Strategic Planning at NIST

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VCAT Meeting
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NIST
National Institute of
Standards and Technology
U.S. Department of Commerce

Outline

- Drivers of NIST Strategic Planning
- Changing Landscape (2008/2009 Budgets, New Administration)
- Current 3 year Plan
- Planning for Key Priority Areas

NIST Mission

To promote U.S. **innovation** and industrial **competitiveness** by advancing

What

measurement science,
standards, and
technology

How

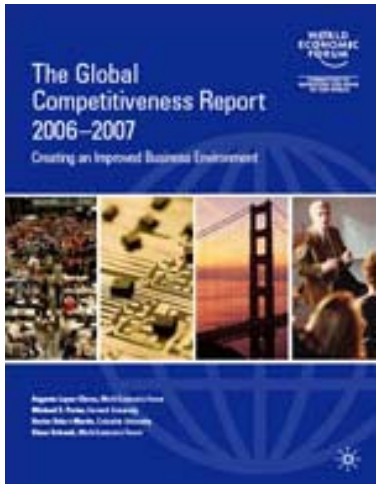
in ways that enhance *economic security* and improve our *quality of life*

Why

Many Drivers Many Opportunities

- Presidential and Congressional directives
  - Interagency Working Groups
- DOC priorities
- Technical and advisory bodies
  - VCAT, NRC, CORM, CIRMS, …
- Voice of NIST customers
  - USMS
  - Industry
    - Prospective economic studies
    - Council on Competitiveness, …
  - Other Agency

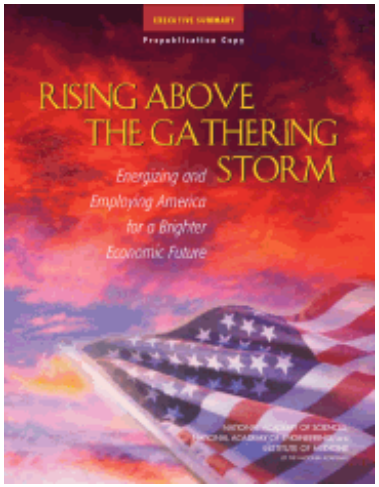
Recent focus on Innovation and Competitiveness Recognizes a Critical Role for NIST



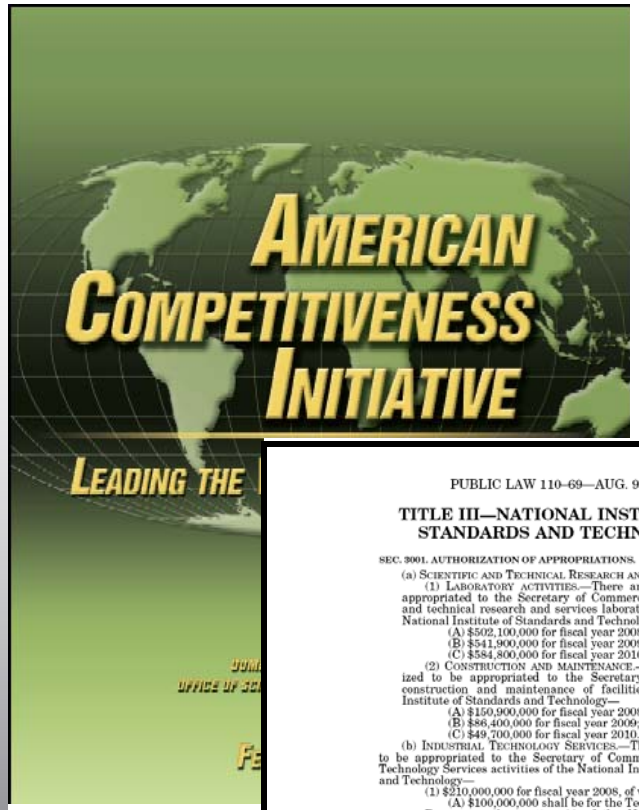
We face significant challenges to our global competitiveness.

Leaders in government, industry and academia recognize these challenges.

NIST supplies key infrastructure enabling innovation to enhance our competitiveness.



Current NIST Strategic Planning Efforts have been influenced by ACI and COMPETES



PUBLIC LAW 110–69—AUG. 9, 2007 121 STAT. 585

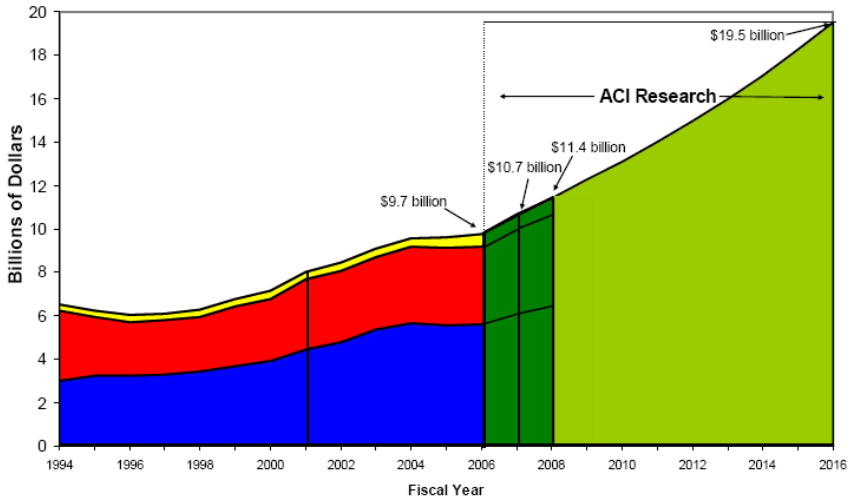
TITLE III—NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY

SEC. 3001. AUTHORIZATION OF APPROPRIATIONS.

(a) SCIENTIFIC AND TECHNICAL RESEARCH AND SERVICES.—
(1) LABORATORY ACTIVITIES.—There are authorized to be appropriated to the Secretary of Commerce for the scientific and technical research and services laboratory activities of the National Institute of Standards and Technology—
(A) $502,100,000 for fiscal year 2008;
(B) $541,900,000 for fiscal year 2009; and
(C) $584,800,000 for fiscal year 2010.
(2) CONSTRUCTION AND MAINTENANCE.—There are authorized to be appropriated to the Secretary of Commerce for construction and maintenance of facilities of the National Institute of Standards and Technology—
(A) $150,900,000 for fiscal year 2008;
(B) $86,400,000 for fiscal year 2009; and
(C) $49,700,000 for fiscal year 2010.
(b) INDUSTRIAL TECHNOLOGY SERVICES.—There are authorized to be appropriated to the Secretary of Commerce for Industrial Technology Services activities of the National Institute of Standards and Technology—
(1) $210,000,000 for fiscal year 2008, of which—
(A) $100,000,000 shall be for the Technology Innovation Program under section 28 of the National Institute of Standards and Technology Act (15 U.S.C. 278n), of which at least $40,000,000 shall be for new awards; and
(B) $110,000,000 shall be for the Manufacturing Extension Partnership program under sections 25 and 26 of the National Institute of Standards and Technology Act (15 U.S.C. 278k and 278l), of which not more than $1,000,000 shall be for the competitive grant program under section 25(f) of such Act;
(2) $253,500,000 for fiscal year 2009, of which—
(A) $131,500,000 shall be for the Technology Innovation Program under section 28 of the National Institute of Standards and Technology Act (15 U.S.C. 278n), of which at least $40,000,000 shall be for new awards; and
(B) $122,000,000 shall be for the Manufacturing Extension Partnership Program under sections 25 and 26 of the National Institute of Standards and Technology Act (15 U.S.C. 278k and 278l), of which not more than $4,000,000 shall be for the competitive grant program under section 25(f) of such Act; and
(3) $272,300,000 for fiscal year 2010, of which—
(A) $140,500,000 shall be for the Technology Innovation Program under section 28 of the National Institute of Standards and Technology Act (15 U.S.C. 278n), of which at least $40,000,000 shall be for new awards; and
(B) $131,800,000 shall be for the Manufacturing Extension Partnership Program under sections 25 and 26 of the National Institute of Standards and Technology Act (15 U.S.C. 278k and 278l), of which not more than $4,000,000 shall be for the competitive grant program under section 25(f) of such Act.

$50B to be invested over the next 10 years in:

- NIST core (Technical Laboratories and infrastructure)
- National Science Foundation
- DOE Office of Science



NIST Strategies for Success

- Help the U.S. to drive and take advantage of the increased pace of technological change
- Foster more efficient transactions in the domestic and global marketplace by promoting more effective development and use of standards
- Address selected critical national needs assigned to NIST
- Enhance the effectiveness and efficiency of NIST staff by improving their well-being and by reducing administrative burdens, and by doing technically challenging work
- Maintaining close and effective ties with the private and academic sectors that NIST serves

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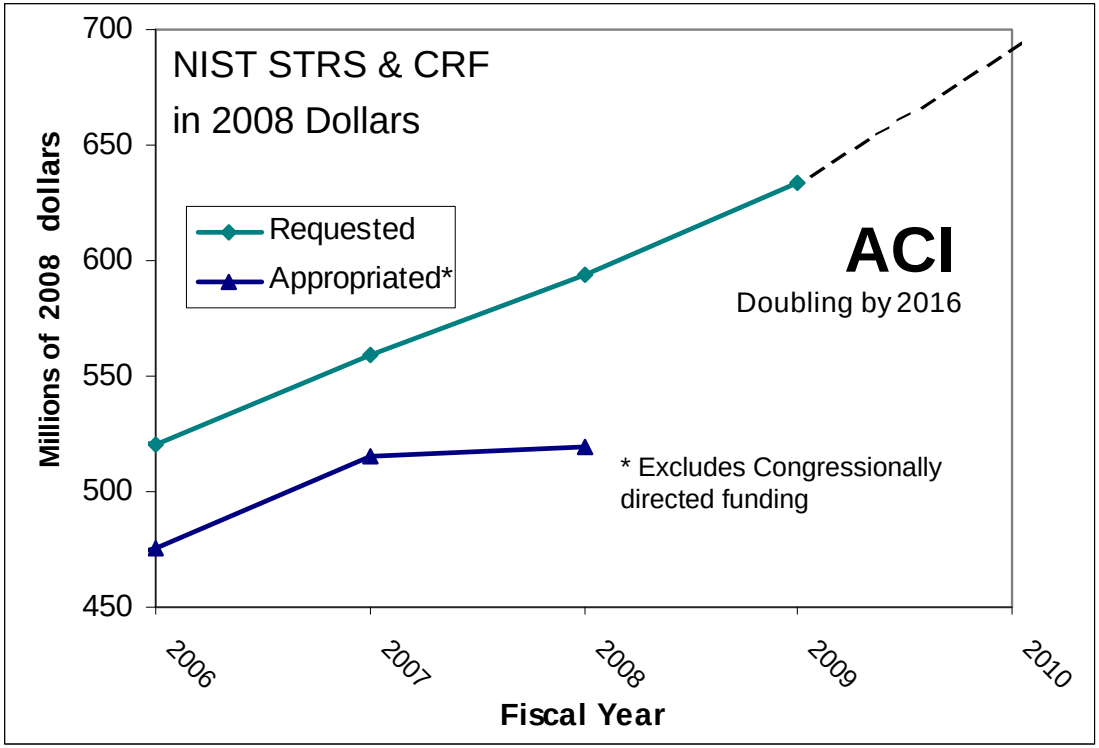
ACI Funding Has Not Kept Pace With Projected Budget Doubling

- FY 2008, NIST Laboratory funding cut in real dollars
  - Stalls important new research in Quantum and Nano and other critical areas
  - Jeopardizes critical facilities improvement projects
- Need to get back on the ACI doubling track but….



Status of future NIST Budget Growth

While there is still bipartisan support for the actions called for in America COMPETES (P.L. 110-69) a number of factors make immediate increases to the NIST budget questionable:

- With this year's elections the FY2009 Budget will most likely not be passed.
  - Expect partial to full year CR
- FY2010 Budget will be submitted during a transition year
- New Administration may have different priorities regarding investments in science and technology

In order to ensure we can maximize NIST's impact in this environment strategic planning becomes even more important

Even if increased funding does not materialize NIST will work to ensure that the top priorities identified through our strategic planning efforts are fully funded

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NIST 3 Year Programmatic Plan

NIST Planning Called for by the America COMPETES Act (P.L. 110-69)

SEC. 3004. INSTITUTE-WIDE PLANNING REPORT.

Section 23 of the National Institute of Standards and Technology Act (15 U.S.C. 278i) is amended by adding at the end the following:

"(c) THREE-YEAR PROGRAMMATIC PLANNING DOCUMENT.—Concurrent with the submission to Congress of the President's annual budget request in the first year after the date of enactment of this subsection, the Director shall submit to Congress a 3-year programmatic planning document for the Institute, including programs under the Scientific and Technical Research and Services, Industrial Technology Services, and Construction of Research Facilities functions.

3-year Program Planning Report: Strategic Goals

Provides a flexible planning framework to ensure that NIST programs are aligned with strategic planning and the needs of the Nation:

Directs NIST's planning to addressing the previously mentioned overarching strategic goals:

- Help the U.S. to drive and take advantage of the increased pace of technological change;
- Foster more efficient transactions in the domestic and global marketplace; and
- Address critical national needs.

3-Year Program Planning Report: Foundation for Planning

The planning framework is built on four pillars that target areas that NIST must address to excel and meet our strategic goals

Needs	Pillars
Improved External Outreach	I. Enhanced stakeholder outreach and identification of critical measurement and technology challenges; e.g. USMS
Target High Impact Research	II. A strategic multiyear investment framework to ensure that investment in research targets critical and high-impact technology areas;
New Methods to Support Innovation	III. Development of the infrastructure to optimize and support the nation's technological and organizational innovation—and the staff and equipment so that NIST can succeed; and
Demonstrate Impact	IV. Rigorous evaluation of all NIST investments.

3-Year Program Planning Report

Utilizing the Planning Framework will ensure that NIST:

- **identifies** and targets critical measurement and technological **problems** facing the nation and its economy;
- **leverages** the **resources** and expertise of the NIST programs and staff;
- **stimulates** investment by NIST **stakeholders** and partners in academia, industry, and other agencies;
- **develops** the **capabilities** needed to lower the risk associated with basic and early stage research;
- **creates incentives** for the development of technologies that address key national needs;
- **enhances** the **training** and expertise of U.S. scientists and engineers particularly in the area of measurement science;
- **stimulates** private and state **investment** in early-to-mid stage breakthrough technologies; and
- **provides** management **tools** to achieve business success.

This multipronged approach will shorten time between discovery, innovation, and deployment and enhance U.S. competitiveness, and improve the economic security and quality of life of all Americans.

Responses to NIST 3-Year Plan

Some positive…

- "Overall, the Three-year Programmatic Plan represents an excellent and comprehensive strategic document that reflects clearly the goals of the organization, its core competencies, current research priorities as well as identification of future measurement needs and a discussion about how technology priorities will be established in the future." – Excerpt from the March 11th testimony of James Serum before the House Science and Technology Committee, Subcommittee on Technology and Innovation.

Some negative…

- The document that NIST delivered falls far short of this mandate. It leaves out several of NIST's most important programs, and it does not lay out a strategic plan to ensure that NIST's investments are suitable for the competitive challenges of the 21st century. – Excerpt from the opening Statement of Representative Wu at the March 11lth hearing on NIST's FY2009 budget request.

NIST is working on ways to improve our plan.

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- Future Strategic Focus Areas

Future Strategic Focus Areas:

- NIST will continue to utilize the planning framework in the development of NIST activities.
- A revised plan will be developed to accompany the FY2010 submission that more explicitly outlines NIST's programmatic plans in critical areas
  - Biotechnology
  - Nanotechnology
  - Communications and Computing
  - The service sector
  - Manufacturing
  - Sustainability
  - Energy

Example: NIST Strategic Planning for Biotechnology/Healthcare

In response to the VCAT's recommendation NIST is developing a comprehensive Bioscience/Healthcare Strategic Plan. In developing the plan we will be:

- Summarizing relevant input from past needs assessments
- Updating inventory of current NIST activities in the biosciences
- Convening an October 2008 Conference
- Summarizing needs Identified during October 2008 Conference
- Performing a Gap Analysis
- Developing implementation Plan with timelines for addressing identified gaps

We expect to have the plan completed by the end of the year

Preparation for Upcoming Meeting

The topics that we would like to focus on at the next meeting include how NIST can best impact :

- Manufacturing (including applications of nanotechnology and communications)
- The service sector
- Sustainability (including Energy and the Environment)

In all of these areas we want to review NIST's current efforts and portfolios and ask:

- Is NIST looking far enough over the horizon?
- What technology areas will be critical targets?
- What is the best mix of programs (e.g. research, grants, technology diffusion) to support innovation in these areas?