United States Government Accountability Office

GAO

Report to Congressional Committees

July 2005

BUSINESS SYSTEMS MODERNIZATION

Internal Revenue Service's Fiscal Year 2005 Expenditure Plan

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BUSINESS SYSTEMS MODERNIZATION

Internal Revenue Service's Fiscal Year 2005 Expenditure Plan

Why GAO Did This Study

The Internal Revenue Service's (IRS) Business Systems Modernization (BSM) program is a multibillion-dollar, high-risk, highly complex effort that involves the development and delivery of a number of modernized information systems intended to replace the agency's aging business and tax processing systems. As required by law, IRS submitted its fiscal year 2005 expenditure plan in April 2005 to congressional appropriations committees, requesting about $203 million from the BSM account.

GAO's objectives in reviewing the plan were to (1) determine whether it satisfied the conditions specified in the law, (2) determine what progress IRS had made in implementing our prior recommendations, and (3) provide any other observations about the plan and IRS's BSM program.

What GAO Recommends

GAO recommends that the Commissioner of Internal Revenue fully revisit the vision and strategy for the BSM program and develop a new set of long-term goals, strategies, and plans that are consistent with IRS's budgetary outlook and management capabilities. In providing comments on a draft of this report, the Commissioner agreed with GAO's findings and described actions IRS is taking to address GAO's recommendation.

What GAO Found

IRS's fiscal year 2005 expenditure plan, which requested about $203 million for the BSM program, satisfies the conditions specified in the law. These conditions include meeting the Office of Management and Budget's capital planning and investment control review requirements and complying with federal systems acquisition requirements and management practices.

IRS has made progress in implementing GAO's recommendations to improve its modernization management controls and capabilities. However, certain controls and capabilities related to configuration management, human capital management, cost and schedule estimating, contract management, and post-implementation reviews have not yet been fully implemented or institutionalized. Weaknesses in these controls and capabilities have contributed, at least in part, to project cost and schedule shortfalls.

GAO's observations on the expenditure plan and BSM program include the following:

- During the past year, IRS has made progress implementing BSM, but much work remains. While IRS has deployed initial versions of several modernized tax processing and business systems, these deliveries only represent the initial steps toward modernization. For example, initial deliveries of the Customer Account Data Engine (CADE) project will process less than 1 percent of all tax returns filed this year.

- IRS has not met long-term cost and schedule estimates, but its new incremental approach contributed to short-term improvements. In the second quarter of fiscal year 2004, systems modernization projects were rebaselined, and IRS adopted a new strategy to develop and deploy more manageable project segments. Since that time, IRS has met its short-term cost estimates and delivery dates for the initial releases of CADE and the Custodial Accounting Project. However, concerns remain about IRS's ability to continue meeting cost and schedule targets.

- IRS has made progress toward addressing issues raised in independent BSM assessments and implementing program improvement initiatives, but high-priority issues and challenges remain in areas such as quality assurance, the change request process, and integrated schedule and baseline management.

- The BSM vision and strategy need revision in order to clearly show what the modernization program will consist of, when it will be completed, and at what cost. For example, the latest modernization strategy referenced in an expenditure plan dates back to fiscal year 2002, and its planned delivery dates no longer reflect reality.

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Abbreviations

BSM	Business Systems Modernization
CIO	Chief Information Officer
IRS	Internal Revenue Service
OMB	Office of Management and Budget
PRIME	Prime Systems Integration Support

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United States Government Accountability Office
Washington, D.C. 20548

July 22, 2005

The Honorable Christopher S. Bond
Chairman
The Honorable Patty Murray
Ranking Member
Subcommittee on Transportation, Treasury,
 the Judiciary, Housing and Urban Development,
 and Related Agencies
Committee on Appropriations
United States Senate

The Honorable Joe Knollenberg
Chairman
The Honorable John W. Olver
Ranking Member
Subcommittee on the Departments of Transportation,
 Treasury, and Housing and Urban Development,
 the Judiciary, District of Columbia,
 and Independent Agencies
Committee on Appropriations
House of Representatives

As required by law, the Internal Revenue Service (IRS) submitted its fiscal year 2005 expenditure plan in April 2005 to the congressional appropriations committees, requesting about $203 million from the Business Systems Modernization (BSM) account. Our objectives in reviewing the plan were to (1) determine whether the plan satisfied the conditions specified in the law,[1] (2) determine what progress IRS had made in implementing our prior recommendations, and (3) provide any other observations about the plan and IRS's BSM program.

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[1]BSM funds are unavailable until the IRS submits to congressional appropriations committees for approval a modernization expenditure plan that (1) meets the Office of Management and Budget's (OMB) capital planning and investment control review requirements; (2) complies with IRS's enterprise architecture; (3) conforms with IRS's enterprise life cycle methodology; (4) complies with federal acquisition rules, requirements, guidelines, and systems acquisition management practices; (5) is approved by IRS, the Department of the Treasury, and OMB; and (6) is reviewed by GAO. See P.L. 108-447, Div. H, Title II, Dec. 8, 2004, for fiscal year 2005 funding.

GAO-05-774 IRS's Fiscal Year 2005 Expenditure Plan

On May 20, 2005, we briefed your respective offices on the results of our review. This report transmits the materials we used at the briefing and provides the recommendation that we made to the Commissioner of Internal Revenue. The full briefing materials, including our scope and methodology, are reprinted as appendix I.

In summary, we made the following major points:

- IRS's fiscal year 2005 plan satisfies each of the six legislative conditions.

- Although IRS has made progress in implementing our recommendations and improving its modernization management controls and capabilities, certain controls and capabilities related to configuration management, human capital management, cost and schedule estimating, contract management, and post-implementation reviews have not yet been fully implemented or institutionalized. Weaknesses in these controls and capabilities have contributed, at least in part, to BSM project cost and schedule shortfalls.

- IRS has made progress in implementing BSM, but much work remains. IRS has deployed initial phases of several modernized systems during the past year, including the Customer Account Data Engine (the new taxpayer information database), Modernized e-File (a new electronic filing system), and e-Services (a new Web portal and electronic services for tax practitioners). The deployment of these systems provides several benefits to the taxpayer, including faster processing of tax refunds and more timely response to customer inquiries. However, these deliveries represent only a beginning, and much more remains to be done by IRS before the BSM program is complete. For example, the Customer Account Data Engine will process less than 1 percent of all tax returns filed this year.

- IRS has not met long-term cost and schedule estimates, but its new incremental approach contributed to short-term improvements. Historically, BSM has experienced significant cost overruns and schedule slippages. In the second quarter of fiscal year 2004, IRS rebaselined its projects and decided to change its BSM project strategy to enable it to develop and deploy more manageable project segments. Since making this change, IRS has met its short-term cost estimates and scheduled delivery dates for initial releases of the Customer Account Data Engine and the Custodial Accounting Project. However, concerns remain about IRS's ability to continue meeting its cost and schedule

targets because of persistent weaknesses in the agency's capabilities to deliver modernization initiatives on time and within budget.

- IRS has made progress toward addressing issues raised in independent BSM assessments and implementing program improvement initiatives, but significant issues and challenges remain. IRS has made further progress in addressing the items in its BSM Challenges Plan, completing 44 of the 48 action items. In addition, the current IRS Associate Chief Information Officer (CIO) for BSM developed a new BSM program improvement framework, which covers all identified issues and allows the agency to regularly identify, prioritize, and resolve these issues. Currently, there are 17 high-priority initiatives. These initiatives address key areas, including quality assurance, cost and schedule estimation, the change request process, and integrated schedule management and baseline management. If it is effectively implemented, this program improvement process should help IRS manage program risk. However, until the agency has addressed its high-priority initiatives, BSM remains at risk of further cost overruns and delays in its delivery of critical functionality.

- IRS is adjusting the BSM program in response to its assessment of the prime systems integration support (PRIME) contractor's performance and budget reductions. As a result of its assessment of the PRIME contractor's performance in 2004, IRS began to transfer program management operations from the contractor to the agency. Subsequent budget reductions resulted in further shifting of responsibilities away from the contractor. IRS has taken over significant responsibilities for program management, systems engineering, and business integration. Also, IRS has made adjustments to project funding allocations and future delivery schedules. Because IRS does not have all the expertise and processes needed to discharge these responsibilities effectively, these changes could impact future modernization budgets and cause further delays in implementing functionality that is intended to provide benefits to IRS and to taxpayers.

- The BSM vision and strategy need revision. The BSM program is based on visions and strategies developed several years ago. The significant delays experienced by the program over the past few years and the changes brought about by the shift of significant program responsibilities from the PRIME contractor to IRS, indicate a need for IRS to revisit its long-term goals, strategies, and plans for BSM,

including an assessment of when significant future BSM functionality would be delivered and at what cost.

Recommendation for Executive Action

To address the many changes associated with the BSM and to clearly describe what the modernization program is intended to accomplish, when it will be completed, and at what cost, we recommend that the Commissioner of Internal Revenue direct the CIO to take the following action:

- fully revisit the vision and strategy for the BSM program and develop a new set of long-term goals, strategies, and plans that are consistent with the budgetary outlook and IRS's management capabilities.

Agency Comments

In providing written comments on a draft of this report, the Commissioner of Internal Revenue agreed with our findings and described the actions that IRS is taking to implement our recommendation. The Commissioner also provided additional information on various improvement efforts that IRS has undertaken. The Commissioner's written comments are reprinted in appendix II.

We are sending copies of this report to the Chairmen and Ranking Members of other Senate and House committees and subcommittees that have appropriation, authorization, and oversight responsibilities for the Internal Revenue Service. We are also sending copies to the Commissioner of Internal Revenue, the Secretary of the Treasury, the Chairman of the IRS Oversight Board, and the Director of the Office of Management and Budget. Copies are also available at no charge on the GAO Web site at http://www.gao.gov.

Should you or your offices have questions on matters discussed in this report, please contact me at (202) 512-9286 or pownerd@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made major contributions to this report are listed in appendix III.

David A. Powner
Director, Information Technology
  Management Issues

Briefing Slides from the May 20, 2005, Briefing to the Senate and House Appropriations Subcommittee Staffs

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Review of IRS's Fiscal Year 2005 Business Systems Modernization Expenditure Plan

**Briefing for the staffs of the
Subcommittee on Transportation, Treasury, the Judiciary,
Housing and Urban Development, and Related Agencies
Senate Committee on Appropriations
and
Subcommittee on the Departments of Transportation, Treasury, and
Housing and Urban Development, the Judiciary, District of Columbia,
and Independent Agencies
House Committee on Appropriations**

May 20, 2005

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Appendix I
Briefing Slides from the May 20, 2005,
Briefing to the Senate and House
Appropriations Subcommittee Staffs

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Introduction and Objectives

The Internal Revenue Service (IRS) has long relied on obsolete automated systems for key operational and financial management functions, and its attempts to modernize these computer systems span several decades. IRS's multibillion-dollar Business Systems Modernization (BSM) program, initiated in fiscal year 1999, is the agency's latest attempt to modernize its systems. IRS contracted with Computer Sciences Corporation (CSC) as the prime systems integration support (PRIME) contractor to assist with designing, developing, and integrating a new set of information systems that are intended to replace IRS's aging business and tax processing systems. BSM is a high-risk, highly complex program that involves the development and delivery of a number of modernized tax administration, internal management, and core infrastructure projects that are intended to provide improved and expanded service to taxpayers as well as IRS internal business efficiencies.

As mandated by IRS's fiscal year 2005 appropriations act,[1] BSM funds are not available until IRS submits a modernization expenditure plan for approval to the congressional appropriations committees. This plan must

- meet the capital planning and investment control review requirements established by the Office of Management and Budget (OMB);
- comply with IRS's enterprise architecture;[2]
- conform with IRS's enterprise life cycle methodology;[3]
- comply with federal acquisition rules, requirements, guidelines, and systems acquisition management practices;
- be approved by IRS, Treasury, and OMB; and
- be reviewed by GAO.

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[1]P.L. 108-447, Div. H, Title II, Dec. 8, 2004.
[2]An enterprise architecture (EA) is an institutional blueprint defining how an enterprise operates today, in both business and technology terms, and intends to operate in the future. An EA also includes a roadmap for transitioning between these environments.
[3]IRS refers to its life cycle management program as the enterprise life cycle (ELC).

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Introduction and Objectives

Since mid-1999, IRS has submitted a series of expenditure or "spending" plans requesting release of BSM appropriated funds. To date, about $1.9 billion has been appropriated for BSM, including about $203 million for fiscal year 2005.[4] Of the $1.9 billion appropriated, about $1.7 billion has been released.

On April 4, 2005, IRS submitted its fiscal year 2005 expenditure plan to the relevant House and Senate appropriations subcommittees, seeking release of $203 million from the BSM account.

As agreed with IRS's appropriations subcommittees, our objectives were to

- determine whether IRS's fiscal year 2005 expenditure plan satisfies the legislative conditions specified in IRS's appropriations act,
- determine IRS's progress in implementing our prior recommendations, and
- provide any other observations about the plan and IRS's BSM program.

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[4]P.L. 108-447, Div. H, Title II, Dec. 8, 2004. IRS uses the appropriated totals to cover contractor costs related to the BSM program. IRS funds internal costs for managing BSM with another appropriation. These costs are not tracked separately for BSM-related activities.

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Results in Brief

IRS's fiscal year 2005 plan satisfies each of the six legislative conditions.

Although IRS has made progress in implementing our recommendations and improving its modernization management controls and capabilities, certain controls and capabilities related to configuration management, human capital management, cost and schedule estimating, contract management, and post-implementation reviews have not yet been fully implemented or institutionalized. Weaknesses in these controls and capabilities have contributed, at least in part, to BSM project cost and schedule shortfalls.

We have five observations related to the BSM program and fiscal year 2005 expenditure plan:

- *IRS Has Made Progress in Implementing BSM, but Much Work Remains.* IRS has deployed initial phases of several modernized systems during the past year, including the Customer Account Data Engine (the new taxpayer information database), Modernized e-File (a new electronic filing system), and e-Services (a new Web portal and electronic services for tax practitioners). The deployment of these systems provided several benefits to the taxpayer, including faster processing of tax refunds and more timely response to customer inquiries. However, these deliveries represent only a beginning, and much more remains to be done by IRS before the BSM program is complete. For example, the Customer Account Data Engine will process less than 1 percent of all tax returns filed this year.

- *IRS Has Not Met Long-Term Cost and Schedule Estimates, but Incremental Approach Contributed to Short-Term Improvements.* Historically, BSM has experienced significant cost overruns and schedule slippages. In the second quarter of fiscal year 2004, IRS rebaselined its projects and decided to change its BSM project strategy to develop and deploy more manageable project segments. Since making this change, IRS has met its short-term cost estimates and scheduled delivery dates for initial releases of the Customer Account Data Engine and the Custodial Accounting Project. However, concerns remain about IRS's ability to continue meeting its cost and schedule targets due to its history of poor cost and schedule management.

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- *IRS Has Made Progress Toward Addressing Issues Raised in Independent BSM Assessments and Implementing Program Improvement Initiatives, but Significant Issues and Challenges Remain.* IRS has made further progress in addressing the items in its BSM Challenges Plan, completing 44 of the 48 action items. In addition, the current IRS Associate Chief Information Officer (CIO) for BSM developed a new BSM program improvement framework, which covers all identified issues and allows the agency to regularly identify, prioritize, and resolve these issues. Currently, there are 17 high-priority initiatives. These initiatives address key areas, including quality assurance, cost and schedule estimation, the change request process, and integrated schedule management and baseline management. If effectively implemented, this program improvement process should help IRS manage program risk. However, until the agency has addressed its high-priority initiatives, BSM remains at risk of further cost overruns and delays in delivery of critical functionality.

- *IRS is Adjusting the BSM Program in Response to its Assessment of the PRIME Contractor's Performance and Budget Reductions.* As a result of its assessment of the PRIME contractor's performance in 2004, IRS began to move program management operations from the contractor to the agency. Subsequent budget reductions resulted in further shifting of responsibilities from the contractor. IRS has taken over significant responsibilities for program management, systems engineering, and business integration. Also, IRS has made adjustments to project funding allocations and future delivery schedules. While it is too early to tell what effect these changes will ultimately have on the BSM program, IRS's adjustments are not without risk, could impact future modernization budgets, and will cause further delays in implementing functionality that is intended to provide benefits to IRS and to taxpayers.

- *The BSM Vision and Strategy Need Revision.* The BSM program is based on visions and strategies developed several years ago. The significant delays experienced by the program over the past few years and the changes brought about by the shift of significant program responsibilities from the PRIME contractor to IRS, indicate a need for IRS to revisit its long-term goals, strategies, and plans for BSM, including an assessment of when significant future BSM functionality would be delivered and at what cost.

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Results in Brief

To address the many changes associated with the BSM and clearly describe what the modernization program is intended to accomplish, when it will be completed, and at what cost, we are recommending that the Commissioner of Internal Revenue direct the CIO to fully revisit the vision and strategy for the BSM program and develop a new set of long-term goals, strategies, and plans that are consistent with the budgetary outlook and IRS's management capabilities.

In commenting on a draft of this briefing, the Associate CIO for BSM generally agreed with it and provided technical comments.

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Background

To date, we have reviewed and reported on 11 requests for BSM funding releases:

- Since mid-1999, we have reported[5] on the risks associated with IRS's approach of building systems while concurrently developing and implementing program management capabilities—for example, having a fully operational program management office and implementing its enterprise life cycle (ELC). IRS's ELC is a structured method for managing system modernization program and project investments throughout their life cycles. We reported that attempting to acquire modernized systems before having the requisite management capability increases the risk that systems will experience cost, schedule, and performance shortfalls.

- We have also reported[6] that the risk of cost increases and schedule delays associated with building systems without the requisite management controls is not as severe early in projects' life cycles when they are being planned (project definition and preliminary system design), but escalates as projects are built (detailed design and development) and implemented (enterprise deployment).

- In the case of IRS and its ELC, a key point of risk escalation is milestone 3, at the end of the system architecture phase. From this point through design and development (milestone 4) to system deployment (milestone 5), risk will increase significantly if requisite controls are not in place. In our June 2003 report,[7] we identified key IRS projects that were approaching or had passed milestone 4 that were experiencing cost, schedule, and performance shortfalls, and concluded that program risks were heightened. In our November 2004 report,[8] we stated that key IRS projects were continuing to incur significant cost increases

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[5]For example, see GAO, *Business Systems Modernization: Results of Review of IRS' March 2001 Expenditure Plan*, GAO-01-716 (Washington, D.C.: June 29, 2001) and *Internal Revenue Service: Progress Continues But Serious Management Challenges Remain*, GAO-01-562T (Washington, D.C.: April 2, 2001).

[6]For example, see GAO, *Tax Systems Modernization: Results of Review of IRS' Third Expenditure Plan*, GAO-01-227 (Washington, D.C.: January 22, 2001) and *Business Systems Modernization: IRS Needs to Better Balance Management Capacity with Systems Acquisition Workload*, GAO-02-356 (Washington, D.C.: February 28, 2002).

[7]GAO, *Business Systems Modernization: IRS Has Made Significant Progress in Improving Its Management Controls, but Risks Remain*, GAO-03-768 (Washington, D.C.: June 27, 2003).

[8]GAO, *Business Systems Modernization: IRS's Fiscal Year 2004 Expenditure Plan*, GAO-05-46 (Washington, D.C.: November 17, 2004).

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Background

and schedule delays, and that independent assessments of the BSM program had identified significant weaknesses and risks, consistent with our prior reviews.

- We also reported, in November 2004, that IRS had begun to implement a risk-adjusted cost estimating methodology. Prior to the fiscal year 2004 expenditure plan, IRS's project cost estimates consisted of "point estimates" that did not include adjustments for project risk. In the fiscal year 2004 plan, IRS added a "risk adjustment" amount to the cost estimate for each BSM project, in order to allow for variance and uncertainty. These risk-adjusted cost estimates incorporated ranges based on the uncertainty in the point estimates and adjusted those estimates to provide a specified level of confidence, given the inherent variability.

IRS's fiscal year 2005 expenditure plan describes the agency's efforts to

- continue ongoing program-level initiatives through the first week of November 2005 and core infrastructure projects through the end of November 2005,

- continue four ongoing tax administration projects (e-Services, Modernized e-File Releases 3.1 and 3.2, and Customer Account Data Engine – Individual Master File Release 1) to their next milestones,

- begin two new releases of tax administration projects (Modernized e-File Release 4 and Customer Account Data Engine Release 2),

- establish a consolidated program management/transition management activity for all Customer Account Data Engine project releases, and

- continue its ongoing work on the Filing and Payment Compliance/Private Debt Collection Release 1 project (formerly known as Collection Contract Support and allowing the selection of cases that can be handled by private collection agencies) as well as the Customer Account Data Engine Requirements Management/Engineering initiative (formerly known as the Business Rules Management Solution), using funding provided in fiscal year 2004.

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However, as a result of current budget constraints, IRS will not be pursuing any internal management support projects during fiscal year 2005. Specifically, IRS has decided to terminate the Custodial Accounting Project and postpone the next release of the Integrated Financial System indefinitely.

Table 1 shows a financial summary of the plan.

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Background

Table 1: Summary of IRS's Fiscal Year 2005 BSM Expenditure Plan (in thousands of dollars)[a]

	Amount requested
Project category[b]	
Tax administration projects	$90,587
Core infrastructure projects	62,000
Subtotal	**152,587**
Architecture, integration & management	
Architecture & integration	18,506
Business integration	5,909
Management processes	4,763
Federally funded research and development center—MITRE	9,719
Program management	5,199
Architecture, integration & management risk adjustment	904
Subtotal	**45,000**
Management reserve	**5,773**
Total	**$203,360**

Source: IRS.

[a]See appendix I for a description of each BSM project and program-level initiative. See appendix II for additional detail on the plan.
[b]The two categories under this heading include nine separate projects or project releases.

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Scope and Methodology

To accomplish our objectives, we

- reviewed the fiscal year 2005 expenditure plan submitted by IRS in April 2005;

- analyzed the plan against the legislative conditions to identify any variances;

- interviewed IRS program and project management officials to corroborate our understanding of the plan and of other BSM activities;

- analyzed available evidence on recent efforts to implement modernization management controls and capabilities—specifically, progress on and/or plans for

  - configuration management,

  - human capital management,

  - cost and schedule estimation,

  - contract management, and

  - post-implementation reviews;

- reviewed program management reports, briefings, and related documentation to assess the progress IRS has made in completing actions and implementing program management improvements related to the BSM Challenges Plan and Highest Priority Initiatives; and

- coordinated with the Treasury Inspector General for Tax Administration (TIGTA) to avoid duplication of effort in reviewing BSM initiatives.

To assess the reliability of the cost and schedule information contained in this expenditure plan, we interviewed IRS officials in order to gain an understanding of the data and discuss our use of the data. In addition, we checked that information in the plan was consistent with information contained in IRS internal

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Scope and Methodology

briefings. Accordingly, we determined that the data in the plan were sufficiently reliable for purposes of this briefing.

We performed our work from April through May 2005, in Washington, D.C., in accordance with generally accepted government auditing standards.

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Results

Objective 1: The plan satisfies the conditions in IRS's Fiscal Year 2005 appropriations act.

Table 2: Fiscal Year 2005 Expenditure Plan Provisions for Satisfying Legislative Conditions

Legislative conditions	Expenditure plan provisions
1. Meets OMB capital planning and investment control review requirements	IRS's fiscal year 2005 expenditure plan identifies funding required for managing information technology (IT) investments as part of a single portfolio through its capital planning and investment control process. This includes conducting periodic reviews to select, control, and evaluate IT investments.
2. Complies with IRS's enterprise architecture	The plan identifies funding required to continue definition and implementation of the enterprise architecture (EA). For example, it identifies funding needed for • finalizing and publishing updates to the EA based on change requests, • performing EA compliance certification activities, and • updating the 2005/2006 release architecture.
3. Conforms with IRS's enterprise life cycle methodology	The plan identifies funding required for meeting the requirements in IRS's enterprise life cycle (ELC) management program. For example, the plan calls for • maintaining responsibility for coordinating, tracking, and integrating all programwide costs, schedules, releases, issues, and risks and • maintaining and enhancing the ELC.
4. Complies with the acquisition rules, requirements, guidelines, and systems acquisition management practices of the federal government	As part of the ELC, IRS has defined processes, roles, and responsibilities for implementing Carnegie Mellon University's Software Engineering Institute (SEI) Software Acquisition Capability Maturity Model™ practices for the key process areas within the repeatable level (level 2) of the 5-stage model.[a] These practices are consistent with federal acquisition requirements and management practices, and the plan calls for implementation of the ELC on all projects. Further, all PRIME contractor cost reimbursement task orders are subject to a final independent audit by the Defense Contract Audit Agency to ensure that costs are incurred only for tasks actually completed on the contract.
5. Approved by IRS, Treasury, and OMB	• IRS – February 18, 2005 • Treasury – March 10, 2005 • OMB – March 18, 2005
6. Reviewed by GAO	• GAO – May 20, 2005, briefing to IRS's appropriations subcommittees

Source: IRS's fiscal year 2005 appropriations act and GAO analysis.

[a]These are acquisition planning, solicitation, requirements development and management, project management, contract tracking and oversight, evaluation, and transition to support.

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Objective 2: IRS has made further progress in implementing our prior recommendations to improve its modernization controls and capabilities, although more remains to be done to fully address them.

Since we reported on IRS's last plan,[9] it has made further progress in addressing our prior recommendations to improve its modernization controls and capabilities, as the following table illustrates:

Table 3: Status of IRS Progress in Implementing Prior GAO Recommendations

Prior recommendations to improve IRS's modernization controls and capabilities	Implemented	In progress	Status as of fiscal year 2005 plan
Configuration management			
Institutionalize Business Systems Modernization Office (BSMO) configuration management procedures		√	(See pp. 16-17)
Human capital management			
Implement plans for obtaining, developing, and retaining requisite human capital resources		√	(See pp. 18-19)
Cost and schedule estimation practices			
Implement effective procedures for validating contractor-developed cost and schedule estimates		√	(See pp. 20-21)
Contract management			
Establish and implement a process for determining the type of task order to be awarded		√	(See pp. 22-23)
Post-implementation reviews			
Perform analyses of investment data to determine whether completed projects have achieved expected benefits		√	(See pp. 24-25)

Source: GAO analysis of agency data.

[9]GAO-05-46.

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Results

Configuration Management

Effective configuration management (CM) is an essential control for ensuring the integrity and consistency of program and project products created by the system modernization program throughout their life cycles.[10]

In June 2001, we reported[11] that BSM's CM was ineffective, and we made recommendations to address this weakness.

In June 2003, we reported[12] that IRS had implemented most of our recommendations and strengthened its CM processes but that it had not yet fully institutionalized these processes across the BSM program.

In December 2003, TIGTA reported[13] that, although IRS had made progress in defining and establishing an enterprisewide CM process throughout the Modernization and Information Technology Services organization,[14] the functions (i.e., identification, control, status accounting, and audit) had not been uniformly implemented within the organization because IRS had not established executive-level responsibility to ensure that processes were properly implemented and that deficiencies identified in internal assessments were appropriately addressed.

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[10]CM is a discipline that applies technical and administrative direction and surveillance to identify and document the functional and physical characteristics of hardware or software, control changes to those characteristics and their related documentation, record and report change processing and implementation status, and verify compliance with specified requirements. The purpose of CM is to systematically identify and baseline the items that make up a system (identification), formally control any modifications to those items (control), report on the status of the CM process (status accounting), and ensure that baseline configurations are implemented (audit).

[11]GAO-01-716.

[12]GAO-03-768.

[13]Treasury Inspector General for Tax Administration, *Additional Actions Are Needed to Establish and Maintain Controls Over Computer Hardware and Software Changes*, Reference Number 2004-20-026 (Washington, D.C.: December 16, 2003).

[14]The Modernization and Information Technology Services organization consists of (1) BSMO, which acquires and delivers new computer hardware and software for IRS's modernized business processes and (2) the Information Technology Services organization, which develops, operates, and maintains computer hardware and software that support the current production environment.

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During fiscal year 2004, IRS reported that it had made further progress toward establishing mature configuration management processes. Among its activities were developing and delivering training modules on CM processes and configuration control boards (CCB) and completing internal compliance assessments on four BSM projects to evaluate each project's practices to determine whether they are being followed and support the project's goals.

However, the results of these assessments demonstrated the need for additional improvements. Several discrepancies were identified in three of the projects evaluated (Customer Account Data Engine, e-Services, and Modernized e-File), including processes or documentation that were found to be noncompliant with Modernization and Information Technology Services CM processes and procedures and/or were inadequate to perform the intended function. The assessment reports cited significant deficiencies and areas of concern related to requirements management, requirements traceability, and configuration audits. In addition, the Customer Account Data Engine and e-Services assessment reports noted that many of the discrepancies identified during prior assessments of these two projects still remained unresolved or only partially resolved.

In September 2004, the IRS CIO issued a revised Modernization and Information Technology Services CM Directive to establish organizational responsibilities for implementing these processes enterprisewide and addressing deficiencies. The charters for the associated CCBs were approved by the CIO in December 2004. In January 2005, a new Associate CIO was hired to head the new Enterprise Services organization within the enterprise, which includes a new enterprisewide CM policy office. This office, under the leadership of the Associate CIO for Enterprise Services, is responsible for implementing the CM Directive and institutionalizing these processes.

Until IRS fully institutionalizes effective CM processes, it cannot ensure that systems are being developed in accordance with enterprisewide needs and requirements and will not require expensive rework resulting in additional costs and/or schedule delays.

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Human Capital Management

To maintain and enhance the capabilities of IT staff, organizations should develop and implement a human capital strategy that, among other things,

- assesses the knowledge and skills needed to effectively perform IT operations to support agency mission and goals,

- inventories the knowledge and skills of current IT staff,

- identifies gaps between requirements and current staffing, and

- develops and implements plans to fill the gaps.

In February 2002, we reported[15] that IRS had not yet defined or implemented an IT human capital strategy, and recommended that IRS address this weakness.

In June 2003, we reported[16] that IRS had made important progress in addressing our recommendation, but had yet to

- develop a comprehensive multiyear workforce plan to replace the current annual plan, which did not encompass all phases of multiyear projects, and

- hire, develop, or retain sufficient human capital resources with the required competencies, including technical skills, in specific mission areas.

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[15]GAO-02-356.
[16]GAO-03-768.

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In September 2003, TIGTA reported[17] that IRS's Modernization and Information Technology Services organization had made significant progress in developing its human capital strategy,[18] including the development of a 5-year human capital plan; however, the strategy was not complete. Specifically, IRS had not yet (1) identified and incorporated human capital asset demands for the modernized organization, (2) developed detailed hiring and retention plans, or (3) established a process for reviewing the development of a human capital strategy and monitoring its implementation.

In August 2004, the current Associate CIO for BSM identified the completion of a human capital strategy as a high priority. Since then, IRS has reported that it has developed and utilized a human resources capacity management model to identify asset demands and determine where skills gaps exist in the current BSMO organization. IRS is currently in the process of prioritizing its BSM staffing needs within functional divisions, designing and establishing a revised organizational structure and staffing profile/level that meets the needs of the current BSM program, and developing a detailed recruiting plan to bring necessary personnel on board. For example, IRS is focusing on hiring additional staff in the systems engineering area, to provide these skills to various modernization projects. In providing comments on this briefing, IRS stated that it had hired 9 of 10 engineers for the new Modernization Program Engineering Office.

IRS has taken some steps in the right direction. However, until IRS fully implements its strategy, it will not have all of the necessary IT knowledge and skills to effectively manage the BSM program or to operate modernized systems. Consequently, the risk of BSM program and project cost increases, schedule slippages, and performance problems is increased.

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[17]Treasury Inspector General for Tax Administration, *The Modernization, Information Technology and Security Services Organization Needs to Take Further Action to Complete Its Human Capital Strategy*, Reference Number 2003-20-209 (Washington, D.C.: September 22, 2003).
[18]The BSM human capital strategy is an integral part of the overall strategy for the Modernization and Information Technology Services organization.

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Cost and Schedule Estimation Practices

Producing reliable estimates of expected costs and time frames for the completion of systems modernization initiatives is essential to determining a program's cost-effectiveness. Without such information, the likelihood of making poor investment decisions is increased.

The BSM program has had a history of cost overruns and schedule delays, and has been criticized for its ineffective cost and schedule estimation practices and inability to deliver projects within budget and on time.

In February 2002, we reported[19] that BSM project cost and schedule estimates were contractor-provided, "rough order of magnitude" estimates that had not been validated by IRS, and recommended that IRS adopt effective cost and schedule estimating practices.

Since that time, IRS directed the PRIME contractor to build a programwide cost and schedule estimation system that is compliant with best practices in the IT industry. To improve project cost and schedule estimates, IRS and the PRIME contractor

- developed a guidebook to provide assistance in developing cost and schedule estimates,

- issued procedures to (1) help IRS staff in validating the PRIME contractor's cost and schedule estimating capabilities and (2) provide guidance for the independent review of contractor-provided cost and schedule estimates,

- established a database containing historical data from PRIME projects to be used to prepare future estimates, and

- developed a methodology for preparing risk-adjusted cost and schedule estimates.

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[19]GAO-02-356.

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Despite these steps, a September 2004 internal review of the PRIME contractor's cost and schedule estimation capability concluded that estimation processes and compliance were still inadequate in some respects. The report stated that (1) the primary area of weakness was in the PRIME contractor's execution, since there was little evidence that the cost and schedule estimating guidance was being followed, and (2) future efforts will focus on the institutionalization of established guidance.

As a result of IRS's assessment of the PRIME contractor's performance, IRS decided to shift primary responsibility for cost and schedule estimation from the PRIME contractor to IRS staff. Despite the contractor's poor performance in cost and schedule estimating, there are risks associated with this change. For example, IRS has indicated that, as a part of this transition, it must redefine BSM cost and schedule estimation processes consistent with the current scope of the program and strengthen its capabilities in this area. However, although the agency hired additional technical expertise for cost and schedule estimating during fiscal year 2004, it acknowledges that it does not yet have all the expertise necessary to estimate cost and schedule effectively.

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Contract Management

The Federal Acquisition Regulation indicates that performance-based contracting[20] is the preferred method for acquiring services, should be used to the maximum extent practicable, and that fixed-price task orders[21] are the preferred type of performance-based task order.

In September 2002, TIGTA recommended[22] that BSMO require the use of fixed-price task orders whenever possible and appropriate for projects in development and deployment and for any other task orders where requirements can be clearly identified at the outset.

OMB has also encouraged IRS to use performance-based, fixed-price task orders to the maximum extent practicable.

In June 2003, we reported[23] that IRS did not have a clearly documented process for determining the type of task order to be awarded for BSM projects. We recommended that IRS establish and implement a process for determining the type of task order to be awarded.

During fiscal year 2003, IRS issued BSMO guidance,[24] a CIO memorandum,[25] and a BSMO directive[26] outlining (1) IRS's intent to utilize more fixed-price task orders where appropriate, (2) the new IRS policy stipulating that all contracts and task orders for BSM development projects in milestones 4 and 5 will be fixed-price, and (3) implementation guidance and a strategy to facilitate the use of performance-based contracting in the

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[20]The use of performance-based contracting means establishing clear and specific contract requirements where satisfaction can be objectively measured.
[21]A fixed-price task order is one in which the price is agreed upon at the outset and is not adjusted unless the requirements are changed.
[22]Treasury Inspector General for Tax Administration, *Additional Improvements Are Needed in the Application of Performance-Based Contracting to Business Systems Modernization Projects*, Reference Number 2002-20-170 (Washington, D.C.: September 13, 2002).
[23]GAO-03-768.
[24]Internal Revenue Service, *Enabling the Selection of Appropriate Contract Types for BSM Task Orders*, BSMO-Guidance-Contract Types (Washington, D.C.: August 11, 2003).
[25]Internal Revenue Service, *Business Systems Modernization Fixed-Price Policy*, CIO Memorandum (Washington, D.C.: September 29, 2003).
[26]Internal Revenue Service, *Performance-Based Contracting for BSM Task Orders*, BSMO-DIR-PBC (Washington, D.C.: September 30, 2003).

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development of BSM task orders. IRS also provided training for more than 100 IRS and contractor staff in the use of newly developed templates and instructions to facilitate the implementation of performance-based contracting and compliance monitoring.

During fiscal year 2004, IRS's efforts focused on monitoring compliance with BSMO directives and templates for implementing performance-based contracting. IRS developed performance measures for assessing the extent to which certain performance-based contracting practices were introduced into the modernization environment. These measures were used to perform an initial assessment of task orders for modernization projects. Results indicated that IRS staff is applying the new guidelines for performance-based contracting, but a larger number of task orders must be assessed to provide a more reliable basis for evaluating compliance.

In August 2004, IRS issued a revised ELC directive that separated ELC Milestone 4 into Milestone 4a (system design) and Milestone 4b (system development). IRS considered this revision to be a necessary condition for moving toward a firm fixed-price contracting environment for the later stages of systems development. This established Milestone 4a as a checkpoint at the end of the design phase where fixed-price task orders can be negotiated for business system development and deployment.

During fiscal year 2005, IRS plans to improve implementation of performance-based contracting by revising existing guidance, providing needed training for new or improved guidance, and performing semiannual assessments of compliance.

Until IRS fully implements performance-based contracting practices for managing BSM task orders, it cannot ensure that contractor costs are being adequately controlled or that the contractor is delivering products that fully satisfy the requirements and contract specifications.

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Post-Implementation Reviews

Conducting post-implementation reviews (PIR) is a process for reviewing IT projects to identify lessons learned from investments and determine whether the benefits anticipated in the business case for the investment have been realized.

OMB Guidance,[27] GAO's Information Technology Investment Framework,[28] and IRS's ELC require that post implementation reviews be performed on deployed information systems. According to our framework, the reviews should include (1) the collection, evaluation, and analysis of both quantitative and qualitative investment data and (2) documentation of lessons learned and recommendations for improving the information technology investment process.

In November 2004, we reported[29] that IRS had performed PIRs on deployed projects; however, these reviews were incomplete and did not follow IRS's procedure. Although the PIRs documented lessons learned in implementing the projects and provided recommendations for future improvements, the reviews did not (1) compare and analyze actual versus planned benefits and systems performance, (2) determine the validity of original business assumptions, or (3) compare and analyze actual versus planned cost and schedule estimates. We recommended that future post-implementation reviews of deployed BSM projects include an analysis of quantitative and qualitative investment data to determine whether expected benefits were achieved.

IRS has developed a new procedure for conducting post-milestone reviews and PIRs on BSM projects. The post-milestone reviews are to focus on the processes used in systems development, while the PIRs are to focus on outcomes related to expected business benefits, user expectations, and technical performance

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[27]Executive Office of the President, Office of Management and Budget, *Evaluating Information Technology Investments: A Practical Guide*, (November 1995) and Circular A-130, Transmittal Memorandum #4, *Management of Federal Information Resources,* (November 2000).
[28]GAO, *Information Technology Investment Management: A Framework for Assessing and Improving Process Maturity*, GAO-04-394G (Washington, D.C.: March 2004).
[29]GAO-05-46.

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requirements. We have reviewed the procedure and found that it is compliant with established federal guidance. However, this new procedure will not prove beneficial unless IRS ensures that it is followed for conducting all future PIRs. The next BSM project PIR is scheduled for early 2006.

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Objective 3: Observations about IRS's BSM Program and Expenditure Plan

Observation 1: IRS Has Made Progress in Implementing BSM, but Much Work Remains.

During the past 12 months, IRS's BSM program has deployed initial phases of several modernized systems and reported benefits to taxpayers and the agency, including the following:

- **Customer Account Data Engine (CADE) – Individual Master File[30] Release 1**.[31] CADE is intended to replace IRS's antiquated system that contains the repository of taxpayer information and, therefore, is the BSM program's linchpin and highest priority project. In July 2004 and January 2005, IRS implemented the initial releases of CADE, which have been used to process filing year 2004 and year 2005 1040EZ returns, respectively, for single taxpayers with refund or even-balance tax returns. According to IRS, as of March 31, 2005, CADE had processed over 1 million tax returns so far this filing season.

- **e-Services.** This project created a Web portal and provided other electronic services to promote the goal of conducting most IRS transactions with taxpayers and tax practitioners electronically. IRS implemented e-Services in May 2004, and reported that, as of late March 2005, over 84,000 users have registered with this Web portal.

- **Modernized e-File (MeF).** This project is intended to provide electronic filing for large corporations, small businesses, and tax-exempt organizations. The initial releases of this project were implemented in June and December 2004, and allowed for the electronic filing of forms and schedules for the Form 1120

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[30]CADE will include the modernized database foundation to replace the current master files processing systems, which are the agency's repository of taxpayer information. There are master files for individuals, businesses, and employer retirement plans. CADE is expected to facilitate faster refund processing and more timely response to taxpayer inquiries.
[31]Release 1 includes five segments. Release 1.0, the base release of1040 EZ functionality, was deployed in July 2004. Release 1.1, also deployed in July 2004 (concurrent with Release 1.0), contained filing season 2003 and 2004 tax law changes. Release 1.2, deployed in January 2005, included filing season 2005 changes. Release 1.3.1, scheduled to be deployed in July 2005, will include new functionality to improve performance and allow address changes on tax returns as well as some filing season 2006 tax law changes. Release 1.3.2, scheduled to be deployed in January 2006, will include the remaining filing season 2006 tax law changes and some additional functionality.

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(corporate tax return) and Form 990 (tax-exempt organizations' tax return). IRS reported that, during the 2004 filing season, over 53,000 of these forms and schedules were accepted using MeF.

- **Integrated Financial System (IFS).** This system replaces aspects of IRS's core financial systems and is ultimately intended to operate as its new accounting system of record. The first release of this system became fully operational in January 2005.

Although IRS has delivered important functionality, the BSM program is far from complete. Future deliveries of additional functionality of deployed systems and the implementation of other projects are expected to have a significant impact on IRS's taxpayer services and enforcement capability. For example,

- IRS has projected that CADE will process about 2 million tax returns in the 2005 filing season. However, the returns being processed in CADE are the most basic of all tax returns and constitute less than 1 percent of the total tax returns expected to be processed during the current filing season. There is much work to be done before a significant number of taxpayer returns are processed through the CADE system.

- The Filing and Payment Compliance (F&PC) project is expected to improve processes and technologies that support IRS's compliance activities, increase the agency's capacity to treat and resolve the backlog of delinquent taxpayer cases, and improve voluntary taxpayer compliance. Furthermore, it is expected to increase the closure of collection cases by 10 million annually by 2014. IRS intends to deliver an initial limited private debt collection capability in January 2006, with full implementation of this aspect of the F&PC project to be delivered by January 2008, and additional functionality to follow in later years.

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*Observation 2: IRS Has Not Met Long-Term Cost and Schedule Estimates, but Incremental Approach
Contributed to Short-Term Improvements.*

The BSM program has a long history of significant cost increases and schedule delays, which, in part, has led
us to report the program as high risk since 1995.[32] Among the reasons for IRS's poor performance are the
inability to resolve key system design, integration, and performance issues in a timely manner, unanticipated
testing difficulties, and insufficient requirements development.

In addition, IRS has overstated its cost and schedule estimating performance in fiscal year 2004. IRS claims to
have delivered all projects (with the exception of IFS) on time and within budget and that the variance between
estimated and actual costs had been reduced from 33 percent in fiscal year 2002 to 4 percent in fiscal year
2004. However, we do not agree with the methodology used in the analysis supporting this claim. Specifically,
(1) the analysis did not reflect actual costs, instead it reflected changes in cost estimates (i.e., budget
allocations) for various BSM projects; (2) IRS aggregated all of the changes in the estimates associated with
the major activities for some projects, such as CADE, which masked that monies were shifted from future
activities to cover increased costs of current activities (e.g., $39.8 million in fiscal year 2004 funding originally
allocated for the CADE Release 2 project was moved to cover cost overruns in the CADE Release 1 and
Business Rules initiatives, but was not included in the 4 percent variance indicated above); and (3) the
calculations were based on a percentage of specific fiscal year appropriations, which does not reflect that
these are multiyear projects.

A new strategy to develop and deploy more manageable program segments contributed to recent
improvements in meeting some short-term cost and schedule estimates. In the second quarter of fiscal year
2004, IRS rebaselined its projects and decided to change its BSM program strategy to develop and deploy
more manageable project segments. Our comparison of IRS's reported project costs and ELC milestone
completion dates presented in the July 2004 and April 2005 expenditure plans shows that two BSM projects,
CADE Releases 1.1 and 1.2, were delivered at the estimated cost and on or before the scheduled completion

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[32]For our latest high-risk report, please see GAO, *High-Risk Series: An Update*, GAO-05-207 (Washington, D.C., January 2005).

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dates projected in the July 2004 plan. In addition, it shows that Release 1 of the Custodial Accounting Project
was delivered on time and within its risk-adjusted cost estimate.

Concerns remain about IRS's ability to consistently deliver on time and within budget in the future. As
mentioned earlier, IRS has had a history of cost increases and schedule delays. In addition, our comparison of
the July 2004 and April 2005 plans shows that 12 BSM project segments have experienced cost increases
and/or schedule delays against short-term and long-term commitments shown in the July 2004 plan. Five of
the 12 initiatives reported cost increases (4 were within the allocated project risk adjustments and 1 was not).
Also, 9 of the 12 initiatives reported schedule delays. See appendix III for details. Based on our analysis, it
remains to be seen whether the IRS can continue to deliver modernization initiatives on time and within budget
through the life cycle of current projects and into the future.

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Observation 3: IRS Has Made Progress Toward Addressing Issues Raised in Independent BSM Assessments and Implementing Program Improvement Initiatives, but Significant Issues and Challenges Remain.

As a result of continued cost overruns and schedule delays in the BSM program, during the summer of 2003, IRS and the PRIME contractor, CSC, initiated three external independent studies and one IRS internal analysis to assess the effectiveness of the BSM program and to review the CADE project.

These assessments and a subsequent report by the IRS Oversight Board[33] resulted in 48 action issues to address weaknesses in and reduce risks to the BSM program. In October 2003, IRS established a BSM Challenges Plan to address the 48 action issues and assigned a senior executive to coordinate the development of goals, management plans, and closure criteria.

In May 2004, IRS reported[34] that 44 of the 48 action issues were closed and that the plan had accomplished its mission to help put the necessary policies and procedures in place to improve the delivery of modernized systems. However, our review of this report found examples of important issues that were closed even though required activities were incomplete.[35]

Subsequent to the May 2004 report, the current IRS Associate CIO for BSM determined that many of the action issues had been prematurely closed in the BSM Challenges Plan report. As a result, he began internally tracking the progress of the original action issues, including those that had been closed. Also, after interviewing a number of individuals associated with the BSM program and reviewing the four BSM studies as well as various GAO and TIGTA reports, the Associate CIO determined what he believed to be the key barriers to success in the BSM program and created a plan to address these barriers.

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[33]IRS Oversight Board, *Independent Analysis of IRS Business Systems Modernization,* Special Report (December 2003).
[34]Internal Revenue Service, *BSM Challenges Plan Close-Out Report* (May 2004).
[35]See GAO-05-46 for additional details.

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The Associate CIO established the following seven key focus areas for improving IRS's capability to design, develop, and deliver modernized IT systems:

- Staffing and Skill Sets,

- Contractor Management,

- Requirements and Demand Management,

- Systems Engineering,

- Project Management Disciplines,

- Communication and Collaboration, and

- Empowerment/Accountability.

He then mapped (1) the BSM Challenges Plan action issues, (2) GAO/TIGTA recommended corrective actions for improving modernization management controls and processes, and (3) several additional IRS-defined improvement initiatives to these key focus areas to form a BSM program improvement framework.

In August 2004, the Associate CIO identified 16 "highest priority initiatives" from the program improvement framework that were to be completed by the end of January 2005. This initial set of initiatives contained improvement efforts linked to six of the seven key focus areas, and consisted of three action issues from the BSM Challenges Plan, four corrective actions recommended by GAO and TIGTA, and nine additional improvement efforts identified by the Associate CIO.

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As of late April 2005, IRS reported that 44 of the 48 BSM Challenges Plan action issues have been closed, including 10 which were merged with other action issues. Of the remaining 4 open action issues, 2 of these issues (related to hiring additional systems engineering staff and conducting key technical reviews throughout the system life cycle) are nearing completion, while the other 2 issues, (implementing recommendations from an external study of the BSM contracting process and testing a business rules engine[36] in the CADE environment), require significant additional work.

Also, IRS reported that 12 of the 16 initial highest priority initiatives had been completed and closed, including efforts to fill four key critical pay project manager positions, assess and modify the PRIME contractor's role on the program, create a requirements management office, begin revalidation of the CADE project approach and architecture, and institutionalize monthly program reviews. The remaining 4 ongoing initiatives, related to (1) strengthening IRS's systems engineering capability, (2) completing the BSM human capital strategy and recruiting plan, (3) hiring a leader and establishing a requirements management office operation, and (4) hiring a technical lead for the BSM program, have been carried over to the next 6-month cycle.

In addition to the 4 initiatives carried forward from the initial list, IRS is focusing on 13 newly selected highest priority improvement initiatives for a total of 17, which are planned to be completed by early September 2005. Several of these initiatives relate to challenges from the recent switch in responsibility for systems integration from the contractor to IRS, and involve the transition of primary responsibility for critical BSM program management operations to IRS, including

- contract management,
- quality assurance,
- cost and schedule estimation,
- the change request process,

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[36]A business rules engine translates business rules, or processing criteria (e.g., income tax refunds of $x or more are held for administrative review) into executable computer code that processes transactions related to a tax form, and selects and executes correct rules based on the tax year and tax form.

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- integrated schedule management and baseline management, and

- project deployment transition support.

Other initiatives currently being implemented by IRS include ensuring BSM staff are trained in required project management skills (e.g., schedule analysis, earned value management, and testing monitoring) and establishing a business rules management operation to establish and support business rules harvesting[37] as a method to define modernization-related business requirements for projects such as CADE.

When effectively implemented, this program improvement process will allow IRS to regularly assess and prioritize its issues and challenges. However, until the agency has addressed its high priority initiatives, BSM remains at risk of further cost overruns and delays in delivery of critical functionality.

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[37]Business rules harvesting refers to the process of extracting, defining, and documenting tax processing criteria from a variety of sources, including IRS subject matter experts, legacy system source code, the tax code, and various other paper documents.

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Observation 4: IRS is Adjusting the BSM Program in Response to Its Assessment of the PRIME Contractor's Performance and Budget Reductions.

The BSM program is undergoing significant changes as it adjusts to the recent change in the PRIME contractor's role as well as reductions in its budget. As noted previously, IRS completed an assessment of the PRIME contractor's performance during fiscal year 2004. As a result, IRS began to transition program management responsibilities from the contractor to the agency in the fall of 2004. Subsequent funding reductions increased the shifting of areas of responsibility from the contractor. For fiscal year 2005, IRS received about 29 percent less funding than it requested (from $285 million to $203.4 million). According to the Senate report for the fiscal year 2005 Transportation, Treasury, and General Government appropriations bill, in making its recommendation to reduce BSM funding, the Senate Appropriations Committee was concerned about the program's cost overruns and schedule delays and wanted IRS to focus on its highest priority projects, particularly CADE.[38] In addition, IRS's fiscal year 2006 budget request reflects an additional reduction of about 2 percent, or about $4.4 million, from the fiscal year 2005 appropriation. In response, IRS has made adjustments to project funding allocations and future delivery schedules.

It is too early to tell what effect these changes will ultimately have on the BSM program. However, the adjustments IRS is making are not without risk, could potentially impact future budget requests, and will delay the implementation of certain functionality that was intended to provide benefit to IRS operations and the taxpayer. For example,

- *Shifts of BSM management responsibility from the PRIME contractor to IRS.* Due to IRS's assessment of the PRIME contractor's performance and budget reductions, IRS decided to shift significant BSM responsibilities for program management, systems engineering, and business integration from the contractor to IRS staff. For example, IRS is assuming responsibility for cost and schedule estimation and measurement, risk management, integration test and deployment, and transition management. There are risks associated with this decision. It is important to recognize that in the late 1990's, IRS moved

[38]U.S. Senate, Senate Report 108-342.

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management functions to contractors because of the agency's management weaknesses and past difficulties managing large IT projects. To successfully accomplish this transfer, IRS must have the management capability to perform this role. Although the BSM program office has been attempting to improve this capability through, for example, implementation of a new governance structure and hiring staff with specific technical and management expertise, IRS has had significant problems in the past managing large development projects, and acknowledges that it currently does not have all the expertise and processes needed to discharge these additional responsibilities effectively.

- *Reductions in management reserve/project risk adjustments.* In response to the fiscal year 2005 budget reduction, IRS reduced the amount that it had allotted to program management reserve and project risk adjustments by about 62 percent (from about $49.1 million to about $18.6 million).[39] If BSM projects have future cost overruns that cannot be covered by the depleted reserve, this reduction could result in (1) increased budget requests in future years or (2) delays in planned future activities (e.g., delays in delivering promised functionality) to use those allocated funds to cover the overruns. During fiscal year 2004, IRS expended about 46 percent of its BSM management reserve/project risk adjustments.

- *Suspension of the Custodial Accounting Project (CAP).* Although the initial release of CAP went into production in September 2004, IRS has decided not to use this system and to stop work on planned improvements due to budget constraints. According to IRS, it made this decision after it evaluated the business benefits and costs to develop and maintain CAP versus the benefits expected to be provided by other projects, such as CADE. Among the functionality that the initial releases of CAP were expected to provide were (1) critical control and reporting capabilities mandated by federal financial management laws; (2) a traceable audit trail to support financial reporting; and (3) a subsidiary ledger to accurately and promptly identify, classify, track, and report custodial revenue transactions and unpaid assessments. With the suspension of CAP, it is now unclear how IRS plans to replace the functionality this system was expected to provide, which was intended to allow the agency to make meaningful progress toward

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[39]We did not include in our calculations, reductions to specific project risk adjustment amounts that were made for reasons other than the fiscal year 2005 budget reduction.

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addressing long-standing financial management weaknesses. IRS is currently evaluating alternative approaches to addressing these weaknesses.

- *Reductions in planned functionality.* According to IRS, planned functionality for some of its BSM projects will be delayed. For example, IRS no longer plans to include Form 1041 (the income tax return for estates and trusts) in the fourth release of Modernized e-File, which is expected to be implemented in fiscal year 2007. In addition, future releases of the Integrated Financial System, planned to provide additional functionality necessary to fully address financial management weaknesses, have been postponed indefinitely.

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Observation 5: The BSM Vision and Strategy Need Revision.

The BSM program is based on visions and strategies developed in 2000 and 2001. The significant delays experienced by the program and the substantive changes brought on by recent events such as IRS's assessment of its contractor and budget reductions, indicate a need for IRS to revisit its long-term goals, strategies, and plans for BSM. For example, the latest modernization roadmap referenced in an expenditure plan dates back to fiscal year 2002 and showed the first five releases of CADE were to be completed by 2006—currently CADE Release 2 is not scheduled to be delivered until 2007.

Such an assessment would include an evaluation of when significant future BSM functionality would be delivered and at what cost. For example, CADE is currently scheduled to complete Release 2 and be able to process an estimated 33 million tax returns by 2007, but no detailed plans or schedules are available for the remaining phases of this project. Although the ability to process 33 million tax returns will be a significant accomplishment, it is a long way from handling the over 200 million tax returns received by IRS each filing season. For CADE, IRS still needs to determine (1) what additional functionality needs to be developed to cover the remaining tax returns, (2) how much it will cost IRS to develop this functionality, and (3) when this functionality will be made available. A similar analysis should be made for each of its major modernization projects.

IRS's Associate CIO for BSM has recognized that it is time to recast the agency's BSM strategy because of changes that have occurred subsequent to the development of the program's initial plans. According to this official, IRS is in the process of redefining and refocusing the BSM program, and he expects this effort to be completed by the end of this fiscal year; however, definite milestones for completing an updated strategy do not exist.

It is important for IRS to fully revisit its vision and strategy for the BSM program and develop a new set of long-term goals, strategies, and plans that are consistent with the budgetary outlook and IRS's management capabilities.

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Conclusions

IRS's fiscal year 2005 plan satisfies the legislative conditions.

IRS has made progress in implementing our recommendations to improve its modernization management controls and capabilities. However, our reviews and those of the Treasury inspector general clearly demonstrate that significant challenges and serious risks remain. IRS acknowledges this and is acting to address them.

IRS has deployed initial phases of several modernized systems recently and has met short-term cost and schedule estimates. However, much more work remains to be done to complete the modernization, and challenges confront the IRS in meeting its longer-term cost and schedule estimates. In addition, many high priority risks confront the BSM, including contract management, program management, and bolstering its human capital, as greater responsibility and accountability is transitioned from the contractor to the IRS. Finally, the BSM long-term vision and strategy is no longer current given project delays, and requires a major revision that is consistent with the budgetary outlook and its management capabilities.

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Recommendation for Executive Action

To address the many changes associated with the BSM and clearly describe what the modernization program is intended to accomplish, when it will be completed, and at what cost, we recommend that the Commissioner of Internal Revenue direct the CIO to take the following action:

- fully revisit the vision and strategy for the BSM program and develop a new set of long-term goals, strategies, and plans that are consistent with the budgetary outlook and IRS's management capabilities.

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GAO-05-774 IRS's Fiscal Year 2005 Expenditure Plan

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Agency Comments

In providing oral comments on a draft of this briefing, the Associate CIO for BSM concurred with our findings and conclusions, and stated that it is a fair representation of the BSM program. He also provided specific technical comments that we have incorporated into the briefing, as appropriate.

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Appendix I: Description of Business Systems Modernization (BSM)

Projects and Program-Level Initiatives

Proposed modernization initiative	Description
Tax administration projects	
e-Services	Is to create a Web portal and other e-Services to promote the goal of conducting most IRS transactions with taxpayers and tax practitioners electronically.
Filing and Payment Compliance(F&PC)/ Private Data Collection (formerly referred to as Collection Contract Support (CCS))	Is a series of projects providing support for detecting, scoring, and working nonfiler (filing compliance) and delinquency (payment compliance) cases. The first phase of F&PC is Private Debt Collection, which will use advanced software to analyze tax collection cases and divide them into the complex cases requiring IRS involvement from the simpler ("balance due") cases that can be handled by private collection agencies.
Modernized e-File	Is to provide a single standard for filing electronic tax returns. Initial releases will address large corporations, small businesses, and tax-exempt organizations. Its ultimate goal is the conversion of IRS's 1040 e-file program.
Customer Account Data Engine – Individual Master File (CADE IMF)	Is to build the modernized database foundation to replace the existing master file processing systems that contain a repository of information on individual taxpayers.
Internal management projects	
Custodial Accounting Project (CAP)	Is to provide integrated tax operations and internal management information to support evolving decision analytics, performance measurement, and management information needs.
Integrated Financial System (IFS)	Is to provide a single ledger for custodial and financial data and a platform to integrate core financial data with budget, performance, and cost accounting data.

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Appendix I: Description of Business Systems Modernization (BSM)

Projects and Program-Level Initiatives

(continued from previous page)

Proposed modernization initiative	Description
Core infrastructure projects	
Development, Integration, & Testing Environment	Is to provide oversight for laboratory environments that support evaluation, development, and testing of components from multiple projects: (1) Virtual Development Environment provides a development environment and a standardized set of tools; (2) Enterprise Integration Testing Environment provides an integration testing environment for all projects.
Infrastructure Shared Services	Is to establish a program to build and deliver an infrastructure that is scalable, interoperable, flexible, manageable, and features standardized operations and a single security and enterprise systems management framework.
Architecture, integration & management	
Architecture & Integration	Is to ensure that systems solutions meet IRS business needs and that the projects are effectively integrated.
Business Integration	Is to ensure that IRS's BSM program is aligned with the business units' vision and delivers the desired business results. It provides support to the business owners with key activities such as transition management, business rules enterprise management, and business transformation.
Management Processes	Is to provide sustaining support for program-level management processes, including quality assurance, process improvement, training, program control, and ELC maintenance and enhancements.
Federally Funded Research and Development Center—MITRE	Is to provide program management and systems engineering support to BSMO.
Program Management	Is to ensure that projects achieve their objectives; provide the management information and IT infrastructure that supports risk management, project cost and schedule estimating, and financial management; and provide procurement management for the CSC contract and associated task orders.

Source: IRS.

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Appendix II: Additional Detail on IRS's Fiscal Year 2005 BSM

Expenditure Plan (in thousands of dollars)

Proposed modernization initiative	Release[a]	Milestone[b]	Milestone date	Amount requested
Tax administration projects				
e-Services	R1.1, 1.2, 2.0	5	Aug. 05	$8,000
e-Services	PeopleSoft Upgrade	N/A	Aug. 05	600
e-Services Risk Adjustment				1,000
Subtotal – e-Services project				**9,600**
Modernized e-File (MeF)	R3.1	4	March 05	2,400
MeF	R3.2	4	March 06	13,700
MeF	R4	3	Oct. 05	8,000
MeF Risk Adjustment				2,650
Subtotal – MeF project				**26,750**
Customer Account Data Engine – Individual Master File (CADE IMF)	R1	5	Dec. 05	7,000
CADE IMF	R1	Filing Season 06	Dec. 05	27,000
CADE IMF	R2	4a	June 06	7,000
CADE IMF	Program Mgmt. and Transition Mgmt.	N/A	Dec. 05	8,000
CADE IMF Risk Adjustment				5,237
Subtotal – CADE IMF project				**54,237**
Subtotal – tax administration projects				**90,587**
Core infrastructure projects				
Development, Integration & Testing Environment (DITE)		FY 05[c]	Nov. 05	15,574
Infrastructure Shared Services (ISS)		FY 05[c]	Nov. 05	42,426
DITE/ISS Risk Adjustment				4,000
Subtotal – core infrastructure projects				**62,000**

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Appendix II: Additional Detail on IRS's Fiscal Year 2005 BSM
Expenditure Plan (in thousands of dollars)

(continued from previous page)

Proposed modernization initiative	Release[a]	Milestone[b]	Milestone date	Amount requested
Architecture, integration, & management				
Architecture & Integration		FY 05[c]	Nov. 05	$18,506
Business Integration		FY 05[c]	Nov. 05	5,909
Management Processes		FY 05[c]	Nov. 05	4,763
FFRDC – MITRE		FY 05[c]	Nov. 05	9,719
Program Management		FY 05[c]	Nov. 05	5,199
Architecture, Integration & Management Risk Adjustment				904
Subtotal – architecture, integration, & management				**45,000**
Management reserve				**5,773**
Total fiscal year 2005 BSM program				**$203,360**

Source: IRS.

[a]Releases are software versions that provide a subset of the total planned project functionality.
[b]Milestones correspond to phases within IRS's ELC (1 – Enterprise Architecture, 2 – Domain Architecture, 3 – System Architecture, 4a – System Design, 4b – System Development, 5 – System Deployment).
[c]Core infrastructure projects and management initiatives are funded on a fiscal year (FY) basis rather than by milestone.

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Appendix III: IRS Reported Project Cost/Schedule Changes

Project segment	Commitment date and funding as of 7/2004 ($000)	Revised commitment date and funding as of 4/2005 ($000)	Change	IRS explanation of change
e-Services Milestone 5	4/30/05 $32,500	8/31/05 $32,500	+4 months	Significant scope was added to the project that resulted in additional time to the project schedule. Significant additions were a PeopleSoft upgrade, the expansion of the application process to include Modernized e-File (MeF) roles to grant accessibility to those users, and the Electronic Data Accessing Solution (EDAS). The government and contractor executed a replan to address schedule increases.
e-Services PeopleSoft Upgrade (LOE)	4/30/05 $7,400	8/31/05 $12,100	+4 months +$4,700	$600K transferred from FY 2005 project Risk Adjustment to cover estimated cost to complete the PeopleSoft upgrade prior to e-Services' transition to IRS operations and maintenance. In addition, $4.1 million transferred from FY 2004 project Risk Adjustment to cover increased cost of the PeopleSoft upgrade. Thus, the Total Segment Cost is $12,100K (7,400 + 4,100 + 600).

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Appendix III: IRS Reported Project Cost/Schedule Changes

Project segment	Commitment date and funding as of 7/2004 ($000)	Revised commitment date and funding as of 4/2005 ($000)	Change	IRS explanation of change
Filing & Payment Compliance/ Private Debt Collection (F&PC/PDC) Release 1 Milestone 3, 4a	1/31/05 $7,250	3/31/06 $13,250	+14 months +$6,000	Congress passed legislation allowing the use of Private Collection Agencies (PCA) late in 2004, forcing delay of most F&PC/PDC activities originally planned for FY 2004. IRS is in the process of developing a new schedule for Release 1 and will provide a full update in the upcoming FY 2005 and 2006 Expenditure Plan. $6 million transferred from FY 2004 Management Reserve to fully fund original plan activities, including validation and planning of the long-term business strategy (which may include subreleases).
Modernized e-File Release 2 Milestone 4	9/30/04 $15,325	12/16/04 $15,325	+2.5 months	Milestone 4 exit delayed to complete noncritical, post Initial Operating Capability (IOC) testing.
Modernized e-File Release 3.1 Milestone 4	3/31/05 $7,539	3/24/05 $10,139	-0.25 month +$2,600	$2.4 million transferred from the FY 2005 Risk Adjustment to fund $2+ million in Tax Year changes and associated testing costs. An additional $.200 million transferred from the FY 2004 Risk Adjustment to test and implement tax law changes. Total Segment Cost is $10,139K (7,539 + 200 + 2,400).

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Appendix III: IRS Reported Project Cost/Schedule Changes

Project segment	Commitment date and funding as of 7/2004 ($000)	Revised commitment date and funding as of 4/2005 ($000)	Change	IRS explanation of change
Modernized e-File Release 3.2 Milestone 3	10/15/04 $3,633	2/04/05 $3,633	+3.5 months	Release 3.2 Milestone 3 completion delayed by negotiations required to obtain additional funding for Fed/State component. This in turn delayed the start date for Milestone 4.
Modernized e-File Release 4 Milestone 3	6/30/05 $8,000	10/31/05 $8,000	+4 months	Start date for Release 4 Milestone 3 delayed until FY 2005 funding is approved and received. Release 4 Milestone 3 will now begin after Release 3.1 exits Milestone 4.
Customer Account Data Engine (CADE) Release 1 Milestone 5	6/30/05 $17,450	12/31/05 $17,450	+6 months	Milestone 5 was extended to the end of December 2005 to include changes for Filing Seasons 2005 (Release 1.2) and 2006 (Release 1.3).
Customer Account Data Engine (CADE) Release 1.3	12/31/05 $27,000	12/31/05 $28,300	+$1,300	Funding covers software development, a suite of testing, and implementation of the July 2005 Release (R1.3.1) and the January 2006 Release (R1.3.2). $1.3 million transferred from FY 2004 Risk Adjustment to fund start-up work on the filing season 2006 changes and ensure the effort stayed on schedule. Total Segment Cost is now $28,300K (27,000 + 1,300).

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Appendix III: IRS Reported Project Cost/Schedule Changes

Project segment	Commitment date and funding as of 7/2004 ($000)	Revised commitment date and funding as of 4/2005 ($000)	Change	IRS explanation of change
Customer Account Data Engine (CADE) Release 2 Milestone 4a	11/30/05 $15,000	6/30/06 $7,000	+7 months -$8,000	The project will not formally exit Milestone 4a until June 2006 so the logical and physical design may include filing season 2007 tax law changes. This activity is being subdivided into two pieces for FY 2005. IRS will use $7 million of the $15 million in FY 2005 to fund traditional Milestone 4a activities, and $8 million to fund Program Management and Transition Management activities. The net increase to the overall CADE fiscal year 2005 budget is zero.
Custodial Accounting Project (CAP) Release 1 Milestone 4	10/29/04 $105,318	9/30/04 $107,118	-1 month +$1,800	Milestone 4 exit accelerated by changes to initial load approach. $1.8 million was transferred from FY 2004 risk adjustment to cover costs of additional testing and resolving data quality issues.
Integrated Financial System (IFS) Release 1 Milestone 5	6/30/05 $15,000	11/30/05 $15,000	+5 months	BSMO recognized the need for Milestone 5 to include a full accounting cycle (year-end close) as part of the measurement and acceptance of the system, based on rationale provided by the Chief Financial Officer.

Source: IRS.

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Comments from the Internal Revenue Service

DEPARTMENT OF THE TREASURY
INTERNAL REVENUE SERVICE
WASHINGTON, D.C. 20224

COMMISSIONER

June 28, 2005

Mr. David Powner
Director, Information Technology
  Management Issues
U.S. Government Accountability Office
441 G Street, N.W.
Washington, DC 20548

Dear Mr. Powner:

I have reviewed the Government Accountability Office (GAO) draft report titled "Internal Revenue Service's Fiscal Year 2005 Expenditure Plan" (GAO-05-774, July 2005). We are pleased the GAO:

- Validated that we satisfied the legislative conditions as specified in Congressional appropriations;

- Acknowledged the progress made in the Business Systems Modernization (BSM) Program;

- Confirmed the new incremental approach and strategy to develop and deploy more manageable project segments thus meeting short-term cost estimates and delivery dates for some of our projects; and

- Acknowledged the progress made towards addressing the issues raised in independent BSM assessments and in implementing program initiatives.

We agree with your report's findings and with your observations that much work remains ahead of us. However, we have the management focus and discipline in place to ensure that we are "doing things right" as opposed to "doing things fast," such as exiting milestones prematurely. We are also consistently following the proper methodologies and holding people accountable if they do not. Some ongoing challenges, however, will be:

- Balancing the scope and pace of projects consistent with capacity;

- Ensuring that the right people are in place before launching a project; and

- Setting realistic delivery schedules and cost estimates.

We have begun with the implementation of a human resource capacity management model to ensure that we have the right number of resources with the right skills and backgrounds available to a project.

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We also developed and implemented a more robust approach to post-milestone and post-implementation reviews. In addition to extending the post-implementation review process, we also look at lessons learned at the end of each project milestone. We then retain the results of these comprehensive reviews in a repository that is available to everyone involved with the BSM program. We have now conducted several Post Milestone Reviews according to the new BSM procedures on Post Milestone and Post Implementation Reviews (PIRs).

We are aware that the magnitude of the BSM program dictates that we will always be going through an evolution of assessment and improvements. In that regard, the BSM Challenges Action Plan has evolved to support our goal of continuous improvement of the program. Every 6 months, the BSM leadership team identifies new high priority items from the various oversight audit findings and the team's own assessment of the program's needs. We are placing a major focus and thrust towards completing these highest priority items over a 6-month period. The BSM leadership team will continue to reevaluate the state of the BSM program and set new priority items for improving the program every 6 months.

I would like to briefly comment on your report's recommendation: "To address the many changes associated with the BSM and to clearly describe what the modernization program is intended to accomplish, when it will be completed, and at what cost, we recommend that the Commissioner of the Internal Revenue direct the CIO to fully revisit the vision and strategy for the BSM program and develop a new set of long-term goals, strategies, and plans that are consistent with the budgetary outlook and the IRS's management capabilities."

The IRS has begun a planning effort to reset its IT Modernization Strategy and approach. As part of this effort, we will be updating the Enterprise Transition Strategy and Release Architectures that are part of the IRS Enterprise Architecture. Our intent is to have the high-level strategy, goals, and plans in place by the end of this fiscal year (FY 2005), with more detailed engineering analysis and sequencing strategies that will be completed during the first quarter of FY 2006. We believe that this approach will address this recommendation.

We appreciate your continued support and the valuable assistance and guidance from your staff. If you have any questions, or if you would like to discuss this response in more detail, please contact Todd Grams, Chief Information Officer, at (202) 622-6800.

Sincerely,

Mark W. Everson

GAO Contact and Staff Acknowledgments

GAO Contact

David A. Powner, (202) 512-9286

Staff Acknowledgments

In addition to the contact named above, Bernard R. Anderson, John L. Dale, Joanne L. Fiorino, Timothy D. Hopkins, and Tonia L. Johnson made key contributions to this report.