

September 2011

INFORMATION
TECHNOLOGY

OMB Needs to
Improve Its Guidance
on IT Investments

U.S. Government Accountability Office



YEARS

1921-2011

ACCOUNTABILITY ★ INTEGRITY ★ RELIABILITY

Why GAO Did This Study

The federal government invests heavily in information technology (IT). In recent years, the Office of Management and Budget (OMB) has made efforts to improve the transparency, oversight, and management of the federal government's IT investments. More recently, in June 2009, OMB deployed the IT Dashboard, a Web-based system that provides detailed performance information on federal IT investments.

GAO was asked to (1) describe the current number and types of IT investments reported by federal agencies on the IT Dashboard, (2) evaluate the adequacy of OMB's guidance to federal agencies in reporting on IT investments, and (3) evaluate efforts to identify and address potentially duplicative investments. To address these objectives, GAO analyzed data from the IT Dashboard, analyzed 10 federal agencies' investment guidance and reports, and interviewed agency officials.

What GAO Recommends

GAO is recommending that OMB clarify its reporting on IT investments and improve its guidance to agencies on identifying and categorizing IT investments. OMB did not agree that further efforts were needed to clarify reporting. Given the importance of continued improvement in OMB's reporting and guidance, GAO maintains its recommendations are warranted.

INFORMATION TECHNOLOGY

OMB Needs to Improve Its Guidance on IT Investments

What GAO Found

According to data reported on OMB's IT Dashboard in July 2011, 26 federal agencies plan to spend almost \$79 billion on 7,248 IT investments in fiscal year 2011. OMB often uses the \$79 billion figure in referring to annual federal investments in IT; however, it is important to note that this figure does not reflect the spending of the entire federal government. It does not include IT investments by 58 independent executive branch agencies, including the Central Intelligence Agency, or by the legislative or judicial branches. A closer look at the \$79 billion in investments for the 26 agencies reveals that (1) the expenditures are split almost evenly between major and nonmajor (in terms of cost, risk, and other factors) investments; (2) about two-thirds of the expenditures are for systems in an operational state, while about one-third of the expenditures provide for the development of new systems; and (3) there are hundreds of investments providing similar functions across the federal government. For example, agencies reported 1,536 information and technology management investments, 781 supply chain management investments, and 661 human resource management investments (see table).

Selected category of investment	Number of investments	Expenditures (\$ in millions)
Information and technology management	1,536	\$35,476
Supply chain management	781	3,331
Human resource management	661	2,516

Source: GAO analysis of OMB IT Dashboard, exhibit 53 data as of July 2011.

OMB provides guidance to agencies on how to report on their IT investments, but this guidance does not ensure complete reporting or facilitate the identification of duplicative investments. Specifically, agencies differ on what investments they include as an IT investment; for example, 5 of the 10 agencies GAO reviewed consistently consider investments in research and development systems as IT, and 5 do not. As a result, the 26 federal agencies' annual IT investments are likely greater than the \$79 billion reported in fiscal year 2011. In addition, OMB's guidance to federal agencies requires each investment to be mapped to a single functional category. This limits OMB's ability to identify duplicative investments both within and across agencies because similar investments may be organized into different categories.

OMB and federal agencies have undertaken several initiatives to address potentially duplicative IT investments. For example, OMB has efforts under way to consolidate similar functions through its "line of business" initiatives and has reduced the scope of three duplicative systems identified during executive reviews of high-priority projects. In addition, most of the agencies GAO reviewed established guidance for ensuring new investments are not duplicative with existing systems. However, most of OMB's recent initiatives have not yet demonstrated results. Further, agencies do not routinely assess operational systems to determine if they are duplicative. Until agencies routinely assess their IT investment portfolios to identify and reduce duplicative systems, the government's current situation of having hundreds of similar IT investments will continue to exist.

Contents

Letter		1
	Background	2
	Key Federal Agencies Plan to Spend Almost \$79 Billion on 7,248 IT Investments in Fiscal Year 2011	9
	OMB's Guidance on Reporting IT Investments Does Not Ensure Complete Reporting or Facilitate Identifying Duplicative Investments	16
	OMB and Federal Agencies Have Taken Steps to Address Potentially Duplicative Investments, but Results to Date Are Mixed and More Remains to Be Done	19
	Conclusions	23
	Recommendations for Executive Action	23
	Agency Comments and Our Evaluation	24
Appendix I	Objectives, Scope, and Methodology	29
Appendix II	Selected Federal Agencies' IT Investments	31
Appendix III	Examples of Primary Functions of Federal IT Investments	41
Appendix IV	Comments from the Department of Commerce	47
Appendix V	Comments from the Department of Health and Human Services	48
Appendix VI	Comments from the Department of Homeland Security	50
Appendix VII	GAO Contact and Staff Acknowledgments	51

Tables

Table 1: Departments and Agencies that Report to OMB on Their IT Investments	5
Table 2: Executive Branch Departments and Agencies Included on the IT Dashboard	11
Table 3: Available FEA Categories for Investments, for Fiscal Year 2010 Submissions	12

Figures

Figure 1: Breakdown of \$78.8 Billion in Planned IT Investments for Fiscal Year 2011 (dollars in millions, as of July 2011)	9
Figure 2: Summary of Major and Nonmajor Investments in Development and O&M, as of July 2011 (dollars in billions)	10
Figure 3: Number of IT Investments Governmentwide by Primary Function, as of July 2011 (fiscal year 2011 expenditures, in millions)	13
Figure 4: Number of Federal Agencies' Investments in the Information and Technology Management Systems Functional Area (as of July 18, 2011)	14
Figure 5: Number of IT Investments by Federal Agency (excluding DOD) within the Information and Technology Management Systems Functional Area (as of July 2011)	15
Figure 6: Number of Department of Defense IT Investments for Fiscal Year 2011	31
Figure 7: Number of HHS IT Investments for Fiscal Year 2011	32
Figure 8: Number of DHS IT Investments for Fiscal Year 2011	33
Figure 9: Number of VA IT Investments for Fiscal Year 2011	34
Figure 10: Number of Department of the Treasury IT Investments for Fiscal Year 2011	35
Figure 11: Number of Department of Transportation IT Investments for Fiscal Year 2011	36
Figure 12: Number of Department of Justice IT Investments for Fiscal Year 2011	37
Figure 13: Number of Department of Agriculture IT Investments for Fiscal Year 2011	38
Figure 14: Number of Department of Commerce IT Investments for Fiscal Year 2011	39
Figure 15: Number of NASA IT Investments for Fiscal Year 2011	40

Figure 16: Number of Human Resources Investments for Fiscal Year 2011	41
Figure 17: Number of Human Resources Investments (excluding DOD) for Fiscal Year 2011	42
Figure 18: Number of Supply Chain Management Investments for Fiscal Year 2011	43
Figure 19: Number of Supply Chain Management Investments (excluding DOD) for Fiscal Year 2011	44
Figure 20: Number of Financial Management Investments for Fiscal Year 2011	45
Figure 21: Number of Financial Management Investments (excluding DOD) for Fiscal Year 2011	46

Abbreviations

Agriculture	Department of Agriculture
CIO	chief information officer
Commerce	Department of Commerce
DHS	Department of Homeland Security
DOD	Department of Defense
FEA	Federal Enterprise Architecture
HHS	Department of Health and Human Services
IT	information technology
Justice	Department of Justice
LOB	Line of Business
NASA	National Aeronautics and Space Administration
NOAA	National Oceanic and Atmospheric Administration
O&M	operation and maintenance
OMB	Office of Management and Budget
Transportation	Department of Transportation
Treasury	Department of the Treasury
VA	Department of Veterans Affairs

This is a work of the U.S. government and is not subject to copyright protection in the United States. The published product may be reproduced and distributed in its entirety without further permission from GAO. However, because this work may contain copyrighted images or other material, permission from the copyright holder may be necessary if you wish to reproduce this material separately.



GAO

Accountability * Integrity * Reliability

United States Government Accountability Office
Washington, DC 20548

September 29, 2011

Congressional Requesters

The Office of Management and Budget (OMB) has reported that the federal government spends billions of dollars on information technology (IT) investments each year, with such investments totaling almost \$79 billion in fiscal year 2011. During the past several years, we have issued several reports and testimonies and made numerous recommendations to OMB to improve the transparency, oversight, and management of the federal government's IT investments.¹ In June 2009, OMB deployed the IT Dashboard, a Web-based system to improve the transparency and oversight of IT spending. Currently, the Dashboard provides detailed performance information for 828 major IT investments and access to less detailed information on over 6,000 nonmajor IT investments.²

To understand more about OMB's oversight of IT investments, you asked us to (1) describe the current number and types of IT investments reported by federal agencies on the IT Dashboard, (2) evaluate the adequacy of OMB's guidance to federal agencies in reporting on IT

¹GAO, *Information Technology: OMB Has Made Improvements to Its Dashboard, but Further Work Is Needed by Agencies and OMB to Ensure Data Accuracy*, [GAO-11-262](#) (Washington, D.C.: Mar. 15, 2011); *Information Technology: OMB's Dashboard Has Increased Transparency and Oversight, but Improvements Needed*, [GAO-10-701](#) (Washington, D.C.: July 16, 2010); *Information Technology: Management and Oversight of Projects Totaling Billions of Dollars Need Attention*, [GAO-09-624T](#) (Washington, D.C.: Apr. 28, 2009); *Information Technology: OMB and Agencies Need to Improve Planning, Management, and Oversight of Projects Totaling Billions of Dollars*, [GAO-08-1051T](#) (Washington, D.C.: July 31, 2008); *Information Technology: Further Improvements Needed to Identify and Oversee Poorly Planned and Performing Projects*, [GAO-07-1211T](#) (Washington, D.C.: Sept. 20, 2007); *Information Technology: Improvements Needed to More Accurately Identify and Better Oversee Risky Projects Totaling Billions of Dollars*, [GAO-06-1099T](#) (Washington, D.C.: Sept. 7, 2006); *Information Technology: Agencies and OMB Should Strengthen Processes for Identifying and Overseeing High Risk Projects*, [GAO-06-647](#) (Washington, D.C.: June 15, 2006).

²According to OMB guidance, a major investment is a system or acquisition requiring special management attention because of its importance to the mission or function of the agency, a component of the agency, or another organization; is for financial management and obligates more than \$500,000 annually; has significant program or policy implications; has high executive visibility; has high development, operating, or maintenance costs; is funded through other than direct appropriations; or is defined as major by the agency's capital planning and investment control process.

investments, and (3) evaluate efforts to identify and address potentially duplicative investments. To do so, we analyzed IT investment data downloaded from the Dashboard and OMB's guidance to federal agencies on IT investments, interviewed officials at the 10 federal agencies with the largest IT spending in fiscal year 2010³ to understand how they implement OMB guidance, and analyzed reports and interviewed officials on efforts to address duplicative investments.

We conducted this performance audit from February 2011 to September 2011 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives. See appendix I for a complete description of our objectives, scope, and methodology.

Background

OMB plays a key role in overseeing how federal agencies manage their investments by working with them to plan, justify, and determine how to best manage their IT projects. Each year, OMB and federal agencies work together to determine how much the government plans to spend on IT projects and how these funds are to be allocated.

OMB's Roles and Responsibilities for Overseeing IT Investments

Over the last two decades, Congress has enacted several laws to assist agencies and the federal government in managing IT investments. Three key laws are the Paperwork Reduction Act of 1995,⁴ the Clinger-Cohen Act of 1996,⁵ and the E-Government Act of 2002:⁶

- *The Paperwork Reduction Act of 1995*—The act specifies OMB and agency responsibilities for managing information resources, including

³The 10 federal agencies are the Departments of Agriculture (Agriculture), Commerce (Commerce), Defense (DOD), Health and Human Services (HHS), Homeland Security (DHS), Justice (Justice), Transportation (Transportation), the Treasury (Treasury), and Veterans Affairs (VA), and the National Aeronautics and Space Administration (NASA).

⁴44 U.S.C. § 3501 et seq.

⁵40 U.S.C. § 11101 et seq.

⁶The E-Government (E-Gov) Act of 2002, Pub. L. No. 107-347 (Dec. 17, 2002).

the management of information technology. Among its provisions, this law establishes agency responsibility for maximizing the value and assessing and managing the risks of major information systems initiatives. It also requires that OMB develop and oversee policies, principles, standards, and guidelines for federal agency information technology functions, including periodic evaluations of major information systems.

- *The Clinger-Cohen Act of 1996*—The act places responsibility for managing investments with the heads of agencies and establishes chief information officers (CIO) to advise and assist agency heads in carrying out this responsibility. Additionally, this law requires OMB to establish processes to analyze, track, and evaluate the risks and results of major capital investments in information systems made by federal agencies and report to Congress on the net program performance benefits achieved as a result of these investments.
- *The E-Government Act of 2002*—The act establishes a federal e-government initiative, which encourages the use of Web-based Internet applications to enhance the access to and delivery of government information and service to citizens, to business partners, to employees, and among agencies at all levels of government. The act also requires OMB to report annually to Congress on the status of e-government initiatives. In these reports, OMB is to describe the administration's use of e-government principles to improve government performance and the delivery of information and services to the public.

OMB subsequently began several initiatives to help fulfill these responsibilities:

- In February 2002, OMB established the Federal Enterprise Architecture (FEA) program. According to OMB, the FEA is intended to facilitate governmentwide improvement through cross-agency analysis and identification of duplicative investments, gaps, and opportunities for collaboration, interoperability, and integration within and across agency programs. The FEA is composed of five "reference models" describing the federal government's (1) business (or mission) processes and functions, independent of the agencies that perform them; (2) performance goals and outcome measures; (3) means of service delivery; (4) information and data definitions; and (5) technology standards. The reference models are intended to inform agency efforts to develop their agency-specific enterprise architectures and enable agencies to ensure that their proposed

investments are not duplicative with those of other agencies and to pursue, where appropriate, joint projects.

- In April 2003, OMB established the Office of E-Government to promote better use of the Internet and other information technologies to improve government services for citizens, internal government operations, and opportunities for citizen participation in government. In recent years, OMB e-government initiatives have fostered the establishment of centralized systems across the government. Key efforts target electronically filing annual tax returns, providing a one-stop portal for emergency response information, developing a governmentwide electronic travel system, and consolidating the number of payroll systems to a small number of providers.
- In March 2004, OMB established multiple “Line of Business” (LOB) initiatives to consolidate redundant IT investments and business processes across the federal government in areas including case management, grants management, human resources management, federal health architecture, information systems security, budget formulation and execution, geospatial information, financial management, and IT infrastructure. Each LOB initiative is led by an individual agency and supported by other relevant agencies. One of the initiatives’ goals is to reduce costs governmentwide through consolidation and standardization, and OMB reports to Congress each year on the costs and benefits of these initiatives. OMB officials explained that the current administration continues to support these LOB initiatives.

OMB’s IT Oversight Mechanisms

OMB uses several data collection mechanisms to oversee federal IT spending during the annual budget formulation process. Specifically, OMB requires 26 key federal departments and agencies (agencies) to provide information related to their IT investments, including agency IT investment portfolios (called exhibit 53s) and capital asset plans and business cases (called exhibit 300s). The 26 federal agencies are listed in table 1 and the exhibits are described below.

Table 1: Departments and Agencies that Report to OMB on Their IT Investments

Departments	Independent agencies	Other agencies
Agriculture	Environmental Protection Agency	Smithsonian Institution
Commerce	General Services Administration	
Defense ^a	National Aeronautics and Space Administration	
Education	National Archives and Records Administration	
Energy	National Science Foundation	
Health and Human Services	Nuclear Regulatory Commission	
Homeland Security	Office of Personnel Management	
Housing and Urban Development	Small Business Administration	
Interior	Social Security Administration	
Justice	U.S. Agency for International Development	
Labor		
State		
Transportation		
Treasury		
Veterans Affairs		

Source: OMB's IT Dashboard, as of July 2011.

^aWhile the Army Corps of Engineers submits information on its IT investments to OMB separate from the Department of Defense's submission, we have included it here as part of the Department of Defense.

- **Exhibit 53.** The purpose of the exhibit 53 is to identify all IT investments—both major and nonmajor—and their associated costs within a federal organization. Information included on agency exhibit 53s is designed, in part, to help OMB better understand what agencies are spending on IT investments. The information also supports cost analyses prescribed by the Clinger-Cohen Act. As part of the annual budget, OMB publishes a report on IT spending for the federal government representing a compilation of exhibit 53 data submitted by the 26 agencies.
- **Exhibit 300.** The purpose of the exhibit 300s is to provide a business case for each major IT investment and to allow OMB to monitor IT

investments once they are funded. Agencies are required to provide information on each major investment's cost, schedule, and performance.

To help carry out its oversight role and assist the agencies in carrying out their responsibilities as assigned by the Clinger-Cohen Act, OMB developed a Management Watch List in 2003. This list included mission-critical projects that needed improvements in performance measures, project management, IT security, or their overall justification. Further, in August 2005, OMB established a High-Risk List, which consisted of projects identified by federal agencies, with the assistance of OMB, as requiring special attention from oversight authorities and the highest levels of agency management.

More recently, in June 2009, to further improve the transparency into and oversight of agencies' IT investments, OMB publicly deployed a website, known as the IT Dashboard, which replaced its Management Watch List and High-Risk List. The Dashboard displays information on the cost, schedule, and performance of 828 major federal IT investments at 26 federal agencies. In addition, the Dashboard allows users to download exhibit 53 data, which includes information on both major and nonmajor investments. According to OMB, these data are intended to provide a near real-time perspective of the performance of these investments, as well as a historical perspective. Further, the public display of these data are intended to allow OMB, other oversight bodies, and the general public to hold the government agencies accountable for results and progress.

According to OMB officials, the agency's analysts use the IT Dashboard to identify IT investments that are experiencing performance problems and to select them for a TechStat session—a review of selected IT investments between OMB and agency leadership that is led by the Federal CIO. As of December 2010, OMB had held 58 of these sessions.⁷ Further, OMB officials told us that, in mid-2011, TechStat reviews began to occur at the agency level, and as of September 2011, each of the agencies that participated in the IT Dashboard held agency-level TechStat meetings. According to OMB, these sessions have enabled the government to improve or terminate IT investments that are experiencing performance problems.

⁷[GAO-11-262](#).

GAO Has Previously Reported on Needed Improvements to the Reliability of the Exhibit 300s and the IT Dashboard

Over the last 5 years, we have issued several reports recommending improvements to the reliability of both the exhibit 300s and the IT Dashboard. In January 2006, we issued a report on the accuracy and reliability of agencies' exhibit 300s.⁸ We found that underlying support for the information in the exhibit 300 was often inadequate. Specifically, we reported that the exhibit 300s had three types of weaknesses: (1) underlying documentation either did not exist or disagreed with the exhibit 300, (2) agencies did not always demonstrate that they complied with federal or departmental requirements or policies with regard to management and reporting processes, and (3) cost data were generally unreliable. We recommended that OMB direct agencies to identify and disclose weaknesses in data accuracy and reliability. We also recommended that OMB develop more explicit guidance for the exhibit 300s and provide training to agency personnel for completing exhibit 300s. In response, OMB issued guidance directing agencies to ensure that they are complying with OMB guidance on information quality, modified exhibit 300 guidance to make it more explicit in certain sections, and provided training to agencies on how to complete their exhibit 300s.

More recently, we issued two reports on the IT Dashboard. In July 2010 we reported that the Dashboard had increased the transparency and oversight of federal IT investments; however, the cost and schedule ratings on the Dashboard were not always accurate for selected investments.⁹ Specifically, of the eight investments selected for review, we found that four had notable discrepancies on either their cost or schedule ratings. We noted that a primary reason for the data inaccuracies was that while the Dashboard was intended to represent near real-time performance information, the cost and schedule ratings did not take into consideration current performance. As a result, the ratings were based on outdated information. Another issue with the ratings was the wide variation in the number of milestones agencies reported, which was partly because OMB's guidance to agencies was too general. We recommended that OMB report on its planned changes to the Dashboard to improve the accuracy of performance information and provide guidance to agencies that standardizes milestone reporting. OMB agreed with our recommendations and initiated work to address them.

⁸GAO, *Information Technology: Agencies Need to Improve the Accuracy and Reliability of Investment Information*, [GAO-06-250](#) (Washington, D.C.: Jan. 12, 2006).

⁹[GAO-10-701](#).

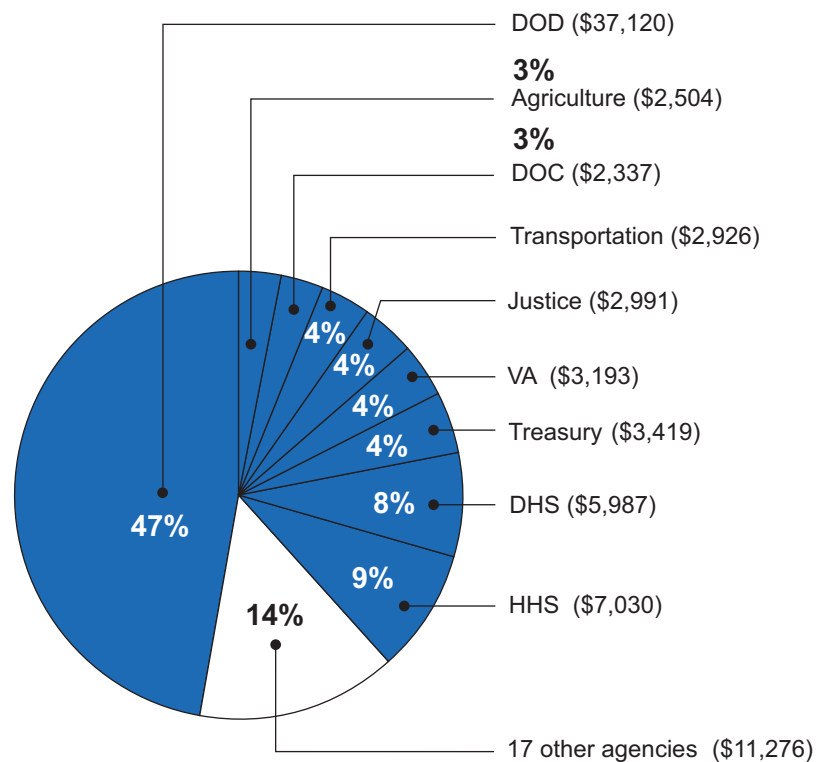
Subsequently, in March 2011, we reported that OMB had initiated several efforts to increase the Dashboard's value as an oversight tool, and had used the Dashboard's data to improve federal IT management.¹⁰ These efforts include streamlining key OMB investment reporting tools, eliminating manual monthly submissions, coordinating with agencies to improve data, and improving the Dashboard's user interface. However, we also noted that while the efforts contributed to data quality improvements, performance data inaccuracies remained. The ratings of selected IT investments on the Dashboard did not always accurately reflect current performance, which is counter to the website's purpose of reporting near real-time performance. Specifically, we found that cost ratings were inaccurate for 6 of the 10 investments that we reviewed, and schedule ratings were inaccurate for 9. These inaccuracies can be attributed to weaknesses in how agencies report data to the Dashboard, such as providing erroneous data submissions, as well as limitations in how OMB calculates the ratings. Accordingly, we recommended that heads of each of the five selected agencies with inaccurate ratings take steps to improve the accuracy and reliability of Dashboard information and OMB improve how it rates investments relative to current performance and schedule variance. In response, four of the selected agencies agreed with our recommendation, and one agreed to consider it. OMB agreed with our recommendation to update the schedule calculation, and stated that the agency has long-term plans to update the Dashboard's calculations.

¹⁰[GAO-11-262](#).

Key Federal Agencies Plan to Spend Almost \$79 Billion on 7,248 IT Investments in Fiscal Year 2011

As of July 2011, the 26 federal agencies that submit information to the IT Dashboard planned to spend about \$78.8 billion on 7,248 IT investments in fiscal year 2011. DOD reported the most planned spending in IT investments (at \$37.1 billion for 2,414 investments), followed by HHS (at \$7 billion for 706 investments), and DHS (at almost \$6 billion for 402 investments). Figure 1 shows the planned spending, in millions, on IT investments by federal agency. Appendix II provides more information on selected agencies' IT investments.

Figure 1: Breakdown of \$78.8 Billion in Planned IT Investments for Fiscal Year 2011 (dollars in millions, as of July 2011)

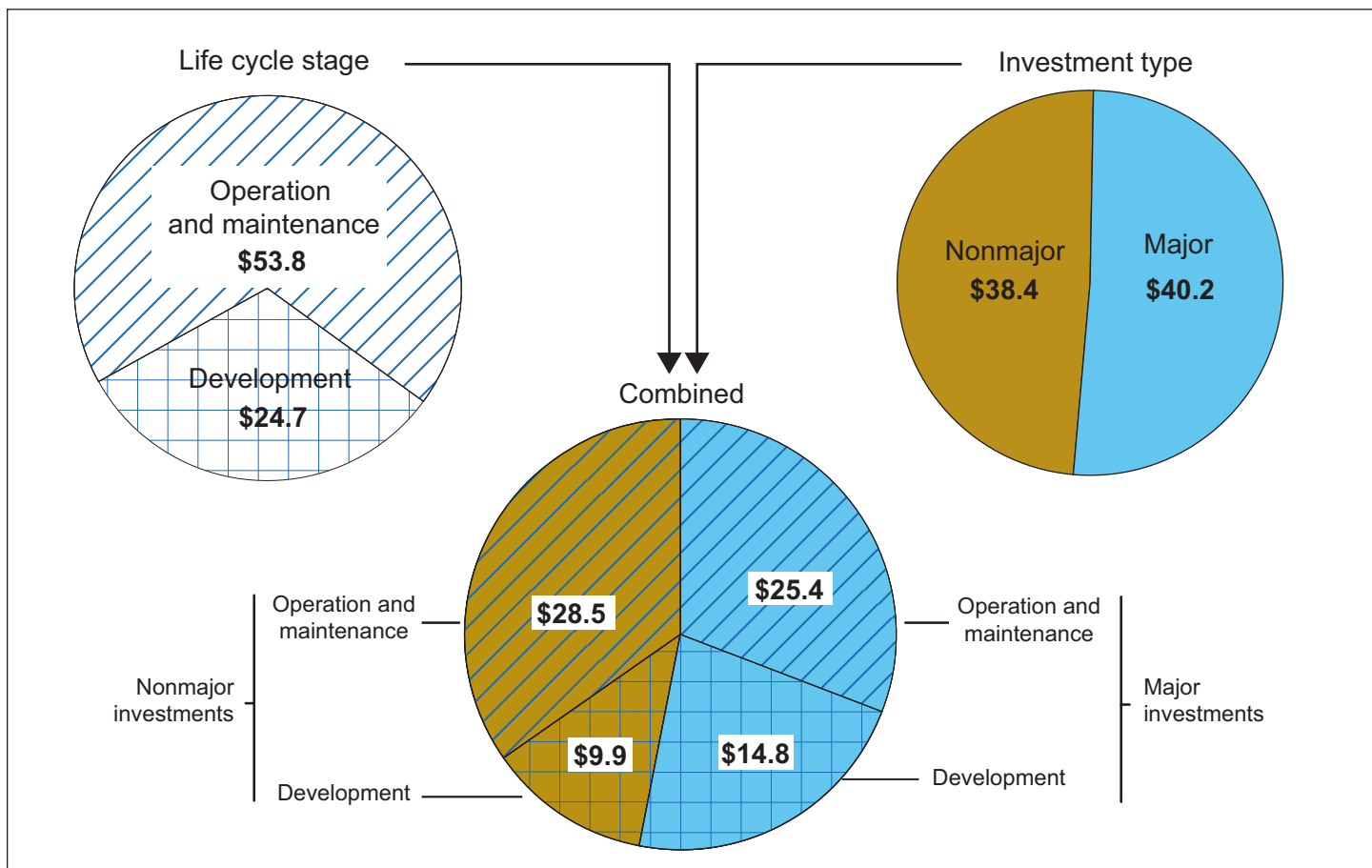


Source: GAO analysis of exhibit 53 data.

When providing IT investment information to OMB, federal agencies designate investments as major or nonmajor IT investments and identify whether expenditures are for new development or for ongoing operation and maintenance (O&M). Of the planned fiscal year 2011 expenditures listed on the IT Dashboard, major IT investments account for about \$40.2 billion and nonmajor investments account for about \$38.4 billion. Looked at another way, federal agencies plan to spend approximately \$24.7

billion on development activities and about \$54 billion on O&M. Figure 2 provides a visual summary of the relative cost of investments that are major and nonmajor investments, and that are in development and O&M.

Figure 2: Summary of Major and Nonmajor Investments in Development and O&M, as of July 2011 (dollars in billions)



Source: GAO analysis of agency data.

The IT Dashboard Does Not Include All Federal IT Investments

OMB often refers to the federal government's approximately \$79 billion annual investment in IT; however, the Dashboard does not provide data for all federal agencies. While the IT Dashboard provides IT investment information for 26 federal agencies, it does not include any information

about 61 other agencies' investments. Specifically, the Dashboard presents information from 15 federal departments, 10 independent agencies, and 1 other agency.¹¹ It does not include information from 58 independent executive branch agencies (such as the Securities and Exchange Commission, the Central Intelligence Agency, and the Federal Communications Commission) and 3 other agencies (such as the Legal Services Corporation). It also does not include information from the legislative or judicial branch agencies. Table 2 summarizes the executive branch agencies that are included and excluded from the Dashboard.

Table 2: Executive Branch Departments and Agencies Included on the IT Dashboard

Type of agency	Number of agencies included on IT Dashboard
Departments	all 15 are included
Independent	10 of 68 are included
Other	1 of 4 are included

Sources: GAO analysis of USA.gov and IT Dashboard data.

According to OMB, the agencies on the Dashboard are those that have historically been involved in the annual capital planning process. While OMB encourages smaller agencies to use the Dashboard, most of these agencies choose not to. Accordingly, estimates of these agencies' IT investments are not included in the \$79 billion spending figure.

Agencies Categorize Their Investments by Primary Function

When agencies develop their annual exhibit 53s, they are required to categorize each investment according to a primary function identified in the FEA reference models. For the fiscal year 2010 submissions, agencies were asked to select a primary function from categories within the FEA business or service reference models—several of which have

¹¹The 15 departments are Agriculture, Commerce, Defense, Education, Energy, Health and Human Services, Homeland Security, Housing and Urban Development, Interior, Justice, Labor, State, Transportation, the Treasury, and Veterans Affairs. The 10 independent agencies are the Social Security Administration, Nuclear Regulatory Commission, National Science Foundation, U.S. Agency for International Development, National Aeronautics and Space Administration, National Archives and Records Administration, Office of Personnel Management, Small Business Administration, General Service Administration, and the Environmental Protection Agency. The other agency, referred to as a quasi-official agency within the executive branch, is the Smithsonian Institution.

similar titles.¹² The primary functions identified in both of these models are listed in table 3.

Table 3: Available FEA Categories for Investments, for Fiscal Year 2010 Submissions

Business reference model	Service reference model
Administrative management	Analysis and statistics
Community and social services	Asset/materials management
Controls and oversight	Business intelligence
Correctional activities	Collaboration
Defense and national security	Communication
Disaster management	Content management
Economic development	Customer initiated assistance
Education	Customer preferences
Energy	Customer relationship management
Environmental management	Data management
Financial management	Development and integration
General government	Document management
General science and innovation	Financial management
Health	Forms management
Homeland security	Human capital/workforce management
Human resource management	Human resources
Income security	Investment management
Information and technology management	Knowledge discovery
Intelligence operations	Knowledge management
Internal risk management and mitigation	Management of process
International affairs and commerce	Organizational management
Law enforcement	Records management
Legislative relations	Reporting
Litigation and judicial activities	Routing and scheduling
Natural resources	Search
Planning and budgeting	Security management
Public affairs	Supply chain management
Regulatory development	Systems management
Revenue collection	Tracking and workflow
Supply chain management	Visualization
Transportation	
Workforce management	

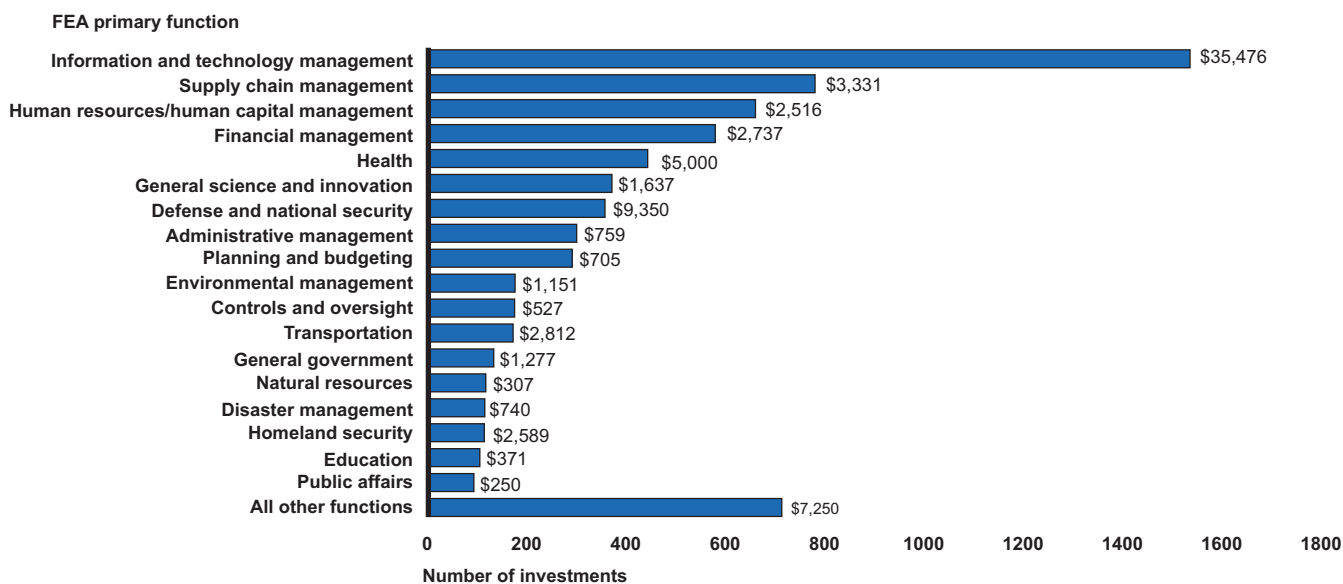
Source: OMB.

In their fiscal year 2011 submissions, agencies reported the greatest number of IT investments in the information and technology management category (1,536 investments), followed by supply chain management (781 investments), human resources management (661 investments), and

¹²For fiscal year 2012 submissions, agencies are only permitted to choose primary functions from the business reference model.

financial management (580 investments). Similarly, planned expenditures on investments were greatest in the information and technology management category, at about \$35.5 billion. Figure 3 depicts the total number of investments governmentwide by agency-identified primary function.

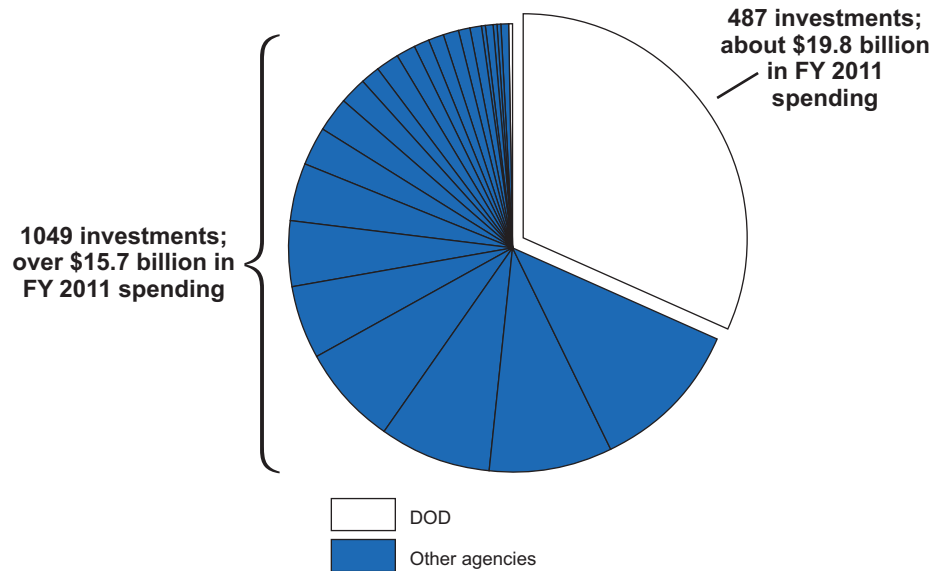
Figure 3: Number of IT Investments Governmentwide by Primary Function, as of July 2011 (fiscal year 2011 expenditures, in millions)



Source: GAO analysis of exhibit 53 data.

This information can also be analyzed to determine the number of investments for each agency in each category. For example, within the information and technology management category, DOD has the greatest number of investments, at 487. Following are the Departments of Energy, with 172 investments, and Justice, with 135 investments. Figure 4 provides a visual representation of the number and cost of investments in the information and technology management category.

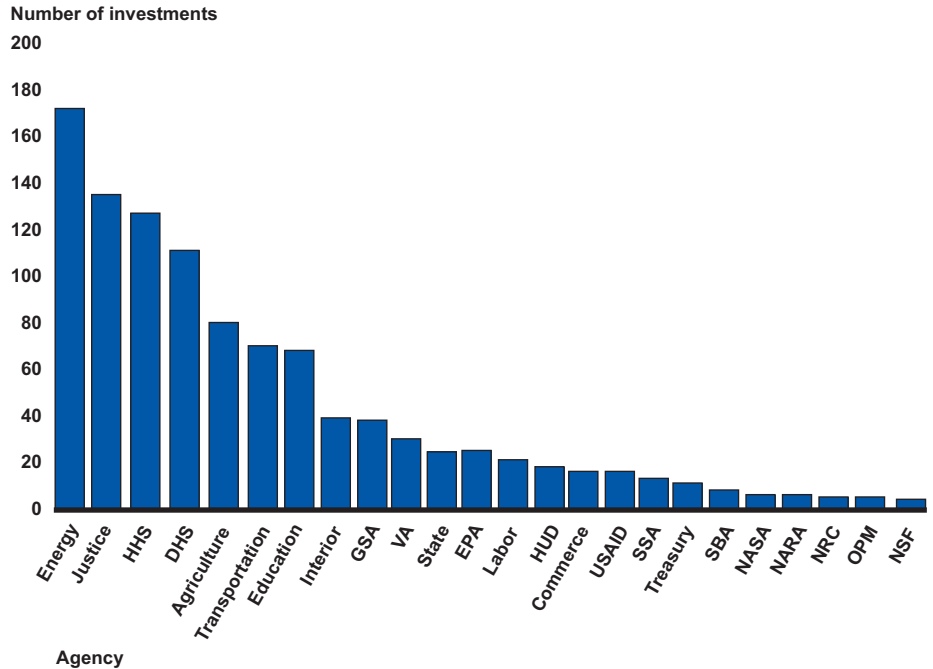
Figure 4: Number of Federal Agencies' Investments in the Information and Technology Management Systems Functional Area (as of July 18, 2011)



Source: GAO analysis of exhibit 53 data.

Figure 5 shows the number of investments developed by federal agencies (excluding DOD) in the information and technology management category. Appendix III provides similar charts for three other functional areas: supply chain management, human resources management, and financial management.

Figure 5: Number of IT Investments by Federal Agency (excluding DOD) within the Information and Technology Management Systems Functional Area (as of July 2011)



Source: GAO analysis of exhibit 53 data.

Notes: (1) Due to the large number of DOD investments in this category, we have omitted that agency from this chart. See figure 4 for information on DOD's investments.

(2) Key to agency names: Energy = Department of Energy; Justice = Department of Justice; HHS = Department of Health and Human Services; DHS = Department of Homeland Security; Agriculture = U.S. Department of Agriculture; Transportation = Department of Transportation; Education = Department of Education; Interior = Department of the Interior; GSA = General Services Administration; VA = Department of Veterans Affairs; State = Department of State; EPA = Environmental Protection Agency; Labor = Department of Labor; HUD = Department of Housing and Urban Development; Commerce = Department of Commerce; USAID = U.S. Agency for International Development; SSA = Social Security Administration; Treasury = Department of the Treasury; SBA = Small Business Administration; NASA = National Aeronautics and Space Administration; NARA = National Archives and Records Administration; NRC = Nuclear Regulatory Commission; OPM = Office of Personnel Management; NSF = National Science Foundation.

OMB's Guidance on Reporting IT Investments Does Not Ensure Complete Reporting or Facilitate Identifying Duplicative Investments

The guidance that OMB provides to agencies on how to report on their IT investments does not ensure complete reporting or fully facilitate the identification of duplicative investments. Specifically, OMB's definition of an IT investment is broad, and agencies interpret it in different ways. The 10 agencies we evaluated differed on what systems they include as IT investments. For example, 5 agencies reported that they include all research and development systems, and 5 do not. As a result, not all IT investments are included in the federal government's estimate of annual IT spending. In addition, OMB's guidance to federal agencies on how to categorize their investments requires them to map each investment to a single primary function. This limits OMB's ability to identify potentially duplicative investments both within and across agencies because similar investments may be organized under different functions.

OMB's Guidance on Reporting IT Investments Does Not Ensure Consistent or Complete Reporting

In its annual request for agencies to report on their IT investments using the exhibit 53, OMB uses the definition of IT from the Clinger-Cohen Act of 1996.¹³ Both the act and OMB's guidance define IT as any equipment used in the automatic acquisition, storage, analysis, evaluation, manipulation, management, movement, control, display, switching, interchange, transmission, or reception of data or information. The exhibit 53 requires agencies to provide, among other things, a description, cost information, and FEA function for each IT investment in the agency's portfolio. After agencies submit an initial draft of the exhibit 53, OMB reviews the draft and then provides an evaluation, including any areas requiring remediation. Through this process, agencies work with OMB to determine which major and nonmajor investments will be reported in the President's budget.

However, OMB officials reported that they have given agencies the flexibility to determine what to include as an IT investment, and agencies have chosen to interpret the definition of IT in different ways. Specifically, in implementing OMB's guidance, 6 of the 10 agencies we evaluated exclude systems that fit the definition of an IT investment.¹⁴ One case involves space systems. Both NASA and Commerce include a spacecraft's ground systems (such as satellite command-and-control

¹³40 U.S.C. § 11101(6).

¹⁴The six agencies are NASA and the Departments of Agriculture, Commerce, Health and Human Services, Homeland Security and Transportation.

systems and satellite data-processing systems) in their exhibit 53s. However, neither agency includes the technology components on the spacecraft itself—including instruments, computers, and transponders—even though these components acquire, manage, and transmit data. As a result, these investments are not included in the annual exhibit 53 submissions. For example, in its fiscal year 2011 exhibit 53 submission, Commerce’s National Oceanic and Atmospheric Administration (NOAA) included only \$215.75 million of the \$690.6 million budgeted for its Geostationary Operational Environmental Satellite-R series and only \$181 million of the \$382.3 million budgeted for its Joint Polar Satellite System. Thus, at least \$676 million in IT-related development was not included on the IT Dashboard for those two systems. Further, NASA’s reported \$1.8 billion in IT investments comprises a very small portion of its over \$68 billion portfolio of major space-related projects.¹⁵

In another case, five agencies—the Departments of Transportation, Commerce, Health and Human Services, Agriculture, and Homeland Security—stated that they do not always include systems that are in research and development as IT investments. For example, the Federal Railroad Administration (within the Department of Transportation) includes three research and development systems in its exhibit 53, but does not include others, such as the Positive Train Control system. This system is meant to integrate command, control, communications, and information systems for controlling train movements at a cost of about \$27 million (as of 2008).

Because agencies choose to exclude certain systems or categories of systems when they report to OMB on their IT investments, key costs are not included in OMB’s estimate of annual spending on federal IT investments. OMB officials acknowledge that agencies are able to interpret the definition of IT in different ways, but stated that they want to provide agencies some flexibility in deciding what they report on. Until OMB clarifies and enforces its requirement that agencies should be reporting on all IT investments, selected IT investments will not be subjected to the enhanced oversight, and OMB’s estimates of federal IT investments will be significantly understated.

¹⁵GAO, *NASA: Assessments of Selected Large-Scale Projects*, [GAO-11-239SP](#) (Washington, D.C.: Mar. 3, 2011).

OMB's Guidance on Categorizing IT Investments Limits Efforts to Identify Duplication

OMB's guidance to federal agencies on how to categorize IT investments allows for analysis of investments with similar functions; however, it does not go far enough to allow identification of potentially duplicative investments. According to OMB guidance, each investment needs to be mapped to a single functional category within the FEA. This feature allows the identification and analysis of potentially duplicative investments across agencies.

However, IT investments could fit into more than one category. For example, an agency could identify an inventory system as a financial management system or a supply chain management system. Thus, if an organization planned to develop an inventory system and searched for potentially duplicative investments in a group labeled as financial management systems, it would miss seeing potentially duplicative systems categorized as supply chain management systems. We recently reported on a DOD financial management system that was identified in a different functional category—supply chain management.¹⁶ We noted that because DOD had categorized the system as supply chain management, the cost of this system was not included in OMB's estimate for financial management systems. Thus, we recommended that OMB take actions to facilitate accurate reporting of spending on financial management systems.

As another example, an agency seeking to develop a wildfire management system would likely assess whether there is a similar system listed in the category of disaster preparedness; however, the agency would miss seeing an investment by the Department of Interior for a wildfire management system because it was grouped in the information management and technology category.

OMB officials acknowledged that there may be limitations in allowing agencies to choose only one descriptive category but noted that agencies can provide additional information on other applicable functions in their supplementary descriptions. However, searching through supplementary material is more labor-intensive than simply searching on primary and secondary functions. Until OMB requires agencies to identify additional functions, where applicable, it will be more difficult to identify similar and

¹⁶GAO, *Financial Management Systems: OMB's Financial Management Line of Business Initiative Continues but Future Success Remains Uncertain*, [GAO-09-328](#) (Washington, D.C.: May 7, 2009).

potentially duplicative investments within and across government agencies.

OMB and Federal Agencies Have Taken Steps to Address Potentially Duplicative Investments, but Results to Date Are Mixed and More Remains to Be Done

OMB and federal agencies have undertaken several initiatives to address potentially duplicative IT investments. For example, OMB has efforts under way to consolidate similar functions through its LOB and FEA initiatives and has eliminated duplicative systems identified during its TechStat sessions. In addition, several of the agencies we evaluated have established guidance for ensuring new investments are not duplicative with existing systems. However, most of OMB's recent initiatives have not yet demonstrated results. Further, several agencies do not routinely assess legacy systems to determine if they are duplicative. Until agencies routinely assess their entire IT portfolios to identify and remove or consolidate duplicative systems, such duplication will continue to exist.

OMB Has Efforts Under Way to Address Duplicative Investments, but the Results of These Initiatives Are Mixed

OMB has multiple initiatives under way that are to identify, eliminate, or avoid duplicative IT investments. These include its E-government, LOB, and FEA initiatives, as well as targeted IT modernizations and TechStat reviews. However, the results of these initiatives are mixed. A discussion of each follows:

- *E-government initiatives.* OMB and agency officials have reported that several of the e-government initiatives were successful at reducing duplication across the government. According to OMB, the E-payroll initiative consolidated 26 separate payroll systems down to 4 e-payroll providers. Similarly, 21 agencies now use the E-gov travel service and have seen a reduction in costs. For example, according to OMB, the Department of Housing and Urban Development decreased travel voucher costs from \$75 per voucher to about \$13.75. According to OMB officials, their shared services initiative—still in its planning stages—is a continuation of these e-government initiatives.
- *LOB initiatives.* OMB currently has nine LOB initiatives to consolidate redundant IT investments and business processes across the federal government in the areas of case management, grants management, human resources management, federal health architecture, information systems security, budget formulation and execution, geospatial information, financial management, and IT infrastructure. According to OMB's annual reports on e-government and LOB initiatives as of fiscal year 2010, since 2006, federal agencies have

reported spending about \$445 million on LOB initiatives. However, the benefits of these initiatives are mixed. In its 2011 annual report, OMB stated that agencies had made progress in developing guidance and obtaining buy-in from multiple agencies. For example, OMB reported that the federal health architecture LOB allowed federal agencies to coordinate with each other and with tribal, state, local, and private sectors to begin developing standards for health information exchanges. Similarly, OMB reported that the budget formulation and execution LOB allowed the federal budget community to begin to develop common tools and best practices. However, the 2011 annual report described demonstrated cost savings for only three LOBs, of which only two provided the estimated amount of savings. Specifically, OMB reported that the geospatial and the information systems security LOBs resulted in cost avoidance or savings of about \$9 million and \$7.6 million, respectively, by allowing for blanket purchase agreements. OMB also reported that the grants management LOB allowed agencies and other organizations to reduce the number of systems, but it did not provide a number or specify which systems were eliminated.

- *FEA*. When originally developed in 1999, the FEA was intended to provide federal agencies with a common construct for their architectures and thereby facilitate the coordination of common business processes, technology insertion, information flows, and system investments among federal agencies. As part of the fiscal year 2004 budget cycle, OMB required agencies to align proposed IT investments to the FEA reference models; this information was then used to develop the initial LOB initiatives. Since that time, agencies have established individual enterprise architectures and used them to characterize their IT investments and to guide plans for the future. In 2004, we reported that the FEA was a work in progress and was still evolving.¹⁷ To this point, the Federal Chief Enterprise Architect recently began planning changes to the FEA framework—such as updating existing reference models and adding reference models for software applications, infrastructure, and security—to further assist agencies in reducing duplication and improving mission performance. OMB’s Chief Architect reported that comprehensive changes to the FEA are planned for fiscal year 2012.

¹⁷GAO, *Information Technology: The Federal Enterprise Architecture and Agencies’ Enterprise Architectures Are Still Maturing*, [GAO-04-798T](#) (Washington, D.C.: May 19, 2004).

-
- *Targeted IT initiatives.* OMB officials reported that ongoing IT initiatives, including efforts to consolidate federal data centers and to develop trusted Internet connections, could help reduce duplication across government. Specifically, in February 2010, OMB began an initiative meant to consolidate federal data centers and hardware and software assets through virtualization, cloud computing, and consolidation. In July 2011, OMB reported that the federal government had already closed 81 centers and was on track to close 137 centers by December 2011 and 800 by 2015. However, in July 2011, we reported that federal agencies' data center inventories and consolidation plans were incomplete and recommended that agencies complete their data center consolidation inventories and plans, and that OMB's data center task force oversee these efforts.¹⁸ Separately, in November 2007, OMB announced its trusted Internet connection initiative to improve security by reducing and consolidating external network connections. However, we reported in March 2010 that none of the 23 participating agencies had yet met all of the initiative's requirements and recommended steps to improve communication and performance measures.¹⁹ In addition, we recently reported on other governmentwide initiatives and found that the FedRAMP project, which is to provide, among other functions, continuous security monitoring of cloud computing systems for multiagency use, is currently behind schedule, and has not yet defined all performance metrics.²⁰ Similarly, the FedSpace project, which is to provide federal employees and contractors collaboration tools for cross-agency knowledge sharing, is also behind schedule and has not defined all of its performance metrics. We recommended establishing metrics so that the benefits of these initiatives can be effectively measured.
 - *TechStat reviews.* OMB works with federal agencies to identify IT projects that need increased visibility in the agency; high-risk projects are then selected for a TechStat session. This program enables the government to improve or terminate IT investments that are

¹⁸GAO, *Data Center Consolidation: Agencies Need to Complete Inventories and Plans to Achieve Expected Savings*, [GAO-11-565](#) (Washington, D.C.: July 19, 2011).

¹⁹GAO, *Information Security: Concerted Effort Needed to Consolidate and Secure Internet Connections at Federal Agencies*, [GAO-10-237](#) (Washington, D.C.: Mar. 12, 2010).

²⁰GAO, *Electronic Government: Performance Measures for Projects Aimed at Promoting Innovation and Transparency Can Be Improved*, [GAO-11-775](#) (Washington, D.C.: Sept. 23, 2011).

experiencing performance problems. According to OMB officials, based on the TechStat reviews held as of March 2011, OMB reduced the scope of three investments that agencies identified as duplicative.²¹ While promising, only a small fraction of the over 7,000 investments that were identified by agencies for fiscal year 2011 have undergone TechStat reviews.

Selected Federal Agencies Evaluate New Investments to Ensure They Are Not Duplicative, but Do Not Routinely Assess Legacy Systems

Highly performing organizations manage investments in a portfolio approach, selecting and evaluating investments by how well they support the agency mission and “de-selecting” obsolete, high-risk, and low-value IT investments.²² Our prior work has shown that major federal agencies have guidance for the selection and oversight of IT investments.²³ This guidance generally calls for establishing a department-level investment review board to select the projects to be included in the agency’s IT investment portfolio. In this way, selection decisions can be made in the context of all other investments, thus minimizing duplication across investments.

Officials from several of the federal agencies we reviewed stated that they routinely evaluate new investments to ensure that they are not duplicative with existing systems.²⁴ For example, investment review guidance at NASA, Justice, and Agriculture requires officials to assess whether an investment is duplicative before it is approved. Further, Commerce officials explained that finding duplication is a challenge, but they attempt to identify duplication through their investment selection process and through their Commerce IT review board.

However, several of the agencies do not routinely assess legacy systems to determine if they are duplicative. Specifically, officials from several agencies with billions of dollars in investments noted that they have

²¹These three investments were Commerce’s BIS ECASS2000+ system, Treasury’s IT Infrastructure Telecom ITT TSS system, and GSA’s Federal Supply Service system.

²²GAO, *Information Technology Investment Management: A Framework for Assessing and Improving Process Maturity*, [GAO-04-394G](#) (Washington, D.C.: Mar. 2004).

²³GAO, *Information Technology: Federal Agencies Need to Strengthen Investment Board Oversight of Poorly Planned and Performing Projects*, [GAO-09-566](#) (Washington, D.C.: June 30, 2009).

²⁴The Department of Transportation delegates this review to its operating administrations.

limited staff resources for performing all of the investment control processes—including reviewing exhibit 300s and IT Dashboard data—for the entire agency. However, given the sheer number of similar investments identified earlier in this report, such as Energy’s 172 information and technology management investments, and DOD’s 657 supply chain management investments, and the large amount of funds spent on these investments, it appears that thorough assessments are justified. Until agencies routinely assess their entire IT portfolios (including both developmental and operational systems) to identify and reduce duplicative systems, such duplication will continue to exist.

Conclusions

Federal agencies spend tens of billions of dollars on IT investments each year. However, because OMB does not enforce the definition of IT provided in the Clinger-Cohen Act, agencies exclude key categories of IT investments—such as space systems—in their annual reports on IT investments. These excluded investments are not subjected to OMB’s IT oversight process, and their associated costs are not included in OMB’s annual estimate of IT investments. As a result, the nation’s actual annual investment in IT is much higher than the \$78.8 billion identified by agencies. In addition, OMB’s guidance on identifying investments’ primary functions has led to a situation in which similar systems could be in different categories. With clearer categorizations, agencies and OMB would be better positioned to identify and address duplication in their system development efforts.

OMB and federal agencies have initiatives under way to help address potentially duplicative systems. While selected initiatives have had success in consolidating systems, most have not yet demonstrated results. Further, the agencies we evaluated do not routinely evaluate legacy systems to determine if they are duplicative and can be eliminated or consolidated. Until OMB and federal agencies consistently target potentially duplicative investments within and across agencies, federal agencies may continue to spend taxpayer funds developing systems that perform similar functions.

Recommendations for Executive Action

To ensure that IT investments are adequately identified and categorized, we recommend that the Director of OMB take the following four actions:

- specify which executive branch agencies are included when discussing the annual federal IT investment portfolio;

-
- clarify guidance to federal agencies in reporting on their IT investments by specifying whether certain types of systems, such as those in research and development and space systems, should be included;
 - revise guidance to federal agencies on categorizing IT investments to ensure that the categorizations are clear and allow agencies to choose secondary categories, where applicable, which will aid in identifying potentially duplicative investments; and
 - require federal agencies to report the steps they take to ensure that their IT investments are not duplicative as part of their annual budget and IT investment submissions.

Agency Comments and Our Evaluation

We received oral comments on a draft of our report from OMB officials, including the Federal Chief Enterprise Architect, a senior policy analyst, and a representative from the office of the General Counsel. In those comments, OMB generally disagreed with the first two recommendations and agreed with the second two recommendations. Specifically, OMB officials requested that GAO remove the first and second recommendations because they believe that the agency has already addressed them. Regarding our recommendation to clearly identify which agencies are included when discussing the federal IT investment portfolio, agency officials noted that both the A-11 guidance and the “Frequently Asked Questions” section of the IT Dashboard clearly indicate which agencies are included in the portfolio of IT investments. However, we believe that the recommendation is warranted because on its website and in presentations, OMB frequently refers to “the federal government’s \$80 billion annual investment in IT” without clarifying that this \$80 billion investment does not represent the entire federal government. Regarding our recommendation to OMB to clarify its guidance to federal agencies on reporting on IT investments, agency officials noted that existing guidance (including OMB circular A-11 and OMB memo 11-29) already discusses how to identify IT investments. We believe that the recommendation is appropriate because the existing guidance does not address key categories of IT investments (such as space systems and systems in research and development) where we found inconsistencies among agencies.

OMB officials stated that the agency is working to address the third and fourth recommendations. Specifically, OMB plans to update the Federal Enterprise Architecture reference models in fall 2011 to provide additional clarity on how agencies should characterize investments in order to

enhance the identification of potentially duplicative investments. Also, OMB's IT Reform Plan includes several initiatives to reduce duplicative investments, including efforts in data center consolidation, cloud computing, and shared services. Officials noted that these initiatives will continue to be pursued with agencies through the annual budget process and related reporting requirements. While we acknowledge that these initiatives offer promise in identifying and reducing duplicative investments, we believe that OMB can do more to encourage agencies to look internally for duplicative investments.

We also sought comments on a draft of our report from the 10 agencies in our review. While none of the agencies agreed or disagreed with our recommendations to OMB, several provided comments. Each agency's comments are discussed in more detail below.

- In an e-mail, Agriculture's Associate CIO for Technology Planning, Architecture, and E-Government stated that the department had no formal comments on the report.
- In written comments, the Acting Secretary of Commerce noted that the report thoroughly assessed OMB's policy and guidance, and fairly assessed Commerce's IT information and data. Commerce's written comments are provided in appendix IV.
- In comments provided via e-mail, an official from DOD's CIO office provided updated data for DOD's IT investments. We did not make these changes in our report because we used data as of July 2011 throughout the report for our analysis.
- In written comments, HHS's Assistant Secretary for Legislation agreed with the broad findings of the report and pointed out a distinction between OMB policies and guidance. The agency believes that this distinction is an issue that needs to be addressed by OMB and all federal agencies. We agree that it is appropriate for OMB and federal agencies to work together to determine if there is to be a meaningful distinction between OMB's policies and its guidance to agencies. However, this distinction does not detract from our recommendation that OMB clarify its guidance to agencies on reporting on their IT investments. HHS's written comments are provided in appendix V.
- In written comments, DHS's Director of the Departmental GAO/OIG Liaison Office noted that the agency remains committed to continuing


its work with OMB and other relevant stakeholders to address challenges related to identifying and eliminating potentially duplicative systems. DHS's written comments are provided in appendix VI.

- In an e-mail, Justice's Acting Assistant Director of the Audit Liaison Group stated that the department did not have comments.
- In comments provided via e-mail, Transportation's Deputy Director of Audit Relations stated that the Positive Train Control system should not be included in the department's exhibit 53 submission because the system will be commercialized, owned, and implemented by an industry. We used this system as an example of a system in research and development that is not included in the federal portfolio of IT investments. Because the agency is expending funds on this system and it is meant to integrate command, control, communications, and information systems, we believe that it should be reported as an IT investment. This example reinforces our recommendation to OMB to clarify its guidance to federal agencies to specify whether such investments should be included.
- In an e-mail, Treasury's Audit Liaison stated that the department had no comments on the report.
- In an e-mail, an official from VA's Office of Congressional and Legislative Affairs reported that the agency had no comments on the draft report.
- In an e-mail, NASA's GAO/OIG Audit Liaison stated that the agency had no comments or technical corrections to add to the report.

OMB and several agencies also provided technical comments, which we incorporated as appropriate.

As agreed with your offices, unless you publicly announce the contents of this report earlier, we plan no further distribution until 30 days from the report date. At that time, we will send copies of this report to the appropriate Congressional committees, the Director of the Office of Management and Budget, and other interested parties. In addition, this report will be available on the GAO website at <http://www.gao.gov>.

If you or your staff members have any questions about this report, please contact me at (202) 512-9286 or at 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 VII.



David A. Powner
Director, Information Technology Management Issues

List of Congressional Requesters

The Honorable Joseph I. Lieberman
Chairman

The Honorable Susan M. Collins
Ranking Member
Committee on Homeland Security
and Governmental Affairs
United States Senate

The Honorable Tom Carper
Chairman
Subcommittee on Federal Financial Management,
Government Information, Federal Services
and International Security
Committee on Homeland Security
and Governmental Affairs
United States Senate

The Honorable Darrell Issa
Chairman
The Honorable Elijah E. Cummings
Ranking Member
Committee on Oversight and Government Reform
House of Representatives

The Honorable Ben Quayle
House of Representatives

Appendix I: Objectives, Scope, and Methodology

Our objectives were to (1) describe the current number and types of information technology (IT) investments reported by federal agencies on the IT Dashboard, (2) evaluate the adequacy of the Office of Management and Budget's (OMB) guidance to federal agencies in reporting on IT investments, and (3) evaluate efforts to identify and address potentially duplicative investments.

To describe the current number and types of IT investments, we analyzed data from agencies' fiscal year 2011 exhibit 53 submissions. We downloaded this data from OMB's IT Dashboard in March and July 2011. To categorize the investments, we used the functional categories that each agency identified for its own investments. We developed charts and graphs depicting IT investments by investment type (major or nonmajor), by life cycle phase (in development or in operations and maintenance), by agency, and by functional category. We then discussed the results of our analysis with OMB officials. To determine the reliability of the data on the IT Dashboard, we reviewed recent GAO reports that identified issues with the accuracy and reliability of agency data on the IT Dashboard.¹ We determined that the data were sufficiently reliable for the purpose of this report, which is to depict the groupings and categories of information drawn from the Dashboard.

To evaluate the adequacy of OMB's guidance to federal agencies in reporting on IT investments, we reviewed OMB's guidance on agencies' exhibit 53 and exhibit 300 submissions. In addition, we evaluated how 10 federal agencies implemented OMB's guidance. We selected the 10 agencies with the largest IT spending as reported in OMB's fiscal year 2010 exhibit 53 data: the Departments of Agriculture, Commerce, Defense, Health and Human Services, Homeland Security, Justice, Transportation, the Treasury, and Veterans Affairs, and the National Aeronautics and Space Administration. We reviewed the guidance these agencies provided to their program managers for reporting on IT investments and identified types of investments that were excluded from reporting. We also met with OMB and agency officials to discuss current guidance on reporting on IT investments and any planned changes to this guidance.

¹[GAO-11-262](#) and [GAO-10-701](#).

To evaluate efforts to identify and address potentially duplicative investments, we met with OMB officials to understand their responsibilities and processes related to identifying and addressing duplication. Then we analyzed documentation related to those processes, including the 2011 report to Congress on OMB's e-government initiatives, OMB's 25-point plan to improve IT, and our previous work on e-government initiatives, the Federal Enterprise Architecture, the Federal Data Center Consolidation initiative, and the trusted Internet connection initiative.² We also analyzed documentation from the agencies in our review, including capital planning and investment control guides, investment selection criteria, and documentation from investment review board meetings, and we interviewed officials.

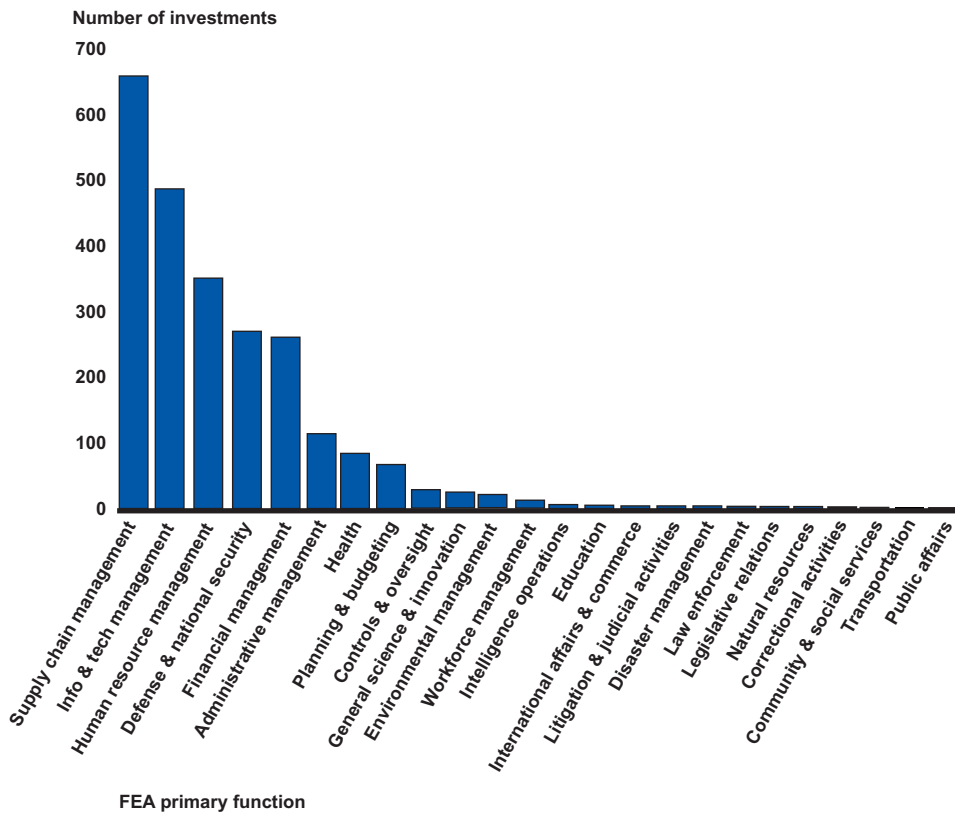
We conducted this performance audit from February 2011 to September 2011 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

²[GAO-04-798T](#); GAO, *Information Security: Concerted Effort Needed to Consolidate and Secure Internet Connections at Federal Agencies*, [GAO-10-237](#) (Washington, D.C.: Mar. 12, 2010); [GAO-11-565](#); and *Electronic Government: Performance Measures for Projects Aimed at Promoting Innovation and Transparency Can Be Improved*, [GAO-11-775](#) (Washington, D.C.: Sept. 23, 2011).

Appendix II: Selected Federal Agencies' IT Investments

The figures in this appendix provide information on selected federal agencies' planned IT investments in fiscal year 2011. Unless otherwise stated, these figures include both major and nonmajor IT investments.¹

Figure 6: Number of Department of Defense IT Investments for Fiscal Year 2011

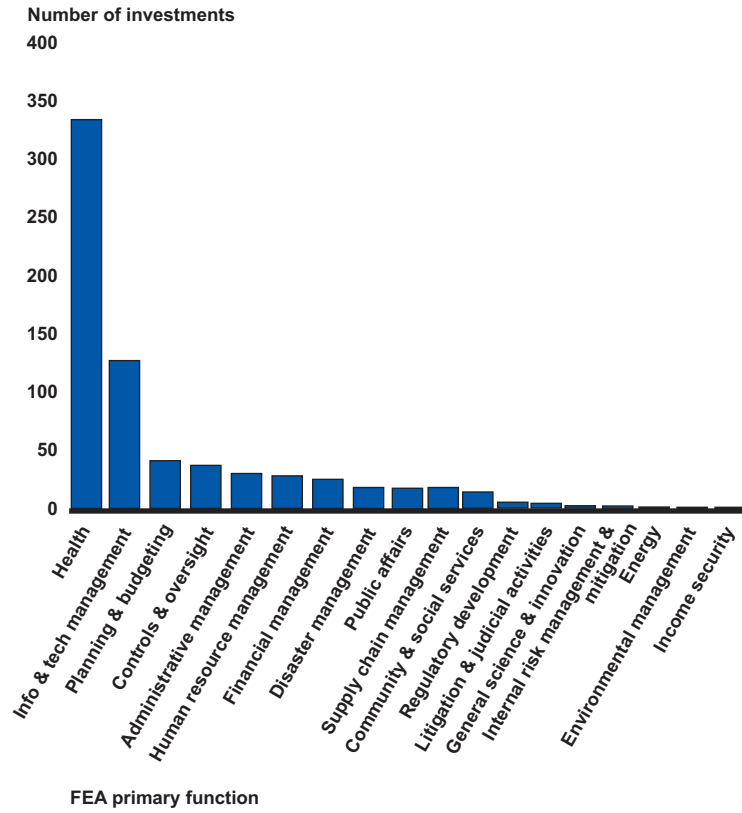


Source: GAO analysis of agency data as drawn from OMB's fiscal year 2011 exhibit 53s, which were downloaded from the IT Dashboard in July 2011.

Note: While the Army Corps of Engineers submits information on its IT investments to OMB separate from the Department of Defense's submission, we have included it here as part of the Department of Defense.

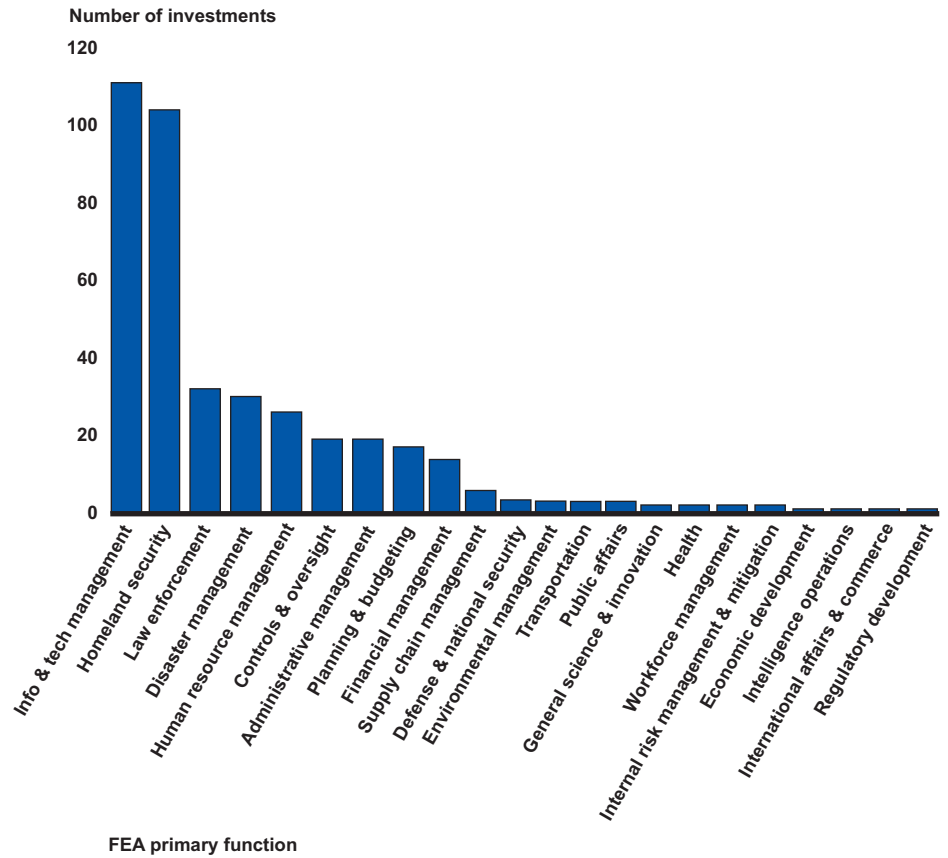
¹According to OMB guidance, a major investment is a system or acquisition requiring special management attention because of its importance to the mission or function of the agency, a component of the agency, or another organization; is for financial management and obligates more than \$500,000 annually; has significant program or policy implications; has high executive visibility; has high development, operating, or maintenance costs; is funded through other than direct appropriations; or, is defined as major by the agency's capital planning and investment control process.

Figure 7: Number of HHS IT Investments for Fiscal Year 2011



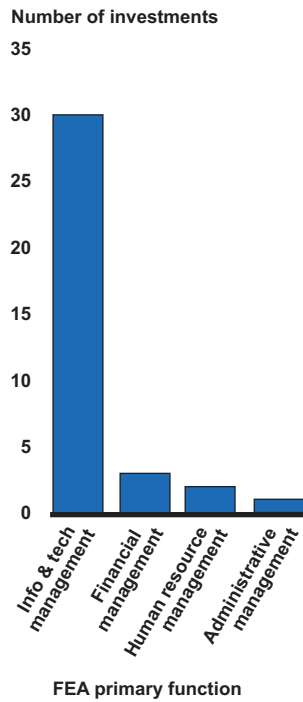
Source: GAO analysis of agency data as drawn from OMB's fiscal year 2011 exhibit 53s, which were downloaded from the IT Dashboard in July 2011.

Figure 8: Number of DHS IT Investments for Fiscal Year 2011



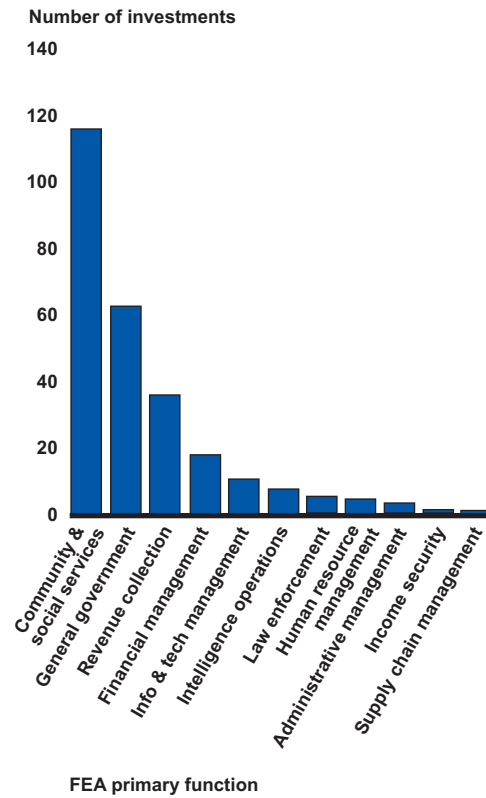
Source: GAO analysis of agency data as drawn from OMB's fiscal year 2011 exhibit 53s, which were downloaded from the IT Dashboard in July 2011.

Figure 9: Number of VA IT Investments for Fiscal Year 2011



Source: GAO analysis of agency data as drawn from OMB's fiscal year 2011 exhibit 53s, which were downloaded from the IT Dashboard in July 2011.

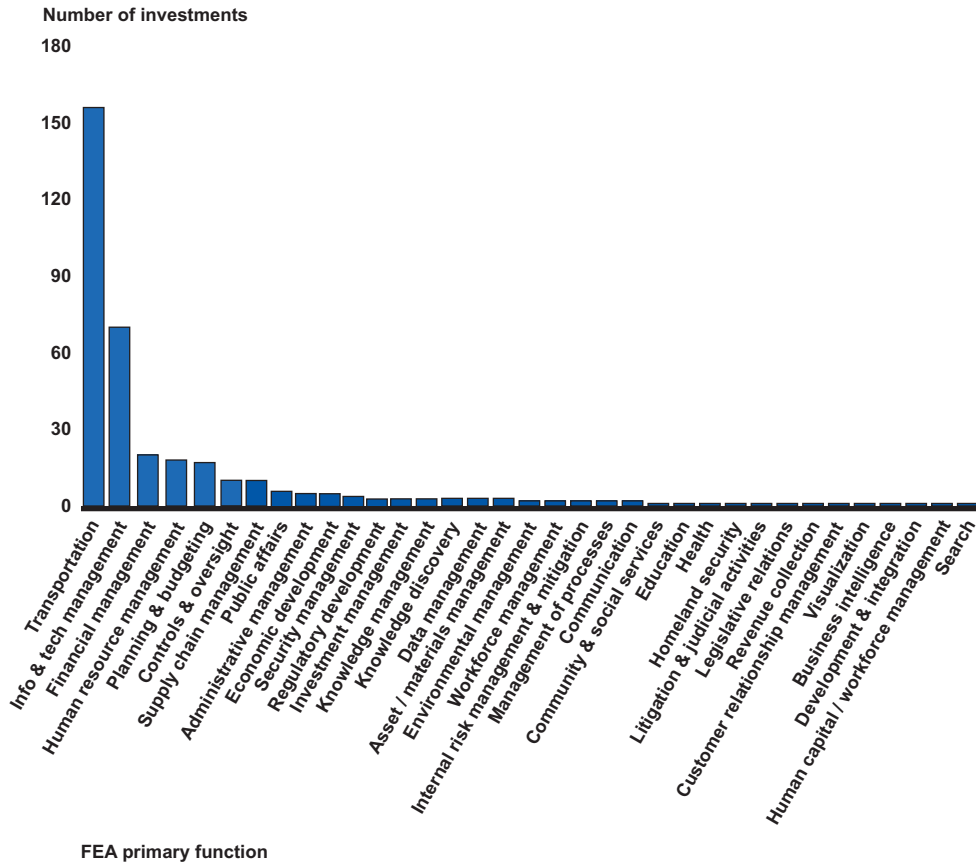
Figure 10: Number of Department of the Treasury IT Investments for Fiscal Year 2011



Source: GAO analysis of agency data as drawn from OMB's fiscal year 2011 exhibit 53s, which were downloaded from the IT Dashboard in July 2011.

Appendix II: Selected Federal Agencies' IT Investments

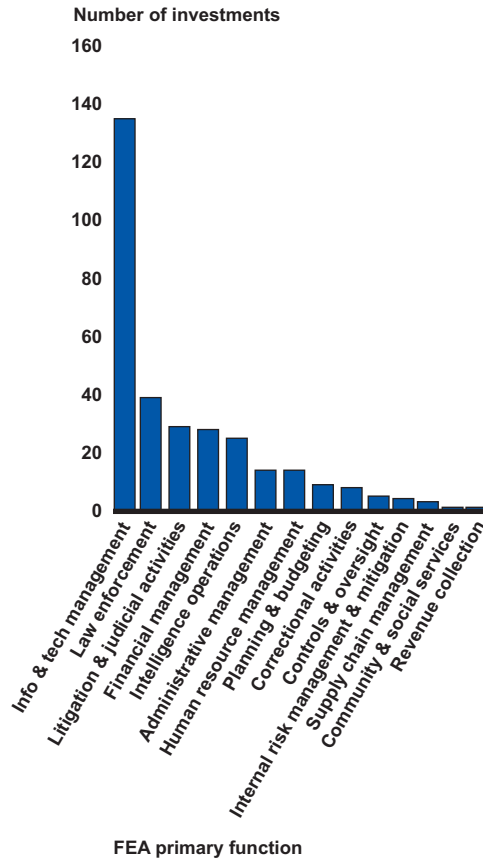
Figure 11: Number of Department of Transportation IT Investments for Fiscal Year 2011



Source: GAO analysis of agency data as drawn from OMB's fiscal year 2011 exhibit 53s, which were downloaded from the IT Dashboard in July 2011.

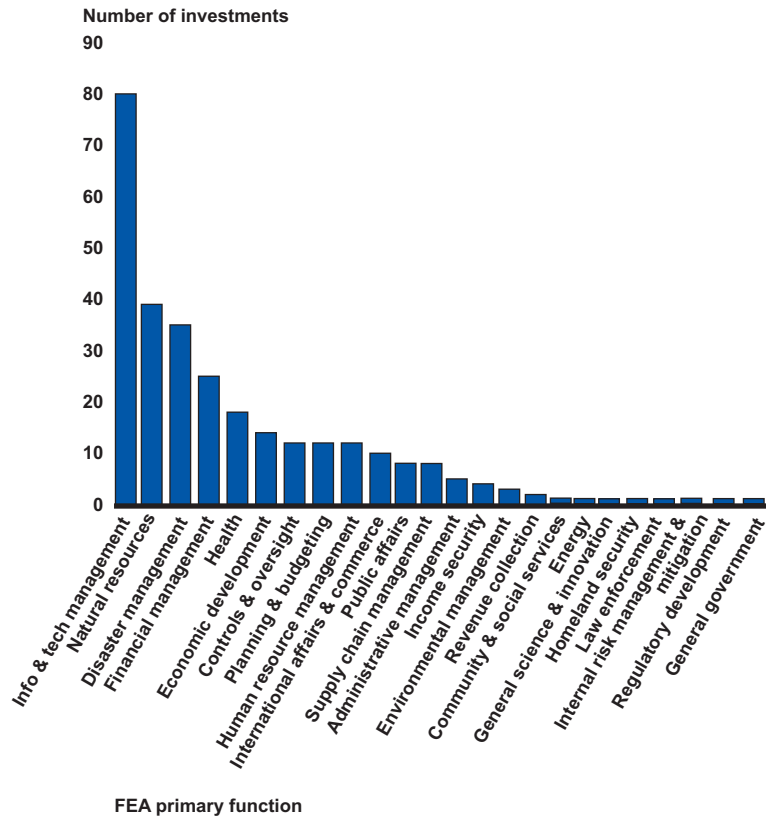
Appendix II: Selected Federal Agencies' IT Investments

Figure 12: Number of Department of Justice IT Investments for Fiscal Year 2011



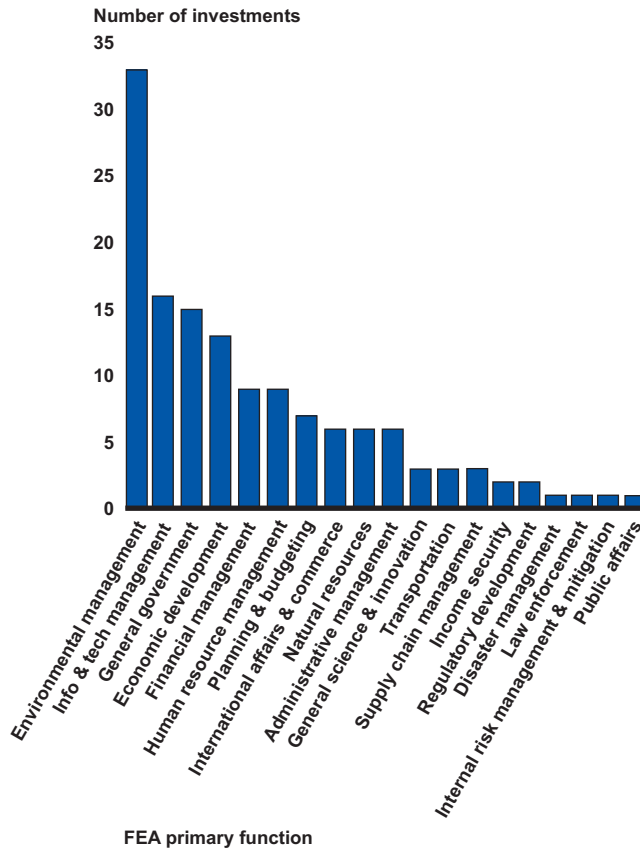
Source: GAO analysis of agency data as drawn from OMB's fiscal year 2011 exhibit 53s, which were downloaded from the IT Dashboard in July 2011.

Figure 13: Number of Department of Agriculture IT Investments for Fiscal Year 2011



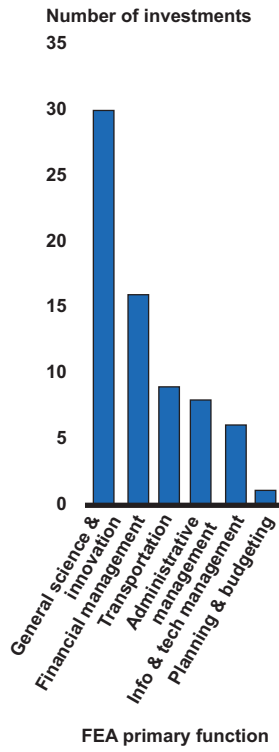
Source: GAO analysis of agency data as drawn from OMB's fiscal year 2011 exhibit 53s, which were downloaded from the IT Dashboard in July 2011.

Figure 14: Number of Department of Commerce IT Investments for Fiscal Year 2011



Source: GAO analysis of agency data as drawn from OMB's fiscal year 2011 exhibit 53s, which were downloaded from the IT Dashboard in July 2011.

Figure 15: Number of NASA IT Investments for Fiscal Year 2011

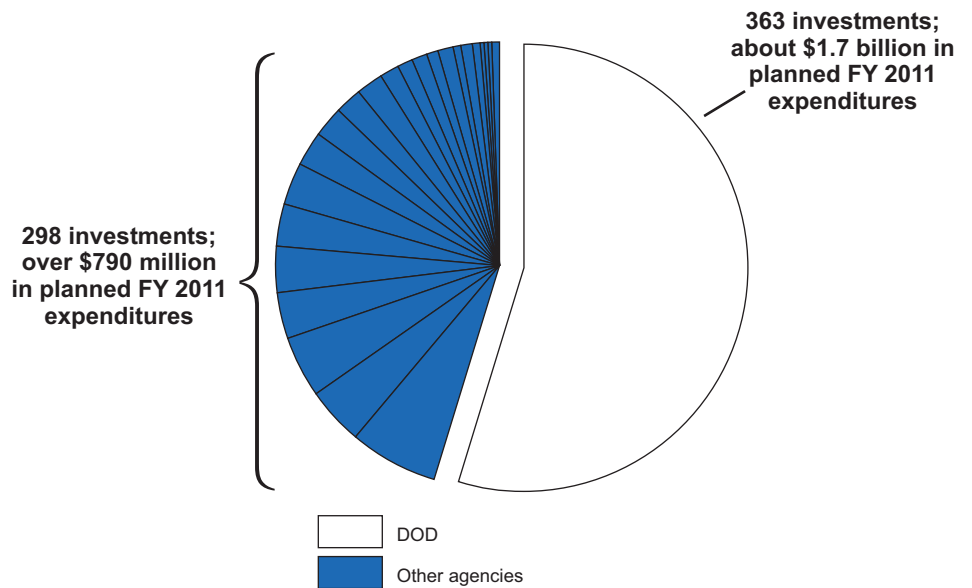


Source: GAO analysis of agency data as drawn from OMB's fiscal year 2011 exhibit 53s, which were downloaded from the IT Dashboard in July 2011.

Appendix III: Examples of Primary Functions of Federal IT Investments

The figures below show the number of investments that federal agencies have categorized in three key primary functions. For each primary function, the first figure shows a visual depiction of selected federal agencies, including the Department of Defense (DOD). The second figure provides more detail on the nondefense agencies. Unless otherwise stated, these figures include both major and nonmajor IT investments.¹

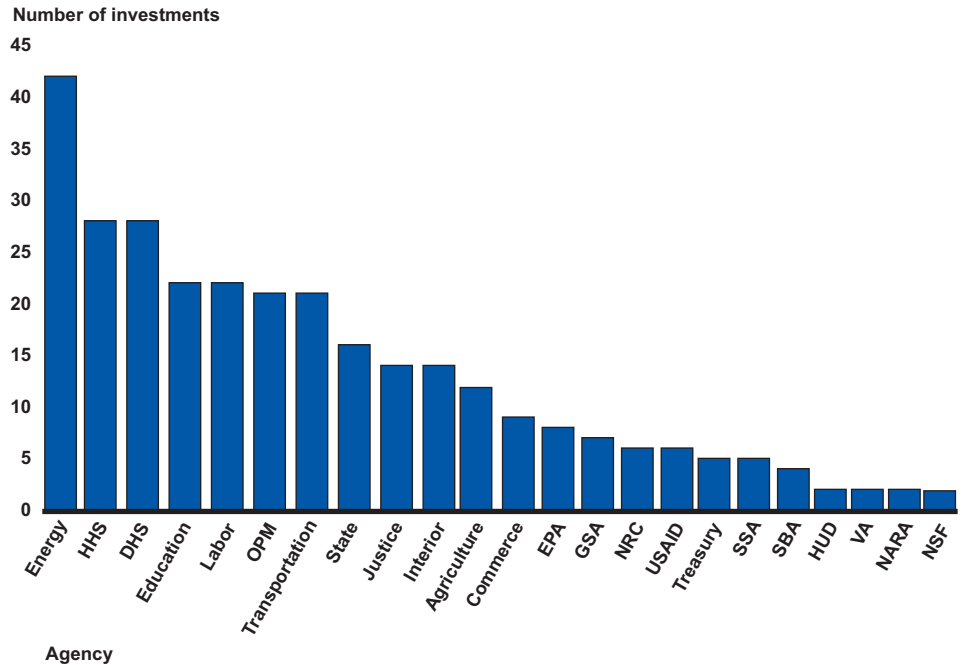
Figure 16: Number of Human Resources Investments for Fiscal Year 2011



Source: GAO analysis of agency data as drawn from OMB's fiscal year 2011 exhibit 53s, which were downloaded from the IT Dashboard in July 2011.

¹According to OMB guidance, a major investment is a system or acquisition requiring special management attention because of its importance to the mission or function of the agency, a component of the agency, or another organization; is for financial management and obligates more than \$500,000 annually; has significant program or policy implications; has high executive visibility; has high development, operating, or maintenance costs; is funded through other than direct appropriations; or, is defined as major by the agency's capital planning and investment control process.

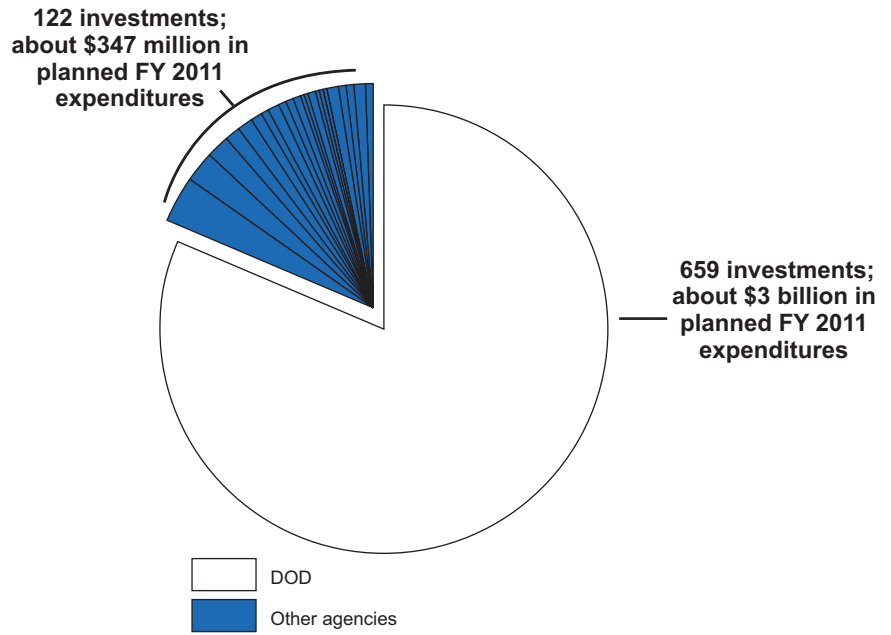
Figure 17: Number of Human Resources Investments (excluding DOD) for Fiscal Year 2011



Source: GAO analysis of agency data as drawn from OMB's fiscal year 2011 exhibit 53s, which were downloaded from the IT Dashboard in July 2011.

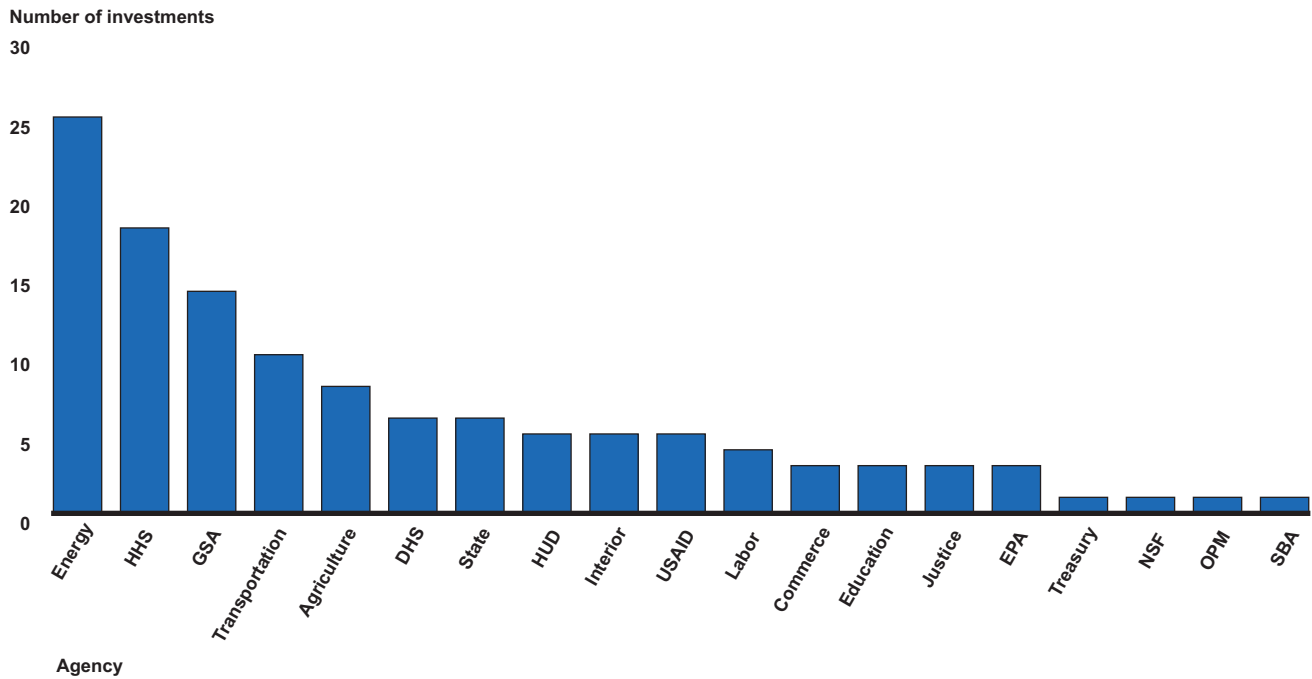
Note: Agency abbreviations are as follows: Energy = Department of Energy; HHS = Department of Health and Human Services; DHS = Department of Homeland Security; Education = Department of Education; Labor = Department of Labor; OPM = Office of Personnel Management; Transportation = Department of Transportation; State = Department of State; Justice = Department of Justice; Interior = Department of the Interior; Agriculture = U.S. Department of Agriculture; Commerce = Department of Commerce; EPA = Environmental Protection Agency; GSA = General Services Administration; NRC = Nuclear Regulatory Commission; USAID = U.S. Agency for International Development; Treasury = Department of the Treasury; SSA = Social Security Administration; SBA = Small Business Administration; HUD = Department of Housing and Urban Development; VA = Department of Veterans Affairs; NARA = National Archives and Records Administration; and NSF = National Science Foundation.

Figure 18: Number of Supply Chain Management Investments for Fiscal Year 2011



Source: GAO analysis of agency data as drawn from OMB's fiscal year 2011 exhibit 53s, which were downloaded from the IT Dashboard in July 2011.

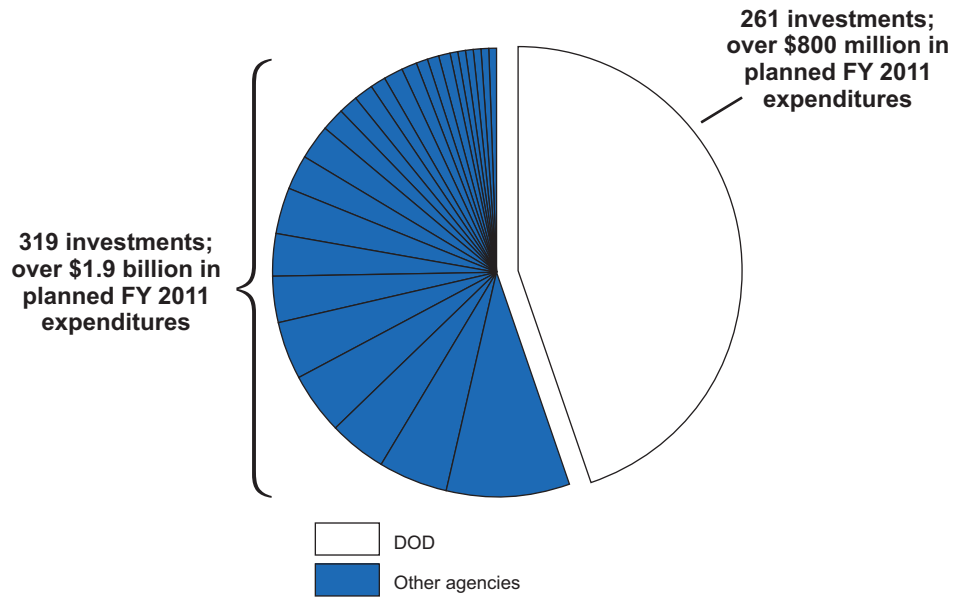
Figure 19: Number of Supply Chain Management Investments (excluding DOD) for Fiscal Year 2011



Source: GAO analysis of agency data as drawn from OMB's fiscal year 2011 exhibit 53s, which were downloaded from the IT Dashboard in July 2011.

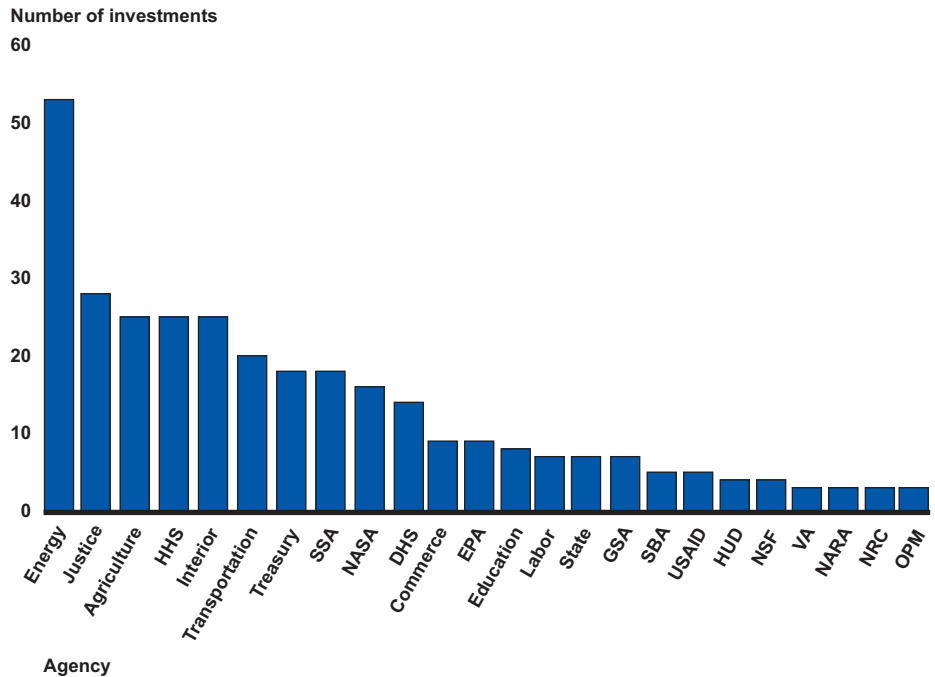
Note: Agency abbreviations are as follows: Energy = Department of Energy; HHS = Department of Health and Human Services; GSA = General Services Administration; Transportation = Department of Transportation; Agriculture = U.S. Department of Agriculture; DHS = Department of Homeland Security; State = Department of State; HUD = Department of Housing and Urban Development; Interior = Department of the Interior; USAID = U.S. Agency for International Development; Labor = Department of Labor; Commerce = Department of Commerce; Education = Department of Education; Justice = Department of Justice; EPA = Environmental Protection Agency; Treasury = Department of the Treasury; NSF = National Science Foundation; OPM = Office of Personnel Management; and SBA=Small Business Administration.

Figure 20: Number of Financial Management Investments for Fiscal Year 2011



Source: GAO analysis of agency data as drawn from OMB's fiscal year 2011 exhibit 53s, which were downloaded from the IT Dashboard in July 2011.

Figure 21: Number of Financial Management Investments (excluding DOD) for Fiscal Year 2011



Source: GAO analysis of agency data.

Note: Agency abbreviations are as follows: Energy = Department of Energy; Justice= Department of Justice; Agriculture = U.S. Department of Agriculture; HHS = Department of Health and Human Services; Interior = Department of the Interior; Transportation = Department of Transportation; Treasury = Department of the Treasury; SSA = Social Security Administration; NASA = National Aeronautics and Space Administration; DHS = Department of Homeland Security; Commerce = Department of Commerce; EPA = Environmental Protection Agency; Education = Department of Education; Labor = Department of Labor; State = Department of State; GSA = General Services Administration; SBA = Small Business Administration; USAID = U.S. Agency for International Development; HUD = Department of Housing and Urban Development; NSF = National Science Foundation; VA = Department of Veterans Affairs; NARA = National Archives and Records Administration; NRC = Nuclear Regulatory Commission; and OPM = Office of Personnel Management.

Appendix IV: Comments from the Department of Commerce



UNITED STATES DEPARTMENT OF COMMERCE
The Secretary of Commerce
Washington, D.C. 20230

September 12, 2011

Mr. David Powner
Director, Information Management Issues
Government Accountability Office
441 G Street, NW
Washington, DC 20548

Dear Mr. Powner:

Thank you for the opportunity to review the draft report, "INFORMATION TECHNOLOGY: OMB Needs to Improve Its Guidance on IT Investments" (GAO-11-826).

This report thoroughly examines and assesses Office of Management and Budget (OMB) policy and guidance that directs agencies reporting on the progress and status of information technology (IT) investment. The report documents several weaknesses and strengths and highlights newer processes, such as OMB IT Dashboard reporting and Techstat reviews, which were conducted solely by OMB and recently delegated to agency chief information offices. The report assesses fairly the Department of Commerce's IT information and data.

We have no substantial comments or changes to recommend at this time. Please let us know if you have questions or need additional information. Our Department of Commerce point of contact is Terri Ware, tware@doc.gov, (202) 482-3138.

Sincerely,

A handwritten signature in cursive script that reads "Rebecca Blank".

Rebecca M. Blank
Acting Secretary of Commerce

Appendix V: Comments from the Department of Health and Human Services



DEPARTMENT OF HEALTH & HUMAN SERVICES

OFFICE OF THE SECRETARY

Assistant Secretary for Legislation
Washington, DC 20201

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

SEP 13 2011

Dear Mr. Powner:

Attached are comments on the U.S. Government Accountability Office's (GAO) draft report entitled: "INFORMATION TECHNOLOGY: OMB Needs to Improve Its Guidance on IT Investments" (GAO-11-826).

The Department appreciates the opportunity to review this report prior to publication.

Sincerely,

A handwritten signature in black ink that reads "Jim R. Esquea".

Jim R. Esquea
Assistant Secretary for Legislation

Attachment

GENERAL COMMENTS OF THE DEPARTMENT OF HEALTH AND HUMAN SERVICES (HHS) ON THE GOVERNMENT ACCOUNTABILITY OFFICE'S (GAO) DRAFT REPORT ENTITLED, "INFORMATION TECHNOLOGY: OMB NEEDS TO IMPROVE ITS GUIDANCE ON IT INVESTMENTS" (GAO-11-826)

The Department appreciates the opportunity to review and comment on this draft report. We agree with the broad findings of the report.

However, HHS differs from the GAO finding that OMB needs to improve its guidance to agencies. HHS finds the guidance documents to which GAO refers to in the report (OMB memoranda and circulars) to be policy documents that direct agencies in *what* actions must be taken regarding management of and reporting on IT investments. There are specific instances where OMB's policy documents have included direction that may have created consistency issues in the reporting of required information, in particular in the definition of IT investment. The revision of that definition in the FY 2013 edition of OMB Circular A-11, Part 3, Section 53 and Part 7, Section 300, should allow a significant improvement in both the consistency and accuracy of information reported on IT investments in OMB Exhibits 53 and 300, and on the IT Dashboard.

HHS believes that the distinction between policy and guidance documents is an issue that does need to be addressed by OMB and all Federal agencies. Guidance documents would explain *how* policy requirements might be implemented at agencies. Implementation guidance would best be developed in collaboration between OMB and Federal agencies, and might address the differing implementation issues for defense, civilian, and small agencies.

Appendix VI: Comments from the Department of Homeland Security

U.S. Department of Homeland Security
Washington, DC 20528



**Homeland
Security**

September 8, 2011

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

Re: Draft Report GAO-11-826, "INFORMATION TECHNOLOGY: OMB Needs to Improve Its Guidance on IT Investments"

Dear Mr. Powner:

Thank you for the opportunity to review and comment on this draft report. The U.S. Department of Homeland Security (DHS) appreciates the U.S. Government Accountability Office's work in planning and conducting its review and issuing this report.

Although the report does not contain any recommendations directed at DHS, the Department remains committed to continuing its work with the Office of Management and Budget (OMB) and other relevant stakeholders to address challenges related to identifying and eliminating potentially duplicate systems. By eliminating duplicity among various systems and creating opportunities for potential cost savings, the DHS Office of the Chief Information Officer is using its processes — Investment Review and Techstat Review — to strategically align with OMB goals. This ensures DHS major IT investments are mapped to a single function within the Federal Enterprise Architecture.

Again, thank you for the opportunity to review and comment on this draft report. We look forward to working with you on future homeland security issues.

Sincerely,

A handwritten signature in black ink, appearing to read "Jim H. Crumpacker".

Jim H. Crumpacker
Director
Departmental GAO-OIG Liaison Office

Appendix VII: GAO Contact and Staff Acknowledgments

GAO Contact

Dave Powner at (202) 512-9286 or pownerd@gao.gov.

Staff Acknowledgments

In addition to the individual named above, the following staff also made key contributions to the report: Colleen Phillips, Assistant Director; Kate Agatone; Rebecca Eyler; Fatima Jahan; Lee McCracken; and Kevin Walsh.

GAO's Mission

The Government Accountability Office, the audit, evaluation, and investigative arm of Congress, exists to support Congress in meeting its constitutional responsibilities and to help improve the performance and accountability of the federal government for the American people. GAO examines the use of public funds; evaluates federal programs and policies; and provides analyses, recommendations, and other assistance to help Congress make informed oversight, policy, and funding decisions. GAO's commitment to good government is reflected in its core values of accountability, integrity, and reliability.

Obtaining Copies of GAO Reports and Testimony

The fastest and easiest way to obtain copies of GAO documents at no cost is through GAO's website (www.gao.gov). Each weekday afternoon, GAO posts on its website newly released reports, testimony, and correspondence. To have GAO e-mail you a list of newly posted products, go to www.gao.gov and select "E-mail Updates."

Order by Phone

The price of each GAO publication reflects GAO's actual cost of production and distribution and depends on the number of pages in the publication and whether the publication is printed in color or black and white. Pricing and ordering information is posted on GAO's website, <http://www.gao.gov/ordering.htm>.

Place orders by calling (202) 512-6000, toll free (866) 801-7077, or TDD (202) 512-2537.

Orders may be paid for using American Express, Discover Card, MasterCard, Visa, check, or money order. Call for additional information.

Connect with GAO

Connect with GAO on [facebook](#), [flickr](#), [twitter](#), and [YouTube](#). Subscribe to our [RSS Feeds](#) or [E-mail Updates](#). Listen to our [Podcasts](#). Visit GAO on the web at www.gao.gov.

To Report Fraud, Waste, and Abuse in Federal Programs

Contact:

Website: www.gao.gov/fraudnet/fraudnet.htm

E-mail: fraudnet@gao.gov

Automated answering system: (800) 424-5454 or (202) 512-7470

Congressional Relations

Ralph Dawn, Managing Director, dawnr@gao.gov, (202) 512-4400
U.S. Government Accountability Office, 441 G Street NW, Room 7125
Washington, DC 20548

Public Affairs

Chuck Young, Managing Director, youngc1@gao.gov, (202) 512-4800
U.S. Government Accountability Office, 441 G Street NW, Room 7149
Washington, DC 20548

