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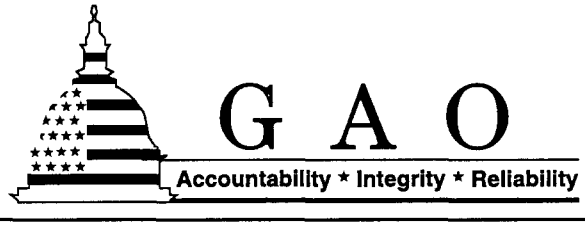
OIMC ANNUAL REPORT



GAO/OIMC-00-1P

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Preface

Dear Colleague:

This is the second annual performance report on OIMC's service to the GAO user community. During fiscal year 1999, OIMC staff dealt with many challenges to maintain an adequate level of customer service. This report highlights our service delivery performance, completed and on-going projects affecting customer services, and the associated challenges.

Our overall goal during fiscal year 2000 is a simple one -- to deliver the highest quality service possible in support of GAO's mission. In doing so, we will strive to be a model of information management programs and functions, and seek to maintain continuous improvement objectives across all OIMC activities.

Our management team is committed to improving customer communications and enhancing overall teamwork across functional groups.

Finally, I would like to thank all those who contributed to this report. I know it was an extra task on top of an already heavy workload.

Anthony Cicco, Jr.
Acting Assistant Comptroller General
Office of Information Management and Communications

Executive Summary

OIMC's major contributions during fiscal year 1999—a year of many changes and challenges—were preparing for Y2K, stabilizing the network, upgrading computer and telecommunications equipment, moving mainframe computing, improving intranet and Internet service, evaluating new publishing systems, and working with Personnel to develop an interim system that replaced 30 stand-alone applications.

OIMC's Y2K team, working across GAO, tested and renovated GAO's computer systems to make them Y2K compliant. The Y2K team also worked with other computer centers, such as the National Finance Center, that support GAO's major administrative systems. And the team, including participation from the Hill, made extensive contingency plans for responses to computer systems that might affect our buildings and staff—including water, telephones, electricity, and so on. The team froze all development as the year 2000 approached, and over the January 1 weekend, stayed at GAO to assess and plan for any disruptions to GAO's work.

During upgrades and changes to workstations and hardware and software, OIMC aimed to stabilize the network. For many reasons (fiscal constraints, running Windows 3.1 and Windows 95 at the same time, problems with routine maintenance, relying on old software and servers, and change of network infrastructure), OIMC planned and implemented many changes in 1999. These changes affected network performance as evidenced by staff surveys reporting network slowness and instability. The surveys also gave OIMC a picture of improvement based on upgrades. Responding to users and to vendor specifications, OIMC divided the network to reduce traffic, upgraded security with a powerful firewall, replaced old servers, and added the newest email upgrade. As expected, help desk activity showed that service requests increased during rollouts of equipment or upgrades to software. OIMC set a goal of providing prompt responses for both network and hardware services. We moved from a resolution rate as low as 25 percent to as high as 70 percent for solving problems as soon as they were reported.

OIMC upgraded much of the agency's computer equipment during fiscal year 1999. OIMC installed new Pentium II computers at the beginning of FY 1999 and surplused old machines to school systems. Features were installed to better direct network traffic and to divide the network. OIMC also added a new call system for the help desk, upgraded servers for the intranet, started a dial-up service as a backup for mainframe failures, and

piloted new dial-in software. We instituted goals for quick fixes in headquarters (such as replacing a monitor in 15 minutes).

In 1999, OIMC's telephone and videoconferencing services continued to be highly dependable, both in access and in equipment repair when it was needed. The office distributed calling cards, developed phone restriction options to avoid fraud, supported emergency telephone efforts, helped with telephone system upgrade when Los Angeles field office was modernized, and began reprocurement efforts for a new telephone contract. Other work included plans for upgrading videoconferencing, assessing video streaming, enabling pager and cellular communications in the headquarters building, and replacing old voice mail equipment in the field.

OIMC moved mainframe computing from one processing center to another. This complex move (necessary because Congress decided to shut down its center) included the financial management system, a personnel reporting system, time and attendance reports, and other administrative systems. The move will result in savings of about a half a million dollars a year and provide more security.

Through a private sector contract to upgrade and maintain the Internet connection and security system, OIMC provided faster and more secure access to the Internet. The Internet was heavily used both by Congress and by the American public (our products were electronically retrieved more than 7 million times during FY 1999). OIMC began converting historical files for the Internet and intranet and made many more internal documents available on the intranet. And OIMC distributed more than 800,000 GAO documents through planned and requested distribution. To support audit work, OIMC helped break new ground in the government by using the Internet for a job survey.

Other projects included evaluating both publishing software for typesetting reports and high speed printing systems. And, OIMC developed a LAN-based database system to replace 30 standalone applications used for tracking personnel functions.

The report that follows this executive summary is organized by major projects and services provided by OIMC centers. It gives further details about the projects and services and shows how OIMC assesses its productivity in order to respond to customers. The report also points out issues concerning GAO's changing environment.

Introduction

Fiscal year 1999 will be remembered as a year of tremendous challenge. Within a 9-month period, OIMC completed numerous and major upgrades to the automated tools and systems that GAO staff rely upon to do their work. We rolled out new workstations, new desktop applications, an updated network operating system, upgrades to network hardware and software, a new publishing process, and a new Internet service, to name the most prominent upgrades. Changes of this magnitude typically take organizations about two years to implement. However, because of the age of GAO's technology–a result largely of repeated years of constrained budgets–and the need to ensure that tools and systems were Y2K compliant, GAO did not have the option of a prolonged rollout.

The deployment of so many, significant technology changes was not without a price. GAO users experienced periods of network instability, which affected their ability to effectively apply available automated tools and which required corrective actions. In response, OIMC implemented a comprehensive action plan to address problems and improve overall network stability and responsiveness. Today, we continue to update that plan and share its status and progress with all GAO staff through both email and GAO's intranet. In addition, we are working diligently to address problems as they occur and are committed to improving overall performance levels and service.

This report (1) provides a snapshot of major OIMC projects and key services; (2) highlights performance indicators OIMC has established for customer satisfaction and timeliness; and (3)identifies emerging issues requiring GAO management attention. Projects and services identified are managed by OIMC centers, most commonly following a matrix approach. Working as a team, OIMC centers provide a variety of ongoing technology, communications, and information management services. OIMC projects and services directly support GAO's IRM vision–articulated in the IRM Strategic Plan, Fiscal Years 1998-2002, March 1998–to use modern technology solutions to help staff do their work quickly, efficiently, and effectively. During fiscal year 2000, OIMC will be realigning projects and services consistent with GAO's strategic plan, which will be published in Spring 2000.

Major Projects

Initiatives/ Accomplishments

Year 2000 Project: Y2K

GAO's Year 2000 (Y2K) Program, intended to protect the agency from Y2K induced failures, made major advancements from fiscal year 1998. At that time, the process of renovating, testing, and implementing GAO's mission-critical systems was only partially complete. While 70 percent of the agency's systems had been renovated, only 40 percent had been tested and 12 percent implemented. In addition, contingency planning to preserve GAO's core business processes had only just begun.

At the end of fiscal year 1999, the agency's posture changed dramatically. The process to renovate, test, and implement all of GAO's mission-critical and most of its non-mission critical systems was completed. In addition, the Y2K project team worked closely with the government computer centers that operate the agency's major administrative systems–the National Finance Center and the Austin Automation Center–to test and certify those applications, as well. These actions were accomplished well before the OMB deadline of March 31, 1999.

GAO, however, recognized that some level of risk would exist despite efforts to repair internal systems. Failures could still occur in the public utilities infrastructure–the systems upon which GAO depends for water, electrical power, telephones, and gas–as well as the transportation systems serving its staff. As a result, the Y2K project team undertook and completed a two-part planning effort: (1) comprehensive business continuity and contingency planning to preserve the agency's core business processes, and (2) zero-day planning to diagnose the health of GAO's locations and systems on the weekend of January 1, 2000. To do the former, the team identified GAO's seven core business processes and their supporting systems. They then worked with the divisions, staff offices, and field locations to develop specific procedures to preserve the agency's physical locations and essential services at the century turn. For zero-day planning, the team froze all systems development, staffed teams of people who would work throughout the weekend to diagnose the agency's systems, developed test schedules and scripts, and established a Y2K communications plan. This plan would ensure that staff were informed in October and December about the progress of the Y2K program, and would be told on January 2, 2000, about the health of GAO's systems and whether they should come to work on January 3. Furthermore, the team tested the

contingency and zero-day plans to ensure that they would operate as designed if failures were to occur. Throughout its contingency planning, the team coordinated its efforts with those of the Legislative Branch Y2K Working Group, composed of 10 Capitol Hill organizations, to ensure that GAO benefited from their thinking and could draw upon their sources of information about the Washington metropolitan area over the millennium weekend.

The end result of all these efforts made January 3, 2000, a business-as-usual day at GAO.

Network Stabilization Efforts

In March 1999, after major upgrades to both workstation and network hardware and software, the performance and stability of the GAO network began to deteriorate significantly. Users experienced problems such as client 32 errors, slow Internet access, long delays and lock-ups while performing routine network tasks, and loss of access to key applications. These problems were the result of several key factors:

- operating in a dual environment (Windows 3.1 and Windows 95),
- inability to schedule routine maintenance of network hardware and software,
- reliance on an outdated and problematic version of email software,
- need to support numerous low performance network servers, and
- change out of the entire network infrastructure during the preceeding nine-month period.

To stabilize the network, OIMC began to plan and implement a series of immediate and near-term actions during the spring and summer. Specifically, OIMC:

- developed periodic maintenance schedules for applying vendor changes to the network's operating system and hardware,
- brought all software that controls workstation performance up to vendor specifications,
- divided the GAO headquarters network into two segments to reduce overall network traffic,
- replaced the Internet security configuration with a high capacity firewall, increasing Internet capacity by a factor of four,
- eliminated low capacity servers and reduced the overall number of servers on the headquarters network, and
- installed the most recent release of cc:Mail.

The result of these actions has been a steady improvement in the stability and overall performance of the network for end-users. The additional changes planned for fiscal year 2000 will further improve response time and isolate network problems to a smaller set of users, as well as allow faster problem identification and resolution.

Move of GAO Mainframe Computing

In fiscal year 1999, OIMC successfully completed a complex project to migrate all of GAO's mainframe computing support from the House Information Resources (HIR) to the Austin Automation Center (AAC) of the Department of Veterans' Affairs. The move to AAC required the migration of several GAO mainframe applications including the Financial Management System (FMS), a personnel reporting system, and the system that collects and transmits time and attendance reports for the Payroll/Personnel System. In addition, the move required the transfer of the statistical processing capability that supports audit retrieval and analysis functions. All of this was accomplished before the end of the fiscal year without any significant operational problems.

The move from HIR was required by a decision of the Congress to shut down the HIR mainframe center. By selecting AAC, GAO achieved some significant cost savings and business advantages. Beginning in fiscal year 2000, GAO will save about half a million dollars per year compared to the cost for the same services at HIR. From a business perspective, AAC provides a much more secure processing environment, effectively addressing security concerns, while also affording better technical support for our customers.

Evaluation and Implementation of a New Typesetting Process

In late fiscal year 1998, OIMC was asked to evaluate off-the-shelf publishing software to replace a custom developed system. Adobe FrameMaker was selected from a number of packages because it could generally meet the GAO visual standards and automate many typesetting functions. Also, it was the clear winner for producing lengthy reports. A preliminary test effort of FrameMaker was undertaken and by February 15, 1999, a working system was in place in OIMC.

A follow-on project staffed by both OIMC and AIMD staff began in May 1999. The focus of the effort was to automate manual processing steps and resolve inefficiencies found in the earlier test. By October 1999, an operational test of the refined system was completed successfully. The

process was streamlined, and three audit divisions were provided access to FrameMaker for typesetting their work. The test results also led to establishing new goals for further improving the graphics creation process, an effort that will continue in fiscal year 2000.

Development of the Personnel Management Information System

The purpose of this project, done at the request of the Office of Personnel, was to develop a Y2K compliant, LAN-based, multi-user database system. This new software application replaced approximately 30 stand-alone applications that tracked various personnel-related functions and services. The replacement system was developed in-house using OIMC and Personnel staff. While the new application is being viewed as an interim system, it provides the bridge from the existing stand-alone environment to a future, fully integrated human resource system.

Improved Internet Service

To improve GAO's access to and use of the Internet, OIMC contracted with GTE in June 1999, to upgrade and maintain our Internet connection and security system. The improvements included a fourfold increase in the speed of our Internet connection and a state-of-the-art security system. OIMC is now able to provide reliable, secure and high-speed connectivity to the Internet for all GAO staff.

Network Services

Network services are provided by the Operations Services Center (OSC). OSC staff provide a wide range of services including network management and engineering for GAO's local and wide area networks, Internet access, end-user support, network upgrades of hardware and software, and technical troubleshooting and repair. OSC also manages copiers and the equipment loaner pool.

Key Indicators

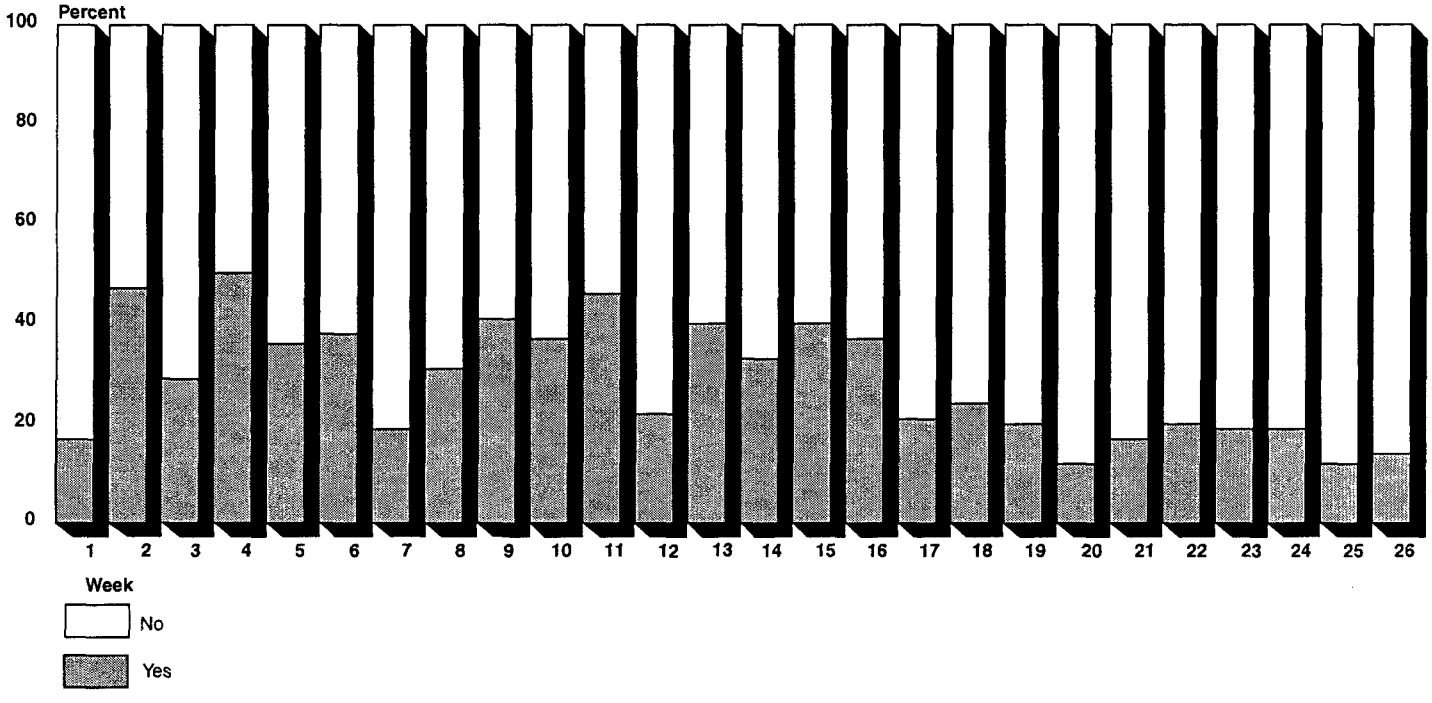
Network Stability

OIMC's top priority is to maintain a stable and reliable network. In order to obtain better information on network stability from an end-user perspective, we initiated a weekly user survey of headquarters and field office staff. The survey captures data on network stability and slowness, workstation lock-ups or lost data, and the responsiveness of email and the Internet. As the following graphs indicate, network and Internet problems have decreased in response to OIMC's upgrades and stability initiatives. The graphs on the next two pages aggregate staff responses to the following questions:

- Was network stability/slowness a problem in completing your work this week?
- Was Internet stability/slowness a problem in completing your work this week?

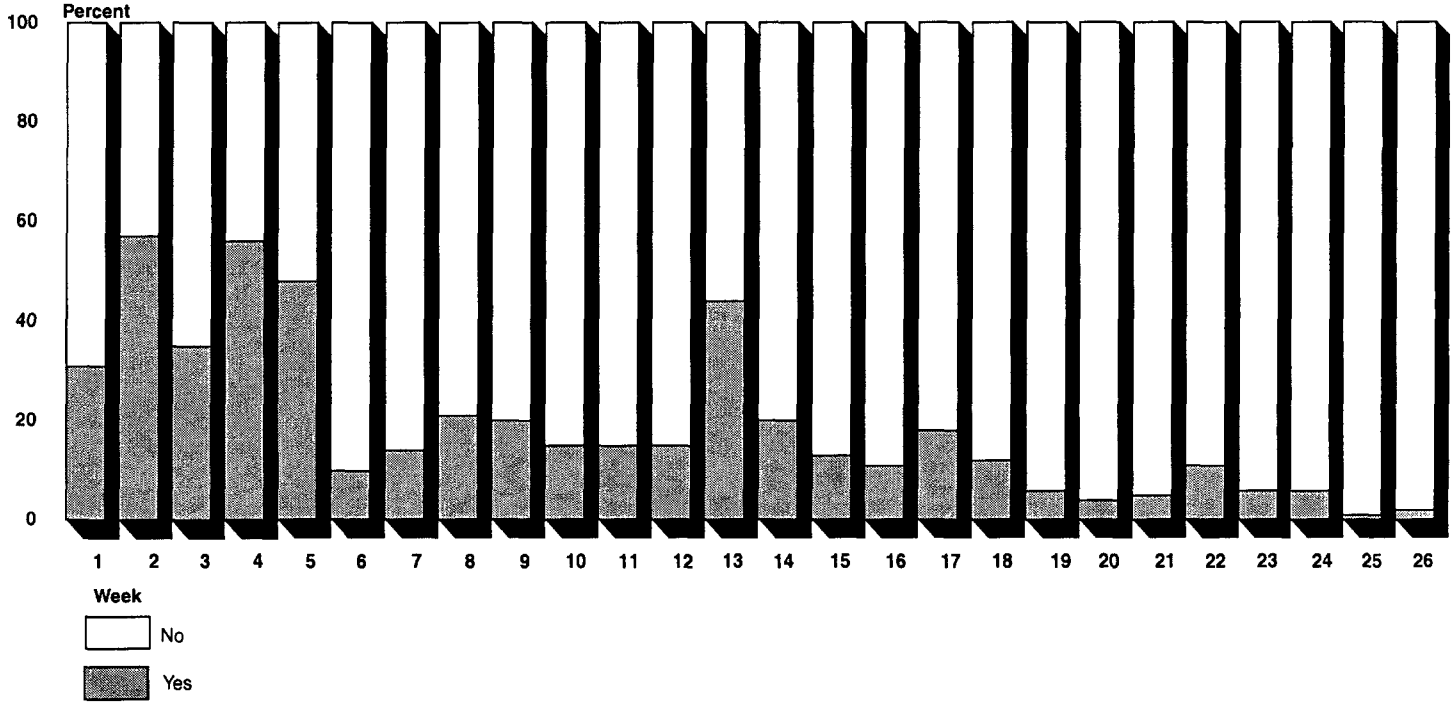
The graphs show the weekly percent of "yes" and "no" responses to the questions. The shaded area or "yes" responses indicates that these users felt the network or Internet was a problem during the reporting period, while the white area indicates a "no" – the network or Internet was not a problem.

Figure 1: Weekly Trends of Network Stability - April 23 Thru October 15,1999



The chart above indicates that network stability received the worst ratings from users during the week of May 14, 1999 (reporting period 4), just before OIMC applied vendor recommended upgrades to software, network servers, and communications equipment in late May 1999. As we continued our stability initiatives through the summer, the positive response ratio generally improved. While some increases in negative responses occurred, it generally tracked with the timing of additional changes being implemented, which resulted in short-term instability. By December 1999, we had completed a large portion of the stability initiatives. We expect the ratio of negative responses to continue to fall as we complete the remaining stability initiatives in fiscal year 2000. Our goal is to keep negative responses to less than 10 percent.

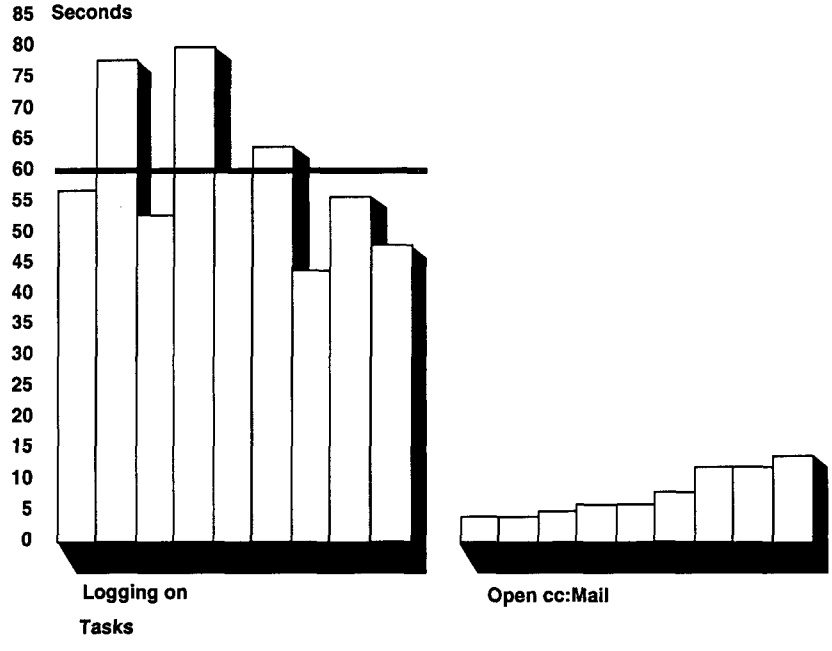
Figure 2: Internet Stability Weekly Trends April 23 Thru October 15, 1999



Similar to the network stability chart, Internet services (Figure 2) received a large number of negative responses in late April through May 1999 (reporting periods 2-5). Except for a week in July when OIMC made changes to standardize user connections to the Internet, negative responses have steadily declined since then. This coincides with the upgrade of GAO's Internet gateway/security server and the installation of a higher speed communications line to the Internet. Again, our goal is to drive negative responses for Internet services to less than 10 percent of total responses. We have achieved that goal for the last four reporting periods.

OIMC also measures network response time at headquarters on a biweekly basis to determine the end-user's perspective. The graph on the next page shows the average network response times for selected tasks.

Figure 3: Average Network Response Time (Bi-Weekly Figures, July 13-Nov. 2, 1999)

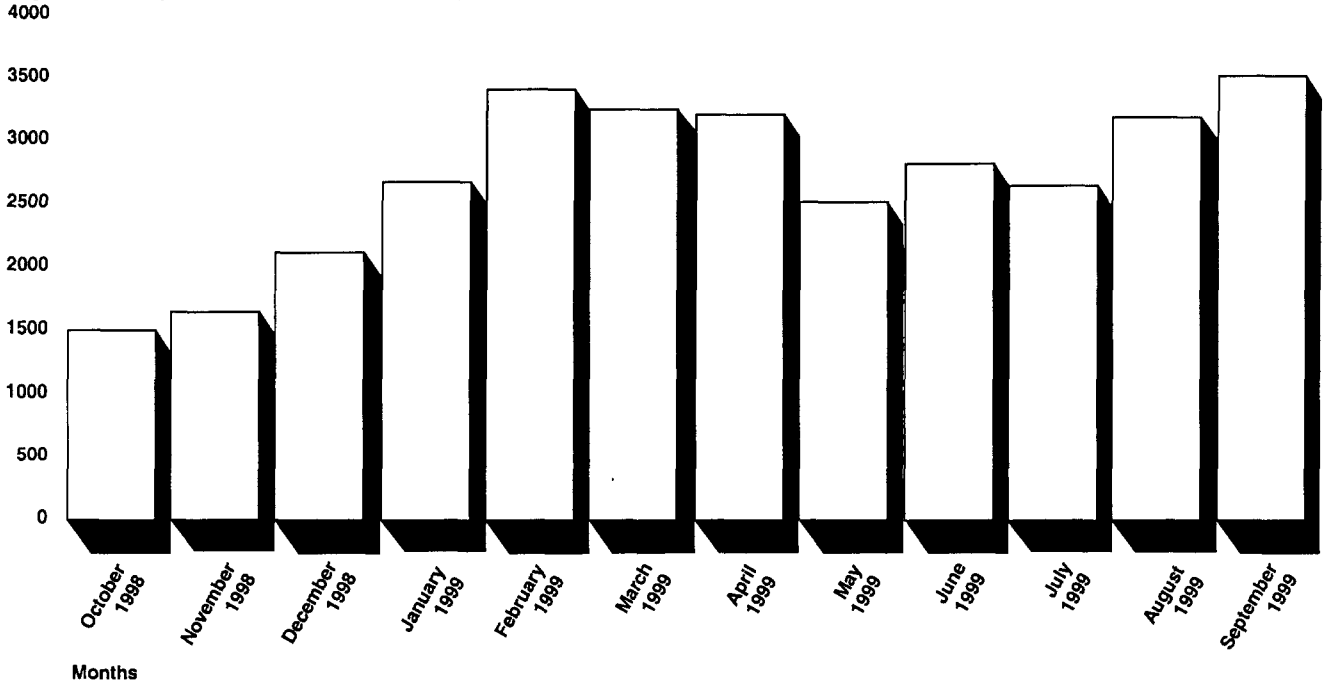


The horizontal line across the bars is the response time goal OIMC established on November 1998, by taking a number of measurements throughout the GAO building. The reporting periods shown in this graph reveal that user response times are at or near established goals except for one "logging on" measurement taken in July and one in August. The increase in the time required to open the cc:Mail application is due to two factors. First, the application is now opened from a user's workstation, rather than downloading it from the network at login. This change was made to cut down on network traffic. Second, the version of cc: Mail 8 implemented was subsequently identified by the vendor as a cause of poor performance. Preliminary tests indicate that upgrading to the most recent version–cc: Mail 8.4–released by the vendor to correct these problems, will reduce the time required to open the application. That upgrade will take place in January 2000.

Based on measurements taken, overall performance for opening the DOCS Open application, Microsoft Word, or getting to the GAO Home page through Netscape are meeting or exceeding expected goals.

Another indicator of network stability is the number of user calls to the help desk. OIMC continually tracks and analyzes calls to the help desk. The following graph indicates the level of activity.

Figure 4: Help Desk Total Ticket Activity



As indicated above, help desk calls steadly increased since October 1998 as we conducted the agency-wide rollout of Windows 95, MS Office 97, upgrades to the Internet browser and document management software, new workstations, new network operating system, etc. The call activity peaked at nearly 3,500 in February 1999, when the rollout and major upgrades were completed. Since that time, the trend has been generally downward with some upward moves that coincide with stability initiatives. For example, the help desk calls went up in June when we standardized the way users connect to the Internet, a necessary precursor to upgrading our entire Internet service. This caused an increase in calls from users who had to learn a new way of connecting to the Internet. Again, in August and September we upgraded to newer versions of our email software, which in turn increased help desk calls in the "how to" category. Our goal is to improve our services to the point where the number of help desk calls are

between 1,000 and 1,500 calls a month, the level we were experiencing during moderate to low rates of change.

Timeliness

We place a high priority on providing a prompt response to user requests for both network and hardware services. Our goal is to resolve 80 percent of the reported network problems on the initial phone call. During fiscal year 1999, we began with a resolution rate of 25 percent. Through increased staffing, additional training, and implementation of enhanced automated tools, we were able to raise this resolution rate to as high as 70 percent in April 1999. During the last quarter of the fiscal year, the rate ranged between 52 to 67 percent. We will continue to focus our efforts on improving the resolution rates to meet our response goals.

For hardware requests, our goal is to complete quick fixes (e.g., replacement of a monitor, mouse, etc.) within 15 minutes. During fiscal year 1999, our repair time for quick fixes averaged 29 minutes. We will strive to improve this average over the next fiscal year. Our goal for copy machine repairs is to have a repair person dispatched, repairs completed, and copiers fully operational within 9 consecutive working hours. Overall, during fiscal year 1999, we met the 9-hour goal 95 percent of the time.

Customer Satisfaction

OIMC's goal is to provide professional, courteous, and competent service. As part of a larger effort within OIMC, user satisfaction surveys were standardized in 1998 to allow analysis of satisfaction levels across OIMC service organizations. This standard survey focuses on one main question for our customers—Did we meet your expectations–"yes" or "no?" Additionally, the survey asks users to provide comments –either negative or positive –about service. This reduces the burden on users and allows a quick "bottom line" assessment of our service delivery. OIMC's bottom line goal is 90 percent of our customers satisfied with all of our services. The following chart summarizes customer satisfaction for both network and hardware services.

Table 1: Annual Data on Customer Satisfaction

Month	Total Tickets Opened	Total Surveys Sent	Total Surveys Received	% of Yes Responses	% of No Responses
Oct-98	2,217	651	176	98	2
Nov-98	2,415	243	134	100	0
Dec-98	2,806	630	174	98	2
Jan-99	3,420	629	236	99	1
Feb-99	4,149	1038	307	93	7
Mar-99	4,258	956	513	92	8
Apr-99	3,658	829	371	98	2
May-99	3,266	1007	269	96	4
Jun-99	3,766	991	316	99	1
Jul-99	3,246	579	258	98	2
Aug-99	4,017	1007	501	97	3
Sep-99	3,516	736	369	96	4
Oct-99	2,979	730	315	96	4
Nov-99	2,849	684	328	96	4
Dec-99	2,665	578	246	99	1

Initiatives/ Accomplishments

GAO-Wide Upgrade of Workstations

In the spring of 1998, OIMC began the workstation rollout project which, over seven months, provided GAO with 3,525 new Pentium II workstations, the majority of which were installed from October to December 1998. Over 5,700 outdated workstations were surplused from GAO and provided for reuse to school systems throughout the United States.

Network Technology and Design

Initiatives are underway to increase capacity and improve manageability in the headquarters' communications infrastructure. Two more powerful switches were installed to direct traffic between users and network services in early June 1999. They afford a larger and more efficient path between users and fileservers. More importantly, this equipment divided the network, and led to an immediate 50 percent reduction in the overhead traffic. Further segmentation is planned that will improve response times. Along with segmentation, we also plan to upgrade all communications

equipment throughout the GAO building that links workstations to network file servers and other resources.

Dial-up Communication to Mainframe Services

OIMC has established a dial-up communications service to help assure the continuity of key network-based administrative functions should the communications link to the Austin Automation Center (AAC) fail. This service will support up to 25 concurrent dial-up users using a communications software package called WinFrame. With this system, users in Personnel and the field offices will be able to transmit their biweekly time and attendance records, as well as access the Payroll/Personnel System at the National Finance Center (NFC). OIMC has distributed the WinFrame software, set up special AAC access accounts, and provided training to each field office and designated Personnel office user.

Recognizing the importance of mainframe services to our mission, GAO has taken steps to ensure that users will have continued access to these services if disaster strikes. GAO has selected data centers with a proven recovery capability. Both data centers can recreate the total computing environment. GAO also has been working with NFC and AAC to establish communications services to the recovery "hot site." GAO has determined the requirements for connecting to the hot site and expects to have the system in place and ready for operation soon. This will ensure that GAO's mainframe users will have minimum interruption in service if a disaster strikes the host facility.

Intranet Improvements

Several improvements are being made to GAO's intranet configuration in order to improve reliability and response time. OIMC is expanding the capacity of GAO's intranet configuration by taking several processes that were being performed on a single server and splitting them up among several faster devices. This will improve access time to applications such as GAO forms, the CD-ROM libraries, the Job Information System, and the Director's Management Information System.

Call Center Upgrades

In May 1999, OIMC installed a new service to improve customer service and manage the Help Desk. The new Automated Call Distribution (ACD) system has improved call management and reporting within the Help Desk, while providing GAO customers with a variety of options, including holding for the next available technician instead of automatically being transferred to voicemail.

Issues

Dial-In Capabilities

GAO's dial-in hardware and software were upgraded from Windows 3.1 to Windows 95 in August 1999. Unfortunately, the dial-in hardware has not worked as reliably as it did in the older environment and has resulted in system reliability and performance problems. Because of the importance of dial-in for GAO staff in carrying out their work, OIMC has researched remote access solutions and has identified several alternatives. In December 1999, we began a small pilot to test a solution that provides remote network access with improved reliability and speed. We are in the process of acquiring outside technical experts to assist us in the configuration and implementation tasks. The pilot test will run through March 2000 and depending on the results, GAO-wide installation could begin in the third quarter, fiscal year 2000.

Telecommunications Services

Telecommunications services are provided by OIMC's Telecommunications Services Center (TSC). TSC staff provide voice (local and long distance), data (wide area network), and video services. Specific services include desktop and cellular telephones, voice mail, facsimile equipment, cable television, and videoconferencing.

Key Indicators

Headquarters Telecommunications Service Availability

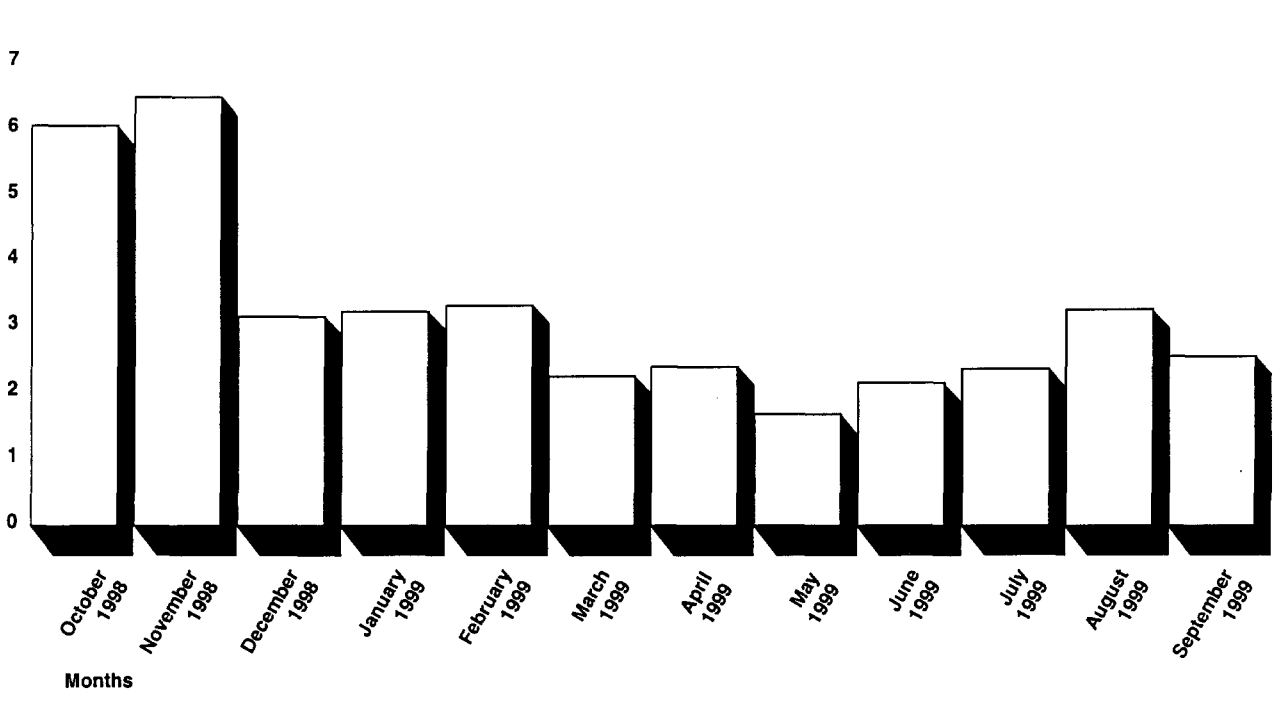
GAO staff depend on telephones at the desk or on the road to make or receive local and long distance calls whenever and wherever needed. GAO users placed 1,312,056 long distance calls, including 9,367 international and 39,960 calling card calls during fiscal year 1999, without measurable service problems. OIMC also provides 800 numbers for staff to access the voice mail system and the LAN when away from the office. During fiscal year 2000, 82,477 callers accessed the headquarters voice mail system, while 10,569 calls were placed to the LAN, using the 800 number.

Service availability for users of desk, mobile and cellular services nationwide was at 99.8 percent over the year, indicating a high degree of dependability and exceeding the industry standard of 98.5 percent used by our local service providers. Telephone service for headquarters was even higher–99.9 percent availability.

Providing reliable telecommunications service requires both responding to trouble calls when they occur and supporting users by moving, adding to or changing their service. These activities are described in the following indicators.

Headquarters Telephone Service Repair

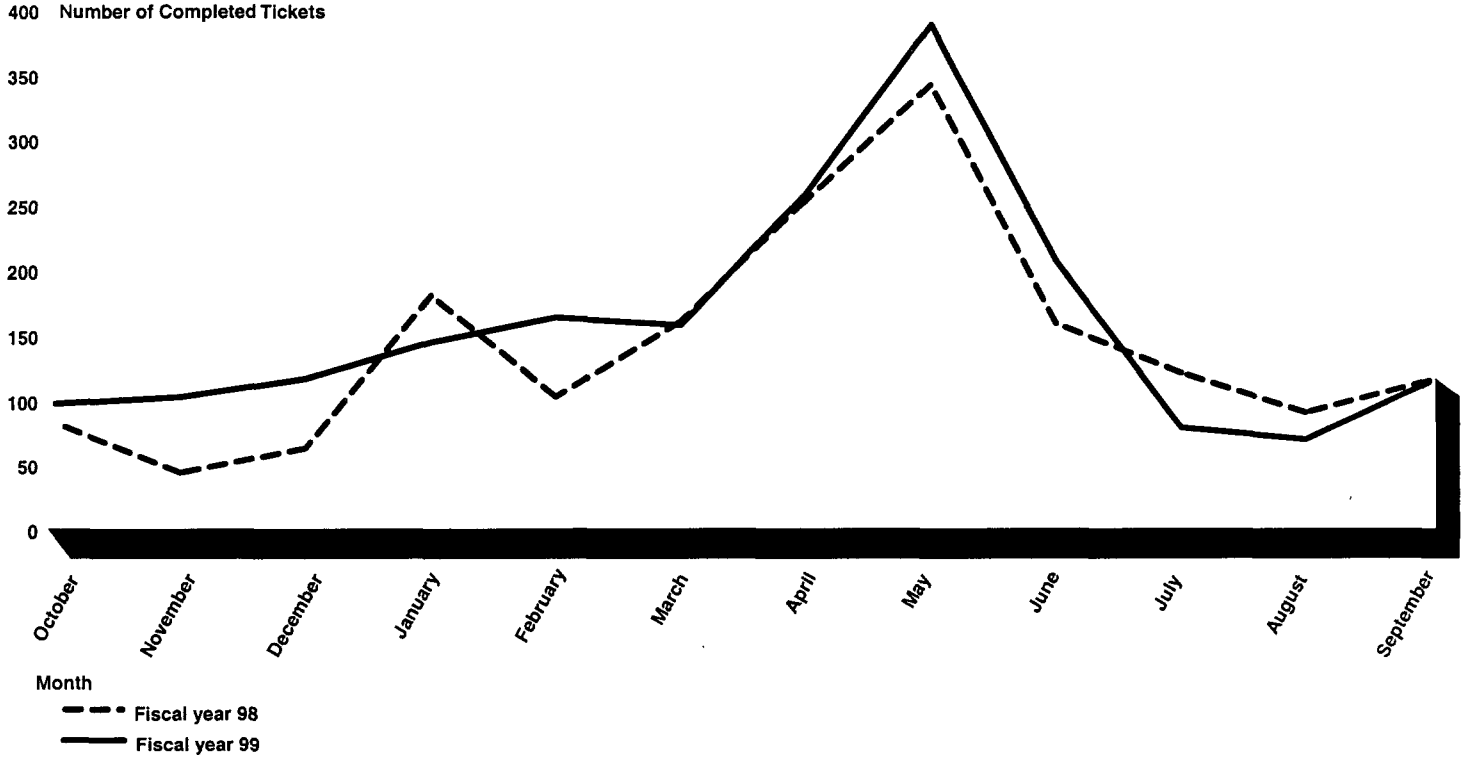
Figure 5: HQ Average Telephone Service Repair Intervals



Bell Atlantic, our headquarters' contractor, is required to repair telephones within 8 business hours. During fiscal year 1999, the average time to respond to and correct a problem was approximately 3.3 hours. This is about the same level maintained over the past four years.

Headquarters Telephone Service Trouble Reports

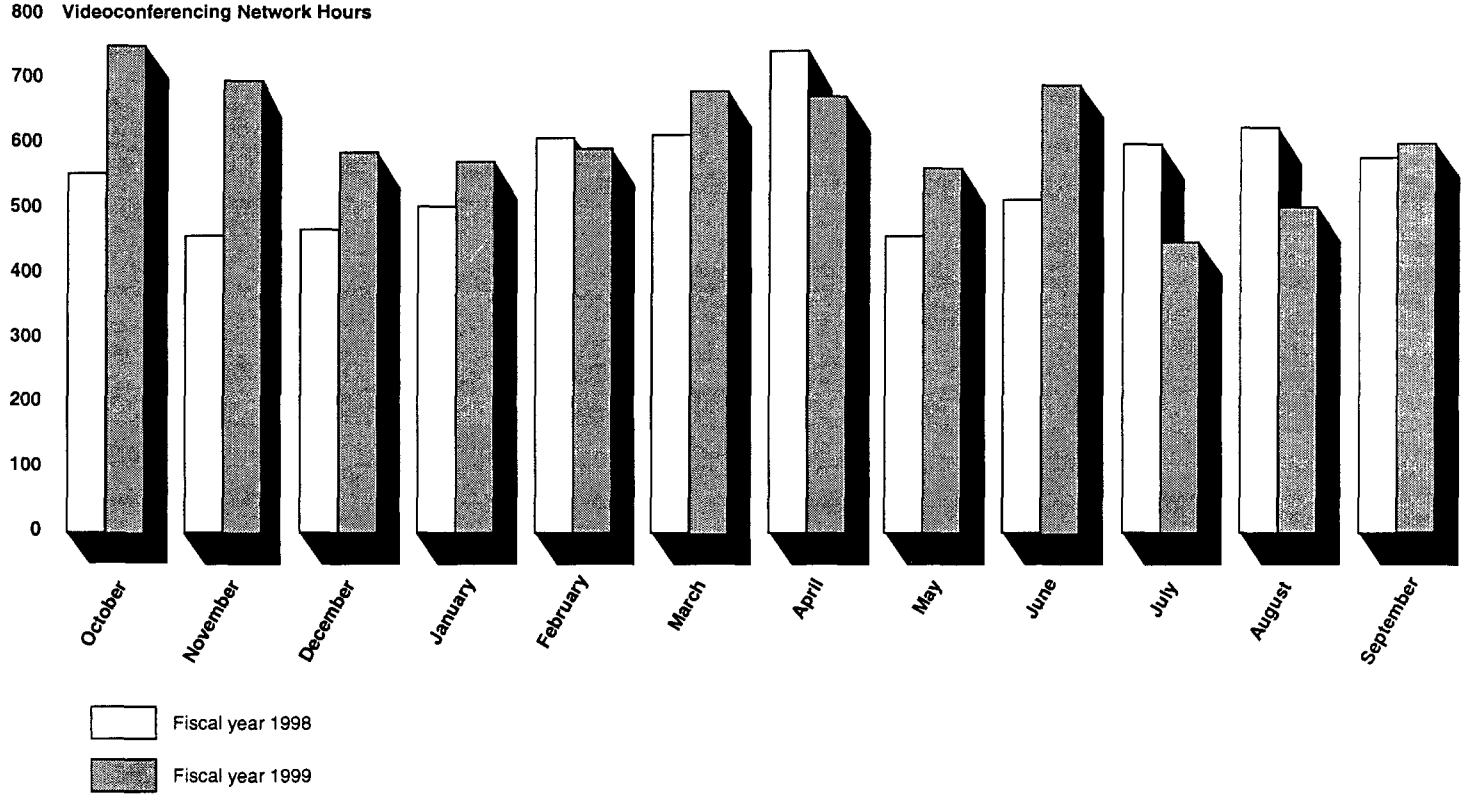
Figure 6: HQ Trouble Reports



During fiscal year 1999, OIMC responded to and corrected 1,774 reported problems with telephone service. Similar to fiscal year 1998, the highest number of calls occurred in April and May. The repairs involved faulty dialing pads on the telephone instruments exacerbated by the increase in heat and humidity in the headquarters building, brought on by the change in seasons. These repairs subside once the heating and air conditioning system is balanced for the seasonal weather change.

Videoconferencing Activity

Figure 7: Videoconferencing Network Hours



During fiscal year 1999, GAO scheduled 7,385 network hours of videoconferencing; 644 hours more than during fiscal year 1998. GAO held an average of 615 hours of videoconferences each month including 38 multipoint conferences.

Initiatives/ Accomplishments

Completed Initiatives

In addition to ensuring dependable telephone, voice mail and videoconference services, OIMC achieved a number of efficiencies in our telecommunications programs and strengthened the telecommunications infrastructure. During fiscal year 1999, the following projects were completed.

Y2K Projects

OIMC worked with its telecommunications service vendors to assess the vulnerability of systems to Y2K failures. Several systems were identified as not being Y2K compliant and required either a major upgrade or a complete system replacement. The following systems were either upgraded or replaced to ensure Y2K compatibility.

1. The hardware and software on the voice mail systems in Raleigh and Sacramento were upgraded in May 1999.

2. The telephone management information system at headquarters was replaced in May 1999.

3. The Automatic Call Distribution (ACD) system used to route calls to the document distribution center required an upgrade to the existing software operating system, which was completed in May 1999.

4. The videoconferencing reservation system was replaced with a new LAN-based Y2K compliant system in July 1999.

Headquarters Calling Card Rollout

OIMC distributed approximately 1,500 long distance calling cards to office and division staff under the new MCI contract. The calling card provides a convenient and cost effective means for staff to make long distance calls while away from the office and provides a consolidated format of invoice review and payment for each office and division.

Headquarters Telephone Line Restrictions

Most telephones in GAO can originate any type of telephone call: local, long distance, international, etc. This unlimited capability could lead to fraud and abuse. This initiative provided the divisions and staff offices an opportunity to select the appropriate level of restriction on each of their office telephone lines.

Nextel Two-way Radio Services

Because GAO's requirements for emergency (2-way radio) services were not being met by existing systems, OIMC teamed with Real Property Management to procure one device that could replace as many as three different devices and provide better responses in emergencies. A contract was awarded to Nextel to provide cellular phones, combining the features of a 2-way radio with cellular and pager services and addressing the various needs of Security and Safety, Real Property Management, Property Management, and OIMC.

Los Angeles Modernization

The LA remodeling project began in May 1999 and was completed in November. The project entailed demolition and remodeling of the office and required the relocation of the LAN, PBX telephone system, videoconference equipment and GAO staff.

Ongoing Initiatives

Headquarters Telecommunications System Procurement

GAO's current contract for headquarters voice telecommunications will expire in fiscal year 2001. Because of the importance of these services and the complexity of the acquisition process, re-procurement efforts began in fiscal year 1999. A multi-year follow-on contract will cover all existing services currently provided through our contractor, Bell Atlantic. These services include telephone service and instruments, voice mail, moves, adds, changes and cabling services, automated call distribution support for GAO help desks, and personnel and equipment required for ongoing operations, maintenance and support. In addition, other services such as field office telephone maintenance and wireless services in headquarters, now obtained through other contracts, will be incorporated into the new contract.

To ensure a quality reprocurement effort, we have acquired the assistance of telecommunications consulting services. Based on the selected firm's analyses of GAO requirements and the rapidly changing telecommunications market, OIMC has established a strategic plan for GAO telecommunications and the scope of the upcoming acquisition.

Videoconferencing System Upgrade

With manufacturer maintenance and support scheduled to stop at the end of calendar year 2000, OIMC has embarked on a project to upgrade its aging videoconferencing equipment with new equipment that is easier to use and maintain. A project team is being pulled together that will include users in headquarters and field offices, as well as OIMC staff. The first step will be to determine the needs of videoconferencing users' and to then assess how well the features and capabilities offered in new systems on the market can meet those requirements.

Video Streaming on the Computer Network

This project is an examination of hardware and software that transmits video and audio "streams" over the LAN. This purpose of this project is to determine to what extent live or pre-recorded video can be transmitted over the LAN without reducing its performance. Testing includes broadcasting CATV and training material, as well as "video-on-demand." To date, video streaming hardware and software have been installed in San Francisco, where staff is using what is known as "IPTV" to receive training and to earn required CPEs. The Training Institute has also identified video streaming as one of its strategic goals for fiscal year 2000 and will team with OIMC in a follow-on project addressing agency-wide deployment.

Pager Contract Competition

The GAO building has areas where radio signals cannot penetrate, effectively constraining wireless communication within the building. These areas are known as "dead zones." To remedy this situation, OIMC plans to acquire a pager service and install a pager antenna system that will overcome the building signal deficiencies and more fully satisfy the requirement for wireless communications. The technical statement of work has been completed and will be forwarded to Acquisition Management in fiscal year 2000.

Issues

Dealing with Aging Equipment

On July 1, 1999, replacement parts for our field office voice mail systems became increasingly difficult to obtain. Our vendor no longer makes parts for these systems and while refurbished parts are now available, vendors no longer guarantee the availability of refurbished parts. As a result, if one of our field office systems has a part failure, the system will be off line for a prolonged period until a replacement part can be located and installed. To correct this problem, we have scheduled the replacement of ten field office systems in the spring of 2000.

Management Information and Administrative Services

Management information and administrative services were provided in fiscal year 1999 by two OIMC centers:

The Client/Server Systems Center (CSSC) provided application software development and maintenance services, as well as technical support for GAO database applications–such as the GAO Job Information System (JIS). The Corporate Systems Center (CSC), in partnership with its customers throughout GAO, maintained GAO-wide administrative systems that track jobs, oversee payroll, support GAO's financial management activities, and the like.

In early fiscal year 2000, these centers were merged, along with another OIMC unit responsible for web development and maintenance. The new center is now known as the Application Development and Maintenance Center (ADMC).

Initiatives/ Accomplishments

System Security Plans

The management letter that accompanied GAO's annual financial audit the past two years recommended that GAO achieve OMB Circular A-130 compliance by developing system security plans for its major applications and general support systems. To comply with this requirement, work began in fiscal year 1998 and continued throughout fiscal year 1999. In fiscal year 1999, system security plans were completed for all four of GAO's major application systems, the Financial Management System (FMS), the Payroll/Personnel System, the Mission and Assignment Tracking System (MATS), and the Information Handling and Support Facility (IHSF). In addition, by the end of calendar year 1999, all of these systems had received formal certification by GAO's Chief Information Officer.

In fiscal year 1999, a draft security plan was also developed for the GAO network. During the year, both internal and external penetration tests were conducted for the GAO network by an outside vendor, and corrective actions were taken for identified weaknesses. In December 1999, the security plan for the GAO network was finalized and a conditional certification granted. In early January 2000, we learned that based on these efforts to bring GAO into compliance with A-130, GAO will be receiving an unqualified opinion on its fiscal year 1999 financial statements, and that for the first time since these independent audits were initiated, no

management letter outlining weaknesses in accounting and financial management operations will be issued.

Disaster Impact Analysis Study for the GAO Network

The GAO network currently lacks the formal contingency plan required for full OMB Circular A-130 compliance. During fiscal year 1999, a disaster impact analysis study was conducted for the GAO network as a preliminary step towards the creation of a formal contingency plan. This study was conducted with the assistance of contractual support from a major consulting firm. It included a series of interviews with senior GAO executives and managers, as well as with technical staff within OIMC. The completed study identified and prioritized network-based applications to be recovered in the event of a disaster affecting the network's operations center, as well as a series of recommendations for improvements in backup procedures and a description of a range of disaster recovery preparedness strategies. Based in part on the results of this study, planning is underway to acquire further contractual assistance in fiscal year 2000 to support the development of a full business continuity plan for GAO that would include a network recovery contingency plan.

Renovated Financial Management System for Y2K

In fiscal year 1998, FMS was renovated for Y2K compliance. The renovated system was tested during the first quarter of fiscal year 1999 and implemented at House Information Resources (HIR) within a newly installed Y2K compliant operating system. After FMS was migrated from HIR to the Austin Automation Center (AAC), further Y2K compliance testing was successfully conducted in that operating environment.

New FMS Extract System

In fiscal year 1999, a system was developed that allows authorized users to query financial data maintained in FMS. The system extracts data from FMS and downloads these files to the GAO network where they can be loaded into a database. This system was originally implemented on the GAO network in November 1998, for a limited number of users. After the implementation of Windows 95, the query facility was upgraded and rolled out to designated users in the field offices. This system has proven to be an effective replacement for the prior mainframe-based subsystem and adequately supports the ad hoc query requirements of financial system users at a lower operating cost and with a more user friendly interface.

Records Management Inventory System

This application will be used by OIMC's Records Management Staff for tracking the location and status information of GAO records that are stored in Federal Records Centers. The new application software system will be accessible on the GAO network, and supported by OIMC staff. OIMC began

development of the replacement system in July 1999, and will deploy it in March 2000.

JIS Upgrade

OIMC and the staff of the Office of Quality and Risk Management (OQRM) have identified and completed a number of programmatic changes to the JIS software. Specifically, the requirements for risk assessment and mitigation reporting in the job starts and job assessment process has been redefined by OQRM. This project was completed and deployed on the GAO network in mid-September 1999.

Sybase to Oracle Conversion Project

Because of growing technical support problems with the Sybase database management (DBMS) software, OIMC chose Oracle (the DBMS industry leader) to replace Sybase. Oracle will support GAO's document management system (DOCS Open) and GAO network-based decision support systems like JIS, as well as future web-based development efforts. Developing installation and data conversion procedures and the project schedule to replace Sybase with Oracle will be a challenge during fiscal year 2000. The documentation and findings from the initial proof-of-concept project will be critical to completing the procedures and schedule. Once those are completed, we expect that we can finish the documentation and project schedules and begin implementation by late Spring 2000.

Issues

Responding to GAO's Changing Needs

Being responsive to GAO's rapidly changing environment has become a major challenge in the maintenance and modification of GAO's administrative data collection and decision support systems. Our current process for developing, testing, and implementing software takes too much time. Looking to the future, we need to explore database, data warehousing, and web technologies that will enable us to more rapidly and accurately deploy changes to application software.

Publishing Services

Publishing services are provided by OIMC's Publishing and Communications Center (PCC). PCC publishes the results of GAO's work in media appropriate for each audience. It provides graphic design, typesetting, printing, photographic, video, and media consultation. It also provides mail and courier services for GAO's internal and external customers.

Key Indicators

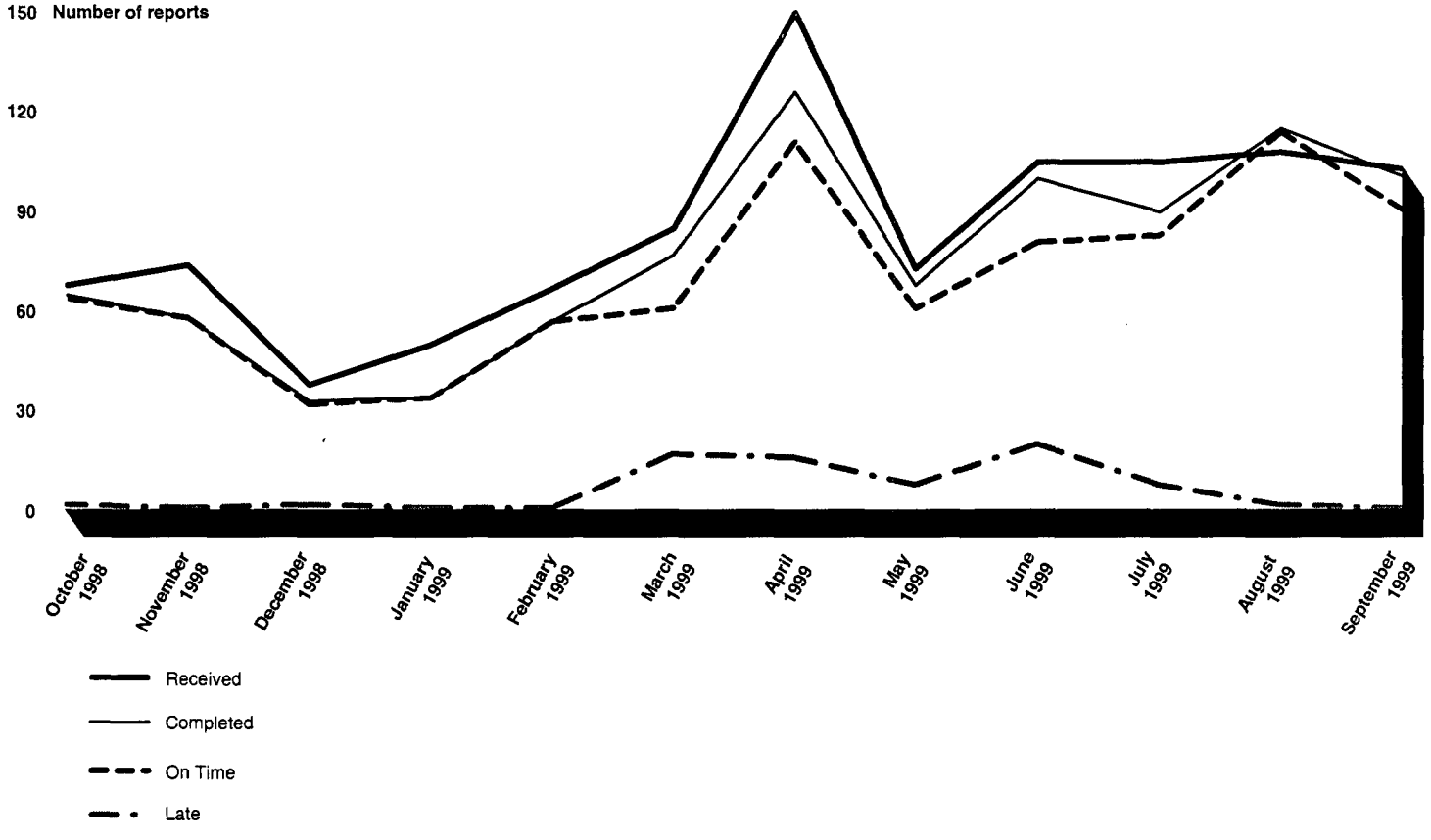
Customer Satisfaction

OIMC's goal is 100 percent customer satisfaction with overall publishing services provided. In fiscal year 1999, PCC received a total of 5,068 customer surveys; 99.8 percent of those customers responding were satisfied with the service provided.

Audit Report Turn-Around Times

Our goal is to have all audit reports completed with no missed delivery dates. During fiscal year 1999, 912 audit reports were completed by the delivery date while 67 missed the delivery date–a 92.7 percent success rate.

Figure 8: Report Production Volume by Month



The graph above shows the overall volume of requests for report production, the number of requests completed on time and those not completed within the established 6 day and 10 day turnaround times. The increase in late reports from February through June primarily reflects processing problems during the initial phase of the FrameMaker implementation.

Volume of Headquarters Incoming/Outgoing Mail Processed

The GAO Mail Center processes all GAO incoming and outgoing mail, whether handled by GAO staff, commercial contractors, or various other methods. The staff is dedicated to providing timely and accurate delivery to our customers and exceptional customer service to those who request service at our intake counter. The following chart shows the methods used for processing GAO mail and the total fiscal year 1999 volume processed.

Table 2: Volume (pieces) of Headquarters Incoming/Outgoing Mail Processed

	FedEX	UPS	USPS	3rd-class Presort	4th-class	GAO Internal Mail	Courier Service*
Total	9,423	1,131	1,000,467	152,652	65,640	74,080	2,398

*Processed via OGC window, Bankers Courier contract, Lockheed-Martin contract, and/or Mail Center messengers.

Initiatives and Accomplishments

Electronic Print Plant Upgrade (EPPU) System

OIMC prints and distributes the results of GAO's work both in hard copy and electronically. Hard copy products are produced in a printing facility in-house and through contractor support provided through the Government Printing Office (GPO). Because the current printing facility is becoming outdated, a business decision was made to explore the procurement of a new, high speed, and more fully integrated system.

In early 1999, a request for proposal (RFP) was issued to procure a new system, and a potential vendor was identified. In brief, the objectives for the electronic printing plant upgrade are to:

- print documents at a lower cost,
- sustain current high-quality service to the Congress,
- employ state-of-the-art digital technology to enhance operations,
- reduce the reliance on outside contract printing, and
- improve management control of individual products and the publishing process.

OIMC, in conjunction with AIMD staff, is preparing a publishing options paper, based on best practices for implementing new technology, to assist management in deciding the best course of action for this upgrade. It is expected that a decision will be made concerning implementation of this system early in calendar year 2000.

Issues

The major issue facing the OIMC publishing staff is the successful completion of the FrameMaker operational test. It is critical that the process demonstrates the ability to effectively meet GAO's publishing demands so the multiple processes now being used can be phased out. In addition, OIMC must maintain a flexible production process as GAO reevaluates its publishing standards and product lines.

Information Management Services

Information management services are provided principally by OIMC's Information Services Center (ISC). ISC is responsible for the capture, organization, access, and use of the agency's information assets in four major areas: library and research services, Internet and Intranet services, distribution services, and records management.

Key Indicators

Congressional Interest in GAO's Web Page

In late October 1998, OIMC began tracking the number of times GAO's web site was accessed by congressional offices. The number of times House and Senate offices have accessed GAO's site during the past year are listed below.

	House	Senate	Total
FY99 Total	86,319	57,674	143,993

GAO Documents Distributed Via Paper and Internet

A measure of GAO's impact on issues facing the Government is the readership of products issued. Public access to GAO documents has expanded dramatically in the last few years with availability through both the GAO Web Page and GPO Access. The following is a summary of key distribution channels for our products for the past year.

	Paper Documents Distributed		Electronic Documents Distributed	
	Requested by Customers (Demand Distribution)	Distribution Initiated by GAO (Planned Distribution)	GAO Web Page Retrievals	GPO Access Retrievals
FY99 Totals	517,765	311,148	5,889,986	1,389,156
Total		828,913 (Paper)		7,279,142 (Electronic)

Orders for GAO Documents Received by ISC Distribution Services

GAO is dedicated to making GAO documents easy to order. This chart shows the number of order transactions, average number of documents per order, and the method used.

Request Method	FY99 Totals
Online	138
Walk-in	1,836
Mail	8,978
Voicemail	14,595
Telephone	21,069
Internet	32,843
Fax	40,139
Total Transactions	119,598

Customer Satisfaction in Distribution Services

In an attempt to measure customer satisfaction from individuals requesting GAO documents, OIMC staff members in Distribution Services enclose survey cards in approximately 10 percent of each day's orders. Survey responses frequently include customer comments providing general feedback (e.g., "appreciate the fast response"). Others may ask questions (e.g., how to obtain a customer ID number); describe problems (e.g., improve on the length of delay time on back orders); or make suggestions (e.g., shorten delivery times, if possible). All comments are forwarded to functional supervisors, who personally contact customers with questions or problems, if that individual provides a telephone number or email address. During fiscal year 1999, GAO's customers were very satisfied, with an average satisfaction rate of 98.6 percent.

Delivery of GAO Documents

	Number of Surveys	Number of Responses	Satisfied Customers
Total	14,952	2,931	98.6

Timeliness

OIMC tracks turnaround time (TAT) in several service areas to monitor timely responsiveness to customer requests:

- In Research Services, library researchers directly support GAO jobs by searching online information systems to retrieve bibliographic, full-text and numeric information. Turnaround time is discussed with each requestor to ensure that information is provided when needed. A 7-day TAT has been established in cases when the requestor does not specify a date for completion. During fiscal year 1999, the established/agreed-upon TAT was met 100 percent of the time.
- In Records Management, staff have the responsibility for retrieving records, (including workpapers, legal files, and administrative records) from the Washington National Records Center (WNRC), where they are stored. These retrievals are done at the request of GAO staff and involve working with the requestor, WNRC, and GAO messenger staff to ensure prompt pickup and delivery. During fiscal year 1999, the 5-day TAT was met 100 percent of the time.
- In Distribution Services, the Maximum Response Time (MRT) for orders requiring no research is 1 day for Priority 1 and 2 customers (Congress, GAO and the press) and 3 days for Priority 3 customers (the general public). During fiscal year 1999, 99 percent of documents requested were shipped within their MRT.

Searches by GAO Staff in Fiscal year 1999 using CD-ROM and Web-Based Products

OIMC provides access to information resources in many formats, including CD-ROM and web-based products. GAO staff are able to search eight of these products (such as the *Washington Post*, *Wall Street Journal*, EconLit, and Computer Select) on the agency-wide LAN, with additional CD-ROM titles available through OIMC at standalone workstations in the GAO Library. Three web-based resources, replacing the same titles in CD-ROM format, are also available to the agency via the Internet. These include business periodicals, *Wall Street Journal*, *Washington Post*, and Newspaper Abstracts.

EconLit, *The Washington Post*, and Newspaper Abstracts are consistently among the most heavily used CD-ROM resources. For web-based services, usage statistics indicate the number of times a user from GAO accesses either the abstract or full text of a record (available only for Computer Select and ProQuest Direct).

CD-ROM Searches	FY Total
Number of Searches	17,265
Minutes Online	209,244
Average Search (minutes)	11.8
Web-based Services*	**FY Total**
Computer Select	780
ProQuest Direct	13,340

*Recordkeeping for this function began in April 1999

Library Services Operational Functions

Various activities help to provide full utilization, circulation, and maintenance of information in the library collections, ensuring access to the most current and comprehensive resources to support GAO's work.

Functions Performed	FY Total
Reference Questions (RQ)	1,366*
RQ Answered W/electronic Resources	571*
Database Searches for GAO Staff	956
Number of Books/Journals Shelved	40,906
Microfiche Filed	37,046
Items Circulated	3,844
Items Obtained for GAO Staff (purchased or borrowed)	3,306

*Recordkeeping for these functions began March 1999

Initiatives/ Accomplishments

IHSF System Projects

The Information Handling and Support Facility (IHSF) is an information management system that supports GAO's report distribution in both paper and electronic formats and provides the corporate memory of GAO's published work. It consists of three main subsystems: planned distribution, documents database, and order entry and inventory control, all of which

required replacement efforts to become Y2K compliant. The planned distribution subsystem, designated as "mission critical," was made Y2K compliant in March 1999, and upgrade of the documents databases was completed in July.

OIMC staff have also been working with GSA's Federal Systems Integration and Management Center (FEDSIM) to reprocure IHSF services. The current IHSF contract expires at the end of March 2000, and a major procurement project began in March 1999 to complete all requisite steps in this effort.

Electronic Availability of Older GAO Publications

OIMC is converting historical files of GAO reports and testimonies to an electronic format, which can be accessed on the desktop through the Internet. The initial files, consisting of documents from December 1989 to September 1994 (10,268 documents, approximately 368,000 pages), have been converted to PDF format which will be fully searchable by keyword. After proofing these files, OIMC staff will begin to add them to the GAO Home Page beginning with the most recent files and working back to earlier years. In addition, both text and PDF versions will be available through GPO Access. OIMC will continue to convert additional historical files, allowing easy access to previous GAO work, a benefit to both GAO staff and outside users.

Web-based Data Collection Efforts

Fiscal year 1999 saw GAO's first use of the Internet for data collection, using a complex web-based survey of Superfund sites. The survey, a joint project of OIMC and RCED staff, obtained responses from over 90 percent of the sites surveyed within two weeks. The resulting report, RCED-99-245, was the first GAO report to be issued on CD-ROM, and was also the first to be published in HTML on GAO's web site.

A second joint OIMC-RCED survey project in support of audit work was the web-based Nuclear Regulatory Commission Employee Attitude Survey. Final data was delivered to RCED staff for analysis.

New Electronic GAO Information Resources

GAO has continued to expand the web-based agency information resources available via the Internet and GAO's intranet.

As a result of a joint effort by AIMD and OIMC staff, a new electronic codification of the Government Auditing Standards (the Yellow Book) is available in both HTML and PDF formats. In accordance with the 1997 endorsement by the Advisory Council on Government Auditing Standards,

the codification incorporates revisions through Amendment No. 2, and will be updated to include future amendments. It is accessible to GAO and to the public on the Government Auditing Standards page of GAO's external web site. This new version of the Yellow Book is not available in hard copy.

Electronic versions of GAO's performance appraisal training guides for raters and reviewers were developed in cooperation with ACG-Ops staff. These guides are now available via GAO's intranet. Other intranet additions developed with OIMC assistance included the Personnel site and the Office of International Liaison site. OIMC staff also collaborated with the Office of Public Affairs to develop a new look for the web-based intranet version of GAO Management News.

GAO's intranet and Internet sites also marked the arrival of Comptroller General Walker with new "From the Comptroller General" sections.

Records Management Guidance and Training

As part of OIMC's efforts to provide records management education and guidance to agency staff, OIMC provided numerous training classes and briefings in fiscal year 1999. Two training sessions in basic records procedures were held for newly appointed records liaison officers from GAO units, and several briefings on records disposition were requested by office/division staff to assist them in "file clean-up" efforts. While videoconferencing has been utilized to brief GAO staff outside headquarters, in fiscal year 1999, two field offices (Kansas City and Seattle) requested and funded onsite training for their administrative staff by an OIMC records management staff member who conducted classes and provided technical assistance in files management. In order to assist headquarters staff in their preparation of fiscal year 2000 files, OIMC held a day-long records management workshop in September to provide guidance on the development of division/office file plans for management of unit files, with additional workshops and refreshers in early October 1999.

Issues

Managing Electronic Records

The increasing number of agency records in electronic format poses a challenge in the records management area. There is a need to manage GAO's electronic records through the full integration of DOCS Open–GAO's document management system–and cc:Mail–the agency's electronic mail system–with an electronic recordkeeping software package. Electronic recordkeeping software would allow electronic agency records in DOCS

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