



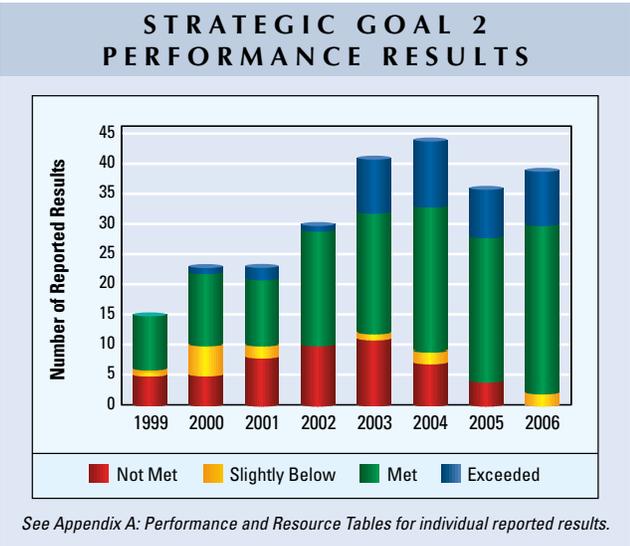
**STRATEGIC GOAL 2**

*Foster science and technological leadership by protecting intellectual property (IP), enhancing technical standards, and advancing measurement science*



**W**orking with U.S. industry to develop and apply technology, measurements, and standards, the Department of Commerce is focused on providing the infrastructure necessary to develop innovative breakthroughs and new technologies vital to the nation's long-term economic growth.

The Department's laboratories provide the measurement science and standards capabilities needed by industry to continually develop new and improved products and services and enhance quality of life. Over 380 National Institute of Standards and Technology (NIST) staff members participate in more than 95 standards development organizations each year, and NIST sells as many as 31,000 Standard Reference Materials (SRM) and 5,000 Standard Reference Databases annually. The Department's measurement and standards work addresses a significant portion of the nation's modern technology-based economy, from the automotive to the biotechnology





## PERFORMANCE SECTION \* STRATEGIC GOAL 2

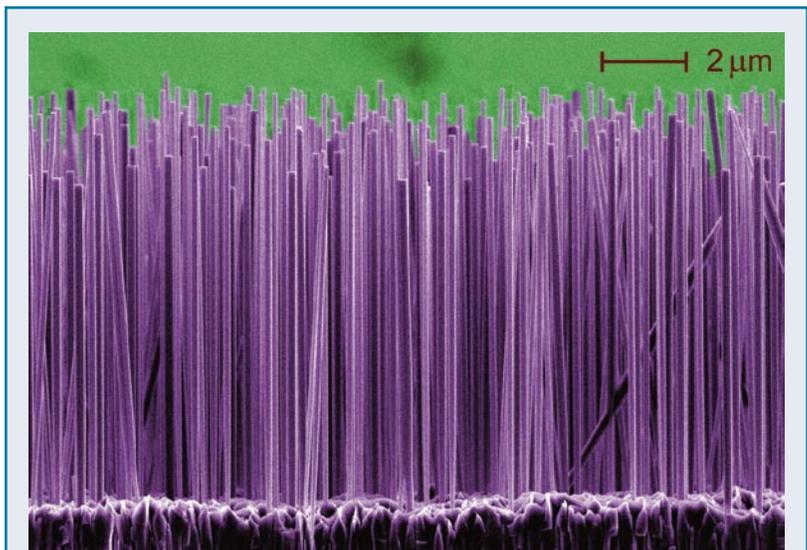
sector, from basic materials and manufacturing to information technology (IT), and from companies with a handful of employees to the largest firms along with universities and other government agencies.

Intellectual property (IP) is a potent force in, and a fundamental component of, the global economy. The Department strives to preserve the nation's competitive edge by protecting IP and encouraging technological innovation. In market-driven economic systems, innovation provides a catalyst for economic prosperity through the accumulation of scientific knowledge, introduction of new products and services, and improvements in the productivity levels of land, labor, and capital resources.

A sample of significant accomplishments that the Department achieved in FY 2006 includes the following:

### ***NIST***

- ◆ **Hydrogen Economy:** *"Nano-Cages" for Hydrogen.* Researchers at NIST analyzed the lattice-like arrangement of atoms in a custom-made material known as a metal-organic framework, demonstrating that nanoscale "cages" formed in the material have a previously unrecognized capacity to store hydrogen. Their work implies that similar materials might be engineered to optimize both the storage of hydrogen and its release under normal vehicle operating conditions—potentially a "fuel tank" for future hydrogen-powered cars.
- ◆ **Natural Disasters:** *NIST Cites Keys to Minimizing Structural Damage from Hurricanes.* NIST coordinated a multi-organizational team of experts from private sector, academic, and federal entities to conduct a broad-based reconnaissance of areas impacted by Hurricanes Katrina and Rita to analyze the performance of a variety of physical structures during the storms. The experts found that stricter adherence to existing building standards, model building codes, and good building practices, and a greater recognition of the risks posed by storm surge, could minimize the kind of structural damage caused by hurricanes in the Gulf Coast states. NIST issued a report that made 23 recommendations for specific improvements in the way that buildings, physical infrastructure (such as bridges and utilities), and residential structures are designed, constructed, maintained, and operated in hurricane-prone regions across the United States. Many of those recommendations are being acted upon already.
- ◆ **Nanotechnology:** *Building Infrastructure for Nanomanufacturing.* U.S. Secretary of Commerce Carlos M. Gutierrez announced the launch of a state-of-the-art center for collaborative nanotechnology research at NIST. At the new Center for Nanoscale Science and Technology (CNST), scientists from U.S. companies, universities, and government will focus on laying the technical groundwork necessary for U.S. industry to translate nanotechnology's many anticipated offerings into practical realities—manufacturable, market-ready products.



*These "nanolights" made by NIST researchers are about a thousand times thinner than a human hair and may have many applications from "lab on a chip" devices for identifying chemicals to ultraprecise tools for laser surgery. Photographed by Lorelle Mansfield for NIST.*



◆ **Competitiveness and Innovation: *Assessing the Nation's Measurement System.*** NIST launched an ambitious assessment of the nation's decentralized measurement system to determine whether this vital infrastructure—the U.S. Measurement System, or USMS—can effectively address diverse needs for ever more exacting and reliable measurement and calibration tools in a high-tech, global economy. As part of this effort, NIST joined with other private and public sector organizations to conduct a series of public workshops to assess and document the priority needs areas for improved measurements and standards. USMS workshops have been held for a broad range of industries, including optical radiation measurements, proteomics, advanced electronics, telemedicine, biotechnology, nanotechnology, data storage, and broadband communications. In addition, NIST solicited input from hundreds of companies, agencies, and individuals. NIST will issue a report on the assessment by fall 2006.

### ***USPTO***

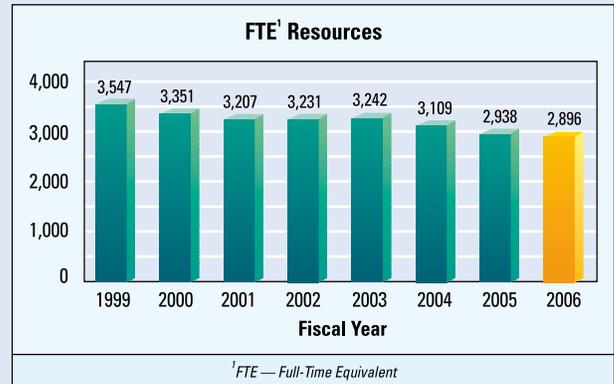
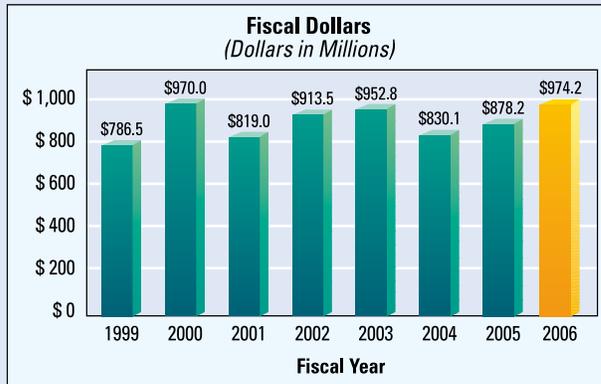
**The U.S. Patent and Trademark Office (USPTO).** USPTO received 417,819 Utility, Plant, and Reissue (UPR) patent applications for FY 2006, an increase of 8.7 percent from FY 2005. USPTO published 291,259 pending applications and issued 183,182 UPR and Design patent grants. USPTO received 275,790 trademark applications containing 354,775 classes for registration, an increase of 9.7 percent from 2005. The Office registered 147,118 marks including 188,899 classes. Total office disposals were 256,002, including 315,783 classes. The inventory of total trademark applications under examination decreased by five percent from 497,400 files with more than 653,000 classes at the start of the year, to 474,241 files, including 634,087 classes at year end.

The Department has demonstrated successful progress under this strategic goal. Bureaus with programs supporting this strategic goal include the Technology Administration (TA), consisting of the Technology Administration/Under Secretary (TA/US), NIST, and the National Technical Information Service (NTIS); USPTO; and the National Telecommunications and Information Administration (NTIA).

STRATEGIC OBJECTIVE 2.1

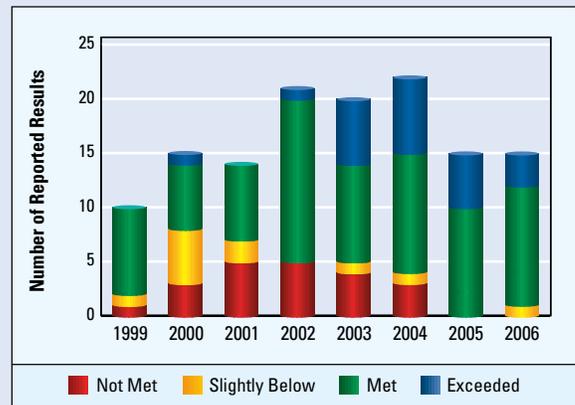
*Develop tools and capabilities that improve the productivity, quality, dissemination, and efficiency of research*

STRATEGIC OBJECTIVE 2.1 TOTAL RESOURCES



**T**hrough NIST, the Department works with U.S. industry and other stakeholders to promote U.S. innovation and industrial competitiveness by advancing measurement science, standards, and technology in ways that enhance economic security and improve quality of life. NIST fulfills its broad responsibilities and works to foster science and technological leadership by helping the United States to drive and take advantage of the increased pace of technological change, fostering more efficient transactions in the domestic and global marketplace, and addressing other critical national needs assigned to NIST by the Administration and Congress.

STRATEGIC OBJECTIVE 2.1 PERFORMANCE RESULTS



See Appendix A: Performance and Resource Tables for individual reported results.

PERFORMANCE GOAL	STATUS*
Promote innovation, facilitate trade, and ensure public safety and security by strengthening the nation's measurements and standards infrastructure (TA/NIST)	●
Accelerate private investment in and development of high-risk, broad-impact technologies (TA/NIST)	●
Raise the productivity and competitiveness of small manufacturers (TA/NIST)	●
Enhance public access to worldwide scientific and technical information through improved acquisition and dissemination activities (TA/NTIS)	●
* ● = MET (100%)   ● = SIGNIFICANTLY MET (75% - 99%)   ● = NOT MET (< 75%)   ● = NOT APPLICABLE	

Among its activities, TA accomplished the following in FY 2006:

◆ **Nanotechnology:** *Stable Polymer Nanotubes May Have a Biotech Future.* Scientists at NIST have created polymer nanotubes that are unusually long (about one centimeter) as well as stable enough to maintain their shape indefinitely. Manipulating lasers as "tweezers" and "scalpels," the researchers created tiny, fluid-filled polymer tubes less than 100 nanometers (nm) in diameter. The NIST team developed processes for extending the shelf life of polymer nanotubes—considered essential for commercial applications—and forming sturdy nanotube network structures. The NIST nanotubes may have biotechnology applications as channels for tiny volumes of chemicals in nanofluidic reactor devices, for example, or as the "world's smallest hypodermic needles" for injecting molecules one at a time.

◆ **Quality:** *NIST Extending Baldrige Program to Non-profit Organizations.* Starting in 2007, non-profit organizations—including charities, trade and professional associations, and government agencies—will be eligible to apply for the Malcolm Baldrige National Quality Award, the nation's highest honor for performance excellence and quality achievement. In 2006 ten non-profit organizations—including federal, state, and local agencies—applied to a pilot application program run by NIST in preparation for the 2007 award process. In April 2006 Vice President Cheney and Secretary Gutierrez recognized the six recipients of the 2005 Baldrige Award, including, for the first time, a community college, an automotive dealership, and an oil industry business.

◆ **Reducing Barriers to Trade:** *Commerce Acts to Simplify Telecom Trade with Singapore.* In June 2006, new, streamlined regulatory approval procedures came into effect in the United States and Singapore, reducing technical barriers in the telecommunications trade between the two countries. Singapore officially recognized four U.S. organizations identified by NIST as "certification bodies" as qualified to determine whether shipments of telecommunications products comply with that country's required standards. Prior to this action, procedures for certifying U.S. telecommunications exports were performed entirely by Singapore organizations. The new procedures eliminate the need for often-duplicative testing and allow U.S. manufacturers of telecommunication equipment to certify their products at home and ship directly to the \$1.3 billion Asian market.

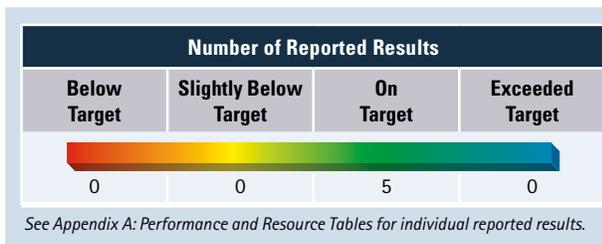


Vice President Dick Cheney and Commerce Secretary Carlos Gutierrez present the 2005 Baldrige National Quality Award to representatives of DynMcDermott Petroleum Operations Company. Since 1993, the firm has operated and maintained the U.S. Strategic Oil Reserve, a cache of up to 700 million barrels of crude oil. Photographed by Ron Bell for the Department of Commerce.

**Performance Goal: Promote innovation, facilitate trade, and ensure public safety and security by strengthening the nation's measurements and standards infrastructure (TA/NIST)**

*The nation's ability to innovate and compete in a global economy depends on a robust scientific and technical infrastructure, including research, measurement tools, standards, data, and models. The NIST Laboratories develop and disseminate measurement techniques, reference data, test methods, standards, and other technologies and services required by U.S. industry to compete in the 21st century.*

Progress on this goal is evaluated using an appropriate mix of specific output tracking, peer review, and economic impact analyses. Together, these evaluation tools, combined with continual feedback from customers, provide a comprehensive picture of performance toward this long-term goal. Additional information on these evaluation methods is available at <http://www.nist.gov/director/planning/strategicplanning.htm>.





## PERFORMANCE SECTION \* STRATEGIC GOAL 2

Specific achievements of this performance goal are described below:

- ◆ Technical publications represent one of the major mechanisms NIST uses to transfer the results of its research to support the nation's technical infrastructure and provide measurements and standards—vital components of leading-edge research and innovation—to those in industry, academia, and other government agencies. Each year NIST's technical staff produce a total of 2,000-2,200 publications with approximately 50 to 60 percent appearing in prestigious scientific peer-reviewed journals. In FY 2006, NIST staff authored 1,163 publications in peer-reviewed journals.
- ◆ SRMs are the definitive source of measurement traceability in the United States; all measurements using SRMs can be traced to a common and recognized set of basic standards that provides the basis for compatibility of measurements among different laboratories. SRMs certified by the NIST Laboratories are used by customers to achieve measurement quality and conformance to process requirements that address both national and international needs for commerce, trade, public safety, and health. In FY 2006, NIST sold 31,195 SRMs.
- ◆ Online data represent another method NIST uses to deliver measurement and standards tools, data, and information. NIST provides online access to more than 80 scientific and technical databases covering a broad range of substances and properties from a variety of scientific disciplines. These technical databases are heavily used by industry, academia, other government agencies, and the general public, with more than 90 million estimated downloads in FY 2006. For example, in June 2006, the NIST Mass Spectrometry Data Center added a major class of spectra to its reference collection. The "NIST Peptide Ion Fragmentation Library" enables highly reliable protein identifications to be made with far greater sensitivity and speed than previously possible. The data has applications in a wide variety of biotechnologies, including pharmaceuticals, health care, agriculture, and food.
- ◆ Today's global marketplace demands rapidly conducted, highly accurate, and efficiently delivered measurements. NIST measurement services, including calibration services, are critical for ensuring product performance and quality, improving production processes, making marketplace transactions fair and efficient, and leveling the playing field for international trade. NIST calibration services provide the customer with direct traceability to national and international primary standards. NIST offers more than 500 different types of physical calibrations in areas as diverse as radiance temperature, surface finish characterization, and impedance; in FY 2006, NIST calibrated 3,026 items.

Accomplishments and applicable quantitative data used to evaluate progress on this long-term performance goal are reviewed quarterly. Quantitative data are collected and reported by NIST Technology Services.

External and independent evaluation of the research and measurement standards work of the NIST Laboratory Programs is conducted regularly. This type of peer review, combined with quantitative evaluation metrics focused on dissemination of NIST's measurements and standards work, demonstrate the laboratories' contribution to the nation's measurement and standards infrastructure.

In FY 2006, a JILA External Review Committee, created by the University of Colorado, conducted a four-day, in-depth review of the operations and scientific activities of JILA. JILA is one of the nation's leading research institutions in the physical sciences and is jointly operated by NIST and the University of Colorado. The review committee consisted of representatives from universities across the country and NIST staff. The committee was unanimously impressed by the overall high quality of scientific research and organizational management at JILA, and concluded that "JILA is truly a unique organization that blends the research cultures of a university and a government laboratory in ways that lead to synergistic and innovative approaches to...challenging scientific problems."

Also in FY 2006, the National Research Council (NRC) Board on Assessment (BOA) delivered a biennial report on the NIST Laboratories focused on the following areas:

- ◆ The technical quality and merit of the laboratory programs relative to the state-of-the-art worldwide.
- ◆ The effectiveness with which the laboratory programs are carried out and the results disseminated to customers.
- ◆ The degree to which the laboratory programs are meeting the needs of intended customers.
- ◆ The adequacy of the laboratories' facilities, equipment, and human resources insofar as they affect the quality of the technical programs and the effectiveness with which the laboratories meet customers' needs.

In the latest NRC assessment report, the BOA indicated that it was impressed with the technical quality of NIST's work: "NIST carries out in a superb fashion an absolutely vital role in supporting as well as facilitating the further development of the technological base of the U.S. economy. Its personnel and scientific programs are, by scientific measures, among the best in the world, and its explicit and continuing attention to the needs of its customers keeps it alert to the changing technological environment to which it must be responsive...." This report is available online at <http://www.nist.gov/director/AssessmentReport.pdf>.

In addition to peer reviews, the programmatic goals and strategic direction of NIST as a whole are reviewed regularly by the Visiting Committee on Advanced Technology (VCAT). The VCAT is a legislatively mandated panel of external advisors that meets quarterly to review NIST's general policy, organization, budget, and programs. In its most recent annual report, the VCAT commended NIST for "aggressively undertaking new strategic planning activities to help ensure that programs and investment strategies are better aligned with NIST's mission and national priorities." See <http://www.nist.gov/vcat/> for additional information on the VCAT, including its most recent annual report.

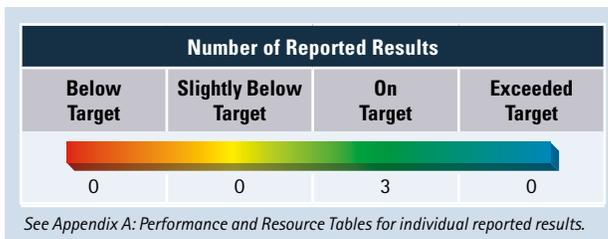


*John L. (Jan) Hall of NIST and the University of Colorado at Boulder was named a co-winner of the 2005 Nobel Prize in Physics for his pioneering work in the development and transformation of the laser from a laboratory curiosity to one of the fundamental tools of modern science and a ubiquitous component of modern communications systems. Photographed and copyrighted by Geoffrey Wheeler.*

**Performance Goal: Accelerate private investment in and development of high-risk, broad-impact technologies (TA/NIST)**

*Phase-out of the Advanced Technology Program (ATP) was initiated in FY 2006. ATP is a cost-shared funding program for businesses that was intended to develop new technologies for commercial use.*

Key indicators of the generation and diffusion of new commercially relevant technical knowledge include patents and technical publications generated by Advanced Technology Program (ATP)-funded projects and ATP-funded projects with technologies under commercialization. Although ATP did not issue any new awards in FY 2006, the long-term nature of ATP-funded projects results in a three to five-year lag from initial project funding to the generation of measurable outputs and outcomes.



Specific achievements of this performance goal are described below:

- ◆ Publications and patents represent major channels for the diffusion of technical knowledge that results from ATP investment in the development of new technologies. Past ATP-funded research generated more than 1,700 cumulative publications and more than 1,400 cumulative patents through FY 2005.
- ◆ The number of ATP-funded projects with technologies under commercialization is an indication of the extent to which ATP-funded research leveraged or catalyzed new products and services. Through FY 2005, over 340 ATP projects have technologies under commercialization.

Evaluation is a central part of ATP's operation. ATP uses a variety of methods, including internal assessments, external program reviews, and economic impact studies to assess and evaluate the program. Additional information on ATP's evaluation methods is available at: [http://www.atp.nist.gov/eao/eao\\_main.htm](http://www.atp.nist.gov/eao/eao_main.htm).

The measures above, along with other programmatic accomplishments, are used to evaluate ATP's progress towards its long-term goal of increasing investment in and development of new technologies. Data are gathered from the portfolio of ATP project participants through ATP's Business Reporting System (BRS). BRS reports are reviewed by ATP's Economic Assessment Office and the individual project managers overseeing the ATP project.

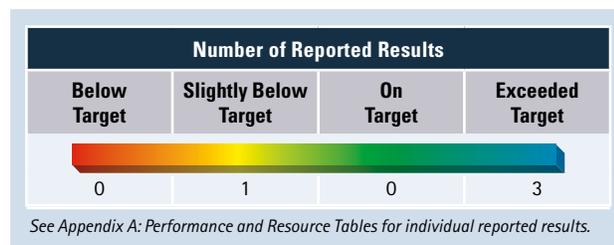
The programmatic objectives and management of ATP are reviewed by the ATP Advisory Committee. Additional information on the ATP Advisory Committee, including recent annual reports, is available at [http://www.atp.nist.gov/adv\\_com/ac\\_menu.htm](http://www.atp.nist.gov/adv_com/ac_menu.htm).

In FY 2006, NIST began an effort to ensure that the results of funded research are available to the private sector for future technology development and commercialization after the program is concluded.

**Performance Goal: Raise the productivity and competitiveness of small manufacturers (TA/NIST)**

The most significant challenge facing U.S. manufacturers continues to be coping with accelerating technological change and global competition. The firms that succeed will be those best able to manage the complexity and rapid change affecting all aspects of the manufacturing enterprise. Through the Hollings Manufacturing Extension Partnership (MEP) program’s nationwide network of manufacturing centers, which are linked to state, university, community college, and private sources of technology and expertise, NIST helps smaller firms adopt new and advanced manufacturing and management technologies and innovative business practices to position them to compete in the global economy.

MEP clients receive technical, business, and innovation services through interactions ranging from informational seminars and training to in-depth technical assistance in areas such as new product development, lean implementation, quality improvement practices, human resources and organizational development, and industrial marketing.



Specific achievements of this performance goal are described below:

- ◆ MEP’s network of manufacturing assistance centers works at the grassroots level with each center providing their local manufacturers with expertise and services tailored to their most critical needs. In FY 2005, MEP centers provided services to 16,448 clients in industries such as fabricated metal products, computer and electronic products, and transportation equipment.
- ◆ Through an annual survey of clients, the Program obtains quantifiable impacts of MEP services on its clients’ bottom line. MEP demonstrates the impact of its services on three key quantitative business indicators that, as a set, suggest the presence of business changes that are positively associated with productivity, revenue growth, and improved competitiveness. The measures include (1) increased sales attributed to MEP assistance, (2) increased capital investment attributed to MEP assistance, and (3) cost savings attributed to MEP assistance. Estimates from the most recent survey results from services provided in FY 2005 show increased sales of \$2,508 million, increased capital investment of \$2,013 million, and cost savings of \$816 million all attributed to the services received from MEP centers.

MEP’s data collection process is designed to obtain actual client impacts and, as a result, client survey data lag by approximately one year. The survey process, coupled with the timeline for producing the Performance and Accountability Report (PAR), precludes the reporting of actual FY 2005 data. The data reported in the PAR represent a combination of three-quarters of actual client reported impacts and one-quarter of estimated client impacts. The estimate is based on the final quarter of FY 2004 survey data and has been adjusted to reflect the number of clients anticipated in the final FY 2005 survey quarter. Final FY 2005 data will be available in December 2006.

These data, along with other programmatic accomplishments, are used to evaluate progress on this long-term performance goal. MEP’s Client Impact Survey is administered by a private firm. Each quarter, data are reviewed by NIST MEP staff and center staff. Based on defined criteria, impacts are selected by NIST MEP for confirmation and verification by center staff.

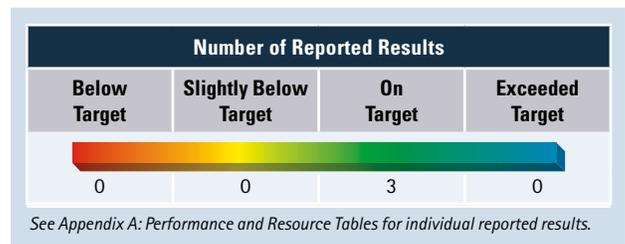


As with other NIST programs, the programmatic objectives and management of MEP are reviewed by the VCAT and MEP's National Advisory Board (NAB), which was established by the Secretary of Commerce in October 1996. Recently, the charter for the MEP NAB was amended to add flexibility and respond to the program's shift in emphasis to enhancing firms' innovation capabilities. NIST is now in the process of selecting additional board members. Several nominees have been identified, additional candidates are being sought, and the Program anticipates scheduling a NAB meeting in the fall of 2006.

**Performance Goal: Enhance public access to worldwide scientific and technical information through improved acquisition and dissemination activities (TA/NTIS)**

*Bringing scientific and technical information to U.S. business and industry.*

NTIS, a component of TA, seeks to promote innovation and economic growth for U.S. business by (1) collecting, classifying, coordinating, integrating, recording, and cataloging scientific and technical information from a variety of sources, foreign and domestic; (2) disseminating this information to the public; and (3) providing information management services to other federal agencies that help them interact with and better serve the information needs of their own constituents, and to accomplish this without appropriated funds.



**STRATEGIES AND FUTURE PLANS**

The U.S. technology sector operates in a dynamic global environment that has changed radically since the end of the Cold War. The emergence and the strength of new economies in countries such as China and India, as well as the dramatic increase in the pace of innovation around the world, have resulted in a transformation of the technological and competitive landscape for the U.S. technology sector. The results are newer, larger global market opportunities, and more and stronger global competitors. Because the United States cannot generally compete in the area of low-cost manufacturing and labor, technological innovation will remain a key differentiator for the United States. TA/US will continue to work to identify barriers to and foster the U.S. technological innovation process for rapid development, deployment, and commercialization of new and emerging technologies with broad economic and social potential.

To address these priorities and fulfill its mission, TA/US engages and works with industry, Department bureaus and federal agencies, and other stakeholders in the innovation community to help maximize the contribution of technological innovation to the growth of the U.S. economy. Through its analytical policy focus, TA/US helps frame and explore key issues related to emerging technologies, the innovation infrastructure, technology transfer, general business climate, economic security, and market opportunities that affect U.S. innovative capacity, competitiveness, and economic growth. TA/US identifies problems and barriers to technological innovation, promotes new models of technology transfer and R&D collaborations, offers policy recommendations to address challenges posed by technological change, and examines other concerns related to technological innovation. By engaging key stakeholders in dialogue and through rigorous analysis of collected data and information, TA/US provides new knowledge and intelligence about the innovative capacity of U.S. firms and workers that inform the actions of the Secretary of Commerce, policymakers, and stakeholders.



## STRATEGIC GOAL 2 \* PERFORMANCE SECTION

Analytical findings are delivered and disseminated through a variety of media and products, including congressional testimony, briefings, reports, and the TA/US Web site; advocacy in the federal interagency policy process and appropriate international fora; workshops and conferences; and other channels. Through the dissemination of TA/US's analysis, U.S. policymakers, leaders, and decisionmakers are provided with increased knowledge and a deeper understanding of trends and policy implications brought about by rapid advancement of new and emerging technologies and the globalization of technological innovation. TA/US's portfolio of policy work adapts and evolves in alignment with the dynamic, fast-paced, and increasingly more technology-driven, knowledge-based global economy.

NIST uses a variety of methods, including hosting conferences and workshops; participating on standards committees; and ongoing interactions with industry, professional groups, universities, and other government agencies; to identify the needs of its diverse customers. As usual, NIST hosted a large number of conferences and workshops in FY 2006, ranging from nanoscience to biometrics to quantum computing and organizational performance improvement. This year, NIST supplemented its usual large number of conferences and workshops with a special series of private-public sessions for the USMS—all aimed at identifying priority measurement needs impeding future technological innovations. NIST led this comprehensive assessment of the USMS, and NIST scientists continued to work closely with industry on developing research and development (R&D) roadmaps. Through these private-public collaborations, priority measurement needs from across industry and the economy are identified, along with potential solutions and viable solutions providers. In addition, NIST conducts retrospective and prospective economic impact studies annually to prioritize R&D funding and ensure that the Department conducts the highest priority research. Two new studies launched this year address biotechnology and semiconductor industry measurements. Additional studies are planned to quantify the economic impact of formal standards-related activities.

In 2006, MEP developed a Next Generation strategic plan focused on providing the innovation services that U.S. manufacturers need to grow, transform, and remain globally competitive. The plan includes a much stronger emphasis on providing technology-intensive services to U.S. small manufacturers. The Next Generation MEP will continue to leverage and expand relationships, partnering at both the federal and state level with organizations that have complementary goals focused on meeting the most pressing needs of the manufacturing community. MEP's planning process is ongoing, with input from a stakeholder list that includes small manufacturers, state representatives, and economic development partners; manufacturing related associations; universities; community colleges; and MEP center staff; as well as national stakeholders in the Departments of Commerce, Labor (DOL), and Defense (DOD). This broad level of input provides a more complete picture of national manufacturing needs, the manufacturing infrastructure in which the MEP centers operate, and the priorities of the manufacturing community.

Phase-out of ATP was initiated in FY 2006. Special attention is being given to documenting the results of funded research to ensure maximum private sector use is made of this investment in the years ahead.

In a continuing effort to develop state-of-the-art capabilities to disseminate scientific and technical information to the public NTIS has developed a strategic plan that focuses on accelerating the transformation of NTIS into a flexible, adaptable, electronically-based information acquisition, dissemination, and preservation entity. NTIS launched strategic initiatives in human capital and in business process re-engineering of mission-critical processes and continues to develop a detailed strategic roadmap that responds to changes in the information acquisition and dissemination environment. NTIS's strategic plan supports both the President's Management Agenda (PMA) and the Department's strategic plan. Achievements recognized from this implementation include management development teams addressing identified initiatives, regularly scheduled financial reviews, and development of human capital plans identifying mission critical occupations. These changes will ensure that the challenge of permanent preservation of and ready access to the taxpayers' investment in R&D through the acquisition, organization, and preservation of the titles added annually to the permanent collection will maximize scientific and technical information dissemination contributing to the U.S. economic growth.



Federal Acquisition Circular (FAC) 2005-10 was published on June 28, 2006 regarding the FAR Case 2005-033 Interim Rule implementing the Wage Determinations Online Program Web site (<http://www.wdol.gov>). WDOL.gov technical development was completed by NTIS through a cooperative effort with OMB, DOL, DOD, General Services Administration (GSA), Department of Energy (DOE), and other agencies to improve the wage determination process. WDOL.gov is part of the Integrated Acquisition Environment (<http://www.acquisition.gov>), one of the e-government initiatives in the PMA.

In FY 2006, NTIS distributed the highly anticipated and highly promoted U.S. Department of Agriculture (USDA) revised Food Pyramid. NTIS continues to assist USDA in providing nutritional information products to the public through NTIS's comprehensive dissemination program. The products disseminated have increased steadily over the past several years averaging 11.5 million items distributed annually. NTIS also continued distribution of the Administration's "Healthy Start, Grow Smart" baby developmental series, adding the nutritional information for the second year of a child's life. The "Healthy Start, Grow Smart" series now encompasses ages newborn through 24 months. NTIS anticipates disseminating approximately six million items in FY 2006.

## CHALLENGES FOR THE FUTURE

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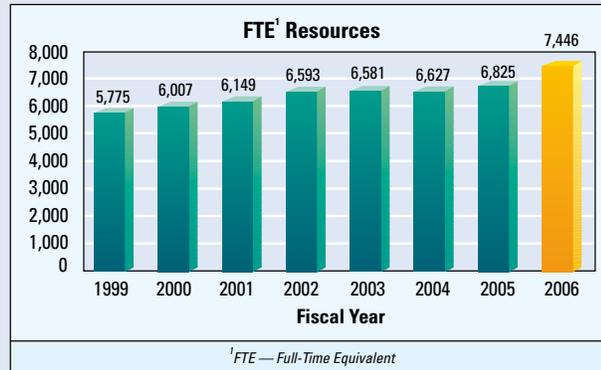
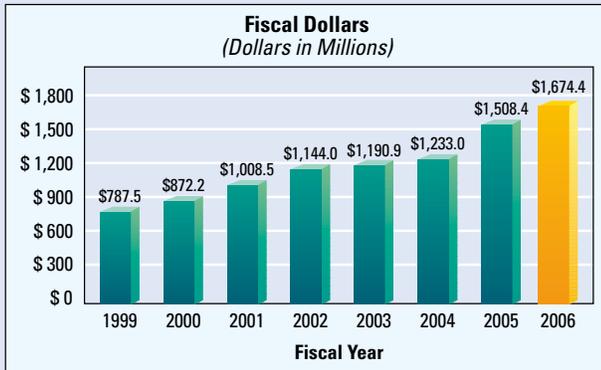
Keeping a competitive edge in the world economy depends on the nation's ability to generate and harness the latest in scientific and technological developments—particularly in the physical sciences and engineering—and to apply these developments to real world applications. Throughout the last decade, political and technical forces have combined to open up much of the globe to commerce. Increased emphasis on the sciences has created an environment in which continuous innovation must be sustained to maintain economic success. These growth and competition trends have significant implications for U.S. technological leadership and the economic growth and jobs they generate: the location of R&D and high-tech manufacturing, competition for high-skilled workers, and the climate for attracting global investment. Technological innovation will ensure continued U.S. leadership in science and engineering, which will in turn drive productivity, grow the economy, and solve important societal problems.

Technological innovation is vital to U.S. economic growth, the nation's industries, and U.S. workers. The Department's key role in the President's American Competitiveness Initiative, which strives to keep the United States strong and secure by ensuring that it continues to lead the world in science and technology, reflects the importance of innovation to the nation's economic future. The Department will continue to conduct high-priority research, identify technical measurement barriers to innovation, and transfer technical knowledge developed to the private sector as part of efforts to drive this initiative.

STRATEGIC OBJECTIVE 2.2

Protect intellectual property and improve the patent and trademark system

STRATEGIC OBJECTIVE 2.2 TOTAL RESOURCES

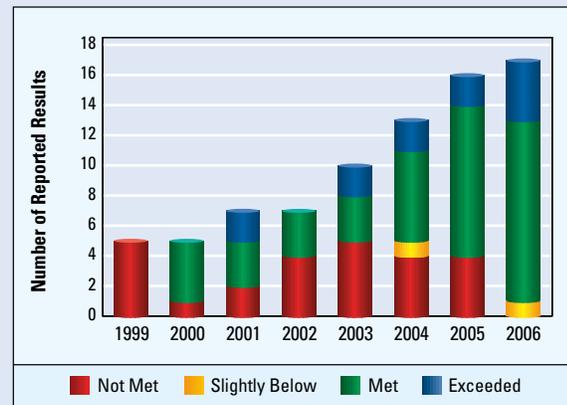


This objective is important to the nation as it serves to ensure that the intellectual property (IP) system contributes to a strong global economy, encouraging investment in innovation, and fostering entrepreneurial spirit.

Achievement of this objective will protect individual rights and innovation in a timely, efficient manner. A discussion of each performance goal within this objective will further describe the outcomes of the objective.

People worldwide benefit from innovations, both directly on a personal level, and indirectly through economic growth fueled by innovation. Continual development of a vigorous, flexible, and efficient IP system protects individual rights, encourages investment in innovation, and fosters entrepreneurial spirit.

STRATEGIC OBJECTIVE 2.2 PERFORMANCE RESULTS



See Appendix A: Performance and Resource Tables for individual reported results.

PERFORMANCE GOAL	STATUS*
Improve the quality of patent products and services and optimize patent processing time (USPTO)	●
Improve the quality of trademark products and services and optimize trademark processing time (USPTO)	●
Create a more flexible organization through transitioning patent and trademark operations to an e-government environment and advancing intellectual property development worldwide (USPTO)	●

\* ● = MET (100%)   ● = SIGNIFICANTLY MET (75% - 99%)   ● = NOT MET (< 75%)   ● = NOT APPLICABLE

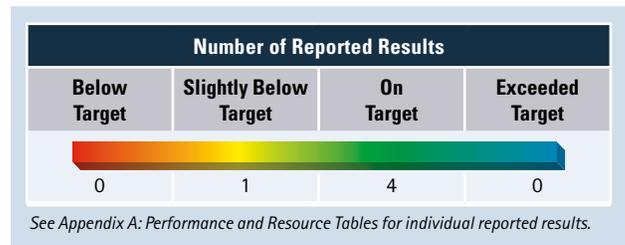


The Department promotes the IP system through the protection of inventions or creations via patent, trademark, trade secret, and copyright laws. Under this system of protection, industry in the U.S. has flourished, creating employment opportunities for millions of Americans.

The primary services provided by the Department within this objective are the examination of patent and trademark applications and dissemination of patent and trademark information. Issuance of patents provides incentives to invent and invest in new technology by allowing innovators the opportunity to benefit from their discoveries. Registration of trademarks assists businesses in protecting their investments and safeguards consumers against confusion and deception in the marketplace by providing notice of marks in use. Through dissemination of patent and trademark information, the Department promotes a global understanding of IP protection and facilitates the development and sharing of new technologies worldwide.

**Performance Goal: Improve the quality of patent products and services and optimize patent processing time (USPTO)**

The most significant activity under this goal is the examination of an inventor's application for a patent by comparing the claimed subject matter of the application to a large body of technological information to determine whether the claimed invention is new, useful, and non-obvious to someone knowledgeable in that subject matter.



**PATENT QUALITY**

Providing quality services and products is USPTO's foremost priority. USPTO's commitment to the continuous refinement and expansion of the quality initiatives is outlined in the *21<sup>st</sup> Century Strategic Plan*. Patent examinations are subjected to both end product and in-process reviews that evaluate the quality of the substantive basis for examiner decisions, applicability of searched cases, evidence, and clarity of communications with applicants. Findings produced by these reviews are shared individually with examiners, collected in a database for ongoing analysis, serve as the basis for the development of training programs, and used to strengthen the review process. Beginning in late 2006, USPTO commenced an intensive effort to better define quality and identify appropriate criteria to gauge quality.

This effort has culminated in plans that will ensure examiners maintain the knowledge and skill levels necessary to perform quality examinations through training and the administration of certification exams.

In January 2006, USPTO launched an academy approach to training entry-level patent examiners aimed at graduating examiners sufficiently skilled to produce quality examinations with reduced oversight. New employees are given in-depth training for up to eight months that combines technical and legal instruction, practical applications, small group study, and one-on-one assistance with real applications. The goal is for competency to improve and attritions of new hires to decrease. Approximately 600 new examiners participated in this program in 2006.

Two of the measures USPTO uses to gauge patent quality are the allowance error rate and the in-process examination compliance rate. An allowance error is defined as at least one claim within a randomly selected allowed application that would be held invalid in a court of law if the application were to issue without the required correction. The allowance error rate is measured by the ratio



of the number of applications containing an allowance error to the total number of allowed applications reviewed. In FY 2006, efforts to improve quality resulted in an allowance error rate of 3.5 percent, 12.5 percent better than the goal of 4.0 percent.

The in-process examination compliance rate is a ratio derived from the number of office actions void of deficiencies that would significantly impact the applicant's ability to advance the prosecution on the merits of the application, divided by the total number of office actions reviewed. At 90 percent in-process examination compliance, USPTO exceeded its goal of 86 percent.

**PATENT PENDENCY**

The time to process a patent application is measured in two ways: (1) first action pendency—the average time in months from filing until an examiner's initial determination is made of the patentability of an invention, and (2) total pendency—the average time in months from filing until the application issues as a patent, or is abandoned by the applicant.

USPTO strives to meet its goals of reducing pendency through a multi-pronged approach that includes hiring sufficient numbers of new examiners, retention of experienced staff, outsourcing, exploring work sharing with other patent offices, process reform through revised rules of practice, and training. In FY 2006 1,218 new patent examiners were hired. Additionally, USPTO has completed an agreement with the Australian Intellectual Property Office and awarded a competitive contract for outsourcing Patent Cooperation Treaty (PCT) searches in FY 2007 and beyond, which will free examiners to focus on the examination of national applications.

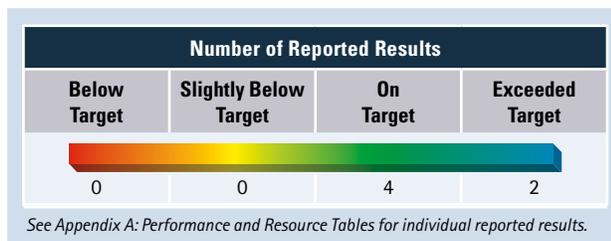
USPTO met its target of 31.3 months for total pendency. USPTO did not meet its first action pendency target of 22.0. The target was not met because there were more older applications processed than planned. USPTO expects to meet the goal next year through increased hiring efforts.

**PATENT EFFICIENCY**

Patent efficiency measures the relative cost-effectiveness of the entire patent examination process over time, or the efficiency with which the organization applies its resources to production. The cost is calculated by totaling all costs (including direct and indirect) incurred to produce a patent product and dividing the sum by the number of product outputs. The FY 2006 target of \$4,214 was met with an actual of \$3,798.

**Performance Goal: Improve the quality of trademark products and services and optimize trademark processing time (USPTO)**

The fundamental process involved in reaching this goal is the examination of trademark applications. Trademark attorneys determine registrability under the provisions of the Trademark Act of 1946, as amended. The examination of trademark applications comprises many elements, including the utilization of electronic databases to determine whether the mark in an application is confusingly similar to any pending or registered mark, the preparation of an office action to inform applicants of the attorney's findings, the approval of applications to be published for opposition, and the examination of Statements of Use filed under the Intent to Use provisions of the Trademark Act.



### **TRADEMARK QUALITY**

A vital component of USPTO's commitment to improve the quality of examination is the identification of criteria used to assess the quality of an office action. In order to determine trademark examination quality, first and final examiner search results and actions are evaluated in order to create a more comprehensive and rigorous review of what constitutes examination quality. More than 350 items are scrutinized to determine "excellent," "satisfactory," and "deficient" work with regard to the examiner's research, critical analysis of the application, and the writing of the office action. The examining attorneys' handling of every substantive and procedural issue is also analyzed comprehensively. These more rigorous criteria have been used to measure quality for the past two years. As a result, the quality of the examiners' first action on applications has demonstrably improved. The quality of final office actions has met its target goal.

In FY 2006, the trademark first action deficiency error rate was 4.3 percent, well below the 6.5 percent deficiency target. Similarly, the final action deficiency error rate was 3.6 percent, also less than the 6.5 percent target.

As part of USPTO's commitment to improve the quality of examination and ensure that all examiners possess the knowledge, skills, and abilities necessary to perform at the highest level, examiners are required to take a series of e-learning tutorials. The quality review process allows the Office to conduct training on the micro level with specific feedback, and also on the macro level with training modules that address trends, targeting topics that warrant improvement.

### **TRADEMARK PENDENCY**

The two primary measures used to determine Trademark application processing time are (1) first action pendency, which measures the average time, in months, from the filing date to when the examiner's first action is processed; and (2) final action pendency, which is based on the average time, in months, from the filing date until the notice of abandonment, notice of allowance, or registration for applications based on use. The Office met its FY 2006 target, 5.3 months, by achieving a first action pendency of 4.8 months. Trademark final action pendency results were 15.5 months, excluding suspended and inter partes cases, and 18.0 months including all cases in FY 2006. The Office met its FY 2006 target of 16.3 months excluding suspended and inter partes cases, and 18.8 months including all cases.

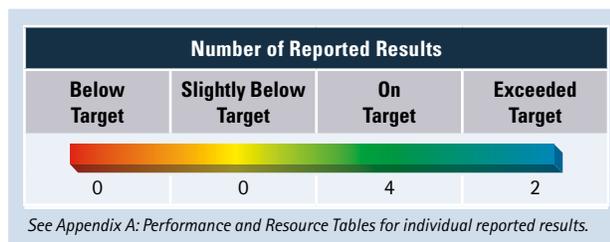
### **TRADEMARK EFFICIENCY**

The measure of Trademark efficiency is calculated by dividing total USPTO expenses associated with the examination and processing of trademarks (including associated overhead and supporting expenses) by outputs (office disposal). The measure indicates the degree to which Trademarks can operate within plan costs relative to outputs produced. The FY 2006 trademark efficiency target of \$635 was met with an actual of \$565.

The strategic plan outlines the Office's commitment to working with its IP partners to improve the efficiency of its processing systems. The number of applications and communications received and processed electronically has continued to increase and has resulted in more coordinated and streamlined work processes. The continued expansion of electronic file management, when combined with internal process mapping, will allow a more efficient design and control of the work process, provide tools to monitor and better manage the work, measure production and timeliness, and evaluate quality. This greater reliance on electronic systems will, in turn, prepare the Office for the globalization that characterizes the 21st century economy.

**Performance Goal: Create a more flexible organization through transitioning patent and trademark operations to an e-government environment and advancing intellectual property development worldwide (USPTO)**

USPTO continues to work with its IP partners as well as its applicant public to improve its processing systems. Significant progress is being made in the transitioning of its patent and trademark operations to an e-government environment. Currently, all federally registered and pending trademarks are available to the public on USPTO's Web site, [www.uspto.gov](http://www.uspto.gov). On USPTO's Web site, a variety of tasks can be accomplished, including filing electronically for patents and trademark registration, reviewing the status of current applications as needed, tracking the status of a public patent application as it moves from pre-grant publication to final disposition, and reviewing the documents in the official patent application file, including all decisions made by patent examiners.



**PATENT E-GOVERNMENT**

The public Patent Application and Information Retrieval (PAIR) system offers the public an advanced electronic portal for PDF viewing, downloading, and printing an array of information and documents for patent applications not covered by confidentiality laws. Public PAIR also offers a quick-click feature for ordering certified copies of patent applications and application files. The private PAIR system allows applicants access to the file history of their applications. In FY 2006, over 24.1 million search requests were made in public PAIR, and 2.7 million requests in private PAIR.

In March 2006, USPTO fully deployed an enhanced electronic filing system (EFS-Web). The system was designed with extensive applicant input to improve the ease of e-filing. E-filing reduces errors and expedites processing by eliminating the scanning and indexing required for paper applications. USPTO met its FY 2006 goal of 10.0 percent of patent applications filed electronically.

Additionally, conversion of all paper applications to electronic form was completed, providing desktop access to patent applications by all examiners, support, and management personnel. USPTO has met its target of electronically managing 99 percent of patent applications. In FY 2006, USPTO enhanced its telecommuting program to remotely provide patent examiners with full access to all patent systems necessary to perform their jobs from home, and added collaborative communication technologies. More than 500 patent employees now participate.

One exciting accomplishment during FY 2006 was the expansion of the Trilateral Document Access system that provides patent examiners at USPTO and Japan Patent Office (JPO) offices access to selected application documents in the file wrappers of each other's office.

**TRADEMARK E-GOVERNMENT**

The public may access official trademark files online by using the Trademark Document Retrieval (TDR) system. This system grants access to the full file contents of all federally registered and pending trademarks in an electronic PDF format. TDR contains nearly two million pending and registered trademarks dating back to 1885, and represents more than 100 years of marketing creativity. TDR enables the public to download and print an array of information and documents. By allowing public access to interested



parties, USPTO is better able to provide timely and useful information to business owners as they develop their marks and prepare to file trademark applications.

The goal for trademark applications filed electronically was revised to 80 percent, based on 2005 results, and the Office was still able to exceed the revised target in FY 2006 with 94 percent of applications received electronically. The trademark electronic filing system has been enhanced by expanding the number and type of transactions that can be completed online and by offering reduced fees to encourage electronic communications. Twenty-five electronic forms are now available through the award winning Trademark Electronic Application System (TEAS). Options for reduced fees, system enhancements, and the availability of forms that permit more electronic transactions have encouraged greater use and acceptance by trademark customers to the point where electronic filing is now the preferred method for communicating on trademark matters. USPTO has met its target of electronically managing 99 percent of trademark applications.

In the past year, the types of notices sent electronically through "Tpostal," the Agency's electronic bulk mailing system for trademark related notices, increased threefold. USPTO uses the U.S. Postal Service's Web-based NetPost Mailing online system to print, stamp, and mail 16 types of notices. These postcard notices are sent electronically to trademark filers within 24 hours of receipt by U.S. Postal Service. Using postcards, rather than letters, saves time and reduces labor, materials, and postage costs, which result in considerable savings.

### ***ADVANCING INTELLECTUAL PROPERTY***

USPTO's Office of External Affairs (EA) plays a critical role in the U.S. government's efforts and obligations to provide IP technical assistance throughout the world. In FY 2006, EA conducted 239 Technical Assistance activities to date affecting 102 countries.

EA's mission is to promote development of IP systems internationally. Some recent initiatives include collaborating with counterparts in the Chinese government to improve China's intellectual property rights (IPR) administration and enforcement, placing IPR experts in six countries to support Embassy and Consulates on all IPR issues, and establishing USPTO Global Intellectual Property Academy (GIPA) to expand IP training, technical assistance, capacity programs, and activities for foreign government officials. Seventeen GIPA training programs have been conducted during FY 2006.

EA also manages a hotline (1-866-999-HALT) that helps small and medium-sized businesses leverage the resources of the U.S. government to protect their IPR in the United States and abroad. Callers receive information from a staff of more than 30 IP attorneys at USPTO with regional expertise on how to secure patents, trademarks, and copyrights, and on enforcement of these rights. In FY 2005, the hotline received 955 calls. In FY 2006, USPTO has received 1,460 calls through the hotline.

In support of U.S. Trade Representative (USTR) and other U.S. government agencies, USPTO plays a key role in the negotiation and drafting of IP provisions of free trade and other international agreements. These provisions generally require U.S. trading partners to provide stronger, more effective protection for IP than is required under World Trade Organization's (WTO) Trade Related Aspects of Intellectual Property Rights (TRIP) Agreement. USPTO has participated in numerous negotiating rounds and/or implementing legislation for all recently concluded and ongoing free trade agreements (FTA).



## STRATEGIES AND FUTURE PLANS

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In 2002, USPTO submitted the *21<sup>st</sup> Century Strategic Plan*, updated in 2003, and has adhered to it over the past four years. In FY 2006, USPTO reviewed its progress in achieving goals, identified current and future challenges, and is in the process of updating the plan for FY 2007 – FY 2012. The new plan builds on the infrastructure developed in the original and outlines specific strategies to meet the goals of optimizing patent quality and timeliness.

Strategies to reduce patent pendency and improve patent quality will include enhanced recruitment to hire 1,200 new examiners a year for an extended period of time, establishment of a retention bonus program, increased training for new and existing examiners, and the creation of partnerships with universities to groom examiner candidates and increase knowledge of the patent system. Hiring alone will not achieve significant reductions in pendency without accompanying changes to the current one-size-fits-all system of examination. USPTO will, in collaboration with stakeholders, develop a suite of patent products to better meet the differing needs of applicants, and more efficiently utilize the Agency's resources.

USPTO will improve and integrate existing electronic systems to promote full electronic patent application processing. This will involve promoting the utilization of electronic text content to facilitate the examination process and increase user acceptance of electronic filing systems. Applicants will be provided with expanded opportunities to conduct business with USPTO electronically. The Office will continue to expand patent examiners' opportunities to participate in the telecommuting program at the rate of more than 500 additional employees annually.

Multiple initiatives will be implemented to improve quality. Examples of quality improvements include involving external stakeholders in defining quality, developing quality metrics and performance targets; assessing the existing process for reviewing examiner work; and externally validating quality data.

USPTO will transform patent appeals and interference processing and workload, and enrollment and discipline functions. This effort will entail enhanced communication and involvement with registered patent practitioners and improvements in the Agency's responsiveness.

USPTO will continue to work on curbing IP theft and strengthen IP protection and enforcement in every corner of the globe. More IP experts will be posted in foreign countries where U.S. IP challenges are the greatest. Training and assistance programs will continue to combat and deter infringement and promote honest business practices in the use and development of IP. In addition, USPTO will continue its intensive national public awareness campaign to help educate small and medium sized businesses, where participants learn what IPR is, why it is important, and how to protect and enforce these rights.

## CHALLENGES FOR THE FUTURE

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Achieving the goal of optimizing patent quality and timeliness presents a broad spectrum of challenges. Congress and the public have recognized that the time it takes USPTO to reach a final decision on a patent application directly impacts U.S. competitiveness. A critical component to achieving the goal of timely, high-quality examinations entails the hiring and retention of more patent examiners. Unfortunately, USPTO must compete with other employers to attract and retain the most talented and sought after individuals.



**PERFORMANCE SECTION \* STRATEGIC GOAL 2**

Optimizing quality first requires accord between USPTO and applicants on the definition of quality and how to measure it. To maintain the U.S. system as the best patent examination system in the world, USPTO must provide applicants with products that protect their IPR while simultaneously facilitating efficient use of USPTO resources. Leveraging new technologies in pursuit of efficiency requires a vision of the examination processes of tomorrow.

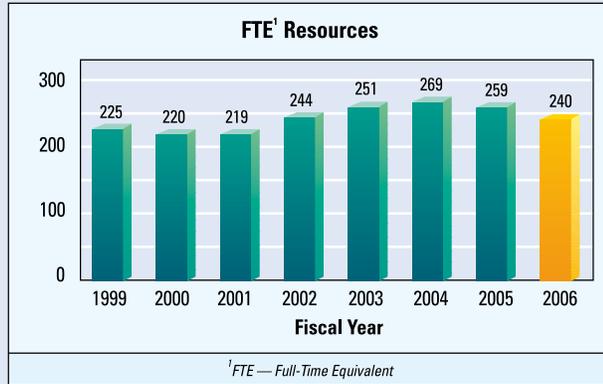
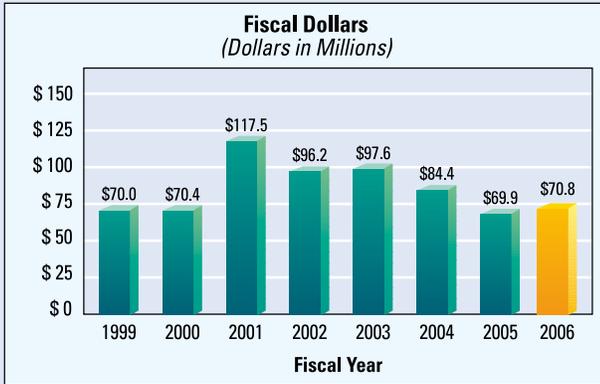
Addressing many of these challenges requires an interrelated approach to ensure that the solution to one challenge does not hamper the remedy of another. USPTO's updated strategic plan for FY 2007 – FY 2012 provides a set of focused initiatives to ultimately produce solutions to the challenges noted above.

Increasing public awareness of various IP issues and interests and how these affect them is an important aspect of the USPTO role. Educating the public about the examination processes of USPTO and how these relate to the use of IPR in the market place will help in that process. Communicating with and informing the public about the intersection of IP issues and the news stories they read everyday will help to generate a better understanding of the role of such rights in the global economy. Promoting an understanding that the violation of IPR affects everyone, and how, will be beneficial to improving the effectiveness of the system as a whole.

STRATEGIC OBJECTIVE 2.3

Advance the development of global e-commerce and enhanced telecommunications and information services

STRATEGIC OBJECTIVE 2.3 TOTAL RESOURCES



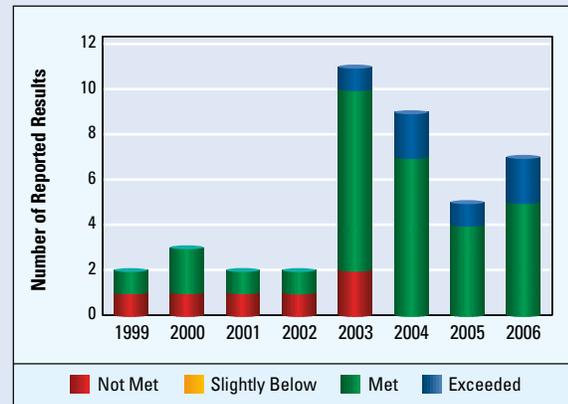
This objective is important not only to the nation, but to the international community as it has a role in radio frequency (RF) spectrum management and communications on a national level, to the President as an advisor on communications policy matters, on Internet domain names, and for wireless technology and high-speed Internet services.

Achievement of this objective will continue to further the technological advances for wireless communication, Internet services, domain name issues, and other advances in technology. A discussion of each performance goal supporting this objective will further describe the outcomes of this objective.

The Department through NTIA:

- ◆ Serves as the principal adviser to the President on domestic and international communications and information policy-making.
- ◆ Promotes access to telecommunications services for all Americans and competition in domestic and international markets.

STRATEGIC OBJECTIVE 2.3 PERFORMANCE RESULTS



See Appendix A: Performance and Resource Tables for individual reported results.

PERFORMANCE GOAL	STATUS*
Ensure that the allocation of radio spectrum provides the greatest benefit to all people (NTIA)	●
Promote the availability, and support new sources, of advanced telecommunications (NTIA)	●
* ● = MET (100%)   ● = SIGNIFICANTLY MET (75% - 99%)   ● = NOT MET (< 75%)   ● = NOT APPLICABLE	



PERFORMANCE SECTION \* STRATEGIC GOAL 2

- ◆ Manages all federal use of the electromagnetic spectrum and generally promotes efficient use of spectrum.
- ◆ Conducts telecommunications technology research, including standards-setting in partnership with business and other federal agencies.
- ◆ Awards grants through the Public Telecommunications Facilities Program (PTFP).

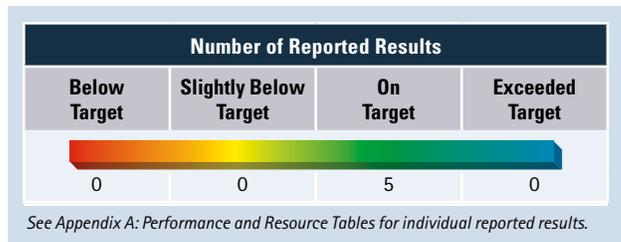
The Agency's expertise encompasses every aspect of telecommunications, including domestic policy, international policy, spectrum management, and technical telecommunications research and engineering.

- ◆ In a "Memorandum for the Heads of Executive Departments and Agencies" dated November 30, 2004, the President directed that an implementation plan be developed in FY 2005 for the recommendations contained in a two-part series of reports released by the Secretary of Commerce in June 2004, under the title *Spectrum Policy for the 21st Century—The President's Spectrum Policy Initiative Reports*. The purpose of the initiative is to promote the development and implementation of a U.S. spectrum policy that will foster economic growth; ensure U.S. national and homeland security; maintain U.S. global leadership in communications technology development and services; and satisfy other vital U.S. needs in areas such as public safety, scientific research, federal transportation infrastructure, and law enforcement.
- ◆ Among its broadband-related activities, NTIA provided technical guidance to the Federal Communications Commission (FCC) for the responsible deployment of broadband over power line (BPL) systems, contributing significantly toward fulfillment of the President's vision for universal affordable broadband Internet access for all Americans by 2007.
- ◆ NTIA also is leading Department activities in the areas of next-generation Internet Protocols, ultrawideband (UWB) technology, wireless broadband applications, wireless sensor technologies, and Internet technical functions.

**Performance Goal: Ensure that the allocation of radio spectrum provides the greatest benefit to all people (NTIA)**

*Advancing broadband and third generation (3G) wireless services.*

NTIA examined an array of spectrum management policy issues in FY 2006 dealing with innovative approaches to spectrum management and the effectiveness of current processes. The availability of the RF spectrum is key to the development and implementation of innovative telecommunications technologies.



NTIA coordinated with federal agencies the Spectrum Reform Initiative implementation plan with 54 milestones to be completed over the next five years. This initiative will fundamentally change the business of spectrum management over the next five years. The purpose of the initiative is to promote the development and implementation of a U.S. spectrum policy that will foster economic growth; ensure U.S. national and homeland security; maintain U.S. global leadership in communications technology development and services; and satisfy other vital U.S. needs in areas, such as public safety, scientific research, federal transportation infrastructure, and law enforcement. One result is the first National Strategic Spectrum plan. NTIA also took steps to establish the Department of Commerce Spectrum Management



## STRATEGIC GOAL 2 \* PERFORMANCE SECTION

Advisory Committee, consistent with the Federal Advisory Committee Act and the NTIA Organization Act. This committee will be comprised of a broad range of stakeholders, including representatives from state, regional, and local sectors; industry; academia; and consumer groups.

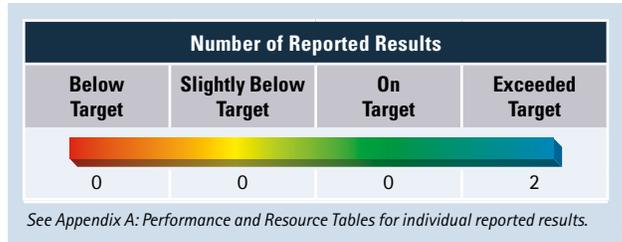
The achievements of this performance goal are described below:

- ◆ NTIA has improved the timeliness of processing frequency assignment requests from a target of 12 business days to less than nine days. This has been accomplished through business process re-engineering and IT improvements. These frequency assignments satisfy the near-term and future spectrum requirements of the 63 federal agencies to operate radio communications that provide the public with national and homeland security, law enforcement, transportation control, natural resource management, and other public safety services during peacetime and emergencies. NTIA's long-term goal is to improve spectrum management processes throughout the federal government so that time for spectrum assignments can be reduced from more than 15 days to three days or fewer by 2008, and ultimately to near instantaneously, supporting long-term goals for efficiency and effectiveness of spectrum use. NTIA's research efforts directly support this goal. The Spectrum Initiative for the 21st Century Implementation plan, developed in coordination with other federal agencies, provides targets for specific NTIA spectrum management and spectrum policy activities, which serve to advance both of the Agency goals. NTIA adopted a new measure of the percent of milestones completed annually to measure progress in achieving these goals.
- ◆ NTIA conducted a two-day spectrum policy reform workshop on the use of economic or other incentives to increase the efficiency of spectrum use. The workshop addressed incentives that apply both to federal government as well as non-government spectrum users. Session topics included spectrum valuation, rights and secondary markets, sharing, and fees. This is the second workshop on spectrum policy that NTIA has sponsored through the National Academy of Sciences.
- ◆ The FCC and NTIA provided information to assist coordination in the 1710-1755 MHz band, to facilitate the transition of this band from federal government use to non-federal use. Specifically, guidance was provided to assist Advanced Wireless Service (AWS) licensees in this band to begin implementing service during the transition of federal operations from the band while providing interference protection to incumbent federal government operations until they have been relocated to other frequency bands or technologies.
- ◆ NTIA called for public comment on a proposed spectrum sharing test bed to explore innovative ways to make more intensive use of the nation's airwaves and promote continued economic growth and national security. The test bed proposal, a key recommendation of the President's Spectrum Policy Initiative, would enable federal and non-federal users of spectrum to test ideas on new ways to share the finite radio spectrum.
- ◆ NTIA selected a Washington, D.C. public safety wireless network to evaluate its effectiveness in sharing the radio spectrum with federal, state, and local governments during emergencies. Selection of the Washington, D.C. Wireless Accelerated Responder Network (WARN), an interoperable, city-wide, broadband public safety network fulfills one of the 24 recommendations of the President's 21st Century Spectrum Policy Initiative for improving management of the nation's airwaves.

**Performance Goal: Promote the availability, and support new sources, of advanced telecommunications (NTIA)**

*Performing research to improve both the performance of telecommunications networks and the availability of digital content on the Internet.*

NTIA participated on behalf of the Administration in FCC and congressional proceedings on telecommunications policies, including the development of appropriate regulatory treatment for broadband services deployment. A number of Internet related policy issues required NTIA action, including ICANN (Internet Corporation for Assigned Names and Numbers) reform and continuing Internet privatization, domain name management both domestically and internationally, next generation Internet Protocols, and the combination of Internet and telecommunications addressing (ENUM). All of these activities required substantial coordination among NTIA's program offices, as well as interagency coordination to develop the Administration's positions.



The achievements of this performance goal are described below:

- ◆ NTIA released the final report on the technical and economic issues related to Internet Protocol Version 6 (IPv6) adoption in the United States, including the appropriate role of government, international interoperability, security in transition, and costs and benefits of IPv6 deployment. The report was developed by the IPv6 Task Force, led by NTIA and NIST.
- ◆ NTIA published a Notice of Inquiry and convened a public meeting to seek views on the continued transition of the technical coordination and management of the Internet Domain Name and Addressing System to the private sector.
- ◆ NTIA testified before the Senate Committee on Commerce, Science and Transportation on wireless telecommunications issues and spectrum management reform. NTIA also testified before the Subcommittee on Financial Institutions and Consumer Credit of the House Committee on Financial Services regarding recent developments related to WHOIS databases. NTIA submitted testimony before the House Committee on Homeland Security's Subcommittee on Emergency Preparedness, Science and Technology regarding "The State of Interoperability: Perspectives on Federal Coordination of Grants, Standards and Technology."
- ◆ NTIA began extensive preparations for the administration of programs established by the Digital Television Transition and Public Safety Fund, created by the Deficit Reduction Act of 2005. This Fund receives offsetting receipts from the auction of electromagnetic spectrum recovered from discontinued analog television signals, and provides funding for several programs from these receipts. Programs authorized by the Act include the Digital-to-Analog Converter Box Voucher Program, Public Safety Interoperable Communications Grants, New York City 9/11 Digital Transition, Assistance to Low-Power Television Stations, National Alert and Tsunami Warning Program, and Enhanced 9-1-1 Service Support.
- ◆ NTIA awarded a sole source contract to ICANN to perform technical functions supporting the Internet Domain Name System (DNS). ICANN has been performing the Internet Assigned Numbers Authority (IANA) services since 2000. They involve three interdependent technical coordinating functions for the Internet domain name and addressing system. These functions include coordination of the assignment of technical protocol parameters, administration of certain responsibilities associated with Internet DNS root zone management, and allocation of IPv4 and IPv6 address space.



- ◆ In FY2006, NTIA awarded \$19.7 million for 95 grants from PTFP to assist public radio, public television and nonbroadcast (distance learning) projects across the country.

Just over \$12.3 million went to 31 grantees to assist in the digital conversion of public television facilities. Radio projects were awarded \$5 million for 49 grants. Nine of the 49 radio grants awarded a total of \$604,237 for digital conversion of public radio stations. One radio grant, totaling \$104,553, was issued on an emergency basis so a public radio station in Austin, TX could replace studio equipment destroyed by fire.

Other PTFP grants include \$1.1 million for eight television equipment replacement grants, which included two grants made on an emergency basis. These emergency awards, totaling \$429,370, replaced a television transmitter in New Orleans destroyed by Hurricane Katrina and a failed transmission line in South Dakota. Five nonbroadcast (distance learning) grants were made for \$740,169, and one grant was awarded to the University of Hawaii for \$499,440 for the PEACESAT (Pan-Pacific Educational and Cultural Experiments by Satellite) project.

Included in the above radio and television awards are grants so 11 public radio stations and 16 public television stations can purchase standby generators to enable the stations to continue public service programming during times of emergency.

The data used to evaluate the effectiveness of performance goal achievements are reviewed quarterly and the Department attests to the accuracy and reliability of the data. Data on the timeliness of processing frequency assignment requests are maintained by the Office of Spectrum Management. All other data are published on the NTIA Web site.

## STRATEGIES AND FUTURE PLANS

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The bulk of NTIA's resources will be directed toward achieving the President's goal of spectrum management reform. NTIA will facilitate a modernized and improved spectrum management system and facilitate economic incentives for more efficient and beneficial use of spectrum. NTIA's other spectrum management activities include (1) identifying and supporting new wireless technologies that promise innovative applications for customers of the federal and private sectors; (2) providing the 63 federal agencies with the spectrum needed to support their missions for national defense, law enforcement and security, air traffic control, national resource management, and other public safety services; (3) developing plans and policies to use the spectrum effectively; (4) satisfying U.S. future spectrum needs globally through participation with the 190 other countries of the International Telecommunication Union in establishing binding treaty agreements through world radio-communication conferences; and (5) improving, through telecommunications research and engineering, the understanding of radio-wave transmission thereby improving spectrum utilization and the performance of radio-communications systems.

NTIA will also work with the Department of Homeland Security (DHS) on the development of standards for the interoperability of public safety systems and on the implementation of Spectrum Relocation Fund legislation. NTIA will work with the Department of Transportation (DOT) on implementation of the Enhanced 911 Act. NTIA will continue work with ICANN on the management of the Internet domain names system. NTIA anticipates that it will participate on behalf of the Administration in a congressional examination of the Telecommunications Act focusing on telephony subsidy reform and the classification of advanced broadband services. NTIA will also participate on behalf of the Administration in Digital TV transition policy-making and implementation of IPv6.



## CHALLENGES FOR THE FUTURE

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In today's era of modern communications, RF spectrum is critical. Current spectrum management policies are under increasing strain as the demand for existing spectrum-based services grows and new spectrum-related technologies and applications emerge. Working with all affected parties in the federal government and the private sector, NTIA and the Department must find ways to implement the recommendations developed through the President's Spectrum Policy Initiative to foster economic growth; ensure U.S. national and homeland security; maintain U.S. global leadership in communications technology development and services; and satisfy other vital U.S. needs in areas such as public safety, scientific research, federal transportation infrastructure, and law enforcement. Also, NTIA and the FCC must coordinate the development of a National Strategic Spectrum plan.

NTIA and the Department must also respond to the President's call to clear the regulatory hurdles that stand in the way of broadband deployment and create the regulatory certainty necessary to meet the President's goal of universal and affordable broadband access. Some of the most promising new broadband technologies are wireless. By expanding the amount of spectrum available for commercial uses, the Department will increase high speed Internet access. In an era of rapidly changing new technologies, like mobile wireless, high-speed fiber optics, and expanded broadband deployment, government policies should favor customer choice. Regulatory stability in the telecommunications sector will promote both competition and investment. Developing these policy frameworks to support these goals is the challenge facing NTIA and the Department.