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GOVERNMENT REORGANIZATION

Observations on the Department of Commerce

Statement of L. Nye Stevens
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Government Reorganization:
Observations on the Department of Commerce

Summary of Statement by L. Nye Stevens
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In the fiscal year 1996 budget resolution, Congress assumed that the Department of Commerce would be abolished and that Commerce functions could either be eliminated or transferred to other agencies. GAO believes that five key principles would help guide Congress as it considers streamlining and reorganizing the federal government. The principles are that (1) reorganization demands a coordinated approach; (2) reorganization plans should be designed to achieve specific identifiable goals; (3) once goals are chosen, the right vehicles must be chosen for accomplishing them; (4) implementation is critical to the success of any reorganization; and (5) oversight is needed to ensure effective implementation.

The missions and functions of the Department of Commerce historically have been among the most diverse of the cabinet departments in the federal government. Because of this, Commerce historically has not been managed on the basis of a unifying mission and shared goals among its various components. In addition, Commerce's key administrative functions are decentralized. Major Commerce components--the National Oceanic and Atmospheric Administration (NOAA), the Economics and Statistics Administration, the National Institute of Standards and Technology (NIST), the International Trade Administration, and the Patents and Trademark Office--have each been granted the authority by Commerce for meeting its own administrative needs.

Commerce recently has articulated a departmentwide mission statement and five "strategic themes." However, at a broad functional level, other agencies also share responsibility for these five themes. The themes are (1) export growth, (2) civilian technology, (3) sustainable development by working to integrate environmental stewardship with economic growth, (4) economic development by working to ensure communities have the infrastructure they need to develop, and (5) economic information and analysis. Some functions of NOAA and NIST suggest possible lines for further inquiry to determine whether duplication of function exists with other federal organizations. For example, NIST's Advanced Technology Program makes cost-shared awards to industry to develop high-risk technologies, and its Manufacturing Extension Partnerships provide seed money for the creation of extension centers that provide technical assistance to small manufacturers. In both cases, NIST's efforts are similar to those undertaken by other federal agencies.

Similarly, marine species research and management activities and ocean research are two of NOAA's key efforts. GAO's limited review identified other agencies with similar functions, such as the Department of the Interior's U.S. Fish and Wildlife Service, which carries out a major effort in species research and management, and the National Science Foundation and the U.S. Geological Survey, which support ocean research activities.

Mr. Chairman and Members of the Committee:

We are pleased to be here today to discuss the organization, missions, and functions of the Department of Commerce. As you know, the conference report for the fiscal year 1996 budget resolution assumed that the Department of Commerce would be abolished and that Commerce functions would either be eliminated or transferred to other agencies. Changes to Commerce are only one of a number of major reorganization and streamlining options under consideration--all of which pose challenging policy decisions.

Our work has shown that to be effective, decisions about the structure and functions of the federal government should be made in a thorough manner with careful attention to the effects of changes in one agency on the workings of other agencies. In his statement before this Committee in May, the Comptroller General discussed some principles that we believe could help guide Congress and the administration as they consider streamlining and reorganizing the federal government.[1] The principles are that (1) reorganization demands a coordinated approach; (2) reorganization plans should be designed to achieve specific identifiable goals; (3) once goals are chosen, the right vehicles must be chosen for accomplishing them; (4) implementation is critical to the success of any reorganization; and (5) oversight is needed to ensure effective implementation.

As agreed with the Committee, my statement today is intended to contribute to the congressional decisionmaking process by providing an overview of the Department of Commerce and its organization. As you requested, this overview includes some of the critical issues at Commerce that demand attention regardless of organizational decisions and a discussion of selected issues at the National Institute of Standards and Technology (NIST) and the National Oceanic and Atmospheric Administration (NOAA), both of which are components of Commerce. My comments reflect recent work we have done for the Committee on the functions performed by agencies in the federal government and other program and management work we have undertaken.[2] As was true with that recent work for the Committee, my comments today are intended not to be conclusive but rather to suggest useful starting points for further lines of inquiry.

Dr. Allan I. Mendelowitz, GAO's Managing Director for International Trade, Finance, and Competitiveness Issues, separately will discuss the potential impact of abolishing the

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[1]Government Reorganization: Issues and Principles (GAO/T-GGD/AIMD-95-166, May 17, 1995).

[2]Government Restructuring: Identifying Potential Duplication in Federal Missions and Approaches (GAO/T-AIMD-95-161, June, 7, 1995); Budget Function Classification: Agency Spending by Subfunction and Object Category, Fiscal Year 1994 (GAO/AIMD-95-116FS, May 10, 1995); Budget Function Classification: Agency Spending and Personnel Levels for Fiscal Years 1994 and 1995 (GAO/AIMD-95-115FS); and Budget Function Classification: Relating Agency Spending and Personnel Levels to Budget Functions (GAO/AIMD/GGD-95-69FS, Jan. 30, 1995).

Department of Commerce on the federal government's management of its international trade responsibilities.[3]

THE DEPARTMENT OF COMMERCE HAS DIVERSE RESPONSIBILITIES

The missions and functions of the Department of Commerce historically have been among the most diverse of the cabinet departments in the federal government. Formed as a department as a result of the creation of a separate Department of the Labor in 1913, the Department of Commerce initially had nine major components that ranged from the Steamboat Inspections Service and the Bureau of Lighthouses to the Bureau of the Census and the Bureau of Foreign and Domestic Commerce. Of the nine original components, three remain in Commerce--the Coast and Geodetic Survey, which is now part of NOAA; the Bureau of Standards, which is now NIST; and the Census Bureau.

The diverse nature of Commerce has been underscored by almost constant organizational changes throughout its history in response to national social, economic, and demographic changes.[4] These changes entailed moving bureaus and agencies out of Commerce into new federal organizations, where it was believed the Commerce components would benefit from location in an agency with a more unified organizationwide mission. For example, the U.S. Fire Administration was moved to the Federal Emergency Management Agency in 1979; the Maritime Administration was moved to the Department of Transportation in 1981, where it joined a number of other components that had moved out of Commerce when the Department of Transportation was created in 1966. In addition, other components periodically have been proposed by various administrations to be moved in or out of Commerce. For example, the Minority Business Development Agency for several years was proposed to be transferred to the Small Business Administration in the late 1980s and 1990, only to be proposed for expansion within Commerce by the same administration in fiscal year 1991.

To this day, Commerce remains essentially a holding company for many disparate programs. Commerce's 13 major components cover a wide range of responsibilities that include expanding U.S. exports, developing innovative technologies, gathering and disseminating statistical data, measuring and fostering economic growth, granting patents and trademarks, promoting minority entrepreneurship, predicting the weather, and serving as an environmental steward. Figures 1 and 2 detail fiscal year 1994 gross obligations and authorized full time equivalent (FTE) staffing levels of Commerce's major components, respectively.

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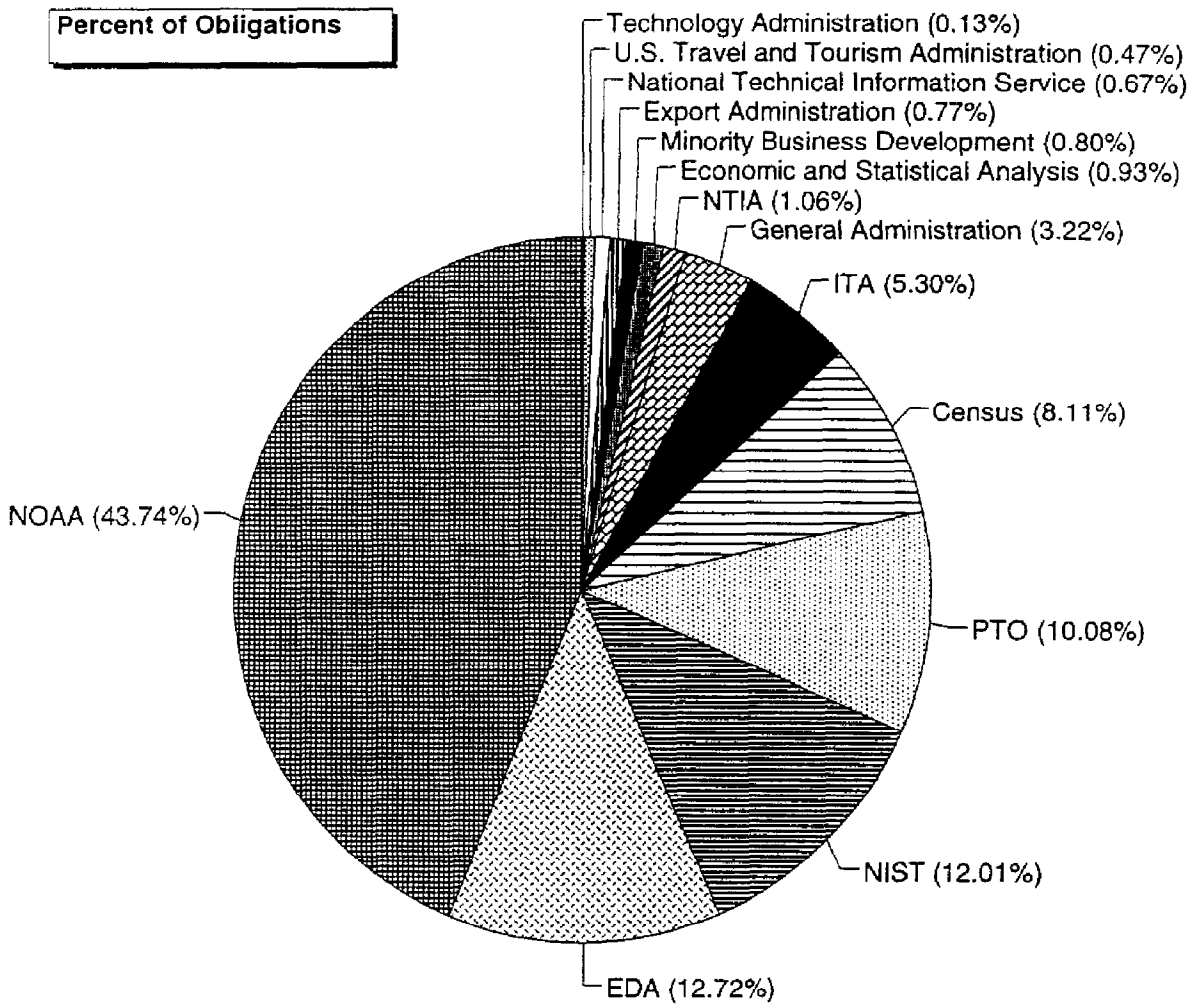
[3]Government Reorganization: Issues Relating to International Trade Responsibilities (GAO/T-GGD-95-218, July 25, 1995).

[4]For a discussion of some of the early changes see, From Lighthouses to Laserbeams: A History of the U. S. Department of Commerce 1912-1988, the United States Department of Commerce, Washington, D.C., 1988.

Figure 1: Department of Commerce Fiscal Year 1994 Gross Obligations by Major Component

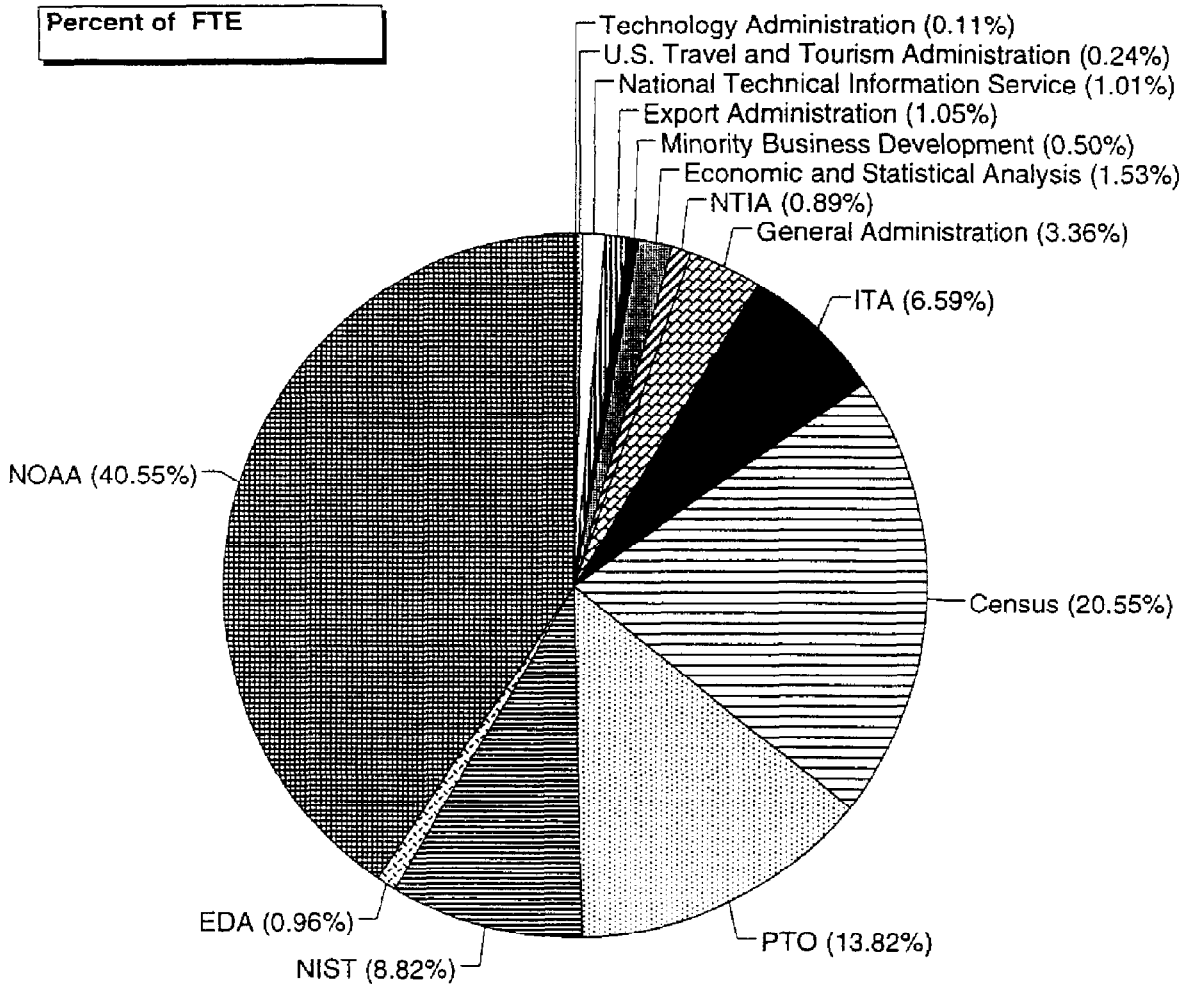


$5.3 billion (0.3 percent of total fiscal year 1994 federal obligations)

NTIA:	National Telecommunications and Information Administration
ITA:	International Trade Administration
PTO:	Patent and Trademark Office
NIST:	National Institute of Standards and Technology
EDA:	Economic Development Administration
NOAA:	National Oceanic and Atmospheric Administration

Source: Budget of the United States Government, 1996

Figure 2: Department of Commerce Fiscal Year 1994 Authorized FTE Levels by Major Compone



36,000 FTE (1.24 percent of total 1994 FTE Levels)

NTIA:	National Telecommunications and Information Administration
ITA:	International Trade Administration
PTO:	Patent and Trademark Office
NIST:	National Institute of Standards and Tehcnology
EDA:	Economic Development Administration
NOAA:	National Oceanic and Atmospheric Administration

Source: Budget of the United States Government, 1996

Because of the wide diversity of its functions, Commerce historically has not been managed on the basis of a unifying mission and shared goals. In recent years, the desire to create cohesion among its rather independent and autonomous components has driven Commerce to take the first steps to establish a departmentwide strategic management and planning effort. As part of that effort, in March 1995 Commerce issued a strategic statement that articulated a departmentwide mission and established five departmentwide strategic themes. According to the strategic statement, Commerce's mission is "to ensure and enhance economic opportunity for all Americans by working in partnership with businesses, communities, and workers." Commerce's strategic themes include (1) export growth, (2) civilian technology, (3) sustainable development by working to integrate environmental stewardship with economic growth, (4) economic development by working to ensure communities have the infrastructure they need to develop, and (5) economic information and analysis.

If Commerce is to develop a departmentwide strategic plan, it will need to undertake the difficult next steps of developing specific outcome-oriented goals, objectives, and performance measures that are directly linked to its themes. This will be particularly challenging because Commerce does not have exclusive federal responsibility for any of its strategic themes. In fact, other federal agencies play substantial roles in the areas covered by the strategic themes. For example, NIST's proposed fiscal year 1996 funding for grants and cooperative research with industry is about 10 percent of the federal government's total funding for such matters, and state governments traditionally have had a leadership role in working with industry to foster technological development. Similarly, NOAA shares responsibility for species protection with the Department of the Interior. Because Commerce shares responsibility with others for making progress on its strategic themes, isolating Commerce's contribution to a particular outcome can be very difficult.

In addition to historically having its strategic management efforts based in its components, Commerce also has decentralized key administrative functions. Major Commerce components--NOAA, the Economics and Statistics Administration, NIST, the International Trade Administration, and the Patent and Trademark Office--have been granted the authority and responsibility by Commerce for meeting most of their own administrative needs. According to Commerce officials, these components are large enough that it is more efficient to have them be responsible for their own support services rather than rely on Commerce headquarters. Thus, Commerce headquarters provides some services but primarily sets policy and provides overall direction and oversight. The major components generally are responsible for their own financial management, personnel, budget, and procurement services. In some cases, the major components receive some administrative services from headquarters, which they pay for through a working capital fund. The major components also have congressional and public affairs offices separate from those in Commerce headquarters. In addition, NOAA, the National Telecommunications and Information Administration, the Economic Development Administration, and the Patent and Trademark Office, have their own

offices of general counsel to handle the bulk of their legal matters, although these offices work closely with the Commerce general counsel.

In addition, the NOAA Administrative Support Centers provide support services to Commerce components in the field and to other federal agencies on a reimbursable basis. According to senior Commerce officials, Commerce's decentralized approach to providing administrative services is the result of its response to the significant budget reductions that it incurred in the early 1980s. According to these Commerce officials, other federal agencies that did not undergo the earlier downsizing are now facing the same need to make sizable cost-saving improvements in administrative service delivery that Commerce confronted in the early 1980s.

KEY ISSUES NEEDING ATTENTION INDEPENDENT OF ORGANIZATIONAL QUESTIONS

As I noted at the outset of my statement, our work has shown that one of the key principles of reorganization is that once an appropriate organizational arrangement is decided upon, continued attention is needed to ensure that programs are properly and effectively implemented and that agencies have the people, information, and technology needed to meet their missions. In that regard, our congressionally requested work at Commerce in recent years has identified a number of key programmatic and management issues that will require continued attention regardless of decisions Congress makes about the organization of Commerce and its components. These key issues include the need for well planned census reform, strengthened financial management, and modernized National Weather Service information systems.

Census Reform

Over many years, we and others have urged that the methods for taking the decennial census need to be fundamentally rethought to reduce costs and protect the accuracy of the nation's primary data-gathering effort.[5] The increased use of sampling and other statistical techniques, a simplified census questionnaire, and streamlined field procedures are among the major changes that we have long urged the Census Bureau to consider and evaluate. On the basis of our work, the congressional fiscal year 1996 budget resolution assumes that almost $1 billion can be saved on the cost of the 2000 Decennial Census if basic changes in census design are made. However, we are very concerned that the possibility for thoughtful and well planned census reform will be lost if Congress and departmental top management--wherever the Census Bureau is placed--do

[5]See, for example, Decennial Census: 1995 Test Presents Opportunities to Evaluate New Census-Taking Methods (GAO/T-GGD-94-136, Sept. 27, 1994) and Decennial Census: 1990 Results Show Need for Fundamental Reform (GAO/GGD-92-94, June 9, 1992).

not work aggressively to ensure that needed changes are made in time for the 2000 Census.

Financial Management

We have found that like all too many other federal agencies, Commerce cannot provide complete, reliable, and useful financial information to assist federal decisionmakers in making sound decisions.[6] The financial management systems at Commerce are incompatible, fragmented, labor-intensive, inadequately controlled, and costly to maintain. Commerce has limited ability to effectively assess program and administrative operations. This problem has resulted in the Office of Management and Budget placing Commerce's financial management on the governmentwide list of high-risk areas.

The top leadership at Commerce has forthrightly acknowledged the serious problems with its financial management systems and related internal controls. Commerce now has leaders in key financial management positions at the department level who have demonstrated a commitment to the Chief Financial Officers (CFO) Act, and efforts are under way to correct Commerce's long-standing financial management problems. However, although Commerce has placed qualified CFOs at 3 of its 13 major components, 2 of its largest components--NOAA and NIST--do not have CFOs in place to manage financial operations and guide improvement efforts. Thus, continuing attention will be needed to ensure that strong financial management exists over Commerce's present functions even if they are relocated.

National Weather Service Information Systems

NOAA's National Weather Service modernization program is one of the larger systems modernization programs of the federal government. Our work has shown that it was being designed and developed without adequate attention as to how the systems were to work together and that development and performance problems remain with individual systems.[7] The modernization includes four major systems that are intended to provide

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[6]See, for example, Financial Management: Status of the CFO Act Implementation at the Department of Commerce (GAO/T-AIMD-94-150, June 28, 1994).

[7]Weather Forecasting: Radar Availability Requirement Not Being Met (GAO/AIMD-95-132, May 31, 1995); Weather Forecasting: Unmet Needs and Unknown Costs Warrant Reassessment (GAO/AIMD-95-81, Apr. 21, 1995); Weather Service Modernization: Despite Progress, Significant Problems and Risks Remain (GAO/T-AIMD-95-87, Feb. 21, 1995); Weather Forecasting: Improvements Needed in Laboratory Software Development Processes (GAO/AIMD-95-24, Dec. 14, 1994); Weather Forecasting: Systems Architecture Needed for National Weather Service Modernization (GAO/AIMD-94-28, Mar. 11, 1994); Weather Forecasting: Important Issues on Automated Weather

more reliable detection and prediction of severe weather and flooding, permit more cost-effective operations, and achieve higher productivity. Collectively, these four component systems and several smaller systems acquisitions are expected to be fully integrated so as to form a single weather forecasting and warning system. The total cost of the modernization is estimated to be over $4.5 billion.

In March 1994, we recommended that the National Weather Service develop a guiding systems blueprint, or systems architecture, to ensure that the component systems for the modernization proceed according to a common set of rules and standards.[8] We have cautioned the Weather Service that to do otherwise invites system inefficiencies, incompatibilities, and more difficult and costly maintenance. The Weather Service agreed to develop a modernization architecture, but it estimated that this will take over 3 years to complete. Thus, while the modernization program can boast of some successes, the lack of a systems architecture compounded by known system problems and development risks means that modernization is far from over and that the challenges remaining are formidable.

As I noted, these issues require continuing attention no matter what organizational arrangement is used for Commerce's functions. However, a clear focus on goals and outcomes may identify opportunities to rationalize the federal government's organizational structure. Our work also has identified cases of apparent duplication of functions across agencies often differentiated by constituency rather than basic activity. As I noted earlier, at a broad functional level, other agencies share responsibility with Commerce for its five strategic themes. Some of the functions performed by NIST and NOAA suggest possible lines for further inquiry to determine whether and if so, to what extent, duplication of effort exists in the activities that these and other federal organizations perform. The efforts of NIST and NOAA also underscore the need for an integrated approach to reorganization that focuses on clearly identified goals--one that is sensitive to how changes in one organization can affect the abilities of other organizations to meet their missions.

THE NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY

NIST was originally established in 1901 as the National Bureau of Standards to perform the research and development (R&D) needed to develop uniform standards and physical measurements. NIST's mission and responsibilities were expanded in 1988 with the establishment of (1) the Advanced Technology Program (ATP), which makes cost-shared awards to industry to develop high-risk technologies and (2) the Manufacturing Extension Partnership (MEP), which provides seed money for the creation of extension

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Processing System Need Resolution (GAO/IMTEC-93-12BR, Jan.6, 1993).

[8]GAO/T-AIMD-95-87, February 21, 1995.

centers that provide technical assistance to small manufacturers. Today, NIST's primary mission is to promote economic growth by working with industry to develop and apply technology, measurements, and standards.

Of NIST's $632 million in fiscal year 1994 obligations, about 60 percent was from appropriated funds. Other federal agencies and the sale of calibration services and standard reference materials primarily provided the remaining 40 percent. While most of NIST's spending supported its R&D program in fiscal year 1994, ATP and MEP, which are growing, will account for most of NIST's obligations this fiscal year.

ATP

Initially funded in 1990, ATP is a competitive cost-sharing program designed to help U.S. businesses pursue high-risk technologies with significant commercial or economic potential. ATP funding increased substantially from $68 million in fiscal year 1993 to $431 million in fiscal year 1995. Our May 1995 report examined NIST's efforts to evaluate ATP.[9] We concluded that it was too early to determine ATP's long-term economic impact. However, our analysis indicated that short-term results that NIST had identified in a January 1994 report were overstated or lacked adequate support. In addition, NIST's proposed use of technical milestones and the number of collaborations and strategic alliances to evaluate ATP may create false expectations of its economic success.

As shown in appendix I, ATP is just one of several federal initiatives that support industrial R&D through grants or cooperative R&D agreements. The administration's fiscal year 1996 budget has proposed $4.8 billion for these initiatives, including $491 million for ATP. Some of these initiatives, including ATP, require participants to provide a substantial portion of a project's costs, and many R&D projects involve consortia of companies within an industry. For example, the Advanced Research Projects Agency (ARPA), within the Department of Defense, has supported SEMATECH--a consortium of 11 major semiconductor manufacturers--by providing up to about 50 percent of the funds for its R&D activities. SEMATECH'S R&D program was designed to regain U.S. leadership in semiconductor manufacturing by developing advanced semiconductor equipment and reducing costs through improved manufacturing efficiency and product quality.

MEP

Since 1988, NIST and ARPA's Technology Reinvestment Project have helped create 42 MEP centers to improve the competitiveness of U.S. manufacturing by advancing the

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[9]Performance Measurement: Efforts to Evaluate the Advanced Technology Program (GAO/RCED-95-68, May 15, 1995).

level of manufacturing technology used by small- and medium-sized U.S.-based firms. The administration's fiscal year 1996 budget proposal of $147 million would transfer funding for ARPA's centers to NIST and increase the total number of centers to 90.

The Omnibus Trade and Competitiveness Act of 1988 authorized NIST to award funding for up to 6 years to U.S.-based nonprofit organizations for establishing and operating Manufacturing Technology Centers, the predecessors of MEPs. While NIST could provide up to 50 percent of an MEP center's capital and annual operating and maintenance costs during the center's first 3 years, the center's operator was expected to contribute increasing percentages of the costs in the last 3 years. NIST's declining levels of funding were intended to ensure that the centers would no longer need NIST financial support by the seventh year. NIST found, however, that revenues generated by the centers would not be sufficient to cover the costs of providing services to small manufacturers. In response, Congress, in Commerce's fiscal year 1995 appropriation allowed NIST to provide up to one-third of a center's total annual costs for additional periods that were not to exceed 3 years to any center.[10] This provision changed the character of the MEP program from offering time-limited incentives to states to provide technology assistance to creating a possible longer term federal role in providing such assistance.

THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NOAA is the largest component of the Department of Commerce, with fiscal year 1994 budget obligations of about $2.3 billion, or about 44 percent of Commerce's $5.3 billion in obligations. NOAA was created by President Nixon in 1970 on the basis of the recommendation of the Stratton Commission on Marine Science, Engineering, and Resources. NOAA was the organizational recognition that the oceans and the atmosphere are interacting parts of the total environmental system. It pulled together scientific, technological, and administrative resources from various agencies across the federal government in the belief that a unified approach to the oceans and the atmosphere was needed to better understand and respond to the total environment and its modification. According to NOAA, its mission is to conserve and manage wisely the nation's coastal and marine resources and to describe and predict changes in the earth's environment to ensure sustainable economic development opportunities. Key programmatic elements of NOAA include the National Weather Service, the National Environmental Satellite and Data Information Service (NESDIS), the National Marine Fisheries Service (NMFS), the Office of Oceanic and Atmospheric Research, the National Ocean Service, and Program Support.

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[10]P.L. 103-317.

As we reported in May 1995, essentially all of NOAA's programs and activities are classified within the federal budget function of natural resources and environment and, specifically, the subfunction of other natural resources.[11] Federal agencies other than NOAA, whose budgets are similarly classified, include the U.S. Geological Survey, the Bureau of Mines, and a small portion of the Bureau of Reclamation--all in the Department of the Interior. Many of NOAA's activities involve scientific research and the assessment and application of research results. Some of NOAA's key activities include the collection and assessment of scientific data on the condition of the oceans and marine species and the climate and weather patterns. Another significant NOAA activity is the management and protection of marine species and their habitats.

Our examination of marine species research and management activities and ocean research activities within NOAA showed that such activities are supported by a number of NOAA's organizational components. According to NOAA officials, research and management of NOAA's marine species efforts supports two of NOAA's strategic goals--building sustainable fisheries and recovering protected species. In its fiscal year 1996 budget request, funding for these goals would amount to about $404 million and about 2,500 FTE positions. The funds and staff primarily would go to NMFS and, to a lesser extent, the Office of Oceanic and Atmospheric Research, Program Support, and NESDIS. In addition, NOAA activities that support its goal of sustaining healthy coastal ecosystems also contribute to the management of marine species and represent about $206 million and 1,020 FTE positions in the budget request.

The budget request for ocean research activities, according to NOAA officials, totals about $201 million, and these activities would be supported by about 640 FTE positions. However, these figures include an atmospheric research component. NOAA officials told us that because of the physical relationship between the ocean and atmosphere, it is not realistic to separate the atmospheric and oceanic components of this research.

Our limited review to identify other federal agencies with activities similar to those of NOAA in these areas showed that the Department of the Interior's U.S. Fish and Wildlife Service (FWS) carries out a significant effort in species research and management and is supported by Interior's National Biological Service. In addition, our review showed that the National Science Foundation, the Office of Naval Research, the Department of Energy, Interior's U.S. Geological Survey and Minerals Management Service, the Environmental Protection Agency, and the National Aeronautics and Space Administration (NASA) carry out ocean research activities. I will now briefly summarize the activities of NOAA and the other federal agencies in these areas and offer some preliminary observations on the similarities and differences.

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[11]GAO/AIMD-95-116FS, May 10, 1995.

Species Research and Management

NOAA's species research and management function primarily is centered in NMFS. Principal NMFS activities to build sustainable fisheries and recover protected species include scientific information collection on and analysis of marine species population sizes and trends and habitat needs and conditions, enhancement of species habitats, and protection of specific species and populations of species.

With regard to activities to recover protected species, Interior's FWS and NMFS share responsibility for administering two key species protection laws--the Endangered Species Act and the Marine Mammal Protection Act. Although FWS carries out species research and management activities similar to NMFS, it directs its activities primarily at nonmarine species. However, FWS does have primary protection responsibility for a selected number of marine mammals; and in the case of sea turtles, NMFS has protection responsibilities when the turtles are in the sea, and FWS assumes responsibility for them when they are on land.

FWS also receives scientific information from Interior's National Biological Service to support its species management activities. In addition, the National Biological Service collects data on the distribution and interrelationships of species protected under the two key species protection laws as well as information on the effects of Interior's marine mineral development efforts on marine species.

The primary distinction between the species protection activities of NOAA and Interior is the type of species each agency focuses on. Marine species are primarily under the purview of NOAA; while land species, birds, and fresh water species are under the purview of Interior. Other than this distinction, the information needs and tasks performed in managing these species seem quite similar. However, NOAA activities to manage marine fisheries for the purpose of ensuring their long-term commercial viability do not appear similar to the activities of Interior and involve international relationships without an Interior counterpart.

Ocean Research

NOAA's activities in oceanic and atmospheric research are to support improved weather and climate services, better resource management, and national and international scientific assessments of the environment. This research is supported by the Office of Oceanic and Atmospheric Research and the National Ocean Service. Among the activities carried out are the observation, measurement, and assessment of the nation's coastal and ocean areas as well as the undertaking of specific studies to provide a sound scientific basis for management decisions.

According to a 1992 National Research Council study, basic ocean research activities in the federal government have been primarily carried out by the National Science

Foundation and the Office of Naval Research.[12] The National Science Foundation supports ocean research with specific programs for areas including physical, chemical, and biological oceanography; marine geology and geophysics; and ocean technology. This research is to improve knowledge of the global climate system, coastal environments, processes that control the chemical composition and motion of ocean waters, the nature and distribution of marine organisms, and the character of the ocean floor. The Office of Naval Research's activities focus on marine geophysics and ocean sciences. Among other things, this office supports basic research in ocean acoustics and maintains data on sea-floor and sea-surface topography.

Among the other agencies with an ocean research function, Interior's U.S. Geological Survey conducts marine and coastal geological studies in basically four areas--environmental quality and preservation, natural hazards and public safety, natural resources, and marine and coastal information. These studies are to support decisions in such areas as the protection of coastal sea-floor habitats, the assessment of hazards in the marine and coastal realms, and the improvement of coastal ocean environmental health. Interior's Minerals Management Service supports studies in physical oceanography, offshore geology, and marine pollution.

Finally, the Department of Energy supports marine research in areas such as subseabed waste disposal, carbon dioxide-related research, and coastal oceanography. The Environmental Protection Agency's research supports improvements in the understanding and management of the sources of pollutants and the environments that receive wastes. NASA's ocean research activities center around funding for construction, operation, and related research for ocean satellite missions and the collection and analysis of data from satellites.

On the basis of descriptions in the 1992 National Research Council study discussing ocean research activities of federal agencies and selected agency budget documents, it is difficult to identify clear distinctions between the activities these agencies are carrying out. It would appear, however, that federal agencies other than the National Science Foundation are conducting specific types of research in support of their respective agency missions. A more detailed examination would be needed to determine the extent to which these agencies' research efforts overlap or supplement each other and to more fully understand the level of coordination that is occurring.

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In summary, Mr. Chairman, while reducing the budget and eliminating redundancy are driving the reorganization agenda for the moment, difficult choices remain for defining

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[12]Oceanography in the Next Century: Building New Partnerships, National Research Council, Washington, D.C., 1992.

both the role of government and the right organizational structures for delivering services to the public. As Congress and the administration continue to grapple with these policy choices, particular attention should be paid to ensuring that reorganization approaches are coordinated within and across agency lines and based on clearly articulated and agreed-upon missions and goals. Once a reasonable degree of consensus on goals and missions is achieved, continued attention will be needed to ensure that proper implementation approaches are chosen and that programs effectively meet their missions. Finally, sustained oversight by Congress is needed to ensure effective implementation. We look forward to continuing to work with Congress as it considers opportunities to reorganize and streamline the federal government.

This concludes my prepared statement. Mr. Chairman, my colleagues and I would be pleased to respond to any questions.

MAJOR FEDERAL INITIATIVES THAT SUPPORT INDUSTRIAL R&D

Dollars in millions

Federal initiatives	Proposed budget for FY 1996
Commerce/NIST	
Advanced Technology Program: Provides cost-shared awards to industry to develop high-risk technologies with significant commercial or economic potential.	$491
Defense/ARPA	
Technology Reinvestment Project: Provides matching fund awards to industry to develop "dual-use" technologies with both military and commercial applications and help small defense firms make the transition to commercial markets.	500
SEMATECH: Provides grants to the U.S. semiconductor industry with the domestic capability for world leadership in manufacturing.	90
Energy	
Cooperative R&D Agreements: Transfers technology from Energy laboratories by collaborating on R&D with industry and other nonfederal organizations.	296[a]
Transportation	
Next Generation High-Speed Rail: Provides funding to promote industry investment in futuristic, cost-effective rail technologies through the use of existing infrastructure.	59
NASA	
Aeronautics Initiative: Funds high-speed research and advanced subsonic technologies for developing future civilian transport and reducing costs.	434

Governmentwide Initiatives

High Performance Computing and Communications: Provides funds to ensure U.S. leadership in information and communications technologies and helps lay the technological foundation for the National Information Infrastructure initiative.	1,142
National Information Infrastructure: Funds research and advanced communications applications and adopts leading-edge information technologies.	100
Partnership for a New Generation of Vehicles (Clean Car): Provides funding to enhance the competitiveness of the U.S. automobile industry and its suppliers and improve environmental quality.	333
Construction and Building: Provides funds to improve the productivity and safety of building construction practices and the affordability, quality, and environmental characteristics of buildings.	169
Physical Infrastructure for Transportation: Provides funding to improve the quality and lowers the cost of building and maintaining highways, bridges, ports, rail lines, airports, and other parts of the nation's physical transportation infrastructure.	321
Small Business Innovation Research Program[b]: Provides funding to strengthen the R&D role of small, innovative companies.	900
Total	$4,835

[a]Funding in Energy's budget specifically designated for Cooperative R&D Agreements. In addition, Energy laboratories can use R&D program funds to support Cooperative R&D Agreement projects.

[b]Two percent of extramural R&D for 11 federal agencies.

Sources: GAO, based on documents from agencies and discussions with officials.

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