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Accounting and Information
Management Division

B-275107

October 18, 1996

The Honorable G. V. (Sonny) Montgomery
Ranking Minority Member
Committee on Veterans' Affairs
House of Representatives

Dear Mr. Montgomery:

This letter responds to your October 2, 1996, letter. You requested that we answer three questions relating to our June 19, 1996, testimony¹ on information technology investment management by the Department of Veterans Affairs' (VA) Veterans Benefits Administration (VBA). Your questions, along with our responses, follow.

1. *I'd like your view as to whether the VA budget provides enough resources for VBA to manage and implement all of the priorities that must be addressed in the information technology area.*

We do not have sufficient information at this time to answer this question. While VBA's overall fiscal year 1997 budget is known, the amount planned for VBA information technology is not yet available. VBA officials told us that they are currently in the process of determining this allocation. In addition, VBA's Information Resources Management (IRM) Support Plan, dated September 20, 1996, and covering information technology needs for a 7-year period (fiscal years 1996 through 2002) does not include resource allocation figures. The resource estimates in this Plan are currently embargoed, pending release of the President's fiscal year 1998 budget in February 1997.

To determine the appropriate amount of resources needed in the information technology area, it is essential that an agency prioritize its information technology projects in terms of costs, benefits, and risks. Then, after appropriate

¹Veterans Benefits Modernization: Management and Technical Weaknesses Must Be Overcome If Modernization Is to Succeed (GAO/T-AIMD-96-103, June 19, 1996).

review, the agency should consider providing the resources necessary to attain its priorities.

VBA's September 1996 IRM Support Plan calls the year-2000 issue the agency's number-one priority, and VBA has drafted a year-2000 plan. The plans, however, do not contain a discussion of estimated costs or of resources needed. Although VBA officials told us that they had performed substantial analysis to determine the extent of the year-2000 problem, VBA has not yet completed this analysis. Until this analysis is completed, the magnitude of effort that will be required to modify systems to run beyond December 31, 1999, will not be known.

According to industry and government experts, the effort to correct the year-2000 problem could become costly and time-consuming and requires early and detailed planning. If the year-2000 problem is not addressed, it could render the vast majority of date-sensitive computer information unusable or obsolete. For example, calculations based on incorrect service dates could result in errors in processing benefit checks in the compensation and pension programs.

Given this scenario, it is essential that VBA develop and implement a strategy to address the inherent risks that accompany the year-2000 change. First, this strategy must help ensure that a sufficient number of experienced staff are devoted to the task, especially since VBA must maintain its current software and service levels at the same time that it is correcting date-sensitive computer code. Second, VBA should complete the system changes in 1998, since industry experts recommend that 1999 be reserved for thoroughly testing these changes. Finally, VBA must have a contingency plan that outlines alternatives for processing claims if systems are not corrected in time.

2. *On balance, in GAO's view, is VBA making progress in its information technology management?*

VBA has made some progress in its information technology management. As noted in our June 19 testimony, VBA's modernization investment activities have yielded some improvement in hardware and software applications. For example, VBA acquired a number of personal computers, local area networks, minicomputers, and commercial off-the-shelf software for its 58 regional offices. VBA has also realized some limited benefits from the development of several short-term, targeted software applications that are being used on equipment previously acquired. These projects include the Control of Veterans Records, Rating Board Automation, and Personal Computer-Generated Letters.

If VBA is to meet the challenges of the Clinger-Cohen Act of 1996,² major improvements in the way it manages its information technology investments will be required. This act requires that agency heads (1) design and implement a process for maximizing the value and assessing and managing the risks of information technology acquisitions and (2) use such a process to select, control, and evaluate the results of information technology initiatives. Our analysis of past and current VBA information technology initiatives shows that the agency lacks the critical cost, benefit, and risk information necessary to determine whether it has made worthwhile investments. Our analysis also shows that these initiatives preceded VBA's business process reengineering (BPR), which increases the risk that initiatives may need to be substantially altered or even abandoned once the results of the reengineering become available.

According to the VBA Chief Information Officer (CIO), VBA needs a baseline infrastructure to implement BPR and he knows of no situation in which BPR results will affect current information technology projects. In our view, however, BPR results are very important because should processes be changed, information technology projects may need to be altered accordingly.

3. *Can you give us a good example of how other government agencies that you are familiar with have been able to measure the return on investments they have made in information technology? If you can't think of a government agency, how about an example of how a private company has measured its return on investment? How can VBA get the cost, benefit, and risk information necessary to determine whether future investments are worthwhile?*

The management of information technology projects has long been a significant problem for many federal agencies. While the federal government obligated more than \$23.5 billion for information technology products and services in fiscal year 1994, federal information systems have failed to produce significant improvements in the speed, quality, or cost of federal programs.

On the other hand, some private- and public-sector organizations have achieved significant performance improvements by managing their information technology resources within an overall management framework that aligns technology with business needs and priorities. In a May 1994 report,³ we

²Public Law 104-106.

³Executive Guide: Improving Mission Performance Through Strategic Information Management and Technology (GAO/AIMD-94-115, May 1994).

identified 11 fundamental management practices found in leading organizations that led to short- and long-term performance improvements. One key practice identified by this research was the management of information technology projects as investments. By following this practice, the organizations minimized risk and maximized return on those information technology projects having the best chance of significantly improving organizational performance.

On September 30, 1996, we issued a report comparing the information technology investment practices of leading organizations with the management of information technology activities at five agencies.⁴ While some federal agencies project their return on information technology investments, we do not have an example of an agency that compares actual return to planned cost, returns, and risks. However, of the five agencies we reviewed, the Coast Guard had the most comprehensive selection process for information technology investments.

Specifically, the Coast Guard used an information technology investment process to select projects for funding. Information technology project proposals were screened, evaluated, and ranked, using explicit criteria, by a group of senior information resources management officials. These decision criteria included (1) risk assessments of schedule, cost, and technical feasibility dimensions, (2) cost/benefit implications of the investment, (3) mission-effectiveness measures, such as delivering service with fewer mistakes, (4) degree of alignment with strategic goals and high-level interest (such as Congress or the President), and (5) the organizational impact on personnel training, quality of work life, and increased scope of service. The decision criteria were weighted and scored, and projects were evaluated to determine those with the greatest potential to improve mission performance. The ranked list—with recommended levels of funding for each project—was submitted for review to a board of senior Coast Guard officers and then forwarded to the Coast Guard chief of staff for final approval.

Similarly, we reported in our May 1994 Executive Guide that the Xerox Corporation was a good example of how a private-sector organization selects its

⁴Information Technology Investment: Agencies Can Improve Performance, Reduce Costs, and Minimize Risks (GAO/AIMD-96-64, Sept. 30, 1996). The five agencies that we reviewed are the Coast Guard, Environmental Protection Agency, Internal Revenue Service, National Aeronautics and Space Administration, and National Oceanic and Atmospheric Administration.

information technology investments. Specifically, the corporation used a disciplined decision-making process that focuses on increasing the quality and impact of investments. Under this process, managers reviewed project proposals and made selections more carefully than previously; cost, benefit, and risk analyses and projections were more realistic than before; and managers worked harder to ensure that information technology initiatives delivered on their promise.

Senior line managers' responsibility and accountability for information management at Xerox was structured within an organized decision-making and tracking process for information systems investments. The corporation used a "portfolio investment process"--based on explicit decision criteria assessing costs, benefits, and risks--to select, control, and evaluate information systems projects. These explicit decision criteria include the (1) level of customer satisfaction, (2) level of business results, (3) level of employee satisfaction, (4) amount of benefit and risk, (5) project longevity, (6) percentage impact on current or future processes, and (7) amount of dollar investment. Over a 3-year period, Xerox saw a nearly 14-fold increase in its return on investment from information systems projects. Such a turnaround was possible because line managers and information professionals were more visibly accountable for project delivery, rigorous results reporting, and post-implementation reviews. Consequently, they were more careful in what they promised for a proposed information system and in measuring what a system actually achieves.

The Office of Management and Budget has published a guide designed to assist agency and OMB staff in creating and evaluating a portfolio of information technology investments.⁵ This guide provides an example of decision and scoring processes used to rank information technology projects, taking into consideration the (1) investment size, (2) project longevity, (3) technical risk, (4) business impact or mission effectiveness, (5) customer needs, (6) return on investment, (7) organizational impact, and (8) expected improvement.

In order for VBA to obtain the cost, benefit, and risk information necessary for determining whether future investments are worthwhile, we believe that it must develop a process and obtain the necessary tools to allow it to follow a three-phased management approach for *selecting, controlling, and evaluating* information technology-related projects. It must assess all information

⁵Evaluating Information Technology Investments: A Practical Guide, Executive Office of the President, Office of Management and Budget, November 1, 1995.

technology projects--proposed, under development, and operational--and then prioritize and make funding decisions on the basis of several factors, including cost, risk, and return, as well as how well the project meets mission needs.

As we stated in our June 19 testimony, VBA does not have the critical cost, benefit, and risk data it needs to determine whether it has made worthwhile investments. Examples in which this lack of information became apparent include the education imaging and replacement of the compensation and pension payment system projects.

VBA also lacks a process with which to rank and prioritize its investments in information technology as a consolidated portfolio. It has undertaken several projects simultaneously, without a full consideration of the resources required, costs, risks, and potential impact on agency operations. For example, investments in current systems development activities--including addressing the year-2000 issue, data-center consolidation and related software conversion, and replacement of the benefits payment system--have not been ranked or prioritized.

According to VBA officials, the agency has begun to implement the three-phased management approach for selecting, controlling, and evaluating information technology-related projects. We plan to evaluate this as part of our ongoing review of actions taken by VBA to address management and technical weaknesses identified in our June 19 testimony.

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In answering the above questions, we reviewed and analyzed agency documents relating to information technology investment management--such as VBA's strategic and IRM plans--to identify milestones, costs, and benefits; and we interviewed key VBA IRM and budget officials. We also discussed a draft of this letter with VBA officials, including the VBA CIO, and their comments have been incorporated where appropriate. We conducted our work from October 7 through October 18, 1996, in accordance with generally accepted government auditing standards.

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We are sending copies of this letter to the Chairman of the House Committee on Veterans' Affairs, other interested committees, and the Secretary of Veterans Affairs. Copies will also be made available to others upon request. If you have any questions regarding this letter, please contact me at (202) 512-6253 or Helen Lew, Assistant Director, at (202) 512-9356. You may also e-mail us at willemsenj.aimd@gao.gov or lewh.aimd@gao.gov.

Sincerely yours,

A handwritten signature in cursive script that reads "Joel Willemsen".

Joel C. Willemsen
Director, Information Resources Management

(511210)

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