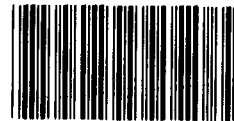


November 1992

VETERANS BENEFITS

Acquisition of Information Resources for Modernization Is Premature



148123

Information Management and
Technology Division

B-247829

November 4, 1992

The Honorable John Conyers, Jr.
Chairman, Committee on Government
Operations
House of Representatives

Dear Mr. Chairman:

On August 29, 1991, you requested that we review the information systems modernization effort of the Veterans Benefits Administration (VBA) at the Department of Veterans Affairs (VA). The overall goal of this modernization effort is to improve the delivery of benefits and services to almost 27 million veterans and their dependents. You requested that we review VBA's effort to use information technology to resolve program and technical deficiencies in its benefits programs and report on whether VA's Chief Information Resources Officer (CIRO) has the responsibility and authority to resolve identified or potential problems in VBA's effort. Details of our objectives, scope, and methodology are discussed in appendix I.

You also requested that we evaluate certain aspects of VBA's proposed procurements of information technology resources. Specifically, you asked that we determine whether VBA's (1) commitment to migrate to an open systems environment will be reflected in its modernized system,¹ and (2) first procurement in support of the modernization duplicates other departmental procurements. The results of our work related to these technical aspects of VBA's modernization effort are discussed in appendix II.

Results in Brief

VBA's desire to invest in new information technology in order to improve service to veterans is laudable. However, its plan to proceed with a \$94-million acquisition of computer hardware and associated software while wrestling with fundamental change in its business processes is clearly premature, for three major reasons. First, it does not yet fully understand what managerial, operational, or technical problems need to be corrected. Second, effective leadership—capable of bringing together program managers and information technology specialists in order to reach consensus on problems and solutions—is lacking. Third, the

¹An open system is a system whose characteristics, including interfaces, are defined in the public domain (i.e., a system that is not vendor specific).

Department's CIO does not possess the essential authority to correct identified problems.

The potential gain in service delivery achievable through integrating currently separate systems into one single system—capable of sharing and accessing data across all program areas—is significant.² This is VBA's goal—one that we share. And VBA officials acknowledge that modernization without careful, coordinated planning aimed at determining future information needs will produce at best only marginal improvement in service to veterans. We question, however, whether such planning and analysis can be adequately and honestly performed while procurement is continuing.

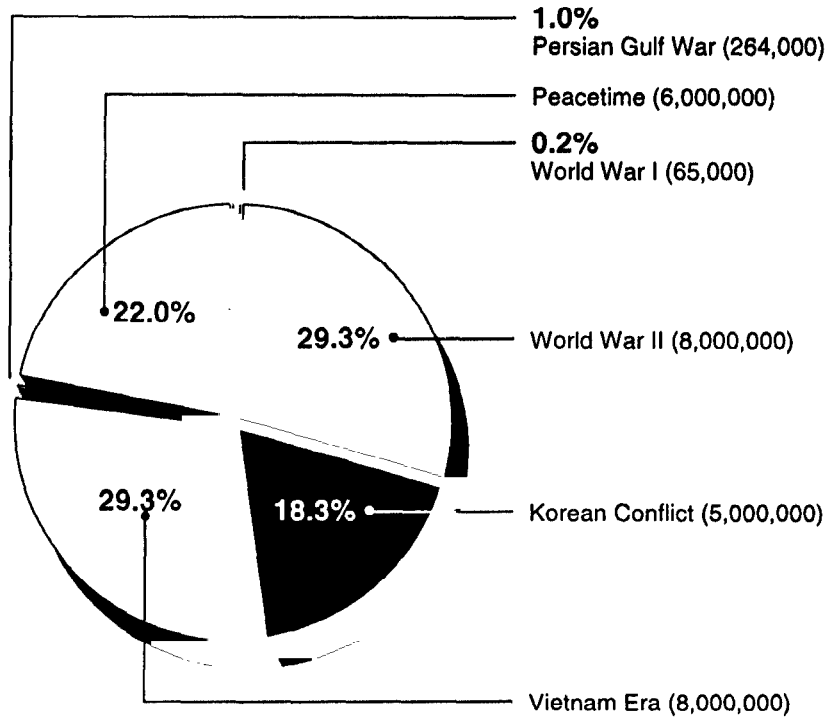
To invest people, time, and money in acquiring information technology before fully understanding what VBA's future business operation will look like risks having a system that may require future replacement because of limited capability and/or inability to perform as intended. Delaying further modernization procurement until VBA has a clearer idea of where it is headed is the prudent, preferable alternative. VBA's information systems modernization is too important to be rushed; it demands—up front—the kind of thoughtful, unpressured planning that has not yet been done.

Background

VA is made up of three major components: (1) the Veterans Health Administration (VHA), which provides services through the nation's largest health care system; (2) the National Cemetery System, which provides burial service in 113 national cemeteries; and (3) VBA, which provides nonmedical benefits to the veteran population of almost 27 million veterans and their dependents. (Figure 1 shows the distribution of veterans by period of service.) These benefits are grouped into six program areas—compensation and pension (C&P), education, insurance, vocational rehabilitation, loan guaranty, and burial. C&P is by far the largest benefit area. In fiscal year 1991, VBA made payments of over \$16 billion for more than 3.5 million new or existing C&P claims. These C&P claims represent about 96 percent of all the benefit payments VBA made during that period.

²VBA's six program areas—structured separately and independent of each other—include compensation and pension, education, insurance, vocational rehabilitation, loan guaranty, and burial.

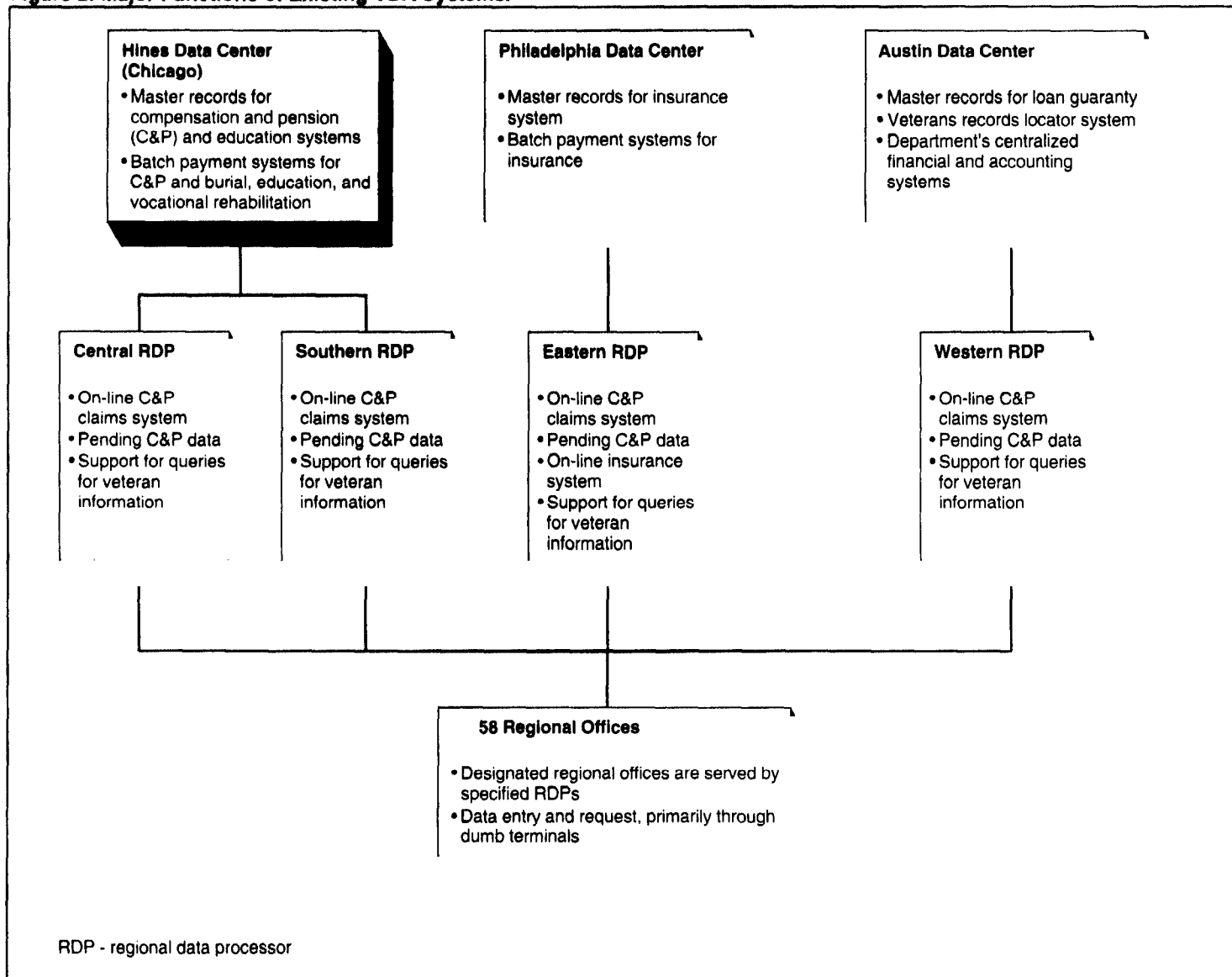
Figure 1: Distribution of Veterans by Period of Service.



Note: Percentages do not total 100 percent due to rounding.

VBA administers its benefits programs through 58 regional offices that are connected to three centralized information systems located in Hines, Illinois; Philadelphia, Pennsylvania; and Austin, Texas. Figure 2 depicts VBA's current systems and the functions that are supported by each facility.

Figure 2: Major Functions of Existing VBA Systems.



As early as 1985 VBA had identified serious technical and program deficiencies that precluded it from providing better service to veterans. VBA, realizing that its computer systems were nearing the end of their useful life and were becoming difficult and expensive to maintain, began to plan how to modernize its computer and telecommunications systems.

During this planning process, VBA experienced computer capacity shortfalls in the C&P and education systems. These shortfalls resulted in VBA's inability to provide timely updates to master records. To address these problems, VBA acquired additional computer capacity, peripherals, and data communications switching capabilities. By correcting these immediate technical problems, there appears to be no significant risk that the existing systems will fail in the near term and, as a result, jeopardize service to veterans. Appendix III provides additional information on the status of VBA's existing systems.

VBA's current systems were designed to support specific benefit programs rather than being integrated to serve all of VBA's programs. As a result, it is difficult for VBA to provide veterans with comprehensive benefit information. This lack of integration also makes it difficult to consistently collect, share, and update veteran information across program areas.

In 1990 the Secretary of VA called for fundamental changes in the way VBA provides its services to veterans. Specifically, his statements noted that VBA needed to change its business processes, procedures, and use of information technology. VBA's current modernization plan is focused on replacing its existing systems with a flexible, decentralized computer architecture. A key objective of this plan is to replace the existing systems, which maintain a veteran's record in several places, with a system that has all benefits information about each veteran in a single master record. In addition, through the use of specialized technologies such as expert systems, imaging systems,³ and sophisticated workflow software,⁴ VBA hopes to improve service to veterans by providing staff with increased capabilities.

To move to the new decentralized architecture, VBA developed a three-stage procurement plan to acquire the necessary hardware and associated software. The first stage, which is scheduled for award during the first quarter of fiscal year 1993, is intended to provide VBA with a broad range of commercial off-the-shelf equipment, software packages, and related support services for ten processing sites as well as each regional office. The procurement includes host computers, operating systems, database management systems, workstations, workflow software, and

³VBA plans to automate much of its current labor-intensive, paper-based claims processing system by using state-of-the-art imaging technology. As planned, claims forms and other documents needed to process claims will be scanned to form electronic images for retrieval and display at regional office workstations.

⁴VBA plans to use this software to improve communications between regional office managers, track claims processing, and schedule and manage pending work loads.

peripherals, as well as software development tools that VBA programmers will use to develop and test the modernized system's software. The second stage, which is scheduled for award in 1993, is expected to provide all the information technology components necessary to configure an imaging system at each regional office and long-term image storage capabilities at each of its ten processing sites. The last stage, scheduled for award in 1994, is planned to replace the mainframe computers in the Hines and Philadelphia centers. VBA also plans to move its systems that reside at the Austin facility to a yet-to-be-determined location. VBA, however, has not yet determined any specific requirements for this third stage.

As the hardware and associated software for its new architecture are being acquired, VBA plans to design and develop entirely new applications software that will replicate existing functions as well as support yet-to-be-determined new business processes. Applications software design and coding for all stages will be the responsibility of VBA's Information Resources Management (IRM) office. The modernization effort is expected to cost \$256 million, of which \$94 million is for the procurement of hardware and associated software. VBA expects to complete its modernization effort in 1998.

VBA Lacks a Comprehensive Strategy to Improve Service

As noted in GAO's October 1989 Symposium, Meeting the Government's Technology Challenge,⁵ modernization requires that top management articulate a clear statement of how the organization expects to improve service to customers through the use of information technology. At VA, this requires a clear statement of how service will be improved for veterans. Further, senior managers within VBA should develop a comprehensive strategy to (1) analyze current business processes in order to identify program and technical deficiencies, and (2) establish service goals for satisfying veterans' needs. Federal guidance on the development of information systems also strongly urges that VBA follow a structured, systematic process to fully define future information needs. VBA acknowledges that there are technical deficiencies in its existing systems and deficiencies in the business processes used to deliver benefits. However, VBA is proceeding with its modernization effort without first

⁵On October 4 and 5, 1989, GAO sponsored a symposium that brought together leaders from industry and government to explore ways of better using information technology to meet the demands facing the government into the next century. The symposium's results provided a framework for acquiring and managing information technology. The results of the symposium were documented in Meeting the Government's Technology Challenge: Results of a GAO Symposium, (GAO/IMTEC-90-23, February 1990).

developing a comprehensive strategy to ensure that the effort will rectify its current deficiencies and significantly improve service to veterans.

VBA Has Not Sufficiently Analyzed Its Current Business Processes

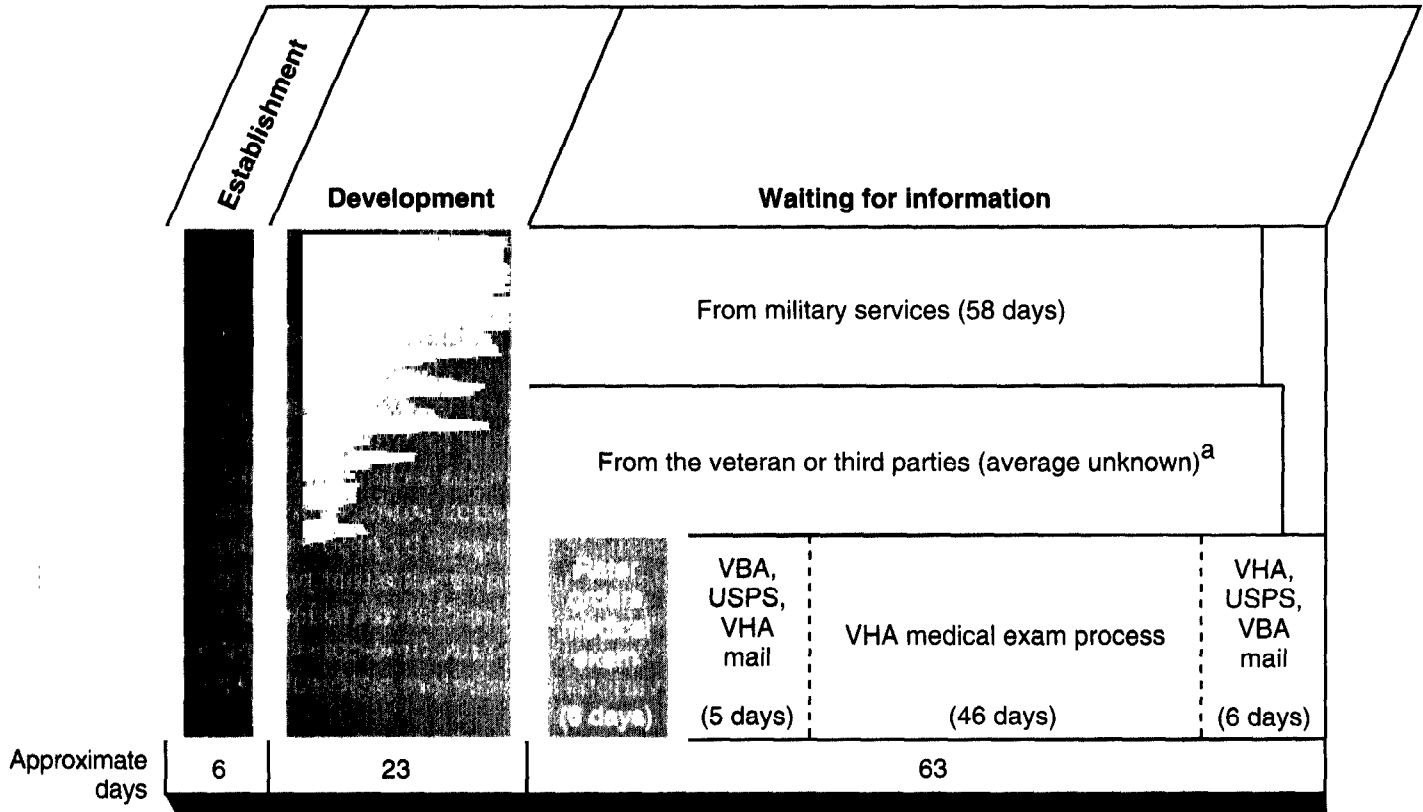
VBA has not sufficiently analyzed its current business processes to determine how information technology can best be used to modernize its operations and improve service to veterans. VBA also lacks detailed information on the specific activities that make up the processes used to deliver benefits to veterans. Consequently, it cannot isolate and evaluate specific problems that, when solved, will significantly improve service to veterans.

For example, VBA desires to process claims for C&P benefits more quickly. However, C&P management and VBA's modernization studies disagree on where delays in the process are occurring. C&P officials generally attribute the delays to regional office staff failing to promptly request and receive all the information that is needed to process a claim, an activity known as claims development. VBA's modernization studies, on the other hand, assert that timely claims processing is hampered by problems associated with the current paper-based system. The studies state that paper documents and folders require sequential handling; are difficult to locate; can be misrouted, lost, or destroyed; and require time-consuming retrieval from central storage areas at various steps before processing can continue.

We believe this disagreement stems from VBA's lack of detailed information about its processes. The monthly reports that C&P officials primarily use to monitor claims processing do not contain data that can be used to analyze the cause or effect of specific problems associated with the claims development activity. For example, the reports do not contain data on how long claims are delayed because regional office staff fail to request needed information from a veteran as soon as possible. Instead, the monthly reports only present data on the total number and type of claims completed within 30, 60, 90, 180, and over 180 days. VBA's modernization studies also do not provide detailed information on how problems associated with the current paper-based system degrade timely claims processing.

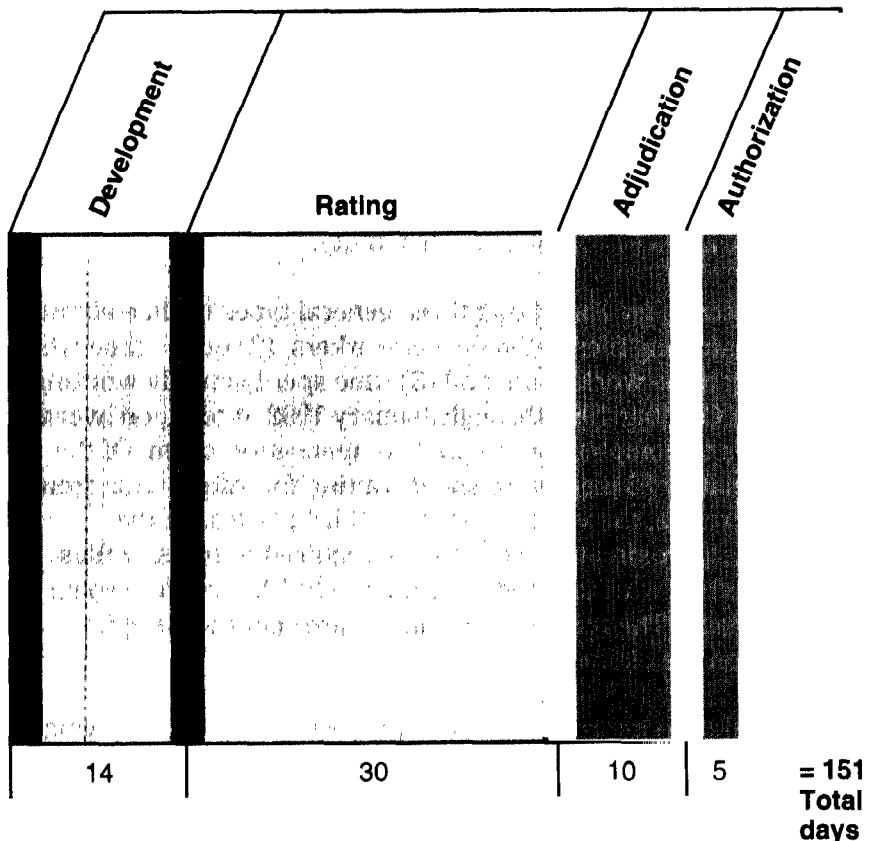
In order to better understand the C&P claims processes, we analyzed the typical original compensation claim process and the time required to complete a claim (see fig. 3). We found that it is comprised of the following seven activities, six of which are conducted by regional staff while one requires action by individuals or organizations outside of VBA.

Figure 3: Typical Original Compensation Claim Process.



- Internal Mail:** Time transferring files between VBA workers (each occurrence varies from minutes to less than 1 day)
- Queue:** Time waiting to work on claim
- Working:** Time working on claim (about 5 hours total)
- Waiting:** Time waiting for information from outside of VBA

- **Establishment** - VBA receives a claim form and enters basic information about the veteran and the claim into the computer system.
- **Development** - VBA assesses the basic information and requests any additional information needed to process the claim.
- **Waiting for information** - VBA must wait for VHA, the military services, private parties, or the veteran to supply the requested information.
- **Development** - The newly-supplied information plus all other information pertaining to the claim is reviewed in order to determine eligibility.



Note: Chart not to scale.

VBA - Veterans Benefits Administration

USPS - United States Postal Service

VHA - Veterans Health Administration

^a VBA policy is to disallow claims if a claimant does not furnish requested information within 60 days. The chart depicts these 60 days.

- **Rating** - VBA analyzes all medical information to determine the veteran's level of disability.
- **Adjudication** - The compensation payment amount is determined based on all available information, statutes, and VBA policies.
- **Authorization** - After all previous work on the claim is reviewed, the start of benefits payments is approved.

While analyzing this process, C&P officials could only provide us with an overall average number of days that VBA took to complete compensation claims, and could only roughly estimate the time required to complete the claims activities. In order for us to approximate the length of time required to complete each activity, we conducted a series of interviews with knowledgeable C&P officials to approximate time frames for completing each activity. Once we approximated the time frames, we presented the information to the Director of the C&P Office for verification. He agreed with our depiction of the typical compensation claim process and the approximate time frames to complete each activity.

Within each VBA activity, we found that three general types of time elapse: (1) time spent transferring files between VBA workers, (2) queue time when the claim is waiting to be worked on, and (3) time spent actually working on the claim. From October 1991 through January 1992, it took, on average nationally, 151 days to complete an original compensation claim. Of the 151 days, approximately 63 days were spent waiting for information from VHA, the military services, the veteran, or other third parties. Of the remaining 88 days, approximately 4 days were required to transfer files between regional office workers, and approximately 5 hours were spent working on each claim. The remaining 83 days were spent waiting for someone to work on the claim.

VBA's primary solution to improve its claims process is to use an imaging system coupled with sophisticated workflow software to automatically route claims-related documents through the process within its regional offices. We analyzed the effect of this solution on the typical original compensation claim process depicted in figure 3. Our analysis indicates that VBA's solution will not significantly change how C&P claims are processed because it mainly automates VBA's internal mail and routing functions and does not affect other parts of the process. The Director of the C&P office agreed with our analysis and said that the modernization effort has the potential to reduce claims processing by only 6 to 12 days. VBA's Chief of Staff also acknowledged that with current business practices, modernization may produce only marginal improvements in the delivery of services to veterans.

In addition, even these minimal benefits may not be realized. In a May 1991 memorandum to the Chief Benefits Director, the Department's General Counsel raised many potential legal issues regarding the proposed imaging system. For example, the General Counsel raised a concern about whether the Court of Veterans Appeals (COVA) would accept electronic records as

evidence in deciding veterans' appeals cases. The General Counsel recommended that COVA's position be addressed before VBA establishes policies and procedures for using the system. However, VBA has not contacted COVA or resolved the legal concerns about maintaining certain types of documents in an imaging system. At the conclusion of our review, both VBA's Chief of Staff and VA's Deputy Assistant Secretary for IRM acknowledged that these legal issues remain unresolved. They also indicated that the Department may have to propose changes to existing laws to resolve the issues. Despite these concerns, VBA's IRM office is pursuing plans to acquire an imaging system because it asserts that the system is an important component of its plan for improving service to veterans.

VBA is just beginning to examine its business processes. In April 1992, VBA's Chief Benefits Director established the business transition steering group in an effort to gain insight into how to change VBA business practices. The group is to lead VBA's effort to reexamine, from the viewpoint of veterans, how it conducts business and then determine changes needed in its processes, systems, and organization to better serve veterans. VBA began this effort by developing a business model that is intended to identify broad business functions to be supported by the modernized system. The Assistant Chief Benefits Director for IRM stated that the preliminary results from the modelling effort indicate that it will produce valuable information, but these results are not yet documented. VBA expects to present the results of the business model to the business transition steering group in October 1992.

VBA Has Not Identified Specific Goals for Improved Service

While VBA is continuing with its modernization effort, it acknowledges that it has not established specific service goals that it intends to meet through its effort, or established performance indicators to measure the progress made in reaching service goals. Moreover, VBA acknowledges that it does not plan to use a formal review process to ensure that the information system it develops contributes to improving service to veterans.

For instance, while VBA's modernization studies focus on the need to improve the current C&P claims process, they do not identify future goals for C&P claims processing. VBA acknowledges that new service goals are needed for the modernization. After these new goals are established, VBA also plans to define performance indicators to monitor its progress in meeting these goals.

As a first step in establishing new performance goals, VBA plans to conduct a nationwide survey of about 3,500 veterans. Through this survey, VBA plans to obtain veterans' comments on the (1) overall quality of service it is providing and (2) level of service desired in each of its program areas. VBA's Assistant Chief Benefits Director for Planning, who is leading the survey effort, stated that VBA may need to conduct additional veteran surveys to obtain specific information in some program areas before it can set new service goals. For example, VBA may need specific information related to problems with how it corresponds with veterans.

The Assistant Chief Benefits Director for IRM stated that VBA does not plan to measure the modernized system's contribution to improving service to veterans because there are too many factors, such as legislative changes, that make measuring its contribution too difficult to quantify. Nevertheless, we believe that VBA needs to identify the factors that are primarily under its control and develop a process to measure the incremental improvements that its modernized system contributes toward attaining veteran-defined service levels.

VBA's Hardware Procurements Are Not Supported by a Defined Information Architecture

VBA is proceeding to buy information technology components without first defining its new information architecture.⁶ This approach is contrary to federal systems design and development guidance and increases VBA's risk of deploying a system that may not work as intended.

General Services Administration (GSA) guidance on the development and design of information systems strongly urges that agencies follow a structured, systematic process to define all aspects of future information needs—an information architecture.⁷ The guidance states that defining an information architecture is necessary before designing and acquiring hardware and software for any new system.

VBA has not followed this guidance. Instead, it intends to procure new hardware and associated software prior to defining its new business processes, information flows, and the relationships between them. For example, VBA intends to develop its modernized system around the concept of a single veteran master record. However, VBA has not defined the form, content, and structure of this veteran master record; what type of information its benefits programs will require; what the relationship of

⁶An information architecture is a model depicting the fundamental business processes and data groups within an organization and the relationships between them.

⁷Information Systems Planning Handbook, Phase I and Phase II, December 1986 and January 1988.

this information will be to the master record; or how the master record will be managed. Until VBA defines its information architecture, it is increasing the risk that the capabilities of the information technology components it is about to acquire may not be able to support how VBA hopes to ultimately accomplish its business in the future.

We have previously reported that making premature choices in information technology components, before processing needs are adequately analyzed and understood, often results in the need to replace hardware and modify software to achieve performance requirements.⁸ Given the degree of uncertainty about the business processes VBA intends to use to deliver improved service and the information required to support its business processes, VBA can give no assurance that the architecture it plans to acquire will not have to be replaced or modified to attain the yet-to-be determined levels of improved service to veterans.

VBA's preliminary efforts to reexamine its processes, systems, and organization are encouraging. However, we believe that VBA's complex business processes, such as the C&P claims process, need to be examined in-depth in order to determine which business practices will require change and what its future information needs will be. After this analysis is completed, VBA can begin to determine how information technology can best support the changes.

VBA's Effort Lacks Effective Communication and Leadership

VBA does not have an organizationwide process to involve all program and IRM office senior managers in its modernization effort. Such a process should encourage effective communications and cooperative working relationships to ensure that technical solutions meet program needs. In addition, the Department's CIRO is not playing an active role in directing the modernization effort. The CIRO should provide the necessary leadership to redirect the modernization should it encounter unforeseen problems. Without effective communications and working relationships throughout the organization and a CIRO who ensures that concerns, ideas, and solutions from both program and IRM offices are aired and addressed, VBA cannot ensure that the technical solutions it develops will meet program needs.

⁸Attack Warning: Lack of System Architecture Contributes to Major Development Problems (GAO/IMTEC-92-52, June 11, 1992).

VBA Lacks Effective Communication and Working Relationships

The success of VBA's modernization effort is jeopardized by a lack of effective communication and cooperative working relationships between its program and IRM offices. This situation has been exacerbated because the IRM office, which is leading the effort, has failed to maintain the program offices' ongoing participation in the modernization decision-making process. Program office managers have been unable to identify how the modernization effort will solve their specific problems or change the way they currently do business. Further, they doubt the IRM office's abilities to understand and improve their business processes, believing instead that the IRM office is acquiring information technology resources without regard for real user needs.

For example, C&P officials, in an effort to provide input to the modernization effort, independently developed and submitted a mission needs statement to VBA's IRM office. However, the IRM managers who reviewed the document indicated that they believed the C&P office's needs statement did not address how C&P business processes could be changed. Rather, they felt that the needs statement presented only enhancements to the current system. The IRM officials said they think program office officials find it difficult to think creatively to solve problems and revise how they do business because they have been forced into an unimaginative mode by limitations in the current system.

The Assistant Chief Benefits Director for IRM acknowledged that program managers may not know how the modernization effort will change their business processes, but believes that by implementing new technology, program areas will be forced to slowly change their ways of doing business. She added that although VBA has not identified how it plans to do business in the future, she believes the planned modernized architecture will accommodate whatever business decisions are made. VBA's IRM managers support this position by contending that because the planned architecture will be decentralized, based on open systems, and employ an integrated set of information technology tools, it will be sufficiently flexible to support whatever business decisions are made.

VBA's approach of modernizing without fully analyzing its current business processes, defining new business processes, or involving the program offices is a high-risk endeavor. This lack of effective communications and cooperation between VBA's program and IRM offices may result in the development of a system that does not effectively serve its mission or meet veterans' needs.

CIRO Lacks Authority to Resolve Problems in the Modernization Effort

The Paperwork Reduction Act of 1980 requires the designation of a senior official to serve as the focal point for a department's IRM activities.⁹ The act also states that those activities must be carried out in an efficient, effective, and economical manner. In May 1991, VA underwent a reorganization intended to enhance the CIRO's role and provide him with the authority needed to better manage information resources throughout the Department.¹⁰ However, our review of VBA's modernization effort shows that the CIRO still lacks the authority needed to resolve problems with the effort and has had no active role in ensuring that VBA's proposed acquisitions will deliver improved service. Instead, the CIRO's involvement remains largely limited to reviewing procurement documentation for information technology resources.

For example, included in the enhanced CIRO's role is the responsibility to work with program managers to develop program performance indicators. However, the Deputy Assistant Secretary for IRM acknowledged that he has not established guidance for developing program performance indicators. He also acknowledged that his office was not involved in the early stages of VBA's upcoming nationwide survey of veterans, which will be used to establish new service goals and program performance indicators. Further, the CIRO and Deputy Assistant Secretary for IRM do not have the explicit authority and responsibility to direct and control specific IRM activities outside their own offices.

The CIRO and Deputy Assistant Secretary for IRM acknowledged that they have been reluctant to intervene in VBA's modernization effort. For example, the Deputy Assistant Secretary for IRM admitted that VBA's modernization effort may do little to improve service to veterans. He stated, however, that VA management is reluctant to take any actions to redirect the modernization. He primarily attributed this to the budget process, which allows VBA to control its own financial resources.

Conclusions

VBA has an excellent opportunity to fundamentally change the way it serves the nation's veterans. Its preliminary efforts to understand the nature of its existing problems and to identify the levels of service veterans believe will be needed are steps in the right direction. However,

⁹Public Law No. 96-511 (Dec. 11, 1980), as amended.

¹⁰The Department of Veterans Affairs Act, Public Law No. 100-527, October 25, 1988, specifically provided for the designation of a CIRO at the assistant secretary level to be responsible for the Department's IRM activities. As part of the May 1991 reorganization, the Assistant Secretary for Finance and IRM was designated the CIRO. In September 1991, the Assistant Secretary for Finance and IRM delegated his day-to-day CIRO responsibilities to the Deputy Assistant Secretary for IRM.

VBA's strategy of acquiring information technology resources before determining how its business processes will change and what its future information needs will be is seriously flawed.

VBA has not yet developed a clear understanding of its current business processes, defined its new information architecture, established specific goals for the modernization effort, or established effective communications and working relationships throughout its organization, including the active leadership of the CIRO. Until VBA accomplishes the above, it has no assurances that the modernization effort will improve service to veterans. Therefore, any acquisition of information technology resources at this time is premature.

Recommendations

To ensure that the modernization effort successfully delivers improved service to the nation's veterans, we recommend that the Secretary:

- Postpone contract award for any procurements under the modernization effort until VBA (1) analyzes its current business processes and develops a clear understanding of the deficiencies and problems the effort is intended to resolve, (2) identifies specific goals for improved service and develops a formal process to ensure that the modernized system meets those goals, (3) completely defines its new information architecture, and (4) ensures effective participation and communication between senior program and IRM managers.
- Ensure that the CIRO has authority for defining, designing, and implementing the modernization effort. This should include authority and responsibility for leading the analysis of the current benefits delivery processes, establishing service delivery goals, and developing plans for how information technology should be used to provide better service to veterans.

We conducted our review between October 1991 and October 1992, in accordance with generally accepted government auditing standards. As requested, we did not provide a copy of this report to the Department of Veterans Affairs for its review and comment. However, we discussed the report's findings with the Deputy Secretary and other senior officials of the Department and VBA, who generally agreed with the findings as presented. We have incorporated their views in the report as appropriate.

As agreed with your office, unless you publicly announce the contents of this report earlier, we plan no further distribution of it until 30 days from the date of this letter. We will then send copies to the Acting Secretary of Veterans Affairs; the Assistant Secretary for Finance and Information Resources Management; the Chief Benefits Director of VBA; the Senate and House Committees on Veterans Affairs; the Senate and House Committees on Appropriations; the Director, Office of Management and Budget; and other interested parties. Copies will also be made available to others upon request.

This report was prepared under the direction of Frank W. Reilly, Director, Human Resources Information Systems, who can be reached at (202) 512-6408. Other major contributors are listed in appendix IV.

Sincerely yours,

A handwritten signature in cursive script that reads "Ralph V. Carlone".

Ralph V. Carlone
Assistant Comptroller General

Contents

Letter	1
Appendix I Objectives, Scope, and Methodology	20
Appendix II Technical Issues Related to VBA's Modernization	22
Appendix III Status of VBA's Current Systems	24
Appendix IV Major Contributors to This Report	26
Related GAO Products	28
Figures	
Figure 1: Distribution of Veterans by Period of Service.	3
Figure 2: Major Functions of Existing VBA Systems.	4
Figure 3: Typical Original Compensation Claim Process.	8

Abbreviations

C&P	compensation and pension
CIRO	chief information resources officer
COVA	Court of Veterans Appeals
GAO	General Accounting Office
GOSIP	Government Open Systems Interconnection Protocol
GSA	General Services Administration
IMTEC	Information Management and Technology Division
IRM	information resources management
POSIX	Portable Operating System Interface for Computer Environments
RFP	request for proposals
VA	Department of Veterans Affairs
VBA	Veterans Benefits Administration
VHA	Veterans Health Administration

Objectives, Scope, and Methodology

On August 29, 1991, the Chairman of the House Committee on Government Operations requested that we review the computer systems modernization effort of VBA. Specifically, the Chairman requested that we

- determine the program and technical deficiencies that VBA intends to solve with the modernization effort;
- evaluate the extent to which VBA will resolve the stated deficiencies, streamline work processes, and improve service to veterans;
- determine if VBA has established system performance indicators that relate to program performance goals, whether these are the most appropriate indicators, how VBA plans to track the new system's performance in attaining these program goals, and express an opinion on whether the proposed tracking system is adequate;
- determine if VBA's procurements and software development (including conversion) activities demonstrate movement towards an open systems environment, thus enhancing VA's ability to conduct fully competitive procurements during the modernization effort;
- determine if any aspects of VBA's modernization duplicate information technology procurements currently planned by other VA components; and
- indicate whether the CIRO has the responsibility and authority to correct the problems or potential problems that we identify.

In order to (1) determine the program and technical deficiencies that VBA intends to solve with the modernization effort, (2) evaluate the extent to which VBA will resolve the stated deficiencies, and (3) determine if VBA has established system performance indicators that relate to program performance goals, we conducted interviews with key VA program and IRM officials. These officials included the CIRO, the Deputy Assistant Secretary for IRM, the Chief Benefits Director, VBA's Chief of Staff, the Assistant Chief Benefits Director for Planning, the Assistant Chief Benefits Director for IRM, the trail boss for modernization, the Director of VBA's Systems Development Service, the directors and senior managers of each of the six program offices, and VBA budget officials. We also interviewed key officials of several veterans service organizations to obtain independent views on VBA's service. We reviewed relevant VA and VBA documents including technical planning documents, computer operations reports, program performance standards and reports, operating policies and procedures, budgets, modernization studies and analyses, and previous reviews of VBA's modernization by GAO and the Federal Computer Performance Evaluation and Simulation Center.

When C&P officials acknowledged they lacked detailed information about the nature and timeliness of the activities that make up the claims process, we developed a chart depicting the activities comprising the original compensation claims process and approximated the time taken to complete each activity. To do so, we reviewed C&P and modernization reports and analyses describing portions of the claims process. After synthesizing the information into a draft chart, we conducted interviews with knowledgeable C&P officials to revise and finalize the chart. Finally, we presented the chart to the Director of the C&P office for final verification. In order to further verify the C&P claims process activities, we conducted three day-long visits to VBA's Washington, D.C., and Baltimore, MD, regional offices to observe all phases of C&P claims processing.

To determine if any aspects of VBA's modernization procurements duplicate information technology procurements currently planned by other VA components, we reviewed VA's IRM strategic plans, operating plans, budgets, reports on obligations for information technology systems, reports on major information technology acquisition plans, and relevant procurement documents. To determine whether the CIRO has the responsibility and authority to correct any problems or potential problems that we identified, we interviewed the CIRO and Deputy Assistant Secretary for IRM and reviewed key documents outlining the CIRO's roles and responsibilities in directing the use of the Department's information resources.

Our work was primarily conducted at VBA's central office in Washington, D.C. To assess the technical aspects of VBA's current computer operations and planned procurements, we visited two of the three sites where VBA systems are located—Hines, Illinois, and Philadelphia, Pennsylvania. We interviewed the directors and key staff at each facility. To determine if VBA's software development and procurement activities demonstrate movement towards an open architecture, we reviewed VBA software development and operating systems documentation; specific software printouts and reports generated from VBA's systems at Hines, Illinois; and the Stage I request for proposals (RFP).

Technical Issues Related to VBA's Modernization

In your August 29, 1991, letter you asked that we address two specific issues related to VBA's proposed procurements. You requested that we determine whether (1) VBA's commitment to migrate to an open systems environment will be reflected in its modernized system, and (2) VBA has eliminated the potential of acquiring duplicate hardware components that are available through a departmentwide office automation equipment contract.

VBA has demonstrated a commitment to implement an open systems environment through its modernization effort. In VBA's first stage procurement, it is requiring that vendors provide hardware and software components that conform to federal information processing standards. We believe, if VBA continues to adhere to this commitment and ensures that the completed modernized system continues to conform with federal standards, it should successfully result in an open system. VBA has also resolved the potential of acquiring duplicate hardware components in its first stage procurement that are available through an existing departmentwide office automation contract.

VBA's Efforts to Move Toward an Open Systems Environment

VBA intends to replace its existing computer environment by acquiring state-of-the-art information technology resources in three stages and developing new applications software. VBA plans to ensure an open systems environment by adopting federal information processing standards for its new hardware and software components. For example, high-level federal standards such as the following will be required for VBA's modernized system:

- Government Open Systems Interconnection Protocol (GOSIP),¹ which defines a common set of data communication protocols that enable systems developed by different vendors to interoperate and the users of different systems to exchange data.
- Portable Operating System Interface for Computer Environments (POSIX),² which is a series of specifications needed to provide source code portability³ for a wide range of applications software across many different hardware architectures and operating systems. Currently, the standard

¹Federal Information Processing Standard 146, GOSIP Version 1, National Institute of Standards and Technology.

²Federal Information Processing Standard 151-1, POSIX: Portable Operating System Interface for Computer Environments, National Institute of Standards and Technology.

³Portability refers to the characteristic of software that allows it to run on more than one type or size of computer and under more than one operating system without requiring significant modifications.

defines a vendor-independent interface specification between applications software and an operating system.

According to the Director of VBA's Systems Development Service, VBA does not plan to use any of the existing applications software for its modernized system. Rather, VBA will develop entirely new applications software to replicate existing functions and support new business functions. As a result, procurement issues related to the time and costs associated with converting VBA's existing applications software to its new hardware architecture do not apply.

Potential for Duplicate Procurements Has Been Resolved

In July 1991, we reported that the requirements for some of VBA's Stage I workstations were identical to those in the Department's office automation contract.⁴ In April 1991, VBA completed an analysis of the requirements for both procurements and determined that workstations from the Department's office automation contract could meet its modernization requirements. As a result, in December 1991 VBA removed the requirement for approximately 4,400 basic workstations from its Stage I RFP and will acquire them through the office automation contract.

In comparing VBA's revised Stage I RFP to other planned major systems acquisitions for the Department, we did not detect any other duplications. Because VBA has not yet finalized the requirements for Stage II or established requirements for Stage III, we were unable to assess the potential for duplication in these procurements.

⁴Veterans Affairs IRM: Stronger Role Needed for Chief Information Resources Officer (GAO/IMTEC-91-51BR, July 24, 1991).

Status of VBA's Current Systems

VBA has stated that there are many technical deficiencies that affect the operations and use of its current computer systems. Some of these problems stem from the age and design of VBA's systems. However, VBA has corrected its most immediate technical problems and there appears to be no significant risk that, in the near term, a failure of existing systems will jeopardize service to veterans.

For example, VBA states that it cannot (1) expand user access to the systems because constraints on its data communication switching capabilities limit the number of terminals that can be supported, and (2) use state-of-the-art software development tools to maintain and develop applications software and integrate systems to avoid maintaining redundant and erroneous data. In addition, in 1989 VBA was experiencing mainframe computer capacity problems that left it unable to provide timely updates to veterans' master records in the C&P and education systems.

To resolve these problems in the short term, VBA is removing regional office computers that control data communications and allow access to applications software at VBA's data centers and is replacing them with a telecommunications switch and microcomputer configuration that will allow its existing system to support more terminals. To alleviate the problems in providing timely updates to its C&P and Education master records, in 1989 VBA acquired an additional mainframe computer through GSA's Excess Federal Information Processing Equipment Program.¹ In order to further decrease the time needed to update veterans' master records, VBA plans to relocate faster disk drives from its Austin data center to the Hines data center. To partially resolve the problems associated with maintaining applications software for its insurance systems, VBA completed conversion of applications software for its insurance systems to COBOL-based systems in the summer of 1991. However, poor file structures present in the old systems were carried over to the COBOL environment. In addition, in the spring of 1992 VBA moved the applications software for its insurance system to an upgraded mainframe computer obtained through the Excess Federal Information Processing Equipment Program.

VBA's data center officials stated that these short-term initiatives have resolved the most prevalent operational problems and that VBA will have enough computer capacity to support its benefits processing needs

¹The primary goal of this program is to help federal agencies locate up-to-date, used equipment for reuse and dispose of equipment that is no longer needed.

through 1995. They further indicated that, should the computer systems encounter unanticipated capacity problems, VBA could acquire additional equipment through the Excess Federal Information Processing Equipment Program.

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Related GAO Products

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