategies, systems, and capabilities to meet those needs. Since EPA provided no additional documentation, our practice assessment and our related recommendations remain unchanged.

2. As stated in our report, practice 1.7 refers to the *documentation* of the process used to develop IT goals and measures and the responsibility for achieving them. As EPA states in its comments, it is currently working on documenting this process. Accordingly, we did not modify our report.

# Comments from the General Services Administration

Note: GAO comments supplementing those in the report text appear at the end of this appendix.

GSA

GSA Office of the Chief Information Officer

December 9, 2003

The Honorable David M. Walker
Comptroller General
of the United States
General Accounting Office
Washington, DC 20548

Dear Mr. Walker:

This is to provide comments on the General Accounting Office (GAO) findings and recommendations included in the Governmentwide Strategic Planning, Performance Measurement, and Investment Management Practices draft report. We generally agree with the findings and recommendations and are pleased that General Services Administration (GSA) was identified as fully meeting 21 of the 29 practice areas included in the report. There were eight (8) areas identified as GSA partially meeting and one (1) as GSA not meeting. We are concentrating our comments on the areas identified as partially or not meeting where we feel additional information or clarification needs to be provided to GAO.

We appreciate the opportunity to review the draft report. Should you require additional information, please contact Ms. L. Diane Savoy, Director, Office of Policy and Plans, at (202) 501-3535.

Sincerely,

Michael W. Carleton
Chief Information Officer

Enclosures

U.S. General Services Administration
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**GAO GOVERNMENTWIDE STRATEGIC PLANNING, PERFORMANCE MEASUREMENT, AND INVESTMENT MANAGEMENT REVIEW**

**Table 1: IT Strategic Planning/Performance Measurement Practices**

*Practice 1.4: The agency has a process that involves the CFO or comparable official, to develop and maintain a full and accurate accounting of IT-related expenditures, expenses, and results.*

*GAO Assessment: Partially - GSA has reported that not all costs may have been captured.*

GSA OCIO Response:

See comment 1.

To the best of our knowledge, all IT costs are captured in the GSA IT Capital Plan and submitted with the agency budget annually. We have been and continue to be very diligent about ensuring that all IT investments, agency-wide, are identified and captured in our IT Capital Plan.

*Practice 1.5: The agency prepares an enterprisewide strategic information resources management (IRM) plan that, at a minimum:*

- *describes how IT activities will be used to help accomplish agency missions and operations, including related resources;*
- *identifies major IT acquisition program(s) or any phase or increment of that program that has significantly deviated from the cost, performance, or schedule goals established for the program.*

*GAO Assessment: Partially – GSA . . . IRM plan(s) do not include resources and major IT acquisition programs that deviated from cost, schedule, or performance goals.*

GSA OCIO Response

See comment 2.

The GSA IT Strategic Plan is a strategic document that sets the direction and focus of the GSA's IT program over a five-year period. It is not considered the appropriate place nor is it intended to track deviations from planned cost, performance or schedule goals. This information is tracked as part of the Control Phase of our IT Capital Planning and Investment Control process. GSA has provided GAO with significant documentation from our Project Summary Control database that currently tracks major investment deviations from planned cost, performance or schedule goals on a monthly basis. In addition, the project managers track these same items closely as they manage their investments day-to-day.

We request that GAO reconsider this statement and modify it to at least acknowledge the processes that GSA has in place to monitor the planned and actual cost, performance and schedule. In support of this, we are attaching copies of additional monitoring documents that are utilized and that identify deviations cost, schedule or performance. (Attachments 1 and 2)

*Practice 1.6: The agency's performance plan required by GPR includes:*

- *A description of how IT supports strategic and program goals*
- *The resources and time periods required to implement the information security program plan required by the Federal Information Security Management Act (FISMA), and*
- *A description of major IT acquisitions contained in the capital asset plan that will bear significantly on the achievement of a performance goal.*

*GAO Assessment: Partially – No agency's performance plan, except VA's, includes time periods, and none includes resources required to implement the information security program plan required by FISMA.*

GSA OCIO Response

See comment 3.

This will be reviewed by, coordinated with the Office of the Chief Financial Officer and the Senior Agency Information Security Official, and corrected appropriately. We note however, that GSA has developed and update quarterly to OMB, as required, the FISMA security report and Plan of Actions and Milestones (POA&M) which includes specifics and details regarding the resources and time periods to accomplish necessary corrective actions.

*Practice 1.9: The agency has established IT performance measures and monitors actual-Versus-expected performance that at least addresses:*

- *How IT contributes to program productivity,*
- *How IT contributes to the efficiency of agency operations,*
- *How IT contributes to the effectiveness of agency operations,*
- *Service delivery to the public (if applicable,*
- *How electronic government initiatives enable progress toward agency goals and statutory mandates,*
- *The performance of IT programs (e.g., system development and acquisition projects), and*
- *Agency compliance with federal software piracy policy.*

*GAO Assessment: Partially – GSA does not have measures for one of its IT goals and did not have performance measures on service delivery to the public.*

GSA OCIO Response

See comment 4.

GSA has performance measures that map to each of the IT goals. We have attached a revised copy of the GSA Goals to Performance Measures Mapping document that was submitted earlier. (Attachment 3)

Please note that GSA's mission is to "*help Federal agencies better serve the public by offering, at best value, superior workplaces, expert solutions, acquisition services and management policies.*" As clearly defined in our mission statement, GSA's primary role is in support of other Federal agencies. We have a lesser role in providing information to citizens through our Office of Citizen Services and Communications that was established on June 30, 2002. This Office has the following performance goals that are related providing service to citizens:

1. Increase access to government for all audiences through the use of web sites, call centers, e-mail, publications, and all forms of media.

2. Develop single government fact to citizens to enable the Federal government to become more citizen centric by presenting a "front door" for citizens who need timely, accurate, consist responses about government programs.

See comment 5.

The attached a revised copy of the GSA Goals to Performance Measures Mapping includes the specific performance measures to accomplish these goals. In further support of this, we have also attached copies of the performance information and results from the GSA Performance Measurement Tool for these goals. (Attachment 4)

*Practice 1.12: The agency requires that its IT management process be benchmarked against appropriate processes and/or organizations from the public and private sectors in terms of cost, speed, productivity, and quality of outputs and outcomes where comparable process and organizations in the public or private sectors exist.*

*GAO Assessment: Partially - . . . GSA . . . provided an example of a process that they have benchmarked, but benchmarking if being performed on an ad hoc basis.*

GSA OCIO Response:

GSA has identified the need for and used benchmarking when it has been determined that comparable process and organizations in the public or private sector exist and that it will provide additional value in management decision-making. GSA recognizes the benefits of benchmarking and will continue to utilize it, as appropriate.

See comment 6.

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**Table 2: IT Investment Management Practices**

*Practice 2.3: The agencywide board(s) work processes and decision-making processes are described and documented.*

*GAO Assessment: Partially - GSA did not have policies and procedures for each of its IT investment management boards.*

GSA OCIO Response:

GSA was advised by GAO that because the pending Business Systems Council (BSC) charter, for the executive tier of our process is in draft that we would be rated "partially" on this practice. We are still planning to have the BSC Charter finalized in place before the end of the year. Charters exist for all other tiers of our investment management boards, and overall policies exist in the GSA IT Capital Planning and Investment Control policy and Guide. Copies of these documents were provided to GAO earlier.

*Practice 2.14: Agency policy calls for investments to be "modularized" (e.g., managed and procured in well-defined useful segments or "modules" that are short in duration and small in scope) to the maximum extent achievable.*

*GAO Assessment: No* - . . . GSA . . . do not have this practice in place.

GSA OCIO Response:

In earlier versions of the GSA IT Capital Planning and Investment Control Guide, that GAO was provided, included this requirement. This requierment was inadvertently not included in the August 2002 version of the Guide, which was reviewed by GAO. The GSA Capital Planning and IT Investment Guide will be updated and will include modularization.

*Practice 2.15: The agency wide investment management board(s) has written policies and procedures for management oversight of IT projects that cover at a minimum:*

- *decision-making rules for project oversight that allow for the termination of projects, when appropriate;*
- *current project data, including expected and actual cost, schedule, and performance data, to be provided to senior management periodically and at a major milestones;*
- *criteria or thresholds related to deviations in cost, schedule, or system capability actual vs. expected project performance; and*

- *the generation of an action plans to address a project's problem(s) and track resolution.*

*GAO Assessment: Partially - GSA does not have clear decision-making rules, require projects to report on deviations in system capability, or require that corrective actions be tracked to resolution.*

GSA OCIO Response:

See comment 7.

The GSA IT Capital Planning and Investment Control Guide identifies the requirements for reporting on major investments in the Control Phase of the IT Capital Planning and Investment Control process. The reporting is accomplished through the Summary Project Control database. Samples of reports from this database have been provided to GAO and provide additional samples are included in Attachments 1 and 2.

See comment 8.

The GSA IT Capital Planning and Investment Control guide requires the Information Technology Resources Boards (ITRBs) and the Technical Review Boards (TRBs), managed by sub-agency CIO's with the participation of the agency CIO, to closely monitor investments, and to develop and monitor correction actions when deviations occur. While this is a decentralized approach, it is fully integrated into our enterprise-wide process. In the upcoming revision of our IT Capital Planning and Investment Control Guide, we will add more details to further clarify this process.

*Practice 2.17: Corrective actions for under performing projects are agreed upon, documented, and tracked by the agencywide investment management board(s).*

*GAO Assessment: Partially - GSA . . . do not systematically track corrective actions.*

GSA OCIO Response:

See comment 9.

GSA Response: As stated in reference to 2.15 above, the GSA IT Capital Planning and Investment Control guide requires the Information Technology Resources Boards (ITRBs) and the Technical Review Boards (TRBs), managed by sub-agency CIO's with the participation of the agency CIO, to closely monitor investments, and to develop and monitor corrective actions when deviations occur.

**Appendix I, Recommendations to Department and Agencies**

General Services Administration

*GAO Recommendation: To improve the agency's IT strategic management/performance measurement processes, we recommend that the Administrator or the General Services Administration:*

- *develop performance measures for each of its IT goals in its ITM plan as well as measures related to how IT contributes to service delivery to the public and the effectiveness of controls to prevent software piracy:*

GSA Response:

See comment 10.

As noted in our response to Practice 1.9 and documented in attachment 3, GSA does have performance measures for each IT goal in the IT Strategic Plan. In addition, the response to Practice 1.9 also identified measures in place to address how IT contributes to service delivery to the public.

See comment 11.

We have also attached a copy of the GSA Order, 2104.1, GSA IT General Rules of Behavior, dated July 3, 2003 that outlines the GSA policy and requirements designed to prevent software piracy (Attachment 5). The specifics are included in Section 10. Software acceptable use. In addition, Section 6. Penalties for non-compliance stated "users who do not comply with the IT General Rules of Behavior may incur disciplinary action and/or criminal prosecution."

The GAO stated recommendation should be removed from the report.

*GAO Recommendation: To improve the agency's IT investment management processes, we recommend that the Administrator or the General Services Administration:*

- *require corrective actions be undertaken, tracked, and reported to the investment management board for underperforming projects.*

GSA Response:

See comment 12.

As stated in our response to Practice 2.15 and 2.17, the GSA IT Capital Planning and Investment Control Guide does require corrective actions to be undertaken, tracked, and reported to the investment management board for underperforming projects. Specifically, the Guide, in Section 8, The IT Capital Planning and Investment Control process, (b) Control Phase, (1). Reporting, includes the following excerpts with critical parts highlighted in **bold** to draw your attention to these sections:

> The SSO CIOs will submit monthly **stop light reports** on all major IT projects that are ongoing developments, acquisitions, or enhancements.
>
> The OCIO will use **these stop light reports** to monitor projects through their life cycle. In addition to alerting the CIO of projects that vary significantly from planned cost, schedule and performance estimates, stop light reports will allow intermittent updates of baseline information on the agency's overall IT investments.

For any reports which indicate **a yellow or red light**, SSOs must submit an update that indicates the change in status and **the actions that are being accomplished to address conditions underlying the yellow or red light. Reports with red light changes must provide get-well plans. The SSO CIO's will synthesize project status data and submit summary control reports to the ITC and Executive Committee, as necessary**.

Variances in project schedule or cost goals of 10 percent or more **must be reported to the ITC**. Any variance or slippage in actual performance from established goals must be included in monthly **stoplight** reports to the CIO.

In addition, projects which, based upon monthly reports or other indicators, **consistently fail to meet requirements may be**, in consultation with the SSO CIO, subject to a special independent review by an Independent Verification and Validation (IV&V) contractor or Governmentwide ITRB. **The results of the review may be presented to the ITC and/or Executive Committee, as appropriate**. When a TRB, ITRB, IV&V or Governmentwide ITRB finds a project has significant deviation from planned performance, cost and schedule, it may result in the project being modified or terminated.

The GSA IT Capital Planning and Investment Control Guide, section (d) Executive **and technical oversight, includes the following:**

(1). Executive Committee. The Executive Committee approves the IT Strategy and IT Capital Plan and **acts on projects that significantly deviate from investment controls**. (NOTE; This Committee is being replaced by the Business Systems Council being established)

The Executive Committee makes the decision for final approval of the investment portfolio and **decisions on systems that have significant deviations from planned performance, cost and schedule.**

The GAO stated recommendation should be removed from the report.

The following are GAO's comments on the General Services Administration's (GSA) letter dated December 9, 2003.

## GAO Comments

1. We based our evaluation on the agency's self-assessment and comments made by GSA's Director, Office of Policy and Plans. However, based on GSA's representation in commenting on our draft, we changed our evaluation of the referenced practice.

2. The Clinger-Cohen Act requires agencies to include in its information resources management (IRM) plan the identification of a major IT acquisition program(s), or any phase or increment of that program, that significantly deviated from cost, performance, or schedule goals established by the program. As we acknowledge in this report, agencies, which would include GSA, identified other mechanisms that they use to track and report cost, schedule, and performance deviations. Moreover, we evaluated agencies as a "partially" instead of a "no" in this practice to take into account that the agency had the required information, although it was not in the prescribed format. Accordingly, we did not modify our report.

3. The Federal Information Security Management Act of 2002 requires agencies to include in the performance plans required by the Government Performance and Results Act the resources and time periods to implement their information security program. As we noted in this report, agencies, which would include GSA, commonly stated that they had this information but that it was in another document. Nevertheless, this does not negate the need for having the agency report to the Congress in the form that it requires. This is particularly important since performance plans are public documents. Accordingly, we did not modify our report.

4. GSA's new documentation illustrates that it has performance measures for each of the IT goals in its IRM plan. However, GSA did not provide evidence that it was tracking actual versus expected performance for measures associated with one of its goals. We revised our report to reflect GSA's new documentation and our evaluation.

5. We revised our report on the basis of this new documentation.

6. GSA's highest-level IT investment management board is its Executive Committee. GSA did not provide a charter or any other evidence of

policies and procedures for this committee. We therefore did not modify our report.

7. The additional documentation provided by GSA (1) does not address decision-making rules and (2) illustrates that GSA uses a monthly project control report on cost, schedule, and performance status, but the report does not explicitly address deviations in system capability. In addition, according to GSA's capital planning and investment control order, the format of the report is left to the applicable organization, thereby making it less likely that the investment management boards are obtaining consistent information. We therefore did not modify our report.

8. We agree that GSA's capital planning and investment control order requires that projects that have significant variances are to provide "get well" plans and that monthly control reports are used to report on project cost, schedule, and performance status. However, it is not clear that these status reports can be used to systemically track corrective actions. Moreover, according to GSA's capital planning and investment control order, the format of the monthly control report is left to the applicable organization, thereby making it less likely that the status of corrective actions is being consistently reported. We therefore did not modify our report.

9. See comment 8.

10. We modified our recommendations based on our evaluation of GSA's documentation. See comment 4 for our assessment.

11. Executive Order 13103 requires agencies to use software piracy performance measures that comply with guidance issued by the federal CIO Council.[1] The Council, in turn, called on the agencies to develop such measures. The additional documentation that GSA provided was an order requiring agency employees to use properly licensed software, but it does not include performance measures that would demonstrate that this requirement is being honored. Measuring how well agencies are combating software piracy is important because it can verify that

[1]The CIO Council is the principal interagency forum for improving agency practices related to the design, acquisition, development, modernization, use, operation, sharing, and performance of federal government information resources.

the controls that they have put in place are working. Accordingly, we did not change this part of the recommendation.

12. We modified our recommendation to reflect that GSA requires projects that have significant variances to develop corrective action plans. However, the other elements of the recommendation pertaining to the tracking and reporting on corrective actions remain outstanding. See comment 8 for additional information.

# Comments from the Department of Health and Human Services

DEPARTMENT OF HEALTH & HUMAN SERVICES

Office of Inspector General

Washington, D.C. 20201

DEC 15 2003

Mr. David A. Powner
Director, Information Technology
Management Issues
United States General
Accounting Office
Washington, D.C. 20548

Dear Mr. Powner:

Enclosed are the Department's comments on your draft report entitled, "Information Technology Management: Governmentwide Strategic Planning, Performance Measurement, and Investment Management Can Be Further Improved." The comments represent the tentative position of the Department and are subject to reevaluation when the final version of this report is received.

The Department appreciates the opportunity to comment on this draft report before its publication.

Sincerely,

Dara Corrigan
Acting Principal Deputy Inspector General

Enclosure

The Office of Inspector General (OIG) is transmitting the Department's response to this draft report in our capacity as the Department's designated focal point and coordinator for General Accounting Office reports. OIG has not conducted an independent assessment of these comments and therefore expresses no opinion on them.

**Comments of the Department of Health and Human Services on the General Accounting Office's Draft Report, "Information Technology Management: Governmentwide Strategic Planning, Performance Measurement, and Investment Management Can Be Further Improved" (GAO-04-49)**

The Department of Health and Human Services (Department) appreciates the opportunity to comment on this draft report. The Department concurs with the findings and recommendations contained in the report.

# Comments from the Department of Housing and Urban Development

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
WASHINGTON, DC 20410-3000

ASSISTANT SECRETARY FOR
ADMINISTRATION/CHIEF INFORMATION OFFICER

DEC 15 2003

Ms. Linda Lambert
Assistant Director, Information Technology
Management Issues
U.S. General Accounting Office
Washington, DC 20548

Dear Ms. Lambert:

Thank you for the opportunity to comment on the GAO's draft report on "Information Technology Management: Governmentwide Strategic Planning, Performance Measurement, and Investment Management Can be Further Improved (GAO-04-49)." The report contains six recommendations to improve HUD's information technology (IT) strategic management/performance measurement processes and five recommendations to improve the investment management processes.

We are in agreement with all the recommendations in the report. We are pleased that of the 29 applicable practices GAO examined at HUD, 17 are in place and 8 are partially implemented. In the coming months, we will focus on implementing the four practices that are not in place and strengthening those processes where further improvements can be made. The information in the report will help form a baseline against which we will measure our continuing improvement efforts.

Should you or your staff have any questions or require additional information, please contact Mary P. Barry, Acting Director, Office of Management and Planning, at (202) 708-1027, extension 123.

Sincerely,

Vickers B. Meadows
Assistant Secretary for Administration/Chief
Information Officer

cc:
David Powner

www.hud.gov espanol.hud.gov

# Comments from the Department of the Interior

United States Department of the Interior
OFFICE OF THE ASSISTANT SECRETARY
POLICY, MANAGEMENT AND BUDGET
Washington, DC 20240

TAKE PRIDE IN AMERICA

David A. Powner
Director, Information Technology Management Issues
United States General Accounting Office
441 G Street, NW
Washington, DC 20548

DEC 0 8 2003

Dear Mr. Powner:

The Department of the Interior reviewed the Draft GAO Report entitled, "Information Technology Management: "Governmentwide Strategic Planning, Performance Measurement, and Investment Management Can Be Further Improved" (GAO-04-49). This report follows closely upon the completion of the GAO Report on information technology investment management (ITIM) in Interior entitled "Information Technology: Departmental Leadership Crucial to Success of Investment Reforms at Interior" (GAO-03-1028), in which GAO commended Interior for the progress made to date in ITIM and provided recommendations for further improvement. In response to this report, Interior committed to develop a comprehensive plan to implement departmentwide improvements to the ITIM process based on the Stage 2 and Stage 3 critical processes of GAO's ITIM framework, and strengthen departmental oversight of bureau investment management processes.

The draft report (GAO-04-49), which covers several agencies, acknowledges that Interior's progress in improving information technology investment management (ITIM) has been evident and is ongoing. The report also provides very useful comparisons to ITIM progress in other agencies. In order to capitalize on the successes at other agencies, it would perhaps be more helpful to provide more examples for emulation in areas where agencies are successful. Interior acknowledges the assistance provided by the GAO auditors during the review process in highlighting a few examples of successes in areas where Interior needs greater improvement. Further examples of successes would provide the information needed to benchmark, as recommended in the draft report.

Interior is committed to continue to move forward aggressively to execute key practices for ITIM considering competing priorities for this and other initiatives. The Department of the Interior agrees the recommendations in this report would further improve ITIM at Interior, and have plans in place to incorporate many of the suggestions noted. However, some of the recommendations go beyond what Interior could reasonably accomplish within current and projected budgets for information technology. Interior remains committed to address the recommendations of the final report GAO-03-1028.

For additional information, please contact Mr. W. Hord Tipton, at 202 208 6194.

Sincerely

Lynn Scarlett
Assistant Secretary for
Policy, Management and Budget

Acting

# Comments from the Department of Justice

Note: GAO comments supplementing those in the report text appear at the end of this appendix.

**U.S. Department of Justice**

Washington, D.C. 20530

DEC - 2 2003

David A. Powner, Director
Information Technology Management Issues
U.S. General Accounting Office
441 G St., N.W.
Washington, D.C. 20548

Dear Mr. Powner:

I would like to thank you for affording the Department of Justice (Department) the opportunity to respond to the General Accounting Office (GAO) report entitled "Governmentwide Strategic Planning, Performance Measurement, and Investment Management Can Be Further Improved."

The Attorney General appointed me Chief Information Officer for the Department in April 2002. In July 2002, I re-issued the Information Technology (IT) Strategic Plan conveying a fundamental reorientation of the role of IT in the Department of Justice. In May 2003, I received congressional approval to reorganize my office and realign staff to operate more effectively to carry out the management goals identified in the IT Strategic Plan. During the past 12 months, I have initiated the following specific initiatives in these areas in order to achieve measurable progress in IT management within the Department:

- Initiated an outside assessment of IT investment management with recommendations to improve the Department's investment management processes;
- Completed a pilot project to test and assess new processes to manage IT investments in the Select Phase resulting in a portfolio-centered analysis of candidate investments and recommendations for consolidated business cases as part of the Department's Fiscal Year 2005 budget formulation process;
- Implemented an ongoing pilot project to test, assess, and phase in new processes to manage IT investments in the Control Phase, including the use of an IT Investment Board, which will enable departmental senior executives to actively set direction and monitor high priority, high risk and department wide IT investments;
- Initiated a web-based "Project Dashboard" to collect current data on cost, schedule, and performance for major projects across the Department;

- Consolidated business cases for enterprise architecture and IT infrastructure - two areas critical for achieving my strategic objectives;
- Developed of a project oversight process in collaboration with the FBI to oversee major IT investments.

I am currently institutionalizing and documenting those key management processes listed above to strengthen strategic planning, performance measurement, and IT investment across the Department. The recommendations of your report will assist me in further defining those management practices.

Overall, I concur with the findings and recommendations in your report; however, I want to modify one recommendation to ensure it is an actionable item that reflects the future direction of our oversight reporting requirements. That recommendation relates to Practice 1.6 – "The agency's performance plan required by GPRA [Government Performance and Results Act] includes the resources and time periods required to implement the information security program plan required by FISMA [Federal Information Systems Management Act]."

The Department's self-assessment and the GAO review results are in agreement on the Partial rating for this assessment. As discussed in the Exit Conference, the Department lays out the full FISMA program, including major milestones and required resources, in the annual Security Report and the Plan of Actions and Milestones Report submitted to the Office of Management and Budget (OMB), GAO, and Congress but includes only selected performance measures in the GPRA Plan. However, the OMB will replace the annual GPRA performance plan with performance budgeting in FY 2005.

See comment 1.

In light of this change, the following modification in language is requested:

> Include the resources and time periods required to implement the information security program plan required by FISMA in reporting document(s) as directed by OMB guidance.

Thank you for the opportunity to comment on this report. If you need additional information, please do not hesitate to contact me.

Sincerely,

Vance E. Hitch

Vance E. Hitch
Chief Information Officer

The following are GAO's comments on the Department of Justice's letter dated December 2, 2003.

## GAO Comments

1. GAO has ongoing work looking at OMB's initiative. However, the Federal Information Security Management Act of 2002 requires agencies to include in the performance plans required by the Government Performance and Results Act the resources and time periods to implement its information security program. Accordingly, we did not change the recommendation.

# Comments from the Department of Labor

Note: GAO comments supplementing those in the report text appear at the end of this appendix.

**U.S. Department of Labor**

Office of the Assistant Secretary
for Administration and Management
Washington, D.C. 20210

DEC - 2 2003

Mr. David Powner
Director, Information Technology Management Issues
U.S. General Accounting Office
441 G. Street, NW
Washington, D.C. 29548

Dear Mr. Powner:

The enclosed comments are in reference to GAO's draft report entitled Information Technology Management: Government-wide Strategic Planning, Performance Measurement, and Investment Management Can Be Further Improved (GAO 04-49). As you know, the objectives of this study were to determine the extent to which major government agencies have in place practices associated with key legislative and other requirements for (1) IT strategic planning/performance measurement and (2) IT investment management.

The Department concurs with GAO's finding and is proposing two changes, found on the enclosed document.

If you have any questions about these comments or this matter in general, please contact Thomas Wiesner, Deputy CIO, at wiesner.thomas@dol.gov or (202) 693-4200.

Sincerely,

Patrick Pizzella
Assistant Secretary for Administration and Management,
Chief Information Officer

Enclosure

See comment 1.

See comment 2.

**DOL Response to GAO-04-49 IT Management Practices Recommendations to Departments and Agencies**

1) p. 25. "For example, the Department of Labor's… does not address all required goals."
Recommended change: After this sentence, insert new sentence reading: "However, this single IT goal is supported by a number of IT indicators, which are specific, measurable and tied to Labor's mission – and address the Clinger-Cohen and PRA requirements. The CIO is assigned responsibility for achieving the goal, with component agencies responsible for carrying out the indicators appropriate to their mission."

2) p. 71, second bullet under Labor's recommendations, which begins "develop a documented process…"
Recommended change: remove this bullet entirely for the following reasons:

As required by the Government Performance Results Act (GPRA), the Department of Labor (DOL) prepares an annual performance plan covering each program activity set forth in the DOL annual budget, including information technology. This plan is built upon strategic goals established by the Department and are directly related to the Department's mission. In addition, performance indicators are established to measure outcomes. These indicators are tracked and reported quarterly through the GPRA process.

DOL's IT strategic goal, "to provide better and more secure service to citizens, businesses, government and Labor employees to improve mission performance" contain a number of IT indicators, which support this goal. The indicators are specific, measurable goals that support the strategic goal and are reported in GPRA on an annual basis.

In accordance with the Clinger-Cohen Act and DOL Secretary's Order 3-2003, the Office of the Chief Information Officer is responsible for establishing, monitoring and evaluating Departmental IT goals to improve efficiencies, contain costs, streamline business processes, provide better access to Government information and services, and promote a secure environment. In addition, consistent with their statutory responsibilities and other applicable Secretary's Orders and guidelines, all DOL Agency Heads are assigned responsibility to implement Department-wide IT initiatives approved by the Department's Management Review Board (MRB).

The following are GAO's comments on the Department of Labor's letter dated December 2, 2003.

## GAO Comments

1. Because Labor did not disagree with our characterization of its IT goal, no changes were made to our report.

2. We agree with Labor's characterization of its IT strategic goal and order 3-2003. Nevertheless, the recommendation, and related practice 1.7, refers to the documentation of the *process* used to develop IT goals and measures and the responsibility for achieving them. Labor neither provided documentation of such a process nor took issue with our assessment of practice 1.7, in which we stated that the agency did not have this practice in place. Moreover, Labor's self-assessment referenced a draft performance measurement guidebook and quarterly review process in support of this practice. However, these mechanisms relate to performance measures associated with IT projects, not Labor's enterprisewide IT goal. Finally, as we noted in our report, unlike other agencies in our review, Labor does not have goals in its IRM plan. Accordingly, we did not change this recommendation.

# Comments from the National Aeronautics and Space Administration

Note: GAO comments supplementing those in the report text appear at the end of this appendix.

National Aeronautics and
Space Administration
**Office of the Administrator**
Washington, DC 20546-0001


December 8, 2003

Mr. David A. Powner, Director
Information Technology Management Issues
United States General Accounting Office
Washington, DC 20548

Dear Mr. Powner:

Enclosed is the National Aeronautics and Space Administration (NASA) response to the General Accounting Office (GAO) Draft Report, "Information Technology Management: Governmentwide Strategic Planning, Performance Measurement, and Investment Management Can Be Further Improved" (GAO-04-49). The Agency concurs with your recommendations for corrective action. Enclosed are NASA's detailed comments on each individual recommendation.

My point of contact for information technology management is Nancy Kaplan in the Office of the Chief Information Officer (CIO). She may be contacted by e-mail at Nancy.Kaplan@nasa.gov or by telephone at (202) 358-1372.

Cordially,

Frederick D. Gregory
Deputy Administrator

Enclosure

**NASA Response to Draft GAO Report:**
**"Information Technology Management: Governmentwide Strategic Planning, Performance Measurement, and Investment Management Can Be Further Improved"**
**(GAO-04-49)**

**GAO Recommendations:** To improve the Agency's Information Technology (IT) strategic management/performance measurement processes, we recommend that the Administrator of the National Aeronautics and Space Administration:

1. Document the Agency's IT strategic management processes;

**NASA Response to GAO Recommendation 1: Concur.** NASA has produced an Information Resources Management (IRM) Strategic Plan and is currently documenting the strategic planning process which will provide the framework for ensuring that the Agency's IT management strategies as defined in the IRM Strategic Plan remain clearly linked to the Agency's vision, mission, and strategic goals as defined in the NASA Strategic Plan. This activity is scheduled to be completed by June 30, 2004.

2. Document how the Agency's IT management operations and decisions are integrated with human resources management processes;

**NASA Response to GAO Recommendation 2: Concur.** The human resources management processes are critical to our success in meeting the NASA mission, and the NASA CIO has been working closely with the NASA Office of Human Resources to tightly integrate NASA's IT human capital needs with their efforts. NASA has developed a *Strategic Human Capital Plan* (SHCP) that establishes a systematic, Agencywide approach to human capital management, aligned with the Agency's vision and mission. The SHCP is built around five pillars--strategic alignment, strategic competencies, learning, performance culture, and leadership. A companion document to the SHCP, the *Strategic Human Capital Implementation Plan* (SHCIP), has also been developed which contains detailed action plans for achieving the goals defined in the SHCP. Neither of these plans reference specific disciplines (e.g., IT), but are intended to pertain to all disciplines that are critical to developing and maintaining NASA's strategic competencies. The current *NASA IRM Strategic Plan* does not address human resources management since the SHCP and the SHCIP address this from a multidiscipline perspective, but does reference the *NASA Strategic Plan*, which identifies the criticality of IT as a strategic competency to NASA through the definition of Implementing Strategy 2, "Demonstrate leadership in the use of information technology." However, the IRM Strategic Plan is currently in the process of being revised and will include language that clarifies the linkage between the various strategic plans and the integration of IT management with human resources management. The revised plan is scheduled to be completed by September 30, 2004.

3. Include in the Agency's annual performance plan the resources and time periods required to implement the information security program plan required by FISMA;

**NASA Response to GAO Recommendation 3: Partially Concur.** NASA has been including the resources and time periods required to implement the information security changes necessary to correct the identified weakness contained in the OMB FISMA report. OMB has instructed NASA to exclude this information in any submit to Congress due to budget data being embargoed at this time. NASA will summarize this information in our annual performance plan.

**4.** Develop a documented process to develop IT goals in support of Agency needs, measure progress against these goals, and assign roles and responsibilities for achieving these goals; develop measures related to the effectiveness of controls to prevent software piracy;

**NASA Response to GAO Recommendation 4: Concur.** The strategic planning process referenced in (1) above is the process through which IT goals and performance measures are developed. NASA is currently in the process of revising NASA Policy Directive (NPD) 2800.1, *Managing Information Technology*, which identifies the roles and responsibilities for achieving the Agency's IT goals and objectives. This revision is scheduled for the first quarter of calendar year 2004. NASA will benchmark other agencies as well as private industry to identify best practices with respect to developing performance measures related to the effectiveness of controls to prevent software piracy. The benchmarking activity will be completed by September 30, 2004.

**5.** Track actual-versus-expected performance for the Agency's Enterprisewide IT performance measures in its IRM plan; and develop a mechanism for benchmarking the Agency's IT management processes, when appropriate.

See comment 1.

**NASA Response to GAO Recommendation 5: Partially Concur.** NASA has established performance measures for major IT investments that are identified in the Agency's Exhibit 300 submissions to OMB and have included performance measures in our IRM Strategic Plan. We acknowledge the need to expand our benchmarking efforts.

**6.** Revise the Agency's IT investment management policy and guidance to describe the relationship of this process to the Agency's Enterprise architecture;

**NASA Response to GAO Recommendation 6: Partially Concur.** The NASA IT investment management policy is contained in NPD 2800.1, *Managing Information Technology*. The *NASA IT Capital Planning and Investment Control (CPIC)Process* document describes the process NASA will use for ensuring that all IT capital investments align with the Agency's mission, Enterprise architecture, and business needs. NASA will ensure that the planned revision of NPD 2800.1, referenced in (4) above, clarifies the relationship between these two documents and the Agency's Enterprise architecture. This revision is scheduled for the first quarter of calendar year 2004.

**7.** Include interfaces in its inventory of the Agency's major information systems, implement a standard, documented procedure to maintain this inventory, and develop a mechanism to use the inventory as part of managerial decisionmaking;

**NASA Response to GAO Recommendation 7: Concur.** NASA has started the process of replacing our existing asset management system, and the NASA CIO has provided IT asset-tracking requirements to the project responsible for implementing this new system. In addition, the CIO has established a database that captures all NASA systems and has begun to integrate the use of these data into our management processes to facilitate decisionmaking. We will be integrating our existing database with the new asset management system once that system is deployed.

**8.** Within the Agency's IT investment selection process, implement a mechanism to identify possible conflicting, overlapping, strategically unlinked or redundant proposals, implement a scoring model, and develop a prioritized list of investments;

**NASA Response to GAO Recommendation 8: Concur.** The *NASA CPIC Process* document referenced in (6) above describes the selection phase of the process NASA will use. The selection phase is divided into two stages--Concept Screening and Business Case Development and Screening. The Concept Screening stage permits the evaluation of a number of candidate investments with a minimum amount of information. If the investment is deemed viable after this initial screening, then it will move into the business case development and screening stage where it will undergo the development of a full business case and project plan. Investments that pass the initial screening will be rated and ranked against other proposed investments and in the context of ongoing projects. As described in the CPIC process, a portfolio analysis will be conducted for rating and ranking each investment in the context of a total investment portfolio. NASA will have completed this process for the FY 2006 budget submission by September 30, 2004.

**9.** Document the role, responsibility, and authority of its IT investment management boards, including work processes, alignment and coordination of decisionmaking among its various boards and processes for controlling and evaluating IT investments, such as those in practices 2.15, 2.16, 2.17, and 2.18.

**NASA Response to GAO Recommendation 9: Concur.** NASA will ensure that the role, responsibility, and authority of its IT investment management board(s) in the referenced practices (2.15, 2.16, 2.17, and 2.18) is clarified in the revision of NPD 2800.1, *Managing Information Technology*, referenced in (4) and (6) above. This revision is scheduled for the first quarter of calendar year 2004.

The following are GAO's comments on the National Aeronautics and Space Administration's (NASA) letter dated December 8, 2003.

## GAO Comments

1. Our practice dealt with enterprise-level measures, not project-specific measures. In addition, although we agree that NASA's IRM plan included performance measures, the agency generally does not track actual-versus-expected performance for these enterprisewide measures.

# Comments from the Nuclear Regulatory Commission


UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

December 5, 2003

Mr. David A. Powner, Director
Information Technology Management Issues
United States General Accounting Office
441 G Street, NW
Washington, D.C. 20548

Dear Mr. Powner:

I would like to thank you for the opportunity to review and submit comments on the draft report, "Information Technology Management: Governmentwide Strategic Planning, Performance Measurement, and Investment Management Can be Further Improved," (GAO-04-49). The U.S. Nuclear Regulatory Commission appreciates the time and effort that you and your staff have taken to review this important topic.

Overall, this report provides useful information on Federal agencies' use of 12 IT strategic planning/performance measurement practices and 18 IT investment management practices. We agree that these practices are important for ensuring effective use of government IT investments, and we support the effort to encourage best practices across Federal agencies.

We have no specific comments on the report. Should you have any questions, please contact either Mr. William Dean at 301-415-1703 or Ms. Melinda Malloy at 301- 415-1785 of my staff.

Sincerely,

William D. Travers
Executive Director
for Operations

cc: Linda J. Lambert, GAO

# Comments from the Social Security Administration

Note: GAO comments supplementing those in the report text appear at the end of this appendix.

SOCIAL SECURITY

The Commissioner

December 3, 2003

Mr. David A. Powner
Director, Information Technology
Management Issues
U.S. General Accounting Office , Room 4075
Washington, D.C. 20548

Dear Mr. Powner:

Thank you for the opportunity to review the draft report, "Information Technology Management: Governmentwide Strategic Planning, Performance Measurement, and Investment Management Can Be Further Improved" (GAO-04-49). Our comments are enclosed. If you have any questions, please have your staff contact Mark Welch at (410) 965-0374.

Sincerely,

Jo Anne B. Barnhart

Enclosure

SOCIAL SECURITY ADMINISTRATION BALTIMORE MD 21235-0001

COMMENTS OF THE SOCIAL SECURITY ADMINISTRATION ON THE GENERAL ACCOUNTING OFFICE'S (GAO) DRAFT REPORT, "INFORMATION TECHNOLOGY MANAGEMENT: GOVERNMENTWIDE STRATEGIC PLANNING, PERFORMANCE MEASUREMENT, AND INVESTMENT MANAGEMENT CAN BE FURTHER IMPROVED" (GAO-04-49)

Thank you for the opportunity to review and provide comments on this GAO draft report. The Social Security Administration (SSA) has taken many positive actions in recent years, and continues efforts, to fully comply with federal guidance relating to information technology (IT) management and improve overall performance in this area. We are pleased that this GAO report acknowledges the numerous IT management practices fully and partially in place at SSA, and that our performance in this area compares quite favorably with that of other federal agencies.

Recommendation 1

Include in its annual performance plan (APP) the resources and time periods required to implement the information security program plans required by the Federal Information Security Management Act of 2002 (FISMA).

Comment

See comment 1.

We agree in part. We are concerned about including the details of our information security program, including information about the resources and time periods required for implementation in a public document, because such information might aid and abet those seeking to compromise the Agency's information security. However, we recognize that Section 3544(d) of the FISMA calls for agencies to include as part of their APP, which are public documents, the time periods and resources that are necessary to implement their information security programs. Therefore, we will include this information in future APPs in a manner that will not risk compromise of the Agency's information security.

Recommendation 2

Develop measures related to the performance of the Agency's IT programs and the effectiveness of controls to prevent software piracy.

Comment

See comment 2.

We agree and we believe the Agency already has effective measures in place to ensure effective SSA IT program performance. SSA's Strategic Information Resources Management Plan and associated IT programs are driven by the Agency's strategic goals and objectives which are defined in the Agency Strategic Plan and APP. IT programs provide the automation support required for the projects that help SSA to achieve those goals and objectives.

See comment 3.

See comment 4.

At the tactical level, the Control Phase of the Agency's Capital Planning and Investment Control Process provides the appropriate oversight process for IT initiatives, including measuring compliance with the cost, schedule and performance goals established for these IT initiatives. SSA also has availability, stability and performance measures for many components of its enterprise IT architecture.

Regarding software piracy, SSA currently tests the effectiveness of controls to prevent software piracy. Since the performance measures in the APP are at a high level and are focused on the four Agency goals, it seems inappropriate to include a goal focused at the tactical level of preventing software piracy. This issue is more appropriately addressed in the oversight provided in the Control Phase of the Agency's Capital Planning and Investment Control Process.

Recommendation 3

Develop a mechanism for benchmarking the agency's IT management processes, when appropriate.

Comment

We agree that the use of benchmarking of IT management processes is useful in certain situations. However, we do not agree with any recommendation that requires the Agency to develop a mechanism (that is, an explicit strategy or policy) for benchmarking its IT management processes. We are in compliance with the Clinger/Cohen Act, Section 5123(4) requirement that "the head of an executive agency shall, where comparable processes and organizations in the public or private sectors exist, quantitatively benchmark agency process performance against such processes in terms of cost, speed, productivity, and quality of outputs and outcomes." SSA performs benchmarking, when appropriate, and has provided GAO a list of Agency benchmarking activities carried out in response to the Clinger/Cohen Act requirement.

Recommendation 4

Develop work processes and procedures for the agency's investment management board.

Comment

We agree and SSA's investment management board (the Information Technology Advisory Board - ITAB) already follows established work processes and procedures. The role of the ITAB is evolving as we explore ways to refine and improve our Capital Planning and Investment Control Process to ensure continued compliance with legislation and Office of Management and Budget (OMB) guidance. While high-level documentation concerning the ITAB's operations is in place, we are working to more fully document ITAB's work processes and procedures.

See comment 5.

Recommendation 5

Establish a policy requiring modularized IT investments.

Comment

We agree and SSA has already established and is following a modularized investment policy. SSA's current review of business cases includes an assessment of major projects against the "Raines Rules" criteria that include "modularized" system implementations. The Raines Rules criteria are incorporated into guidance in OMB Circulars No. A-11 and A-130. The provisions of these circulars are incorporated by reference in SSA's Capital Planning and Investment Control Process. SSA software development initiatives follow a modular, release-oriented strategy and major IT technology deployments are performed through a phased-implementation approach. Each IT investment is assessed to determine whether it is worth doing before approval is given to proceed. Any problems with the results from the implementations of earlier "modules" of a system are considered in the approval process for continued investments.

Recommendation 6

Document the role, responsibility, and authority of its IT investment management board for the oversight of IT investments, such as what is outlined in practices 2.15, 2.16, and 2.18.

Comment

We agree. The role, responsibility and authority of SSA's investment management board (the ITAB) for the oversight of IT investments is documented at a high level. As noted above, the role of the ITAB is evolving as we explore ways to refine and improve our Capital Planning and Investment Control Process to ensure continued compliance with legislation and OMB guidance. We are working to ensure that the ITAB's role, responsibility and authority for the oversight of IT investments are more explicitly documented.

Recommendation 7

Require that corrective actions be tracked, and reported to the investment management board for under performing projects.

Comment

We agree. SSA tracks the progress of all IT projects, including both projects that are proceeding as planned, and those that are not. Any surfacing problems are separately tracked and monitored within the Risk Identification and Mitigation System and

Problem and Issues Reporting System. These repositories collect and track risk/problem information and the corrective actions taken, which are reported upon at various points along a project's lifecycle. The ITAB has access to this information. Therefore, we will more explicitly document how corrective actions for under-performing projects are tracked and reported to the ITAB.

The following are GAO's comments on the Social Security Administration's (SSA) letter dated December 3, 2003.

## GAO Comments

1. We agree that SSA needs to consider the level of detail that is appropriate to include in its performance plans so as not to compromise security.

2. We requested documentation to support SSA's assertion that it has performance measures associated with the performance of IT programs (e.g., the percentage of IT projects that are meeting cost, schedule, and performance goals), but none were provided. Accordingly, we did not modify our report.

3. We agree that it is not appropriate to include measures related to the effectiveness of controls to prevent software piracy in agency performance plans. Neither our practice nor our recommendation specifies the document or process that should be used to address software piracy.

4. As we noted in this report, SSA performs benchmarking in an ad hoc manner. We believe that taking a more systematic approach is necessary to ensure that benchmarking is performed at suitable times using an appropriate methodology. Without a systematic approach, it is not possible to validate that the agency performs benchmarking "when appropriate." Accordingly, we did not modify our report.

5. References to OMB's Circular A-11 in agency policy documentation alone do not ensure that these practices are met. In particular, we believe that agency policies related to modularized IT investments should be explicit and that it is neither prudent nor practical to rely on users of SSA's documentation of its capital planning and investment control process to review a secondary source.

# Comments from the Department of State

Note: GAO comments supplementing those in the report text appear at the end of this appendix.

United States Department of State

*Assistant Secretary and Chief Financial Officer*

*Washington, D.C. 20520*

DEC - 9

Dear Ms. Westin:

We appreciate the opportunity to review your draft report, "INFORMATION TECHNOLOGY MANAGEMENT: Governmentwide Strategic Planning, Performance Measurement, and Investment Management Can Be Further Improved," GAO-04-49, GAO Job Code 310448.

The enclosed Department of State comments are provided for incorporation with this letter as an appendix to the final report.

If you have any questions concerning this response, please contact Karen Mummaw, Computer Specialist, Bureau of Information Resource Management at (202) 663-1415.

Sincerely,

Christopher B. Burnham

Enclosure:

As stated.

cc: GAO/IT - David Powner
State/OIG - Luther Atkins
State/IRM - Bruce Morrison
State/H - Paul Kelly

Ms. Susan S. Westin,
Managing Director,
International Affairs and Trade,
U.S. General Accounting Office.

**Department of State Comments on GAO Draft Report**
**Information Technology Management, Government-wide Strategic Planning, Performance Measurement, and Investment Management Can Be Further Improved**
**(GAO-04-49, GAO Job Code 310448)**

Thank you for the opportunity to review and comment on your draft report "Information Technology Management, Government-wide Strategic Planning, Performance Measurement, and Investment Management Can Be Further Improved". In general, the findings of the report are consistent with the discussions between GAO staff and our Bureau of Information Resource Management staff in September 2003. However, we have made progress in several of the areas since those discussions took place. So that GAO might have the opportunity to reflect the most current information in its final report, we want to bring the following information to your attention:

See comment 1.

- Practice Area 2.13, pg. 49 - Agency has established a structured selection process. GAO scored this item as partial for the Department and commented that the Department's documentation of its selection process is in draft form.

  On September 25, 2003, the Department published the final version of the Department's Capital Planning and Investment Control (CPIC) Program Guide on the IT Planning Division's web page on the Department's Intranet. This guide contains the framework for the Department's information technology CPIC process. Section 4 of the guide contains detailed procedures for the Select phase and addresses process, prerequisites and data requirements, scoring criteria, and outputs. The Department suggests that GAO consider changing the score to a "yes" for this practice area and amend the comment section accordingly. (See pp. 11-14 of the final CPIC guide that is attached.)

See comment 2.

- Practice Area 2.16, pg. 51 - Agency has established an oversight mechanism of funded investments. GAO scored this item as partial for the Department and commented that State had draft procedures for control phase reviews in place, but they are not fully implemented.

Section 5 of the Department's final CPIC Guide, published on the Department's Intranet, contains detailed procedures for the Control phase of the process. The Department has begun the process of implementing these procedures for controlling IT investments, which address the initiative review process, portfolio review process, prerequisites and data requirements, scoring criteria, and outputs. (See pp. 16-21 of the CPIC Guide attached.) The Department suggests that GAO amend the comments section for this practice area to state that the Department recently issued final procedures for control phase reviews, which are not yet fully implemented.

See comment 3.

- Practice Area 2.17, pg. 51 - Corrective actions for projects are agreed upon, documented, and tracked by the agency wide investment management board. GAO scored this item as partial for the Department and commented that State had draft procedures for control phase reviews in place, but they are not fully implemented.

  See our comment for Practice Area 2.16. The Department suggests that GAO amend the comments section for this practice area to state that the Department recently issued final procedures for control phase reviews, which are not yet fully implemented.

See comment 4.

- Practice Area 2.18, pg. 52 - Agency-wide investment management board required that post-implementation reviews be conducted. GAO scored this item as partial for the Department and commented that State has a policy related to this practice, but did not provide evidence that it is completely implemented.

  Section 6.2 of the Department's final CPIC Guide provides for post-implementation reviews of IT investments and sets forth the prerequisites and data requirements for such reviews. (See pp. 24-25.) The Department suggests that GAO amend the comments section for this practice area to state that the Department recently issued final procedures for conducting post implementation reviews, which are not yet fully implemented.

The following are GAO's comments on the Department of State's letter dated December 9, 2003.

## GAO Comments

1. We based our evaluation on the agency's draft Capital Planning and Investment Control Program Guide that was provided during our review. However, based on State's newly finalized Capital Planning and Investment Control Program Guide, we changed this evaluation in our report.

2. We based our evaluation on the agency's draft Capital Planning and Investment Control Program Guide that was provided at the time of our review. Based on the final version of the Capital Planning and Investment Control Program Guide provided by State in its response, we modified the language in our report, as appropriate.

3. See comment 2.

4. See comment 2.

# Comments from the U.S. Agency for International Development

Note: GAO comments supplementing those in the report text appear at the end of this appendix.


U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT

DEC 9 2003

Mr. David A. Powner
Director
Information Technology Management Issues
U.S. General Accounting Office
441 G Street, N.W.
Washington, DC 20548

Dear Mr. Powner:

I am pleased to provide the U.S. Agency for International Development's (USAID's) formal response on the draft GAO report entitled "Information Technology Management: Governmentwide Strategic Planning, Performance Measurement, and Investment Management Can Be Further Improved" (November 2003.)

We have reviewed the draft recommendations to USAID and appreciate the thorough review which has been performed by your team. We do take exception to your assessment of USAID's compliance at the "No" level with the following practices:

See comment 1.

1. Practice 2.11 (page 48): "The agency requires that the proposed IT investment, at a minimum:

   - support work processes that it has simplified or redesigned to reduce costs and improve effectiveness, and
   - make maximum use of commercial-off-the-shelf (COTS) software."

2. Practice 2.14 (page 49): "Agency policy calls for investments to be modularized (e.g., managed and procured in well-defined useful segments or modules that are short in duration and small in score) to the maximum extent achievable."

We believe that USAID implements both practices at a "partial" level because we require that USAID IT investment requests be submitted in accordance with OMB Circular A-11

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which contains such policy requirements. For example, USAID's Automated Directives System (ADS) Chapter 577 (Capital Planning and Investment Control), Table 1, Investment Category Documentation and Review Requirements, states that OMB Exhibit 300 must be submitted to the CIO requesting approval of Level II and Level III investments, which are defined on that table. Authors of Level I Investment Decision Requests (USAID 300i) must follow instructions provided in OMB Exhibit 300 in OMB Circular A-11. OMB Circular A-11 states that, "Agencies must develop, implement and use a capital programming process to develop their capital asset portfolio, and must: …

- Simplify or otherwise redesign work processes to reduce costs, improve effectiveness, and make maximum use of commercial services and off-the-shelf technology; …

- Structure major acquisitions into useful segments with a narrow scope and brief duration... .."

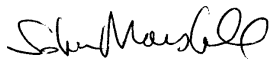
(ADS 577 is available on the USAID website at: http://www.usaid.gov/policy/ads/500/577.pdf. Table 1 is available at: http://www.usaid.gov/policy/ads/500/577maa.doc. The Action Memorandum is available at: http://www.usaid.gov/policy/ads/500/577mag.pdf and OMB Circular A-11, Part 7; page p. 300-8 is available at: http://www.cio.gov/documents/s300.pdf.)

In addition, USAID evaluates and scores IT investment proposals, in part, according to the following criteria:

- whether or not the project includes the use of commercial off-the-shelf (COTS) solutions and minimizes the use of customer-designed components and
- whether the Agency uses phased successive chunks. (See ADS 577, Table 3, page 3, item 2.2, which is available on the USAID website at: http://www.usaid.gov/policy/ads/500/577mab.pdf.)

Thank you for the opportunity to respond to the GAO draft report and for the courtesies extended by your staff in the conduct of this review. If you have any questions, you may contact me or contact Mark Kneidinger, Deputy CIO for Policy and Deputy Assistant Administrator for Management at (202)712-1200.

Sincerely,



John Marshall
Assistant Administrator
Bureau for Management

The following are GAO's comments on the U.S. Agency for International Development's (USAID) letter dated December 9, 2003.

## GAO Comments

1. References to OMB's Circular A-11 in agency policy documentation alone do not ensure that these practices are met. In particular, we believe that agency policies related to practices 2.11 and 2.14 should be explicit and that it is neither prudent nor practical to rely on users of USAID's directives to review a secondary source. Regarding USAID's comments that it uses the criteria in practices 2.11 and 2.14 as part of its evaluation and scoring of investments, we agree that the agency does ask some questions on the use of commercial-off-the-shelf software and whether the agency uses "successive chunks" within its proposed IT investment scoring model. However, addressing these criteria as part of a scoring model does not address our practice because scoring projects on the basis of the questions asked does not necessarily preclude projects from continuing if they do not fully meet the criteria. Additionally, the questions asked as part of the scoring model do not fully meet the requirements of the practices. Accordingly, we did not modify our report.

# Comments from the Department of Veterans Affairs

Note: GAO comments supplementing those in the report text appear at the end of this appendix.

**THE SECRETARY OF VETERANS AFFAIRS**
**WASHINGTON**

December 5, 2003

Mr. David A. Powner
Director
Information Technology Management Issues
U.S. General Accounting Office
441 G Street, NW
Washington, DC 20548

Dear Mr. Powner:

The Department of Veterans Affairs (VA) has reviewed your draft report, ***Information Technology Management: Governmentwide Strategic Planning, Performance Measurement, and Investment Management Can Be Further Improved*** (GAO 04-49). VA concurs with all seven of GAO's recommendations. I am pleased to advise that VA has already implemented five recommendations and plans implementing the remaining two recommendations by the end of April 2004.

VA's detailed comments specific to the report's recommendations are outlined in the enclosure. Thank you for the opportunity to comment on your draft report.

Sincerely yours,

Anthony J. Principi

Enclosure

Enclosure

Department of Veterans Affairs Comments
To GAO Draft Report,
***INFORMATION TECHNOLOGY MANAGEMENT: Governmentwide Strategic Planning, Performance Measurement, and Investment Management Can Be Further Improved***
(GAO-04-49)

**To improve the department's IT strategic management/performance measurement processes, GAO recommends that the Secretary of Veterans Affairs:**

- **Include in the department's annual performance plan the resources required to implement the information security program plan required by FISMA.**

See comment 1.

Concur: The Department currently collects information on the costs to implement the provision of Federal Information Security Management Act (FISMA) of 2002 through several inter-related efforts and reports this information to the Office of Management and Budget. This information will be included in future Government Performance and Results Act submissions.

- **Develop a documented process to measure progress against the department's IT goals and assign goals and responsibilities for achieving these goals.**

See comment 2.

Concur: VA's Acting Chief Information Officer (CIO) is revising the Department's IT Strategic Plan. The revision will include a section that outlines the performance measures that are associated with specific IT goals and objectives and which organizations are responsible for carrying them out. Progress against these performance measures will be assessed as part of the monthly performance reviews that all projects within the IT Portfolio must undergo. The process for measuring this performance will be documented in guidance being prepared to address IT Portfolio and Project Management and will be developed by April 2004. The IT Strategic Plan update will be developed by February 2004. VA anticipates implementing this recommendation by the end of April 2004.

- **Develop measures related to the effectiveness of controls to prevent software piracy.**

See comment 3.

Concur: In fiscal year 2004, VA will field its Department-wide Security Configuration and Management Program (SCAMP). SCAMP will establish and deploy an enterprise-level, network configuration management framework

Enclosure

Department of Veterans Affairs Comments
To GAO Draft Report,
***INFORMATION TECHNOLOGY MANAGEMENT: Governmentwide Strategic Planning, Performance Measurement, and Investment Management Can Be Further Improved***
(GAO-04-49)
(Continued)

capability to centrally manage all desktops, servers, and communications and security devices in the VA environment. This initiative will greatly enhance VA's existing capabilities to preclude the installation of any unauthorized (including pirated) software on VA networks and desktops, and should provide data to measure the effectiveness of the controls.

- **Track actual-versus-expected performance for the department's enterprisewide IT performance measures in its IRM plan.**

See comment 4.

Concur: Monthly performance reports are provided to VA's Strategic Management Council for all OMB Exhibit 300-level projects and programs actual-versus-expected performance metrics including:

- Acquisition requirements
- Funding
- Staffing
- Schedule performance
- Budget performance
- Quality performance

The Department's Strategic Management Council is chaired by the Deputy Secretary and is comprised of senior officers from the Department's administrations and staff offices. This recommendation has been implemented.

**To improve the department's IT investment management process, GAO recommends that the Secretary of Veterans Affairs:**

- **Document the alignment and coordination of responsibilities of the department's various IT investment management boards for decision making related to IT investments, including cross-cutting investment(s).**

See comment 5.

Concur: Within VA, the sole board responsible for the overall governance of IT decision making, as it is related to the IT Portfolio of VA investments, is the Enterprise Information Board (EIB). The EIB is chaired by the VA Chief

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Enclosure

Department of Veterans Affairs Comments
To GAO Draft Report,
***INFORMATION TECHNOLOGY MANAGEMENT: Governmentwide Strategic Planning, Performance Measurement, and Investment Management Can Be Further Improved***
(GAO-04-49)
(Continued)

Information Officer and includes within its membership the senior IT leadership of the Department, as well as fiscal officer representation. The EIB uses the Integrated Management Process as its tool for managing IT investments. The Integrated Management Process ensures appropriate planning, technical, and fiscal review at key decision points ("milestone") within a project's life cycle. Projects must fully complete all requirements for a given milestone before they are permitted unqualified approval to proceed to the next one. There are five milestones in the life cycle of a project: (0) Project Concept Development; (1) Project Planning; (2) Project Pilot/Prototyping; (3) Project Development/Roll-Out; and (4) Project Operation (i.e., "Post-Implementation"). VA constituent organizations (administrations and staff offices) are free to develop appropriate decision making mechanisms to vet investments and investment progress decisions prior to their review by the EIB. Nevertheless, those boards are still subject to the overall governance of the EIB. Detailed guidance on the Integrated Management Process, IT Portfolio Management, and IT Project Management is being prepared and will be completed by April 2004. VA anticipates implementing this recommendation by the end of April 2004.

- **Within the agency's IT investment selection process, implement a mechanism to identify possible conflicting, overlapping, strategically unlinked or redundant proposals and prioritize its IT investment(s).**

See comment 6.

Concur: VA has already implemented an IT Capital Planning and Investment Control (CPIC) process that fully implements the requirement of the Office of Management and Budget (OMB), as defined within OMB Circular A-11, Section 300. A key component of the CPIC process is the annual review of the entire IT Portfolio through the analyses of Exhibit 300 - Capital Asset Plan and Business Case - for each of the Department's major IT investments. VA has fully aligned its review process with that of OMB to the extent that internal evaluation of Exhibit 300s (prior to their dispatch to OMB) uses the same scoring template and analytical paradigm as used by OMB. All Exhibit 300 documents are reviewed by a small group of technical subject matter experts. Through such means, it becomes possible to identify those investments that may be in conflict with others, potentially offer duplicative or overlapping efforts, or not advance the

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Enclosure

Department of Veterans Affairs Comments
To GAO Draft Report,
***INFORMATION TECHNOLOGY MANAGEMENT: Governmentwide Strategic Planning, Performance Measurement, and Investment Management Can Be Further Improved***
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(Continued)

mission, goals, and objectives of the Department (i.e., "strategically unlinked"). Based on this review, the EIB is offered recommendations on the IT Portfolio. The EIB, through its capability to decide whether to recommend continuance, modification, or termination of projects to the VA CIO, can then resolve conflicting, overlapping, or non-aligned investment proposals. This recommendation has been implemented.

- **Develop a process to use independent verification and validation reviews, when appropriate.**

See comment 7.

Concur: As part of VA's Integrated Management Process, the VA CIO, or the EIB, can request "in process" reviews of investments during their life cycle, particularly if such an investment appears "off track" (that is, cost and/or schedule is no longer within planned values plus 10 percent, or the project is not delivering the performance that was expected). In addition, after implementation, projects are subject to post-implementation reviews. This latter set of reviews determines whether a project, now fully implemented, provided the Department with what was initially expected. These reviews are conducted by someone in other than the office responsible for the investment and often by outside consultants. This recommendation has been implemented.

The following are GAO's comments on the Department of Veterans Affairs' (VA) letter dated December 5, 2003.

## GAO Comments

1. VA's response indicates that the department will address this recommendation in the future and, therefore, we did not remove this recommendation.

2. See comment 1.

3. See comment 1.

4. VA's monthly performance reports track project-specific measures, not enterprisewide IT performance measures. VA's draft IRM plan states that it will establish metrics to measure performance for IT strategic initiatives. However, progress toward doing so was not addressed by VA in its comments. Therefore, we do not believe this recommendation has been fully addressed.

5. See comment 1.

6. Although VA describes a process followed for reviewing investment proposals, it did not provide evidence to support that this practice was actually followed. In addition, VA did not address the element of our recommendation related to prioritizing its IT investments. Therefore, we did not remove this recommendation.

7. On the basis of the additional information provided, we agree that the recommendation has been implemented and modified our report accordingly.

# GAO Contacts and Staff Acknowledgments

## GAO Contacts

Linda J. Lambert, (202) 512-9556
Mark D. Shaw, (202) 512-6251

## Staff Acknowledgments

Joseph P. Cruz, Lester P. Diamond, Laurence P. Gill, David B. Hinchman, Robert G. Kershaw, David F. Plocher, Susan S. Sato, and Patricia D. Slocum made key contributions to this report.

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