

Office of Inspector General



February 12, 2001
Audit Report No. 01-006

Audit of the FDIC's Application
Maintenance Budgets




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DATE: February 12, 2001

TO: Donald C. Demitros, Chief Information Officer and
Director, Division of Information Resources Management

FROM: 
David H. Loewenstein
Assistant Inspector General

SUBJECT: *Audit of the FDIC's Application Maintenance Budgets*
(Audit Report No. 01-006)

The Federal Deposit Insurance Corporation (FDIC) Office of Inspector General (OIG) has completed an audit of the FDIC's maintenance budgets for its application systems. This audit was conducted based on information gathered during a previous OIG audit entitled *Audit of the FDIC's Strategic Planning for Information Technology Resources* (Audit Report No. 00-013). During our previous audit we identified a general perception at the FDIC that application maintenance expenditures were higher than they should have been. Part of this perception was caused by the fact that application maintenance has represented one of the largest components of the FDIC's information technology (IT) budget in recent years. Division of Information Resources Management (DIRM) and program office officials had also expressed concern during our previous audit about how application maintenance expenditures were being categorized and reported.

Our audit identified opportunities for DIRM to improve the manner in which it manages IT expenditures classified as application maintenance. The report contains four recommendations designed to improve the manner in which DIRM defines, categorizes, and monitors application maintenance expenditures.

BACKGROUND

The FDIC invests a significant amount of resources in IT each year. The FDIC's \$202 million IT budget for 2000 represents approximately 17 percent of the Corporation's \$1.2 billion annual budget. The FDIC expects to invest an additional \$185 million in IT resources during calendar year 2001. The large investment that the FDIC makes in IT each year reflects the vital role that technology plays in accomplishing the FDIC's business goals and objectives. It also underscores the need for sound internal controls and performance measures to ensure that these valuable resources are deployed in an optimal manner.

Approximately \$33.8¹ million of the FDIC’s \$202 million IT budget for 2000 has been budgeted to maintain the FDIC’s approximately 470² business applications to ensure that they continue to satisfy the business needs and objectives of the Corporation. This IT work is referred to as “application maintenance.” Figures 1 and 2 below illustrate the FDIC’s planned level of spending on IT and application maintenance, respectively, during 2000.

Figure 1: Portion of FDIC's Budget Related to IT

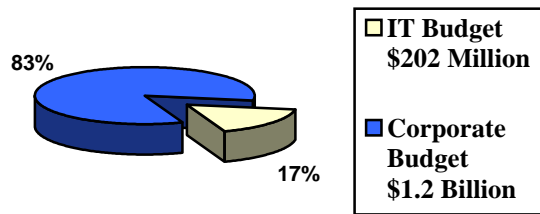
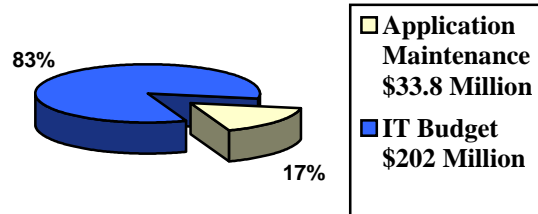


Figure 2: Portion of IT Budget Related to Maintenance



Program divisions and offices also invest significant resources to maintain the FDIC’s business applications. However, we were unable to quantify these costs because program divisions and offices were not required to track and report IT costs. We reported on the need to track program office costs relating to IT projects and associate these costs with DIRM expenditures in three previous OIG audit reports.³ We recommended that the Chief Financial Officer, Division of Finance Director, and Chief Information Officer (CIO) and DIRM Director work with the FDIC’s divisions and offices to ensure that full life-cycle costs associated with IT investments, including program office costs, are tracked, reported, and compared to initial estimates. The FDIC plans to implement procedures in 2001 to allow IT expenditures incurred by non-DIRM organizations to be captured and related to DIRM’s IT projects. When fully implemented, this process will allow the FDIC to identify and evaluate the true total costs of individual IT projects from a corporate perspective.

The IT Technical Committee defined application maintenance in its 2000 IT budget formulation procedures as “production monitoring, emergency fixes, software package version upgrades and minor enhancements to an application system or group of application systems.” In addition, DIRM developed a more detailed, but informal, definition of application maintenance. The more detailed

¹ It is important to note that the \$33.8 million figure does not include approximately \$8.8 million in license and maintenance fees related to the purchase of third-party software products that operate on the desktop, server, and mainframe computing environments. Examples of these products include the Microsoft Office Suite, Entrust, Forest and Trees, Walker, and DB2. DIRM categorized fees for third-party software products as technical infrastructure expenditures.

² As of October 18, 2000, there were 470 production applications contained in the FDIC’s Corporate Data Repository.

³ The three OIG audit reports were *Audit of FDIC Resource and Cost Tracking Systems for Information Systems Projects* (Audit Report No. 98-019), dated February 27, 1998; *Follow-on Audit of FDIC’s General Examination System Development Project* (Audit Report No. 99-020), dated March 31, 1999; and *Audit of the FDIC’s Strategic Planning for Information Technology Resources* (Audit Report No. 00-013), dated March 31, 2000.

definition provides DIRM's program managers with a more detailed level of specificity to develop and manage individual maintenance budgets for the FDIC's business applications. However, as discussed in a subsequent section of this report, DIRM needs to modify its definition of application maintenance to ensure that it meets traditional and generally accepted definitions of maintenance.

DIRM tracked and reported its application maintenance expenditures using IT project numbers. DIRM established a unique IT project number for each FDIC application with annual maintenance costs exceeding \$200,000. Applications with annual maintenance costs of less than \$200,000 were grouped by FDIC division and office into a single application maintenance project called "other maintenance."

DIRM took steps during our review to improve the manner in which it categorized application maintenance expenditures. For example, as part of the 2001 IT budget planning process, DIRM established a separate IT category for on-line data services, such as LEXIS-NEXIS and Westlaw. Previously, expenditures for on-line data services had been categorized as application maintenance. Separating these expenditures from application maintenance improved the accuracy with which IT expenditures are categorized. DIRM also initiated actions that, when fully implemented, will indirectly benefit DIRM's planning and administration of application maintenance expenditures. These include plans to establish a formal IT configuration management program and actions to re-engineer and consolidate the FDIC's stand-alone systems, where appropriate.

These positive actions serve, in part, to accomplish DIRM's strategic IT goals and objectives of improving the efficiency and effectiveness of IT management and reducing application maintenance costs. These goals and objectives are articulated in the FDIC's IT Strategic Plan for 2000–2005. The recommendations contained in this report are intended to further DIRM's efforts in accomplishing the FDIC's strategic IT goals and objectives. When implemented, these recommendations will improve the manner in which DIRM defines, categorizes, and monitors application maintenance expenditures. Such improvements will help promote a more detailed analysis of IT budgets and expenditures in an environment where cost reductions are a high corporate priority.

OBJECTIVES, SCOPE, AND METHODOLOGY

The objectives of the audit were to evaluate DIRM's planning, categorization, and administration of application maintenance expenditures and to monitor DIRM's progress in evaluating the feasibility of adopting seat management⁴ at the FDIC. We were unable to monitor critical aspects of the seat management initiative because key deliverable products needed by DIRM to evaluate the feasibility of seat management had not been completed at the close of our field work. Our office plans to continue monitoring DIRM's seat management initiative through our *Audit of IT Hardware/Software Planning and Expenditures*, Audit No. 2000-920. Thus, we are making no recommendations regarding seat management at this time.

⁴ Seat management is a method of outsourcing support for an organization's desktop computing environment. The scope of seat management can be tailored to meet the specific needs of an organization and generally involves procuring IT services from a single vendor at predefined performance levels. Seat management can offer many benefits, including improved IT performance, reduced IT costs, and the ability to better predict IT costs.

To accomplish the audit's objective relating to application maintenance, we interviewed senior DIRM managers who were responsible for managing the FDIC's application maintenance program. We also interviewed key DIRM and program office staff who provided the day-to-day maintenance of the FDIC's business applications to determine how application maintenance expenditures were being planned, categorized, and administered. In addition, we spoke with representatives of government oversight agencies, such as the Office of Management and Budget (OMB), the U.S. General Accounting Office (GAO), and the General Services Administration (GSA), to obtain an understanding of how other federal agencies define "application maintenance." We also researched industry guidance relating to application maintenance and spoke with representatives of two leading IT organizations about how their organizations track and report various maintenance expenditures.

In addition, we judgmentally selected 3 of 52 application maintenance projects contained in the FDIC's 2000 IT budget for a detailed review. The combined value of the FDIC's 52 application maintenance projects totaled approximately \$33.8 million. The value of the three application maintenance projects selected for detailed review was approximately \$2.5 million. We selected the three projects based on their high-dollar value and potential for containing non-maintenance expenditures. For each project selected, we interviewed the DIRM and program office staff who provided the day-to-day maintenance of the applications to identify the types of IT activities being categorized as maintenance. We also reviewed contractor status reports, IT plans, employee time reports, and budget and expenditure reports to determine how the expenditures related to these projects were being administered. In addition, we attended IT Technical Committee meetings to observe how application maintenance expenditures were being planned for 2001.

We conducted the audit between April 2000 and November 2000 in accordance with generally accepted government auditing standards.

RESULTS OF AUDIT

While DIRM has taken actions that will have a positive effect on the manner in which it manages the FDIC's application maintenance expenditures, additional opportunities exist to improve DIRM's management of application maintenance expenditures. Specifically, DIRM needs to better categorize and define application maintenance expenditures to enhance the accuracy of IT cost data and strengthen IT budgeting and reporting. Additionally, senior management can enhance its administration of IT maintenance by implementing a process to monitor and evaluate key components of application maintenance expenditures.

We noted that DIRM combined IT expenditures traditionally defined as application maintenance with a variety of expenditures that were not related to application maintenance. Generally, the expenditures unrelated to application maintenance fell into three broad categories: ongoing operations, administration, and special projects. Combining non-maintenance expenditures with expenditures traditionally defined as application maintenance overstated the FDIC's maintenance costs and reduced the FDIC's ability to effectively manage all of these costs and measure performance.

Although DIRM developed detailed guidance describing the types of IT activities that should be categorized as application maintenance, the guidance needs to be modified to exclude certain IT activities traditionally defined as ongoing operations. DIRM also needs to work with other divisions and offices to develop formal, detailed guidance for budgeting and categorizing application maintenance expenditures. In addition, we identified opportunities for senior DIRM management to enhance its administration of application maintenance expenditures. Specifically, DIRM needs to implement a process to further break out and monitor major application maintenance components. DIRM combines all of the FDIC's application maintenance expenditures, including expenditures related to post-implementation reviews, software bugs, infrastructure upgrades, disaster recovery, and software modifications caused by legislative and policy changes, into a single IT category.

Our report contains a series of recommendations designed to improve DIRM's management of application maintenance expenditures. Our recommendations are based on generally accepted industry standards, FDIC-specific needs, and sound IT management principles espoused in key legislation, such as the Clinger-Cohen Act of 1996, and the Government Performance and Results Act (GPRA). These recommendations not only encourage greater accountability but also improve DIRM's ability to plan, estimate, and justify application maintenance resources.

PROPERLY CATEGORIZING MAINTENANCE AND NON-MAINTENANCE EXPENDITURES WILL ENHANCE THE ACCURACY OF INFORMATION TECHNOLOGY COST DATA

We identified opportunities for DIRM to significantly improve the manner in which it categorizes and reports application maintenance expenditures. Specifically, DIRM combined IT expenditures traditionally defined as "application maintenance" with a variety of non-maintenance-related expenditures. Generally, the expenditures not typically related to application maintenance fell into three broad categories: ongoing operations, administrative tasks, and special projects. Combining non-maintenance expenditures with expenditures traditionally defined as application maintenance overstated the FDIC's maintenance costs and, in our opinion, contributed to a general perception at the FDIC that application maintenance expenditures are higher than they should be. Combining these expenditures also prevented DIRM from assessing the true total cost of maintaining the FDIC's business applications and from having accurate cost data on which to base important IT decisions, such as effective cost-benefit evaluations.

We judgementally selected 3⁵ of 52 application maintenance projects contained in the FDIC's 2000 IT budget to identify the types of IT activities that DIRM categorizes as application maintenance. The combined value of the FDIC's 52 application maintenance projects totaled approximately \$33.8 million. The value of the three application maintenance projects selected for detailed review was approximately \$2.5 million. We selected the three projects based on their high-dollar value and potential for containing non-maintenance-related expenditures. For each project selected we interviewed the DIRM and program office staff who provided the day-to-day maintenance of the

⁵ The three application maintenance projects selected for detail review were (1) M0003 Accounts Payable/Purchase Order Maintenance, (2) M9934 Electronic Travel Voucher Payment System Maintenance, and (3) M9915 Federal Financial Institutions Examination Council Support Maintenance.

applications and reviewed the contractor status reports, IT plans, employee time reports, and budget and expenditure reports to determine how the expenditures related to these projects were being categorized and reported.

We also researched industry and government guidance related to application maintenance to identify the types of IT activities that are generally recognized as maintenance. Specifically, we reviewed published definitions of maintenance and related guidance issued by organizations such as the National Institute of Standards and Technology (NIST), the Institute of Electrical and Electronics Engineers (IEEE), and the Software Engineering Institute (SEI) of Carnegie Mellon University. We also reviewed guidance issued by government oversight agencies such as OMB and GSA. In addition, we reviewed published studies and reports by industry experts and spoke with representatives of two leading IT organizations about how they track and report selected IT activities.

Based on our review of the three selected maintenance projects and discussions with DIRM staff, we believe that DIRM categorized and reported a variety of ongoing operations activities as application maintenance. For example, staff time spent acquiring, validating, and uploading data to FDIC systems from external sources was categorized as application maintenance. We noted several such processes whereby the FDIC received data on a regularly scheduled basis from other federal regulators. Staff time spent providing user support, such as processing user access requests for information systems, performing data extracts, and providing resolution support for failed financial institutions,⁶ was also routinely categorized as application maintenance. In addition, time spent generating the quarterly Uniform Bank Performance Report (UBPR)⁷ was categorized as application maintenance. Generating the UBPR required DIRM staff to perform extensive data verification, validation, and analysis. We noted that the cost to print and mail the UBPR to financial institutions and regulators for 2000 alone totaled \$150,000 and this cost was categorized as application maintenance.

DIRM also categorized and reported administrative tasks as application maintenance. For example, staff time spent in training, such as corporate diversity training and other corporate- and vendor-provided training programs, was categorized as application maintenance. Time spent developing IT plans and budgets, developing employee performance appraisals, and attending general meetings were also routinely categorized as application maintenance. In addition, time spent preparing and delivering presentations on FDIC systems and programs to outside parties, such as other federal regulators and foreign deposit insurance agencies, was routinely categorized as application maintenance.

In addition, staff time spent on special projects was sometimes categorized and reported as application maintenance. For example, time spent by DIRM staff collecting data for the IT

⁶ DIRM headquarters staff provided IT support for several financial institution failures during the first half of 2000. DIRM officials informed us at the close of our field work that headquarters support for financial institution failures was discontinued in the summer of 2000 and that this work was transitioned to DIRM Dallas.

⁷ The UBPR is an analytical tool used primarily by bank supervisory and management personnel to evaluate an institution's financial condition, trends in financial performance, and performance relative to peers. It contains data in the form of ratios, percentages, and dollar amounts computed mainly from Reports of Condition and Income filed by financial institutions.

Overview Analysis as part of the seat management project was categorized as application maintenance. In addition, support for an inter-divisional working group called the Mega Bank Committee, aimed at identifying alternative approaches for resolving large financial institution failures, was categorized as application maintenance.

DIRM staff that we spoke with during our audit generally recognized that the above referenced IT activities were not application maintenance. DIRM staff informed us that the referenced activities were categorized as application maintenance because there were no other IT categories available to which the costs could be allocated. DIRM used application maintenance as a “catch all” IT category for activities that did not meet the definition of DIRM’s existing IT categories. In addition, because DIRM combined all of the referenced non-maintenance activities into a single IT category and did not track them separately, we were unable to quantify either their individual or total cost. However, based on our analysis and discussions with DIRM staff, we concluded that the total cost of these activities is significant.

Recommendation

We recommend that the CIO and Director, Division of Information Resources Management,

- (1) Perform an evaluation of the FDIC’s application maintenance expenditures and re-categorize those expenditures that do not meet the traditional definition of maintenance, such as the ongoing operations, administrative tasks, and special projects discussed in this report.

BETTER DEFINING APPLICATION MAINTENANCE WILL STRENGTHEN INFORMATION TECHNOLOGY BUDGETING AND REPORTING

Although DIRM developed detailed guidance describing the types of IT activities that should be categorized as application maintenance, the guidance needs to be modified to exclude certain IT activities traditionally defined as “ongoing operations.” In addition, DIRM needs to work with other FDIC divisions and offices to formalize its detailed application maintenance guidance from a corporate perspective. Formal guidance will improve the efficiency of the IT budget formulation process, mitigate potential misclassifications of IT expenditures corporate-wide, and provide a foundation for capturing program office costs.

The IT Technical Committee defined application maintenance in its 2000 IT budget formulation procedures as “production monitoring, emergency fixes, software package version upgrades and minor enhancements to an application system or group of application systems.” In addition, DIRM developed a more detailed, but informal, definition of application maintenance. The more detailed definition is contained in a September 24, 1998, e-mail message from an assistant DIRM Director and is intended to provide DIRM’s program managers with guidance as to the level of specificity needed to develop and manage individual maintenance budgets for the FDIC’s business applications. DIRM’s detailed definition of application maintenance consisted of:

- *Fixing Problems:* Receiving and responding to problem calls and reports; investigating problems; and changing, testing, and implementing fixes to problems;
- *Cyclical Processes:* Implementing call report and UBPR changes and year-end and month-end processes;
- *Mandatory Maintenance:* Regulatory changes and interface changes to ensure continuing interoperability between systems and external data interchanges;
- *Technical Maintenance:* Migrating to new product releases, including new operating systems, databases, commercial off-the-shelf products, etc;
- *Production Support:* Running and monitoring batch processes, restoring files, monitoring performance and utilization;
- *Platform Migration:* Re-engineering to new standard platforms, such as from Computer Associates-Clipper® to Microsoft Visual Basic®/Structured Query Language (SQL) Server; and
- *Disaster Recovery:*⁸ Planning and testing for disaster recovery.

We researched industry guidance and published definitions related to maintenance to determine whether the FDIC’s detailed guidance met traditional and generally accepted definitions of maintenance. Specifically, we reviewed published definitions of maintenance and related guidance issued by organizations such as NIST, IEEE, SEI, and other recognized industry experts. We also reviewed guidance issued by government oversight agencies such as OMB and GSA.

Based on our research, we concluded that DIRM’s detailed guidance for budgeting and categorizing application maintenance expenditures included certain activities that are not traditionally recognized as maintenance. For example, DIRM’s guidance defined production support, such as running and monitoring batch processes, restoring files, and monitoring performance and utilization, as application maintenance. DIRM’s guidance also defined scheduled processes, such as UBPR processing and year-end and month-end processes, as application maintenance. Based on our research of industry guidance, we concluded that these activities are more appropriately defined as “ongoing operations.”

In addition, DIRM needs to work with other FDIC divisions and offices to formalize their detailed application maintenance guidance from a corporate perspective. FDIC organizations other than DIRM perform a variety of maintenance and non-maintenance related IT activities, such as system and table maintenance, production support, user acceptance testing of software changes, disaster recovery planning and testing, and help desk support. A recent survey of the FDIC’s IT operations conducted by the Gartner Group, Inc.⁹ confirmed that a significant amount of IT activities are performed by non-DIRM organizations. The Gartner survey estimated that non-DIRM divisions dedicated 234 full-time equivalents during 1999 to delivering IT services.

FDIC plans to implement procedures in 2001 that would allow IT expenditures incurred by non-DIRM organizations to be captured and related to DIRM’s IT projects. Developing a corporate-wide

⁸ DIRM clarified its detailed definition of application maintenance on June 8, 2000, to include disaster recovery.

⁹ The Gartner Group, Inc. is an independent provider of research and analysis on the computer hardware, software, communications, and related IT industries.

definition of application maintenance before the 2002 IT budget formulation process begins will help ensure consistent IT cost tracking and reporting for program office maintenance costs in the future.

Recommendations

We recommend that the CIO and Director, Division of Information Resources Management,

- (2) Work with other divisions and offices to develop a detailed definition of application maintenance that can be used to categorize IT expenditures on a corporate-wide basis and
- (3) Incorporate the new detailed definition of application maintenance into DIRM's 2002 IT budget instructions.

FOCUSING ON KEY APPLICATION MAINTENANCE COMPONENTS WILL PROVIDE SENIOR DIRM MANAGEMENT VALUABLE DECISION-MAKING INFORMATION

DIRM needs to implement procedures to better monitor and evaluate key components of FDIC's application maintenance expenditures. Improved monitoring of key components can be accomplished by grouping similar application maintenance activities into subcategories of maintenance or tracking critical or high-cost IT activities separately. Improved analysis of application maintenance expenditures will allow DIRM to better estimate and plan future maintenance costs and ensure that scarce resources are being deployed in an optimal manner. Focusing on key maintenance components will also allow DIRM to more readily identify potential problems, measure the financial performance of its IT activities, and justify resource requirements. Without relevant and meaningful information related to the FDIC's application maintenance expenditures, DIRM management cannot make informed decisions regarding ongoing systems enhancements, replacements, or operations because all maintenance expenditures are combined into a single IT category.

DIRM established a centralized process to track and report critical information on its IT projects, including application maintenance projects. DIRM tracked IT project information, such as project status, budget and expenditure data, and schedule information, in a centralized Lotus Notes® database. While DIRM's centralized process provided valuable information on its application maintenance projects, it did not allow DIRM to evaluate key components of application maintenance expenditures. DIRM combined all of the FDIC's maintenance expenditures, including expenditures related to post-implementation reviews, software bugs, infrastructure upgrades, disaster recovery, minor enhancements, and legislative changes, into the single IT category of application maintenance. DIRM's centralized process was used primarily to ensure that approved application maintenance budgets were not exceeded.

We researched industry guidance related to application maintenance to determine how other organizations monitor and evaluate maintenance expenditures. We found that many organizations had adopted procedures published by recognized IT industry standard-setting

bodies, such as NIST and IEEE, that define multiple categories of maintenance. While no single set of maintenance categories was prescribed for all organizations, common categories of maintenance used by industry organizations include:

- *Corrective Maintenance*: To capture costs associated with correcting software errors (“bugs” in a system);
- *Adaptive Maintenance*: To capture costs associated with software infrastructure upgrades, such as platform and operating system upgrades;
- *Perfective Maintenance*: To capture costs associated with modifying software to meet the evolving and expanding needs of users, such as minor enhancements and changes caused by new policies and legislation; and
- *Preventive Maintenance*: To capture costs associated with efforts to prevent software problems from occurring.

Using multiple categories of maintenance allows organizations to determine where their maintenance resources are being deployed and to evaluate those areas where resource consumption appears high. This approach to monitoring maintenance can also be used to justify resource requirements and to provide more meaningful information regarding return on investment. In addition, key IT legislation, such as the Clinger-Cohen Act of 1996 and GPRA, require agencies to establish performance measures for their IT investments and evaluate how well IT supports agency programs.

Another approach to effectively monitor application maintenance expenditures is to identify, track, and evaluate the cost of key IT activities categorized as application maintenance. Examples of key IT activities performed by DIRM could include performing post-implementation reviews, planning and testing for disaster recovery, and modifying software due to major legislative and policy changes. DIRM staff that we spoke with during our review recognized the need to better monitor and evaluate application maintenance expenditures and, in at least two instances, implemented just such an approach.

One DIRM section developed a maintenance project valued at \$553,500 to track the cost of infrastructure upgrades for its client’s business applications during 2001. Another DIRM section developed two separate IT projects with a combined value of \$680,301 to track the cost of infrastructure upgrades and legislative changes affecting its client’s business applications in 2001. Although these efforts represent positive steps toward more effective monitoring of application maintenance, they are isolated instances and are not representative of how maintenance expenditures are being tracked and monitored throughout DIRM.

Our research indicates that there is no single approach to effectively monitoring and evaluating maintenance expenditures. However, organizations recognized for their expertise in IT, such as SEI, have developed basic techniques for measuring software development and maintenance costs. Sound IT management principles contained in key legislation, such as the Clinger-Cohen Act of 1996 and GPRA, also suggest that effective performance measures be implemented to monitor, track, and evaluate IT expenditures. Sound performance measures promote more effective accountability over scarce IT resources.

Effective performance measurement procedures can take years to successfully implement. Industry research suggests that initial implementations should be simple and incremental and that organizations should not attempt to measure every factor affecting their costs. In addition, limitations in cost accounting and time tracking systems should be considered when planning a performance measurement program. DIRM management should review its application maintenance expenditures and develop procedures to effectively monitor and later re-evaluate components of application maintenance that it determines to be key.

Recommendation

We recommend that the CIO and Director, Division of Information Resources Management

- (4) Implement procedures to identify, monitor, and evaluate key components of the FDIC's application maintenance expenditures. Such procedures should include provisions to periodically re-evaluate components classified as "key" and the manner in which they are monitored.

CORPORATION COMMENTS AND OIG EVALUATION

On January 26, 2001, the CIO and Director, DIRM, provided a written response to the draft audit report. The CIO and DIRM Director agreed with the report's findings and recommendations and provided the elements necessary for management decisions on all four of the report's recommendations. DIRM's response is presented in its entirety in Appendix I of this report.

Regarding recommendation 1, the CIO and DIRM Director indicated that an evaluation of the FDIC's application maintenance expenditures had been completed. As a result of this evaluation, DIRM plans to re-categorize a variety of expenditures that were previously classified as application maintenance. In addition, DIRM plans to establish three new types of maintenance activities—regulatory, adaptive, and general. DIRM plans to fully implement these procedures by the end of the first quarter of 2001. In addition, DIRM anticipates that the FDIC's 2001 application maintenance budgets will decrease from approximately \$20 million to about \$12 million as a result of these planned re-categorizations.

Regarding recommendation 2, DIRM stated that it would present a detailed definition of application maintenance to the IT Technical Committee and obtain the committee's concurrence by the end of the first quarter of 2001. DIRM added that it would coordinate this effort with the Division of Finance (DOF) to facilitate their collection of budget information for 2002. While DIRM indicated that it would assist DOF in collecting and tracking corporate-wide maintenance costs, it felt that requiring program divisions and offices to capture and report their expenses against IT projects was a matter for the Chief Financial Officer (CFO). DIRM stated that it does not have the authority to modify corporate budget development or tracking instructions.

We agree that capturing and reporting program office costs related to IT projects is a matter that is most appropriately addressed by the CFO. As stated in the background section of our report, we reported on the need to track program office costs relating to IT projects and associate these

costs with DIRM expenditures in three previous OIG audit reports. In the most recent of these reports, entitled *Audit of the FDIC's Strategic Planning for Information Technology Resources* (Audit Report No. 00-013), dated March 31, 2000, we recommended that the CFO work with FDIC's divisions and offices to ensure that full life cycle costs associated with IT investments, including program office costs, are tracked, reported, and compared to initial estimates. The FDIC plans to implement procedures in 2001 to allow IT expenditures incurred by non-DIRM organizations to be captured and related to DIRM's IT projects. When fully implemented, this process will allow the FDIC to identify and evaluate the true total costs of individual IT projects from a corporate perspective.

Regarding recommendation 3, DIRM stated that a new detailed definition of application maintenance would be included in DIRM's 2002 IT budget instructions by June 30, 2001.

Regarding recommendation 4, DIRM indicated that it would establish new IT project types to more accurately track and monitor application maintenance expenditures by the end of the first quarter of 2001. In addition, as mentioned under recommendation 1, DIRM plans to establish three new types of maintenance activities—regulatory, adaptive, and general. DIRM will also re-evaluate its procedures for identifying, monitoring, and evaluating key components of application maintenance on an annual basis beginning with the end of the third quarter of 2001.



Federal Deposit Insurance Corporation

3501 North Fairfax Dr., Arlington, VA 22226

Office of the Chief Information Officer

January 26, 2001

TO: David H. Loewenstein
Assistant Inspector General

FROM: Donald C. Demitros 
Chief Information Officer

SUBJECT: DIRM Management Response to the Draft OIG Report Entitled, “Audit of the FDIC's Application Maintenance Budgets” (Audit Number 2000-914)

The Division of Information Resources Management (DIRM) has reviewed the subject draft audit report and generally agrees with the findings and recommendations. Responses to each of the specific recommendations are provided below.

Management Decision:

Recommendations: We recommend that the CIO and Director, Division of Information Resources Management,

- (1) Perform an evaluation of the FDIC’s application maintenance expenditures and re-categorize those expenditures that do not meet the traditional definition of maintenance, such as the ongoing operations, administrative tasks, and special projects discussed in this report.

DIRM Response: DIRM has evaluated the FDIC’s application maintenance expenditures. As a result, some of these expenditures have been re-categorized into ongoing operations and will be identified by a sustaining base “B” project number. In addition, administrative “G” projects will be used to capture costs associated with more administrative types of tasks such as training, staff meetings, performance reviews, and corporate functions. DIRM has also delineated three types of maintenance activities – regulatory, adaptive, and general. Costs associated with these activities will be reported in our existing “M” projects. Attached is a document describing these definitions in more detail.

After briefing the IT Committee, this re-categorization will be implemented by the end of the first quarter 2001. The current application maintenance budget in 2001 is approximately \$20M. After implementing these changes, the budget will be approximately \$12M. As a result, other areas of the DIRM budget will have a combined corresponding \$8M increase, since we are neither increasing nor decreasing the overall DIRM budget.

- (2) Work with other divisions and offices to develop a detailed definition of application maintenance that can be used to categorize IT expenditures on a corporate wide basis.

DIRM Response: Having all divisions capture and report their expenses against specific IT projects is an issue that the OIG should address with the CFO. DIRM does not have the authority to modify budget development or tracking instructions for the Corporation. DIRM currently assists DOF in accomplishing their budget tracking responsibilities, and we look forward to assisting their efforts to collect and track corporate wide maintenance costs.

In support of this recommendation, DIRM will present the attached definition document to the IT Technical Committee and obtain their concurrence by the end of the first quarter 2001. We will coordinate this effort with DOF to aid their collection of budget information for 2002.

- (3) Incorporate the new detailed definition of application maintenance into DIRM's 2002 IT budget instructions.

DIRM Response: The new definition of application maintenance (attached) will be incorporated by June 30, 2001 into DIRM's 2002 IT budget instructions.

- (4) Implement procedures to identify, monitor, and evaluate key components of the FDIC's application maintenance expenditures. Such procedures should include provisions to periodically re-evaluate components classified as "key" and the manner in which they are monitored.

DIRM Response: Initially, new projects ("B" and "G") will be established to more accurately capture costs currently reflected in the application maintenance projects. Each of these projects will have a budget and their expenses will be monitored and reported on a monthly basis according to the procedures already established for all other IT projects. This will be completed by the end of the first quarter 2001. The benefit of any further breakdown of application maintenance expenditures will be evaluated annually, beginning the end of the 3rd Quarter 2001.

Please address any questions to DIRM's Audit Liaison, Rack Campbell, on (703) 516-1422.

Attachment

cc: Vijay Deshpande
Michael MacDermott

Business Applications Branch (BAB) and Corporate Applications Branch (CAD) Project Categories

In 2001 BAB and CAB work will be charged to the following project categories, which are defined below:

- Development (D Projects)
- Enhancements (E Projects)
- General, Adaptive, and Regulatory Maintenance (M Projects)
- Sustaining Base (B Projects)
- Administrative (G Projects)
- Planning (P Projects)

Development Definition (D Projects)

Development encompasses all work on new systems or enhancements to existing systems that exceed \$200,000 per release. Development work includes all System Development Life Cycle (SDLC) phases.

Enhancement Definition (E Projects)

Enhancement encompasses all enhancements to existing systems that do not exceed \$200,000 per release. Enhancement work also includes small-scale development of new systems where the total cost of development does not exceed \$200,000. Enhancement work includes all SDLC phases.

Maintenance Definitions (M Projects)

Three categories of maintenance have been defined. Each BAB and CAB section will have a single adaptive maintenance project. General and regulatory maintenance projects may be combined depending on the nature and scope of the work. Maintenance work includes all applicable SDLC phases.

General Maintenance

Encompasses changes to production software to correct known problems and to prevent anticipated problems or inefficiencies. General maintenance includes all work required to diagnose problems, and to fix, test, and implement new releases, including emergency changes.

Regulatory Maintenance

Encompasses changes to production software in response to mandatory regulatory or policy initiatives. Examples are Federal Financial Institutes Examination Council (FFIEC) mandated changes to Call Reports and Uniform Bank Performance Report (UBPR) ratios, Section 508 changes, and Privacy Act changes.

Adaptive Maintenance

Encompasses testing of and changes to production software to adapt to infrastructure changes such as operating system and Data Base Management System (DBMS) upgrades, security upgrades, new general use Commercial off-the-Shelf (COTS) upgrades (e.g., new versions of Office), new hardware, etc. This maintenance category is not intended for extensive reengineering projects that combine a platform conversion with significant functional enhancements.

Sustaining Base Definition (B Projects)

Encompasses work required to sustain and support ongoing operations (existing systems operations) and functions (e.g., budgeting and planning). Examples include supporting routine production cycles (e.g. Quarterly Call Reports and monthly general ledger processes), disaster recovery testing, File maintenance, post-implementation reports, customer inquiries, audit participation, budget preparation, and other work in support of a customer's program and systems. Normally, each Application System Management

(ASM) section will have one sustaining base project, although there may be cases where a section has enough support work on a system or group of systems to justify a separate project.

Administrative Definition (C Projects)

Encompasses limited administrative activities not directly in support of a customer. Examples include training and conferences, staff meetings, performance reviews, corporate functions (e.g., diversity meetings, annual awards ceremony, etc.), and time required for individual administrative activities. Each ASM branch will have a single administrative project, which will be closely monitored to ensure that charges are limited to appropriate activities.

Planning Definition (P Projects)

Encompasses projects where a significant effort is required to define the scope and plans for a project. Work is limited to the planning phase of the SDLC.

MANAGEMENT RESPONSES TO RECOMMENDATIONS

The Inspector General Act of 1978, as amended, requires the OIG to report the status of management decisions on its recommendations in its semiannual reports to the Congress. To consider FDIC’s responses as management decisions in accordance with the act and related guidance, several conditions are necessary. First, the response must describe for each recommendation

- the specific corrective actions already taken, if applicable;
- corrective actions to be taken together with the expected completion dates for their implementation; and
- documentation that will confirm completion of corrective actions.

If any recommendation identifies specific monetary benefits, FDIC management must state the amount agreed or disagreed with and the reasons for any disagreement. In the case of questioned costs, the amount FDIC plans to disallow must be included in management’s response.

If management does not agree that a recommendation should be implemented, it must describe why the recommendation is not considered valid. Second, the OIG must determine that management’s descriptions of (1) the course of action already taken or proposed and (2) the documentation confirming completion of corrective actions are responsive to its recommendations.

This table presents the management responses that have been made on recommendations in our report and the status of management decisions. The information for management decisions is based on management’s written response to our report.

Rec. Number	Corrective Action: Taken or Planned/Status	Expected Completion Date	Documentation That Will Confirm Final Action	Monetary Benefits	Management Decision: Yes or No
1	Management agreed with the recommendation. DIRM indicated that an evaluation of the FDIC’s application maintenance expenditures had been completed. As a result, DIRM plans to re-categorize a variety of expenditures previously classified as application maintenance. In addition, DIRM plans to establish three new types of maintenance activities—regulatory, adaptive, and general. DIRM plans to fully implement these procedures by the end of the first quarter of 2001.	March 31, 2001	Revised procedures for categorizing maintenance expenditures and IT budget re-allocations.	N/A	Yes

Rec. Number	Corrective Action: Taken or Planned/Status	Expected Completion Date	Documentation That Will Confirm Final Action	Monetary Benefits	Management Decision: Yes or No
2	<p>Management agreed with the recommendation.</p> <p>DIRM stated that it would present a detailed definition of application maintenance to the IT Technical Committee and obtain the committee's concurrence by the end of the first quarter of 2001. DIRM indicated its intent to coordinate this effort with the Division of Finance (DOF) to facilitate DOF's collection of budget information for 2002.</p>	March 31, 2001	Revised definition of application maintenance approved by the IT Technical Committee.	N/A	Yes
3	<p>Management agreed with the recommendation.</p> <p>DIRM stated that a new detailed definition of application maintenance will be included in DIRM's 2002 IT budget instructions by June 30, 2001.</p>	June 30, 2001	2002 IT budget instructions containing the new definition of application maintenance.	N/A	Yes
4	<p>Management agreed with the recommendation.</p> <p>DIRM indicated that it would establish new IT project types to more accurately track and monitor application maintenance expenditures by the end of the first quarter of 2001. In addition, as mentioned under recommendation 1, DIRM plans to establish three new types of maintenance activities—regulatory, adaptive, and general. DIRM will re-evaluate its procedures for identifying, monitoring, and evaluating key components of application maintenance on an annual basis beginning with the end of the third quarter of 2001.</p>	March 31, 2001	Procedures for identifying, monitoring and evaluating key components of application maintenance, including provisions for periodic re-evaluations.	N/A	Yes