

July 1998

VA INFORMATION TECHNOLOGY

Improvements Needed to Implement Legislative Reforms



**Accounting and Information
Management Division**

B-278709

July 7, 1998

The Honorable Arlen Specter
Chairman, Committee on Veterans' Affairs
United States Senate

The Honorable John D. Rockefeller IV
Ranking Minority Member
Committee on Veterans' Affairs
United States Senate

The Honorable Bob Stump
Chairman, Committee on Veterans' Affairs
House of Representatives

The Honorable Lane Evans
Ranking Minority Member
Committee on Veterans' Affairs
House of Representatives

In your September 1997 letter, you requested that we review and evaluate how well the Department of Veterans Affairs (VA) is selecting and managing its information technology investments and identify specific areas where improvements could be made. Information technology represents about \$1 billion of VA's fiscal year 1999 budget request of \$43 billion. This report provides the results of our review.

The Clinger-Cohen Act and other related legislative reforms provide guidance on how VA and other agencies should plan, manage, and acquire information technology as part of their overall information resources management responsibilities. They also require federal agencies to appoint Chief Information Officers (CIOs) responsible for providing leadership in the acquisition and management of information resources. Accordingly, as agreed with your offices, our specific objectives were to examine how VA has implemented the following specific provisions of the Clinger-Cohen Act and other legislative reforms: reengineering business processes before acquiring information technology; completing an integrated information

technology architecture;¹ institutionalizing a disciplined information technology investment decision-making process; and appointing an agency CIO.

Results in Brief

VA has not fully implemented critical provisions of the Clinger-Cohen Act and other legislative reforms. Although VA has taken some initial steps, it has not adequately implemented these legislative reforms. Specifically, the Clinger-Cohen Act requires agencies to analyze their mission-related and administrative processes, and on the basis of this analysis, revise and improve these processes before making significant investments in supporting information technology. Although GAO's business process reengineering guide² states that agencies should have an overall business process improvement strategy to accomplish reengineering, VA has not developed such a strategy. VA also has not yet defined the departmentwide integrated information technology architecture needed to efficiently utilize information systems across the department.

In addition, VA has not institutionalized a disciplined process for selecting, controlling, and evaluating information technology as investments as required by the Clinger-Cohen Act. Specifically, VA decisionmakers did not have current and complete information such as cost, benefit, schedule, risk, and performance data at the project level, which is essential to making sound investment decisions. In addition, VA's process for controlling and evaluating its investment portfolio is incomplete and, as a result, decisionmakers do not have the information needed to (1) detect or avoid problems early and (2) improve VA's investment process. As a consequence, the department does not know whether it is making the right investments, how to control these investments effectively, or whether these investments have provided mission-related benefits in excess of their costs.

Finally, although the Clinger-Cohen Act requires agencies' CIOs to have information management as their primary duty, the responsibilities of VA's CIO are not limited primarily to information management. Instead, the CIO

¹An integrated information technology architecture is a blueprint, consisting of logical and technical components, to guide and constrain the development and evolution of a collection of related systems. At the logical level, the architecture provides a high-level description of an organization's mission, the business functions being performed and the relationships among the functions, the information needed to perform the functions, and the flow of information among functions. At the technical level, the architecture provides the rules and standards needed to ensure that the interrelated systems are built to be interoperable and maintainable. These include specifications of critical aspects of component systems' hardware, software, communication, data, security, and performance characteristics.

²Business Process Reengineering Assessment Guide (GAO/AIMD-10.1.15, April 1997, Version 3).

also functions as the department's Assistant Secretary for Management and Chief Financial Officer (CFO). As a result, information technology issues are not addressed promptly.

In commenting on a draft of this report, VA concurred with all six recommendations. VA stated, among other things, that it will establish the position of Assistant Secretary to serve as the department's CIO, reporting directly to the Secretary on all information resources issues.

Background

VA comprises three major components: the Veterans Benefits Administration (VBA), the Veterans Health Administration (VHA), and the National Cemetery System (NCS).³ VA's mission is "to administer the laws providing benefits and other services to veterans and dependents. . . ." The department's vision is to be a more customer-focused organization, functioning as "One VA." This vision stemmed from the recognition that veterans think of VA as a single entity, but often encounter a confusing, bureaucratic maze of uncoordinated programs that put them through repetitive and frustrating administrative procedures and delays. The "One VA" vision is to create versatile new ways for veterans to obtain services and information by streamlining interactions with its customers and integrating information technology resources to enable VA employees to help customers more quickly and effectively. This will require modifying or replacing separate information systems with integrated systems using common standards to share information across VA programs and with external partner organizations, such as the Department of Defense.

Information technology accounted for approximately \$1 billion of VA's fiscal year 1999 budget request of \$43 billion. Of the \$1 billion, about \$847 million, \$146 million, and \$5 million were for VHA, VBA, and NCS, respectively.

Over the past several years, we have identified weaknesses in VA's efforts to modernize its operations and manage its information technology resources. As we reported in 1992, VBA's procurement of hardware was not supported by a defined information architecture, thereby increasing the risk of developing systems that would not work as intended.⁴ In June 1996, we testified that VBA needed to develop a much improved investment

³VBA provides nonmedical benefits to veterans and their dependents; VHA provides services through the nation's largest health-care system; and NCS provides burial services in 115 national cemeteries.

⁴Veterans Benefits: Acquisition of Information Resources for Modernization Is Premature (GAO/IMTEC-93-6, November 4, 1992).

strategy for selecting and managing information technology projects in a more disciplined, businesslike manner.⁵ In January 1998, we reported⁶ that while VA made significant progress in preparing a strategic plan, dated September 30, 1997, the plan needed improvement in four major areas: (1) development of results-oriented goals, (2) descriptions of how the goals are to be achieved, (3) discussion of external factors, and (4) discussion of coordination efforts with other agencies. Finally, in October 1997, we testified on the importance of having strong CIOs at major federal agencies, such as VA, to bring about much-needed reforms in the government's management of information technology.⁷ In addition, a panel of the National Academy of Public Administration reported in August 1997, that VBA lacks strategic planning and management capabilities that are necessary for leadership to define where the organization wants to be, enable development of specific operational plans for getting there, and provide a set of coordinating and integrating capacities for implementing planned initiatives.⁸

Recognizing the need to better manage information technology, recent legislative reforms—the Clinger-Cohen Act of 1996,⁹ the Paperwork Reduction Act of 1995, and the Federal Acquisition Streamlining Act of 1994—provide guidance to federal agencies on how to plan, manage, and acquire information technology as part of their overall information resources management responsibilities. These legislative reforms highlight the need for business process reengineering, integrated architectures, investment processes, and CIOs to help with major information resource management responsibilities.

⁵Veterans Benefits Modernization: Management and Technical Weaknesses Must Be Overcome If Modernization Is To Succeed ([GAO/T-AIMD-96-103](#), June 19, 1996).

⁶Managing for Results: Agencies' Annual Performance Plans Can Help Address Strategic Planning Challenges ([GAO/GGD-98-44](#), January 30, 1998), app. XV, "Observations on the Department of Veterans Affairs' Strategic Plan."

⁷Chief Information Officers: Ensuring Strong Leadership and an Effective Council ([GAO/T-AIMD-98-22](#), October 27, 1997).

⁸Management of Compensation and Pension Benefits Claim Processes for Veterans—A Report by a Panel of the National Academy of Public Administration for Congress and the Department of Veterans Affairs, August 1997.

⁹The Omnibus Consolidated Appropriations Act, 1997, renamed both the Federal Acquisition Reform Act of 1996 and the Information Technology Management Reform Act of 1996 as the Clinger-Cohen Act of 1996.

Scope and Methodology

In assessing VA's implementation of the Clinger-Cohen Act and other legislative reforms, we reviewed and analyzed numerous documents pertaining to VA's business process reengineering, integrated information technology architecture, information technology investment decision-making process, and appointment of an agency CIO. These documents include VA's draft entitled One VA: Vision of Information Technology Enhanced Customer Service, dated January 22, 1998; OMB's Memorandum on Information Technology Architectures, dated June 18, 1997; VA's draft FY 1999 Department Capital Plan, dated October 1997; and VA's April 1997 Progress Report on the Department of Veterans Affairs CIO Program.

We discussed VA's implementation of the Clinger-Cohen Act and other legislative reforms with Office of Management and Budget (OMB) officials and with various VA headquarters and component officials, including the Offices of the CIO, Information Resources Management, and Policy and Planning. We also interviewed a VA representative of the contractor responsible for developing VA's information technology vision document. We used our investment guide¹⁰ to evaluate and assess VA's information technology investment process.

We performed our work from October 1997 through April 1998, in accordance with generally accepted government auditing standards. We requested comments on a draft of this report from the Secretary of Veterans Affairs and they are reprinted in appendix I. More details of our objectives, scope, and methodology are included as appendix II.

VA Lacks Overall Business Process Improvement Strategy

The Clinger-Cohen Act requires agency heads to analyze the missions of the agency and, on the basis of this analysis, revise and improve the agency's mission-related and administrative processes before making significant investments in supporting information technology. Specifically, agencies should maximize the potential of technology to improve performance, rather than simply automating inefficient processes. According to our business process reengineering guide,¹¹ an agency should have an overall business process improvement strategy that provides a means to coordinate and integrate the various reengineering and improvement projects, set priorities, and make appropriate budget decisions.

¹⁰Assessing Risks and Returns: A Guide for Evaluating Federal Agencies' IT Investment Decision-making (GAO/AIMD-10.1.13, February 1997).

¹¹GAO/AIMD-10.1.15, April 1997, Version 3.

VA has not analyzed its business processes in terms of implementing its “One VA” vision. In addition, it does not have a departmentwide business process improvement strategy specifying what reengineering and improvement projects are needed, how they are related, and how they are prioritized. VA’s Directive 6000 instructs administration heads, assistant secretaries, and other key officials to apply sound business process improvement or business reengineering methods to enhance the benefits of information technology, but the directive does not provide the guidance needed to accomplish this departmentwide effort. Specifically, VA’s strategy does not identify needed reengineering and improvement projects, describe how they are interrelated, determine the order in which they will be pursued, and define specific goals, time frames, resource requirements, and key participants for each.

In the absence of a departmentwide strategy, VA components are proceeding with separate, uncoordinated efforts, which undermines the department’s “One VA” vision. For example, both VBA and VHA are building information centers which enable callers, through the use of an 800 number, to obtain information on general benefits and basic services. However, these efforts are not currently coordinated. As a result, both projects are unnecessarily providing the same functionality. A senior VA official acknowledged that VA should not be building two separate information center systems, and that doing so is not consistent with the “One VA” vision.

Similarly, VA and its components have not adequately coordinated and integrated their business process improvement efforts for the development of a master veteran record (MVR). This departmentwide project is intended to electronically link VHA, VBA, NCS, and Board of Veterans’ Appeals information systems and databases to share vital information, such as death notification, change of address, representation and family status about veterans. However, according to the project manager, this project is experiencing difficulties because VBA will not fund a segment of the project necessary to establish a link between VBA’s compensation and pension program—VBA’s largest program—and other VA components. As a result, VBA is not in a position to obtain timely information, such as death notifications, which can result in overpayments to veterans.

VA has acknowledged the need to develop a strategy to achieve the “One VA” vision and has hired a contractor to analyze the department’s business plans and information technology projects to determine how well they fit within the vision. However, to date, VA has not committed to when it will

have an overall business process improvement strategy to accomplish reengineering.

VA Lacks an Integrated Information Technology Architecture

The Clinger-Cohen Act and recent OMB guidelines require agency CIOs to implement an architecture to provide a framework for evolving or maintaining existing information technology, and for acquiring new information technology to achieve the agency's strategic and information technology goals. Leading organizations both in the private sector and in government use systems architectures to guide mission-critical systems development and to ensure the appropriate integration of information systems through common standards.¹²

Despite the importance of doing so, VA and its components have yet to define a departmentwide integrated architecture. For example, as we reported in May 1997, VBA did not have a complete, integrated systems architecture to help guide its new systems development activities.¹³ We therefore recommended that VBA develop such an architecture, including a security architecture and performance characteristics and standards. VA concurred with our recommendation.

To formulate an approach for developing an integrated architecture, VA in March 1997 established an architecture team consisting of representatives from VA's Office of Information Resources Management, VBA and VHA. This team issued a report to the VA CIO Council¹⁴ in May 1997 adopting the National Institute of Standards and Technology (NIST)¹⁵ five-layer model for its departmentwide information technology architecture. The five layers—business processes, information flows and relationships, applications processing, data descriptions, and technology—provide a framework for defining an information technology architecture. VA can use this model to help it document the baseline architecture, identify a target architecture, and develop a migration plan showing how the department will make the necessary transition from its existing architecture to the target architecture.

¹²Executive Guide: Improving Mission Performance Through Strategic Information Management and Technology—Learning From Leading Organizations (GAO/AIMD-94-115, May 1994).

¹³Veterans Benefits Computer Systems: Risks of VBA's Year-2000 Efforts (GAO/AIMD-97-79, May 30, 1997).

¹⁴VA's CIO Council is comprised of VA's Assistant Secretary for Management and his Deputy CIO, VA's Assistant Secretary for Policy and Planning, VBA's CIO, VHA's CIO, NCS' Director of Operations Support, and Board of Veterans' Appeals' Director of Management and Administration.

¹⁵NIST Special Publication 500-167, "Information Management Directions: The Information Challenge."

Despite the VA architecture team's efforts, VA does not yet have a departmentwide target architecture and migration plan. While a baseline architecture has been established, VA has not addressed key aspects of the target architecture, such as information flows, data descriptions, and common technical standards that would apply to VBA, VHA, and NCS. According to VA's CIO, the department has not addressed these aspects because it is waiting for the Strategic Management Steering Committee¹⁶ to take a position on the proposal to develop a departmentwide target architecture and establish a program office to implement the architecture and related efforts, including business process reengineering and customer service improvements.

VA Has Not Institutionalized a Disciplined Information Technology Investment Process

While information technology represents \$625 million or 80 percent of VA's proposed \$786 million capital investment budget for fiscal year 1999, the department lacks an effective process for selecting, controlling, and evaluating its information technology projects as investments. VA's newly developed selection process, used for the first time in the fiscal year 1999 budget cycle, is incomplete, undisciplined, and does not satisfy the selection process requirements specified in the Clinger-Cohen Act. For example, decisionmakers did not have adequate information pertaining to project cost, benefits, risk, and performance measures to make well-informed decisions. Also, VA's process for monitoring and controlling its investment portfolio was incomplete and provided little information to VA decisionmakers reviewing ongoing projects. Finally, VA's process for evaluating completed projects did not include reviews to (1) determine the causes of major differences between actual and expected results in terms of cost, schedule, and performance, and (2) revise investment processes on the basis of lessons learned. As a result of these weaknesses, the department does not know whether it is making the right investments, how to control these investments effectively, or whether these investments have provided mission-related benefits in excess of their costs.

The Clinger-Cohen Act Prescribes an Investment Management Approach

The Clinger-Cohen Act requires agency heads to implement an approach for maximizing the value and assessing and managing the risks of information technology investments. It stipulates that this approach should be integrated with the agency's budget, financial, and program management processes.

¹⁶The members of this committee include the Chief of Staff, the Deputy Under Secretaries for Health and Benefits, the CIOs for VHA and VBA, the CFOs for VHA and VBA, the Assistant Secretary for Policy and Planning, and the NCS Directors for Field Operations and Operations Support.

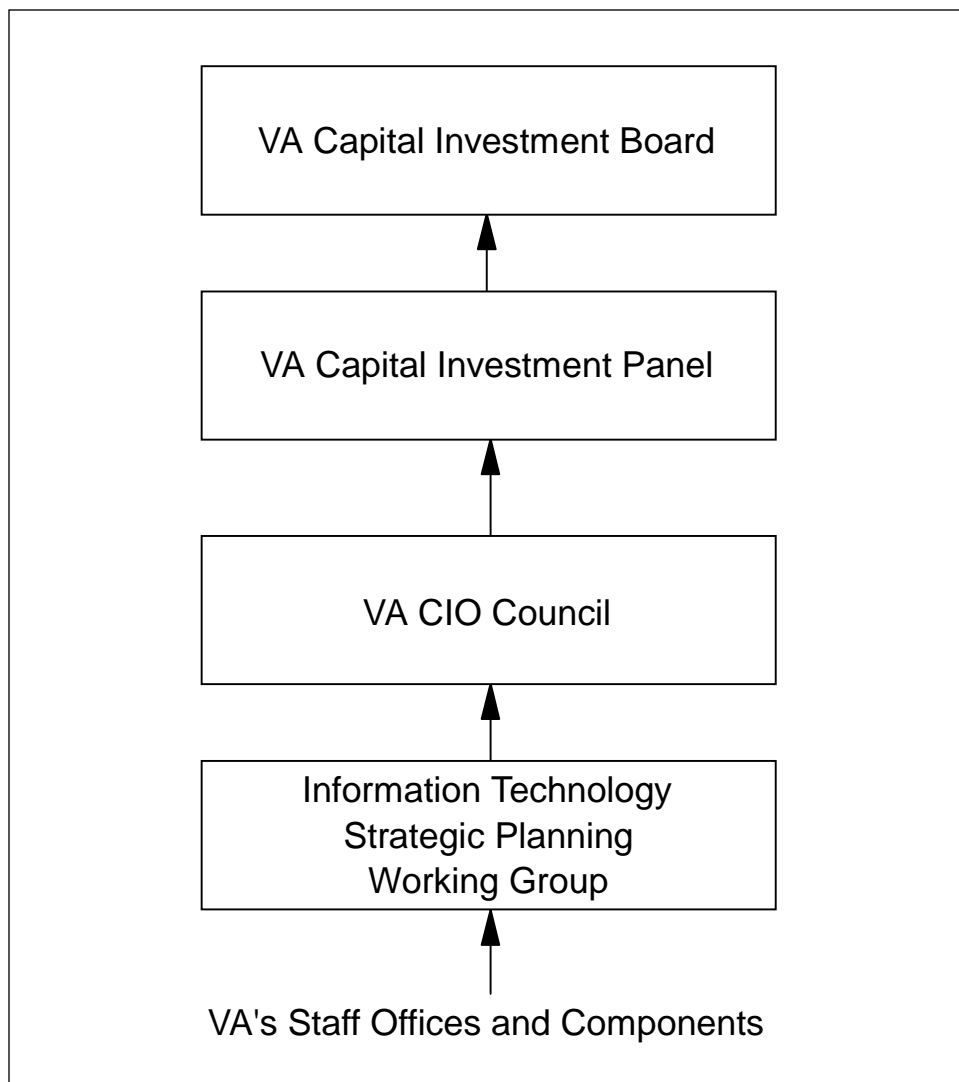
According to our investment guide,¹⁷ an information technology investment process is an integrated approach that provides for disciplined, data-driven identification, selection, control, life-cycle management, and evaluation of information technology investments. Information from one phase is used to support activities in the other phases. When identifying information technology investments to be managed at the department level, leading organizations use criteria that include (1) high-dollar, high-risk projects, (2) cross-functional projects (two or more organizational units benefitting from the projects), and (3) common infrastructure support, such as hardware and telecommunications.

Once selected, information technology projects in the investment portfolio are consistently controlled and managed through progress reviews at key milestones in a project's life cycle. Progress reviews should include assessing deliverables, technical issues, schedule, costs, and risks. Finally, once a project has been fully implemented, a post-implementation review or evaluation should be conducted, comparing actuals against estimates in order to assess performance and identify areas where future decision-making can be improved.

VA defined a new decision-making process for information technology investments and conducted a "dry run" in formulating the fiscal year 1999 budget. As depicted in figure 1, this process began with VA's staff offices and components submitting information packages about their capital investment projects to an Information Technology Strategic Planning Working Group. This group—composed of project decisionmakers representing the VA Central Office's Office of Information Resources Management, Office of Financial Management, VBA, VHA, Board of Veterans' Appeals, Office of Planning and Policy, and NCS—was created to assist VA's CIO Council in its review of prospective projects for funding. The working group used risk and return criteria, which included factors such as investment size, project longevity, technical risk, business impact on mission, and customer needs.

¹⁷GAO/AIMD-10.1.13, February 1997.

Figure 1: VA's New Investment Decision-Making Process



The working group then forwarded the scored and ranked projects to VA's CIO Council, which is responsible for ensuring that the information technology projects are well planned, completely documented, support the strategic plan and corporate goals, and are mission critical. After its review, the council forwarded the scored and ranked projects to VA's Capital Investment Panel. This panel, which is composed of project decisionmakers representing the VA CFO, VA CIO, VHA, VBA, VA Office of Planning and Policy, and NCS, was created to assist VA's Capital Investment

Board. The panel reviewed the projects from the CIO Council and recommended to the VA Capital Investment Board that these projects be included in the department's capital investment plan for the upcoming year.¹⁸ The board is composed of the Deputy Secretary, Assistant Secretary for Management, Assistant Secretary for Policy and Planning, Under Secretaries for VHA and VBA, and the Director of NCS and is responsible for making decisions on capital investment projects and ensuring that the projects conform with VA mission, goals, priorities, and strategies.

VA Has Not Followed a Disciplined Process for Selecting Projects

Under the Clinger-Cohen Act, agencies need to compare and prioritize projects using explicit quantitative and qualitative decision criteria, such as data on hardware and software life-cycle costs, technical risks, and mission-related benefits. In conducting their selection processes, leading organizations assess and manage all information technology projects, including mission-critical or infrastructure projects, at all phases of their life cycles, in order to create a complete strategic investment portfolio and help ensure that the benefits of their investments will be realized.¹⁹ By continually scrutinizing and analyzing their entire information technology investment portfolio, managers can examine the costs of maintaining existing systems versus investing in new ones and, on the basis of mission priorities, reach decisions on systems' overall contributions to organizational goals.

As stated in our investment guide,²⁰ good decisions require good data. To help make decisions on information technology investments, leading organizations require all projects to have complete and up-to-date project information. This information includes cost and benefit data, risk assessments, implementation plans, and initial performance measures. Further, this information allows senior executives to rigorously evaluate each project, make project comparisons across the organization, and establish project review schedules for projects selected for funding in order to monitor and track project cost, benefits, and risks.

VA's selection criteria requires that relevant reports (e.g., congressionally requested audits and studies, VA in-process and post-implementation review findings), cost-benefit analyses, risk analyses, and risk

¹⁸VA's Fiscal Year 1999 Department Capital Plan supports VA's annual budget request and summarizes how each proposal addresses the Capital Investment Board's criteria.

¹⁹GAO/AIMD-94-115, May 1994.

²⁰GAO/AIMD-10.1.13, February 1997.

management plans, be provided to decisionmakers reviewing projects for funding.

VA did not follow a disciplined process for selecting its information technology projects. Specifically, the VA Capital Investment Board was not provided sufficient data with which to make good funding decisions. In our analysis of VA's selection process, we examined 7 of 16 projects approved by the board. These seven projects represent about \$223 million or 36 percent of VA's fiscal year 1999 information technology capital investment budget of \$625 million. As shown in table 1, none of the seven projects we examined contained all the required information. Further, despite the importance of VA's Veteran-Focused Information Technology Architecture (ITA) program to defining and achieving the "One VA" vision, none of the required information for this project was provided to the board. Nonetheless, the board decided to fund all seven projects. Further, the board did not establish a schedule for conducting project reviews, at key milestones, for each approved project.

Table 1: Summary of Supporting Analyses and Documentation Presented to the VA Information Technology Strategic Planning Working Group

| | ES ^a | IC ^b | MVR ^c | HRLink\$ ^d | C&P ^e | IDCU ^f | ITA ^g |
|-------------------------------|-----------------|-----------------|------------------|-----------------------|------------------|-------------------|------------------|
| Relevant reports ^h | | | | X | | | |
| Market research results | X | Z | | | | | |
| Benefit-cost analysis | X | Z | X | X | | X | |
| Formal risk analysis | X | Z | | X | | | |
| Risk management plan | X | Z | | | | X | |
| Acquisition strategy/plan | X | | | X | | | |

Legend: X represents documents presented to VA's Information Technology Strategic Planning Working Group, which was created to assist VA's CIO Council in its review of the projects.
Z represents a document provided to decisionmakers that contained elements of these types of analyses and documents.

^aVHA's VA Medical Care Enrollment System.

^bVBA's Information Centers.

^cVA's Master Veteran Record.

^dVA's replacement human resources and payroll system (formerly known as PAY-VA).

^eVBA's Replacement of the Compensation and Pension Payment System.

^fVA's Integrated Data Communications Utility Follow-On.

^gVA's Veteran-Focused Information Technology Architecture Program.

^hRelevant reports include congressionally requested audits and studies as well as VA in-process and post-implementation review findings.

Source: VA. We did not independently assess the quality and validity of the analyses and documents provided.

Recognizing the weaknesses in the investment selection process, the Deputy CIO, in an August 4, 1997, memorandum to VA's CIO, recommended that this process be improved in the next budget cycle. For example, she recommended that (1) adequate documentation be provided for all information technology projects and (2) adequate time be provided for thorough reviews of the documentation prior to scoring and ranking. Seven months later, the CIO in a memorandum to VA's administration heads, assistant secretaries, and other key officials, specified that changes would be made to the department's capital investment process for the fiscal year 2000 budget cycle to ensure the provision of adequate documentation and adequate documentary review. In addition, the memorandum stated that projects with incomplete documentation will be returned to the originating

office for the missing information. The memorandum did not address what action will be taken if the missing documentation is not provided.

Control Process Does Not Provide for Adequate Monitoring and Management of Investments

Leading organizations continue to manage their investments once selection has occurred, maintaining a cycle of continual control and monitoring.²¹ Senior managers review the project at specific milestones as the project moves through its life cycle and as the dollar amounts spent on the project increase. At these milestones, the executives compare the expected costs, risks, and benefits of earlier phases with the actual costs incurred, risks encountered, and performance benefits realized to date. This enables senior executives to (1) identify and focus on managing high-potential or high-risk projects, (2) reevaluate investment decisions early in a project's life cycle if problems arise, (3) respond to changing external and internal conditions in mission priorities and budgets, and (4) learn from past successes and mistakes in order to make better decisions in the future. During the control phase, senior executives determine if projects should be functionally modified, continued, accelerated, delayed, or terminated. As executives responsible for implementing legislative reform, it is critical that senior managers stay actively involved in the process for controlling information technology projects and receive complete and up-to-date information related to the projects under review.

To control and monitor its information technology projects, VA relies on periodic project status reviews and formal in-process reviews. Periodic project status reviews are conducted at the VA component level. Formal in-process reviews are conducted at the department level. According to VA's policy, formal in-process reviews are only conducted ad hoc, such as when it becomes apparent that a project is behind schedule, over-budget, not performing as planned, or when oversight agencies raise issues.

VA's process for monitoring and managing its investment portfolio is not timely and provides little information to VA decisionmakers. First, VA does not conduct formal in-process reviews before significant dollars are expended or substantial risks are encountered. For example, VA had initially scheduled an in-process review of a VBA project to replatform and redesign a system that provides educational benefits to reservists. However, the in-process review was canceled when the project ran into problems and the project is now being reassessed. The problems

²¹GAO/AIMD-94-115, May 1997.

associated with this project might have been avoided had VA conducted proactive, risk-based in-process reviews at all critical project milestones.

Second, to the extent that periodic project status reviews and formal in-process reviews are conducted, the results of the reviews were not provided to decisionmakers reviewing projects for funding. For example, of the 15 major ongoing or maintenance projects²² that the VA investment board approved for funding, only one, VBA's Replacement of the Compensation and Pension Payment System project, received a formal in-process review during fiscal year 1997. However, as shown in table 1, decisionmakers were not provided with the results of this review. Therefore, they were not in a position to effectively monitor and manage this project.

Evaluation Process Does Not Identify How to Improve the Investment Process

Once projects have been implemented and become operational, leading organizations conduct post-implementation reviews (PIRS) to determine whether they have achieved expected benefits, such as lowered cost, reduced cycle time, increased quality, or increased speed of service delivery.²³ Our information technology investment guide²⁴ points out that each PIR should have a dual focus. First, it should provide an assessment of the implemented project, including an evaluation of customer/user satisfaction and mission/program impact in terms of achieving the estimated cost, schedule, and mission-related benefits. Second, it should provide lessons learned so that the investment decision-making processes can be improved.

VA has developed a standard methodology for conducting PIRS. This methodology focuses on elements, such as: (1) customer/user satisfaction, (2) strategic impact and effectiveness, and (3) impact on organization's internal operations including security, internal controls, standards and compliance, and maintenance.

Our review identified deficiencies with VA's process for evaluating completed projects. First, while the three PIRS VA performed during fiscal years 1996 and 1997 gathered information on customer/user satisfaction and discussed development and implementation challenges, none of them

²²An ongoing project is a project that VA's Capital Investment Board initially approved as a new project and which is now seeking out-year funding; a maintenance project is a project that is fully operational/implemented and in a maintenance mode.

²³GAO/AIMD-94-115, May 1994.

²⁴GAO/AIMD-10.1.13, February 1997.

compared actuals to estimates in terms of cost, schedule, and mission-related benefits.²⁵ For example, while the PIRS discuss cost savings, they do not provide information on whether the projects met, exceeded, or fell short of expectations.

Second, VA did not identify lessons learned that can be used to improve VA's investment process for selecting, controlling, and evaluating information technology initiatives. Our review of the three PIRS VA performed disclosed that the PIRS did identify some project specific improvements. For example, based on a PIR of VHA's Integrated Funds Distribution, Control Point Activity, Accounting and Procurement system, VHA subsequently modified this system to ensure appropriate security access. However, none of the PIRS assessed the completed projects to identify improvements that could be made to VA's information technology investment process.

VA's CIO Responsibilities Not Limited Primarily to Information Technology Management

The Paperwork Reduction Act and the Clinger-Cohen Act direct federal agency heads to appoint CIOs to (1) promote improvements to the work processes used by the agency to carry out its programs, (2) implement an integrated agencywide systems or technology architecture, and (3) help to establish a sound investment review process to select, control, and evaluate spending for information technology. To help ensure that these responsibilities are effectively executed, the Clinger-Cohen Act also requires that the CIO's primary responsibility be related to information management.

VA's CIO responsibilities are not limited primarily to information management. The CIO also serves the department in a variety of top management positions, including Assistant Secretary for Management, CFO, and Deputy Assistant Secretary for Budget.

In an agency as decentralized as VA, its CIO is faced with many significant information management responsibilities, such as ensuring (1) that the department's operations will not be disrupted by the Year 2000 problem, (2) that its systems developments are not handicapped by incomplete architectures, and (3) that a sound information management investment review process that provides a systematic, data-driven means of selecting, controlling, and evaluating information technology projects will be

²⁵The three reviews were of VHA's Automated Medical Information Exchange; VHA's Integrated Funds Distribution, Control Point Activity, Accounting and Procurement; and NCS' Burial Operations Support System.

institutionalized. As we testified in October 1997,²⁶ each of these responsibilities is formidable. Taken together, they certainly constitute a full-time job for any CIO.

We have raised concerns in the past about agencies that have vested CIO and CFO responsibilities in one person.²⁷ Agencies face challenges in improving both financial and information management. In our opinion, each management area requires full-time leadership by separate individuals with appropriate talent, skills, and experience in these two areas. The Clinger-Cohen Act calls for CIOs to have information resources management as their primary duty. We have stressed the importance of this principle in testimony and in our February 1997 high-risk report, in which we emphasized that the CIO's duties should focus sharply on strategic information management issues and not include other major responsibilities.²⁸

In a May 1997 report²⁹ to OMB, VA's Assistant Secretary for Management acknowledged that he was the department's CIO as well as its CFO. He indicated that the VA Secretary felt that assigning multiple responsibilities to the department's CIO would establish clear accountability for information resources management activities at VA, where financial systems represent a substantial part of the agency's information systems portfolio. However, officials familiar with the current information management environment at VA and its components told us that VA's CIO is unable to get involved in the normal, day-to-day business of a CIO unless a problem arises that absolutely demands his attention.

Moreover, VA's CIO told us that because he does not have a technical background in information resources management, he relies on his deputy. VA's Deputy CIO, however, told us that since she has not been officially delegated the decision-making authority that the CIO has, she can not make important information technology decisions promptly. For example, the Deputy CIO recognized problems VBA was having with the Veterans Service Network (VETSNET). Consequently, she wrote a plan to correct the

²⁶GAO/T-AIMD-98-22, October 27, 1997.

²⁷GAO/T-AIMD-98-22, October 27, 1997.

²⁸Government Reform: Legislation Would Strengthen Federal Management of Information and Technology (GAO/T-AIMD-95-205, July 25, 1995); Managing Technology: Best Practices Can Improve Performance and Produce Results (GAO/T-AIMD-97-38, January 31, 1997); High-Risk Series: Information Management and Technology (GAO/HR-97-9, February 1997); and GAO/T-AIMD-98-22, October 27, 1997.

²⁹Progress Report on the Department of Veterans Affairs Chief Information Officer Program, April 1997.

problems and briefed the CIO. Despite the problems that VETSNET has encountered and the significance of this project to VA, the CIO has not acted yet on this plan beyond presenting the plan to the VBA CIO. The Deputy CIO stated that she does not have the authority to ensure that this corrective action plan is enacted. As a result, she added, such issues, when left unaddressed, tend to evolve into different issues or problems later.

The CIO recently told us that he would soon step down from his Assistant Secretary for Management/CFO/CIO positions and assume the position of VA's Deputy Assistant Secretary for Budget. It is not known at this time whether the new Assistant Secretary will also hold the CIO and CFO positions.

According to VA's Director of Information Resource Management Policy and Standards Service, VA recently formed a working group³⁰ to determine whether to separate the department's CIO and CFO positions. The working group has submitted several options on this matter to VA's Secretary for consideration.

Conclusions

VA has not fully implemented critical provisions of the Clinger-Cohen Act and other information technology legislative reforms to achieve its "One VA" vision of becoming more customer-focused and delivering seamless service to veterans. It lacks a departmentwide strategy for reengineering and improving business processes. As a result, business process reengineering efforts at the component levels are uncoordinated, duplicative, and do not provide VA with opportunities to share information.

Further, while VA recognizes the importance of defining a departmentwide integrated information technology architecture, it has not yet done so. Without an integrated architecture, VA will continue to develop duplicative and redundant information systems and will not accomplish its vision of "One VA."

In addition, VA has not institutionalized a disciplined investment management process. Decisionmakers continue to make investment decisions involving millions of dollars without reliable data on expected and actual costs, benefits, and risks. Moreover, VA's process for controlling information technology projects through periodic status and in-process

³⁰The working group consists of VA's Chief of Staff, who is also the chairperson of the working group; VA's Deputy to the Assistant Secretary for Management; VA's Deputy Assistant Secretary for Information Resources Management; VA's Deputy General Counsel; and VA's Deputy Assistant Secretary for Human Resources Management.

reviews does not adequately monitor and manage its investments so as to detect or avoid problems early. Further, VA's process for evaluating completed projects does not modify and improve the investment process based on lessons learned.

Finally, given the size of VA's information technology budget and the many serious information management issues its CIO must face, such as ensuring that the department's operations will not be disrupted by the Year 2000 problem, it is important that information resources management be the CIO's primary duty. A full-time CIO would help ensure adequate coverage of information management issues. Information resources management is not the primary duty of VA's CIO. He also serves as Assistant Secretary for Management, CFO, and Deputy Assistant Secretary for Budget.

Recommendations

We recommend that the Secretary of Veterans Affairs direct the Assistant Secretary for Policy and Planning to develop a departmentwide strategy that details how VA will reengineer its business processes, including identifying and prioritizing process improvement projects, and delineating their interrelationships.

To fulfill the requirements of the Clinger-Cohen Act and other information technology legislative reforms, we also recommend that the Secretary direct VA's CIO to

- develop a detailed implementation plan with milestones for completing an integrated, departmentwide information technology architecture;
- fully implement a disciplined process for selecting information technology investments in which all decisions are based upon complete and current project information including estimated project costs, expected mission-related benefits, projected schedule, and risks;
- conduct formal in-process reviews at key milestones in a project's life cycle, including comparing actual and estimated project costs, benefits, schedule, and risks, and provide these results, as well as the results of periodic project status reviews performed by VA components, to decisionmakers who will determine whether to continue, accelerate, or terminate information technology projects; and
- initiate post-implementation reviews for information technology projects within 12 months of implementation, to compare completed project cost, schedule, performance, and mission improvement outcomes with original estimates, and provide the results of these reviews to decisionmakers so

that improvements can be made to VA's information technology investment process.

In addition, we recommend that the Secretary appoint a CIO with full-time responsibilities for information resources management.

Agency Comments and Our Evaluation

In commenting on a draft of this report, the Department of Veterans Affairs concurred with all six of our recommendations. The department also stated that it recognizes that its information resources management challenges are broad and critical to the success of the department's mission, and, therefore, established the position of Assistant Secretary to serve as CIO reporting directly to the Secretary on all information resources issues. This new Assistant Secretary will be responsible for ensuring that all of the department's information technology initiatives support the overall "One VA" vision.

Finally, in concurring with our recommendation to complete an integrated, departmentwide information technology architecture, the department did not specify how and when it plans to do so. Until it completes and implements an integrated architecture, VA will continue to develop duplicative and redundant information systems and will not accomplish its vision of "One VA."

As agreed with your offices, we will not distribute this report until 5 days after its date. At that time, we will send copies to the Chairman and Ranking Minority Member of the Subcommittee on Oversight and Investigations, House Committee on Veterans' Affairs; and the Chairman and Ranking Minority Member of the Subcommittee on Benefits, House Committee on Veterans' Affairs. We will also provide copies to the Chairmen and Ranking Minority Members of the Senate and House Committees on Appropriations; the Secretary of Veterans Affairs; and the Director of the Office of Management and Budget. Copies will also be made available to others upon request.

Please contact me at (202) 512-6253 or by e-mail at *willemsenj.aimd@gao.gov* if you have any questions concerning this report. Major contributors to this report are listed in appendix III.

A handwritten signature in black ink that reads "Joel Willemsen". The signature is written in a cursive style with a large, looping initial "J".

Joel C. Willemsen
Director, Civil Agencies Information Systems

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Abbreviations

| | |
|---------|--|
| CIO | Chief Information Officer |
| CFO | Chief Financial Officer |
| ITA | Veteran-Focused Information Technology Architecture Program |
| MVR | Master Veteran Record |
| NCS | National Cemetery System |
| NIST | National Institute of Standards and Technology |
| OMB | Office of Management and Budget |
| PIR | Post-implementation review |
| VA | Department of Veterans Affairs |
| VBA | Veterans Benefits Administration |
| VETSNET | Veterans Service Network |
| VHA | Veterans Health Administration |

Comments From the Department of Veterans Affairs



DEPARTMENT OF VETERANS AFFAIRS
ASSISTANT SECRETARY FOR POLICY AND PLANNING
WASHINGTON DC 20420

JUN 11 1998

Mr. Gene Dodaro
Assistant Comptroller General
Accounting and Information Management Division
U. S. General Accounting Office
441 G Street, NW
Washington, DC 20548

Dear Mr. Dodaro:

This is in response to your draft report, *VA INFORMATION TECHNOLOGY: Improvements Needed to Implement Legislative Reforms* (GAO/AIMD-98-154). You have focused on a critically important issue in the Department of Veterans Affairs (VA): the management of VA's information resources.

We recognize that the Department's information resources management challenges are so broad and so critical to the success of VA's mission, that they require increased prominence in VA's strategic management structure. Accordingly, the Secretary has decided to establish a sixth Assistant Secretary to serve as the Chief Information Officer for the Department. The new Assistant Secretary will report directly to the Secretary on all issues that relate to VA's vast and complex information resources. This individual will be a key component of VA's strategic management process and will be responsible for assuring that all of VA's information technology initiatives will conform to the Department's overall "One VA" vision.

We are concurring with the report's recommendations, and the enclosure describes actions we have taken or planned to implement them. Thank you for the opportunity to comment on your draft report.

Sincerely,

A handwritten signature in black ink, appearing to read "Duffy".

Dennis Duffy

Enclosure

Enclosure

DEPARTMENT OF VETERANS AFFAIRS COMMENTS TO
GAO DRAFT REPORT, ***VA INFORMATION TECHNOLOGY: Improvements
Needed to Implement Legislative Reforms***
(GAO/AIMD-98-154)

GAO recommends that the Secretary of Veterans Affairs direct the Assistant Secretary for Policy and Planning to develop a departmentwide strategy that details how VA will reengineer its business processes, including identifying and prioritizing process improvement projects, and delineating their interrelationships.

Concur - The Assistant Secretary for Policy and Planning will work with a newly appointed CIO (Assistant Secretary) to enhance the Department's strategies for process improvement relative to IT decisions. This strategy will employ the goals of the Clinger-Cohen Act and other IT legislative reforms to identify ways to improve Departmental systems processes and to develop IT approaches to assure a "One VA" seamless benefits delivery service to our nation's veterans.

To fulfill the requirements of the Clinger-Cohen Act and other information technology legislative reforms, GAO also recommends that the Secretary direct VA's CIO to

- **develop a detailed implementation plan with milestones for completing an integrated, departmentwide information technology architecture;**

Concur - In its May 1997 VA IT Architecture Report, the VA IT Architecture Team, described a general architecture framework to be made more precise over time, and outlined the particular technologies most important to achieving the "One VA" vision. This framework was entirely consistent with the OMB's subsequently issued guidance on IT Architecture. The VA IT Architecture Framework provides the mechanism for ensuring that technologies, standards, and shared infrastructure exist to support VA's mission of service delivery to veterans. At the business level, VA managers are working to define the impact of "One VA" customer service and other strategic business goals on existing business processes and workflows. At the technology level, the VA IT Architecture Team is focusing on data and technical standards to achieve interoperability and integration across the Department's systems and on solving technology problems of Departmentwide strategic importance.

DEPARTMENT OF VETERANS AFFAIRS COMMENTS TO
GAO DRAFT REPORT, **VA INFORMATION TECHNOLOGY: Improvements
Needed to Implement Legislative Reforms**
(GAO/AIMD-98-154)
(Continued)

- **fully implement a disciplined process for selecting information technology investments in which all decisions are based upon complete and current project information including estimated project costs, expected mission-related benefits, projected schedule, and risks;**

Concur - VA's investment process is constantly maturing and improving. This complex process has been evolving from the time we first developed and implemented the process for the FY1999 planning process up to our recent efforts for improving the investment process in the FY2000 planning cycle. In the FY1999 cycle, VA's Office of Information Resources Management evaluated investment submissions that did not contain all of the required information to avoid an interruption in business, and put VA organizations on notice regarding future investment requirements. For the FY2000 planning cycle, we collected and compared anticipated and actual data on costs as part of our IT Strategic Plan. We will continue to expand this effort and fully implement a disciplined process for selecting information technology investments. This has always been our strategic direction.

- **conduct formal in-process reviews at key milestones in a project's life cycle, including comparing actual and estimated project costs, benefits, schedule, and risks, and provide these results, as well as the results of periodic project status reviews performed by VA components, to decisionmakers who will determine whether to continue, accelerate, or terminate information technology projects; and**

Concur - VA will enhance its current in-process review activities to include all IT investments that the Capital Investment Board has approved. VA will conduct proactive in-process reviews throughout the life cycle of the IT investments. Results of in-process reviews will be provided to program officials responsible for the investment as well as to the Capital Investment Board. This will ensure that all relevant reports are included in the investment portfolios and are available to decisionmakers reviewing projects for funding, and to decisionmakers who will determine whether to continue, accelerate, or terminate information technology projects.

**Appendix I
Comments From the Department of
Veterans Affairs**

DEPARTMENT OF VETERANS AFFAIRS COMMENTS TO
GAO DRAFT REPORT, **VA INFORMATION TECHNOLOGY: Improvements
Needed to Implement Legislative Reforms**

(GAO/AIMD-98-154)

(Continued)

- **initiate post-implementation reviews for information technology projects within 12 months of implementation, to compare completed project cost, schedule, performance, and mission improvement outcomes with original estimates, and provide the results of these reviews to decisionmakers so that improvements can be made to VA's information technology investment process.**

Concur - VA will continue to conduct post-implementation reviews on all IT investments that were approved by the Capital Investment Board and have been fully deployed. These reviews will be conducted within 12 months after the information technology project has been implemented and fully deployed to compare completed project cost, schedule, performance, and mission improvement outcomes with original estimates. The results of these reviews will be provided to program officials responsible for the investment as well as to the Capital Investment Board so that improvements can be made to VA's information technology investment process.

In addition, GAO recommends that the Secretary appoint a CIO with full-time responsibilities for information resources management.

Concur - The Secretary has decided to establish an additional Assistant Secretary to serve as the Chief Information Officer for the Department. The Assistant Secretary for Policy and Planning has been assigned responsibility for outlining the organizational requirements and developing an initial implementation plan for the establishment of this new organization. The CIO's office will be established in the very near future.

ADDITIONAL COMMENT:

References to "draft" VA Strategic Plans produced in July and September 1997 should be replaced with discussions on VA's completed Strategic Plan published on October 1, 1997.

Objectives, Scope, and Methodology

Our objectives were to examine how VA has implemented the following specific provisions of the Clinger-Cohen Act and other legislative reforms: reengineering business processes before acquiring information technology, completing an integrated information technology architecture, institutionalizing a disciplined information technology investment decision-making process; and appointing an agency CIO.

In examining VA's reengineering of its business processes, we applied GAO's guide for business process reengineering.¹ We also reviewed VA's draft One VA: Vision of Information Technology Enhanced Customer Service, dated January 22, 1998, and its Strategic Plan—Fiscal Years 1998-2003, dated September 30, 1997. In addition, we discussed VA business process revision activities with VA, VBA, VHA, NCS, and OMB officials.

Regarding VA's information technology architecture, we applied OMB's Memorandum on Information Technology Architecture, dated June 18, 1997, and the National Institute of Standards and Technology's Special Publication 500-167, "Information Management Directions: The Information Challenge." We also reviewed agency documents and interviewed VA officials on the department's efforts to develop an integrated information technology architecture.

To assess VA's information technology investment process, we applied applicable requirements from the Clinger-Cohen Act of 1996, the Paperwork Reduction Act of 1995, the Government Performance and Results Act of 1993, the Federal Acquisition Streamlining Act of 1994, the Chief Financial Officers Act of 1990, OMB Circular A-130, GAO's best practices report on strategic information management,² and OMB's guide Evaluating Information Technology Investments: A Practical Guide. We reviewed and analyzed numerous documents provided by VA, including its (1) Strategic Plan—Fiscal Years 1998-2003, dated September 30, 1997, (2) Information Technology Strategic Plan—FY 1999-FY 2003, dated July 1997, (3) Office of Information Resources Management—IRM Policy and Standards Service—Information Technology Evaluation Process, dated November 4, 1997, (4) Directive 6000—VA Information Resources Management (IRM) Framework, dated September 17, 1997, (5) draft Department of Veterans Affairs FY 1999 Department Capital Plan, dated October 1997, and (6) VA's Information Technology Strategic Planning, dated March 1997.

¹GAO/AIMD-10.1.15, April 1997, Version 3.

²Executive Guide: Improving Mission Performance Through Strategic Information Management and Technology—Learning From Leading Organizations (GAO/AIMD-94-115, May 1994).

In addition, we compared VA's information technology investment plans and process documents with selected criteria following GAO's guide for evaluating and assessing federal agencies' selection and management of information technology resources³ as well as OMB's Capital Programming Guide (Version 1.0) Supplement to OMB Circular A-11, Part 3: Planning, Budgeting, and Acquisition of Capital Assets, dated July 1997. We also applied criteria from our investment guide to our review of seven VA information technology projects approved for funding in VA's fiscal year 1999 budget cycle. These seven projects were selected based on a variety of factors, including some of interest to congressional oversight committees, some that exhibited potential duplication of project functionality, and the single highest cost departmentwide project. We interviewed key VA, VBA, VHA, NCS, and OMB officials regarding the department's information technology investment process.

Finally, to assess VA's implementation of the CIO provision of the Clinger-Cohen Act, we analyzed (1) VA's April 1997 Progress Report on the Department of Veterans Affairs CIO Program, (2) VA's strategic, IRM, and information technology plans mentioned above, and (3) OMB documentation regarding CIOs. We also interviewed key VA, VBA, VHA, NCS, and OMB officials regarding the duties and responsibilities of CIOs.

³GAO/AIMD-10.1.13, February 1997.

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