

W

September 14, 1998

TO: AO/Chief Information Officer

FROM: W/Assistant Inspector General for Auditing

SUBJECT: Final Report on the Audit of Outsourcing of Desktop Computers
(Assignment No. A-HA-97-047)
Report No. IG-98-029

The subject final report is provided for your use. Please refer to the executive summary for the overall audit results. Your comments on the draft report were responsive to our recommendation, and we consider the recommendation closed for reporting purposes.

If you have questions concerning the report, please contact Mr. David Gandrud, Director for Information Technology Program Audits, at (650) 604-2672, or Mr. Ernest Willard, Program Manager, at (650) 604-2676. We appreciate the courtesies extended to the audit staff. The report distribution is in Appendix E.

[original signed by]

Russell A. Rau

Enclosure

cc:
B/Chief Financial Officer
G/General Counsel
L/Associate Administrator for Legislative Affairs
JM/Director, Management Assessment Division

IG-98-029

**AUDIT
REPORT**

**OUTSOURCING OF DESKTOP
COMPUTERS**

SEPTEMBER 14, 1998



National Aeronautics and
Space Administration

OFFICE OF INSPECTOR GENERAL

ADDITIONAL COPIES

To obtain additional copies of this audit report, contact the Assistant Inspector General for Auditing at 202-358-1232.

SUGGESTIONS FOR FUTURE AUDITS

To suggest ideas for or to request future audits, contact the Assistant Inspector General for Auditing. Ideas and requests can also be mailed to:

Assistant Inspector General for Auditing
NASA Headquarters
Code W
300 E. St., SW
Washington, DC 20546

NASA HOTLINE

To report fraud, waste, abuse, or mismanagement, contact the NASA OIG Hotline by calling 1-800-424-9183, 1-800-535-8134 (TDD), or by writing the NASA Inspector General, P.O. Box 23089, L'Enfant Plaza Station, Washington, DC 20026. The identity of each writer and caller can be kept confidential, upon request, to the extent permitted by law.

ACRONYMS

CIO	Chief Information Officer
ODIN	Outsourcing Desktop Initiative for NASA
POP	Program Operating Plan
RFP	Request for Proposal

TABLE OF CONTENTS

EXECUTIVE SUMMARY.....	1
INTRODUCTION.....	3
FINDING AND RECOMMENDATION.....	5
NASA’S IN-HOUSE COST BASELINE	5
APPENDIX A - OBJECTIVE, SCOPE, AND METHODOLOGY.....	9
APPENDIX B - BUSINESS CASE OPTIONS.....	10
APPENDIX C - SUMMARY OF PRIOR NASA AND OTHER REVIEWS.....	11
APPENDIX D - MANAGEMENT’S RESPONSE.....	12
APPENDIX E - REPORT DISTRIBUTION.....	13

OUTSOURCING OF DESKTOP COMPUTERS

EXECUTIVE SUMMARY

INTRODUCTION

In December 1996, NASA decided to outsource its desktop computers, local area networks, and user support services. NASA based its decision, in significant part, on the results of its outsourcing study referred to as the Business Case analysis. On June 17, 1998, NASA announced the competitive selection of seven vendors who were later awarded indefinite-delivery, indefinite-quantity contracts. NASA Centers may now select vendors to provide desktop services without further competition but are required to provide fair consideration to the vendors under the established delivery order selection process.¹

OBJECTIVE

The overall objective of the audit was to determine the adequacy of NASA's outsourcing study.² Specifically, our objective was to determine whether NASA had:

- based its outsourcing analysis on current, accurate, complete, and relevant cost data;
- used appropriate and consistent methodology in analyzing the various options; and
- adequately considered alternatives to outsourcing.

Appendix A contains details on the scope and methodology.

RESULTS OF AUDIT

NASA has not ensured the adequacy or consistency of cost data to be used to place outsourcing delivery orders. After completing the Business Case analysis, which supported outsourcing, NASA updated the available cost data on outsourcing desktop computers, through

¹ The Office of Space Flight is planning to award delivery orders to a common vendor for the work at multiple NASA Centers.

² We have issued two additional products that resulted from this audit. See Appendix C for additional information.

successive iterations, to support each phase of the competitive procurement process. NASA used the updated data to assess the Agency-wide benefits of outsourcing. However, NASA has not issued guidance on preparing reliable cost estimates in support of delivery order placement. Without consistently prepared and reliable estimates of the costs of the Government activities to be outsourced, the Centers may be unable to make well-informed decisions on the type and extent of outsourcing services they should acquire, particularly with regard to services other than general-purpose computing (for example, intra-Center communications). Also, Centers may be unable to reliably compare the costs of doing business with the eligible vendors or to determine the total amount of savings actually achieved through outsourcing.

RECOMMENDATION

We recommended that the NASA Chief Information Officer (CIO) require Centers to develop Government cost estimates for use in determining the type and extent of outsourcing services to be acquired. We also recommended that the CIO issue detailed guidance for the Centers to use in developing their cost estimates.

***MANAGEMENT'S
RESPONSE AND
EVALUATION OF THE
RESPONSE***

In lieu of requiring each Center to develop cost estimates, the ODIN Program Office is developing Center-specific cost baselines with the full support and participation of the Centers. We consider this action responsive to the recommendation.

INTRODUCTION

In July 1996, the NASA Chief Information Officer and Associate Administrator for Procurement formed a management team to assess outsourcing NASA's desktop computing, which the team defined as including hardware, software, local area networks, and customer support. In performing its assessment, the management team studied three options: business as usual, consolidation, and outsourcing. Details on the options are in Appendix B.

The management team issued its study results in the *Business Case for Outsourcing of Desktop Computers* on October 24, 1996. The Business Case concluded that desktop outsourcing, estimated to cost \$988 million over 5 years, could produce the most cost savings of the options considered, as well as improve asset management, enhance focus on NASA's core mission activities, and simplify procurement management.

The Business Case recommended that NASA consolidate its desktop management responsibilities at a designated lead Center and outsource desktop requirements. NASA management concurred with the recommendation and formed a team, the Outsourcing Desktop Initiative for NASA (ODIN) team, to issue a request for proposal (RFP). The RFP defined the outsourcing scope as:

. . . comprehensive, end-to-end desktop, server, and intra-Center communications services, including associated capital infrastructure improvements, as well as maintenance and enhancements to that infrastructure, throughout the term of the contract.

NASA issued the ODIN RFP on November 28, 1997.

On June 17, 1998, NASA announced the selection of seven contractors who were later awarded indefinite-delivery, indefinite-quantity contracts. These contractors (referred to as "master" contractors) will

perform “due diligence” reviews at each Center to validate the accuracy of the information NASA provided them on the Centers’ existing inventories and infrastructures. Each Center will then select a single contractor from the pool of seven master contractors based on fair consideration of contractor submittals. Unless the contractors identify requirements that are above or beyond those specified in the master contracts, prices will be at or below the not-to-exceed prices in the master contracts.

FINDING AND RECOMMENDATION

NASA'S IN-HOUSE COST BASELINE

NASA has not ensured the adequacy or consistency of cost data that Centers will use in finalizing their respective outsourcing delivery orders. Deficiencies in the cost data first appeared in NASA's Business Case and have continued in successive iterations to update the cost data. NASA has not developed better cost data because it considers the current cost baseline adequate to support outsourcing actions. However, the available cost data is oriented toward determining the Agency-wide benefits of outsourcing to NASA. Government cost estimates for specific outsourcing decisions at the Center level are required to ensure that the scope of the contracting effort is clearly defined. Without reliable and relevant cost data, based on consistently prepared estimates, the Centers may be unable to make well-informed decisions on the type and extent of needed desktop services, compare vendors, or determine the actual savings achieved.

Adequate Cost Data Are Needed to Support Outsourcing Actions

NASA used the Business Case to support the initial decision to outsource, with the understanding that the Agency would perform additional cost analyses before issuing the RFP. NASA later assessed the reasonableness of contractor proposals by comparing them to revised in-house cost data.

Before issuing outsourcing delivery orders, Centers need reliable cost data for the following reasons.

- A March 13, 1997, memorandum on cost/benefit analyses from the Acting Deputy Administrator stated that NASA offices are expected to perform cost/benefit analyses “. . . of sufficient rigor to provide management with the information it needs to make the best decisions as well as withstand the scrutiny of others.”
- The ODIN RFP states that one of ODIN's objectives is to “reduce the cost to NASA of delivering desktop, server, and intra-Center communications services.” Accordingly, meaningful cost comparisons are needed as part of the outsourcing analyses.

**Original Cost Baseline
Derived From the Business
Case Analysis**

NASA's Business Case concluded that, in addition to other benefits, outsourcing would result in a cost savings of \$226 million over 5 years. While we commend the Agency for having prepared the Business Case, it did not fully support the conclusion on cost savings.

NASA's decision to use a "quick-look" approach in performing the Business Case analysis adversely affected the initial cost baseline. NASA used its *Outsourcing Guide and Benefit-Cost Model* (May 1996) in preparing the "quick-look" approach for its outsourcing study. The guide states that the benefit-cost model:

. . . is designed to be used by the manager in one of two ways: as a guide for an internal "quick-look" analysis; or as a reference for the manager to use in assisting in-house cost professionals in the performance of a detailed study.

NASA's "quick-look" approach meant that it devoted only limited time and personnel to the Business Case analysis. As a result, the data NASA used in 1996 to develop the Business Case cost baseline were incomplete and had been inconsistently compiled by the Centers. Further, the cost analyst for the Business Case team determined that some cost data were not sufficiently reliable for use in the outsourcing analysis. To compensate for deficient data, the cost analyst made certain assumptions for hardware component costs. For example, the costs for hardware components ranged from \$298 at Headquarters to \$1,871 at the Goddard Space Flight Center. Because the range was so wide, the cost analyst concluded that the data were unreliable and, therefore, assumed hardware costs of \$2,500 for each personal computer and \$3,600 for each Apple Macintosh. In addition, the cost analyst eliminated hardware maintenance, network, and customer service costs for some Centers because he believed that time constraints did not permit him to collect more reliable data. The Business Case team should have allowed enough time for the analyst to obtain reliable cost data. Nonetheless, NASA considered the Business Case cost baseline adequate for determining that outsourcing would be

cost-effective and for making the decision to implement ODIN. In addition, a Business Case team member stated that the nonmonetary benefits (such as enhanced focus of Agency resources on core mission activities) expected to result from outsourcing were more important than cost savings.

Revision of Cost Data After Decision to Outsource

In May 1997, after its decision to outsource, NASA initiated additional cost analyses. The NASA CIO directed each Center CIO to determine the current costs for ODIN-supported desktop computers, local area networks, and other services. Rather than providing detailed guidance on specific costs that apply to desktop services and their method of computation, the NASA CIO directed the Center CIOs to use their current cost data and to define the extent and associated costs of the various services needed at the Centers. Relying on the Center CIOs to determine costing methodology, rather than developing an Agency-wide costing methodology, resulted in inconsistent and unreliable cost data. After receiving the data, the NASA CIO worked with the Center CIOs to improve the quality of the data; however, the data remained deficient.

ODIN officials compared the updated, in-house cost estimates with the best and final not-to-exceed prices offered by vendors. Some of those officials acknowledged that the revised cost data were inconsistent and unreliable. Nonetheless, NASA did not take steps to ensure that the Centers improve their cost comparison data before acquiring outsourcing services.

NASA's February 1998 Information Technology Program Operating Plan (POP) Call for Fiscal Year 2000 requires Centers to provide cost information to NASA Headquarters as defined and scoped in the ODIN RFP. However, the POP Call did not contain detailed guidance for Centers to use in identifying the full costs of activities to be outsourced or the assumptions to be used in making cost estimates. Consequently, the 1998 cost analysis will likely result in inconsistent and unreliable cost data, as have the previous cost analyses.

Consistent In-House Cost Data Are Needed

NASA does not yet have a full cost accounting system and, therefore, many in-house desktop computing costs

can only be estimated. While Centers should use actual cost data to the extent possible, estimates will be required when actual cost data are not available. Formal guidance from the CIO would help ensure consistency in the collection of actual cost data and in the assumptions underlying the estimated costs.

Baseline cost deficiencies may not adversely affect the master contracts because the contracts reflect not-to-exceed prices and commit only \$1,000 per contractor. Nonetheless, Centers will negotiate firm requirements and prices and include these terms in delivery orders to their selected contractors. Cost savings is one of ODIN's objectives. Using current, reliable, and consistently compiled data will enable the Centers to better assess costs when weighing all factors that influence their decisions on the type, extent, and source of desktop services they may acquire.

RECOMMENDATION

The NASA CIO should require Centers to develop Government cost estimates for use in determining the type and extent of outsourcing services to be acquired. The CIO also should issue detailed guidance describing all costs that apply to ODIN-type services and their method of computation, including assumptions to be used in determining cost estimates.

***MANAGEMENT'S
RESPONSE TO THE
RECOMMENDATION***

Management concurred in part. The CIO agreed that a cost baseline should be developed and maintained to assess the cost-effectiveness of ODIN and to manage and contain costs associated with desktop computing and local area networking. However, instead of requiring the Centers to conduct their own assessments, the CIO stated that the ODIN Program Office at the Goddard Space Flight Center is now directing the development of Center-specific and program-wide cost baselines. The Program Office is working with each Center to ensure an accurate and consistent data call and data assessment. The complete text of management's comments is in Appendix D.

***EVALUATION OF
MANAGEMENT'S
RESPONSE***

The action being taken is responsive to the recommendation.

OBJECTIVE, SCOPE, AND METHODOLOGY

OBJECTIVE

The overall objective of the audit was to determine the adequacy of NASA's outsourcing study. Specifically, our objective was to determine whether NASA had:

- based its outsourcing analysis on current, accurate, complete, and relevant cost data;
- used appropriate and consistent methodology in analyzing the various options; and
- adequately considered alternatives to outsourcing.

SCOPE AND METHODOLOGY

We reviewed NASA's outsourcing study and supporting documentation, which included cost data. We interviewed NASA officials including the cost analyst who helped prepare the Business Case, ODIN team members, and independent consultants in the information technology field. We reviewed Office of Management and Budget Circular A-76, *Performance of Commercial Activities*, and the Revised Supplemental Handbook to A-76, and conferred with the Office of Management and Budget's point of contact for A-76. We obtained legal advice from the Office of Inspector General Associate Attorney-Advisor regarding the applicability of A-76 to NASA's decision to outsource desktop computers. We examined and tested applicable records and documents dating from mid-1996 through mid-1998. We performed the audit according to generally accepted Government auditing standards.

MANAGEMENT CONTROLS REVIEWED

We reviewed NASA's Outsourcing Guide and Benefit-Cost Model (May 1996) to the extent needed to satisfy the audit objectives. We determined that the prescribed procedures for conducting cost-benefit analyses were adequate.

FIELD WORK

The audit was primarily performed from March through December 1997 (see Appendix C for summaries of a rapid action report and management letter issued during this period), with follow-on work performed during April through July 1998. We visited several NASA Centers and NASA Headquarters.

BUSINESS CASE OPTIONS

The management team studied three options before deciding to outsource NASA's desktop computing.

Business as Usual. This option assumed a continuation of NASA's current desktop environment, in which the Agency relies on about 80 contractors to provide support. The Agency owns all assets and is responsible for configuration management, contract management, and day-to-day operational management.

Consolidation. This option represented an Agency-wide consolidation of all desktop management activities. A single management office would be established to provide overall direction, policies on standardization, and budget management. NASA's multiple support contracts would be consolidated into a few support contracts awarded through a single procurement action. NASA would continue to own all assets and perform day-to-day operational management.

Outsourcing. This option assumed NASA would establish a single management office with points of contact at each Center. A single procurement action would make multiple awards to selected vendors. The vendors would own and manage all assets, provide all support, and perform day-to-day operational management. NASA would retain responsibility for contractor oversight and budget management.

The table shows the costs and estimated savings for the three options studied.

Business Case Options

Options	Cost Estimates	Savings
Business as Usual	\$ 1,214M	None
Consolidation	\$ 1,072M	\$ 142M
Outsourcing	\$ 988M	\$ 226M

SUMMARY OF PRIOR NASA AND OTHER REVIEWS

APPLICATION OF OMB CIRCULAR A-76 TO DESKTOP OUTSOURCING

***RAPID ACTION REPORT
No. IG-98-001,
DECEMBER 19, 1997***

NASA mistakenly determined that Office of Management and Budget Circular A-76 does not apply to the desktop outsourcing initiative. We recommended that NASA develop an in-house cost estimate, as defined in Circular A-76, and compare this estimate with offerors' proposals to determine whether NASA should outsource its desktop computer requirements. NASA did not concur with our recommendation. NASA can satisfy the prerequisites for exemption from A-76 cost comparison requirements by stating, in writing, that no affected employees will be displaced solely due to the desktop outsourcing initiative.

In a follow-up memorandum to the report, the NASA CIO stated that, "in the highly unlikely event that any affected employees are displaced, they will not be displaced solely due to ODIN." We believe the CIO's statement, together with NASA's successful accommodation of staff reductions (through attrition, reassignment, and retraining) over the past 5 years have effectively satisfied the remaining exemption requirement. Accordingly, we closed the recommendation.

NEED TO CONSIDER EMERGING TECHNOLOGIES IN ODIN STUDY

***MANAGEMENT LETTER
No. M-IG-97-015,
September 25, 1997***

The management team for ODIN has no formal plan to consider the potential impact of emerging technologies on NASA's 5-year cost baseline for desktop outsourcing. The baseline needs to reflect the impact of technologies that may significantly reduce the Agency's total cost of owning and maintaining its desktop computers. Such a baseline would enable NASA to more accurately assess the reasonableness of vendor responses to requests for proposal and to more accurately measure the savings it may realize from outsourcing.

In response to the management letter, NASA stated that it believed outsourcing would provide the flexibility to rapidly introduce targeted new technologies. While we maintain that NASA could develop a more realistic cost baseline by assessing the probable extent and cost of introducing new technologies, the management letter contained no recommendations requiring action by NASA.

MANAGEMENT'S RESPONSE

National Aeronautics and
Space Administration
Office of the Administrator
Washington, DC 20546-0001



AUG 18 1998

TO: W/Inspector General

FROM: AO/Chief Information Officer

SUBJECT: Draft Report on the Audit of Outsourcing of Desktop Computers
(Assignment Number A-HA-97-047)

Thank you for the opportunity to review and comment of the subject draft report.

This office concurs in part with the report's single recommendation. We agree that a cost-baseline should be developed and maintained by the Agency to assess the cost-effectiveness of the Outsourcing Desktop Initiative for NASA (ODIN) and to facilitate the management and containment of our infrastructure costs associated with desktop computing and local area networking.

However, in lieu of asking each Center to conduct their own assessment, Center-specific and Program-wide cost baselines are being developed under the auspices of the ODIN Program Office at the Goddard Space Flight Center, with the full support and participation of each Center. The ODIN Program Office is working with each Center to ensure an accurate and consistent data call and data assessment. We believe this approach meets the intent of your recommendation.

If you have any questions about this response, please call Don Andreotta on 358-1367.

A handwritten signature in black ink, appearing to read "Lee B. Holcomb".

Lee B. Holcomb

REPORT DISTRIBUTION

National Aeronautics and Space Administration (NASA) Headquarters

Code AO/Chief Information Officer
Code B/Chief Financial Officer
Code B/Comptroller
Code G/General Counsel
Code H/Acting Associate Administrator for Procurement
Code J/Associate Administrator for Management System and Facilities
Code JM/Management Assessment Division
Code L/Associate Administrator for Legislative Affairs
Code W/Assistant Inspector General for Inspections, Administrative Investigations,
and Assessments

NASA Offices of Inspector General

Ames Research Center
Goddard Space Flight Center
Jet Propulsion Laboratory
Lyndon B. Johnson Space Center
John F. Kennedy Space Center
Langley Research Center
Lewis Research Center
George C. Marshall Space Flight Center
John C. Stennis Space Center

Non-NASA Federal Organizations and Individuals

Assistant to the President for Science and Technology Policy
Deputy Associate Director, Energy and Science Division, Office of
Management and Budget
Budget Examiner, Energy Science Division, Office of Management and Budget
Associate Director, National Security and International Affairs Division,
General Accounting Office
Special Counsel, House Subcommittee on National Security, International Affairs,
and Criminal Justice
Professional Assistant, Senate Subcommittee on Science, Technology, and Space

Chairman and Ranking Minority Member - Congressional Committees and Subcommittees

Senate Committee on Appropriations
Senate Subcommittee on VA, HUD, and Independent Agencies
Senate Committee on Commerce, Science and Transportation
Senate Subcommittee on Science, Technology and Space
Senate Committee on Governmental Affairs
House Committee on Appropriations
House Subcommittee on VA, HUD, and Independent Agencies
House Committee on Government Reform and Oversight
House Committee on Science
House Subcommittee on Space and Aeronautics

Congressional Member

The Honorable Pete Sessions, U.S. House of Representatives

MAJOR CONTRIBUTORS TO THIS REPORT

David L. Gandrud, Program Director for NASA Information Technology Program
Audits

Ernest L. Willard, Program Manager

Barbara J. Smith, Program Assistant

Bessie J. Cox, Staff Auditor

Ellis D. Lee, Staff Auditor

James H. Pearce, Staff Auditor

Nancy C. Cipolla, Report Process Manager