Subcommittee on Research and Technology Hearing – A Review of the Networking and Information Technology Research and Development (NITRD) Program

Greg Hager, Johns Hopkins University

https://science.house.gov/legislation/hearings/subcommittee-research-and-technology-hearing-review-networking-and-information

NITRD Review: Context

- Cochair (with Susan Graham) of NITRD review
  - Biannual examination of coordination program spanning computing research across 18 Federal agencies

- Several recommendations related to reorganization as well as highlighting the evolution of the field

- Testimony to the Research and Technology subcommittee of the Space, Science, and Technology committee

R&T Subcommittee

- Subcommittee of Science, Space, and Technology
- The Subcommittee on Research and Technology has legislative jurisdiction and general oversight and investigative authority on all matters relating to science policy and science education
  - **Intergovernmental mechanisms for research**
  - National Science Foundation
  - NIST
  - DoT R&T
  - DHS R&T
  - ….

Subcommittee on Research and Technology Hearing – A Review of the Networking and Information Technology Research and Development (NITRD) Program

Opening Statements

Chairman Lamar Smith (R-Texas)

Research & Technology Chairwoman Barbara Comstock (R-Va.)

Witnesses

Dr. Keith Marzullo
Director, National Coordination Office, The Networking and Information Technology Research and Development Program (NITRD)
[Truth in Testimony]

Dr. Gregory D. Hager
Mandell Bellmore Professor, Department of Computer Science, Johns Hopkins University; Co-Chair, NITRD Working Group, The President's Council of Advisors on Science and Technology
[Truth in Testimony]

Dr. Edward Seidel
Director, National Center for Supercomputing Applications, University of Illinois at Urbana-Champaign
[Truth in Testimony]

https://science.house.gov/legislation/hearings/subcommittee-research-and-technology-hearing-review-networking-and-information

More Context

- The "Truthy" incident in CISE; SBE under siege

Representatives Eddie Bernice Johnson (D–TX) and Lamar Smith (R–TX)

HOUSE COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY

Battle between NSF and House science
committee escalates: How did it get this bad?

By Jeffrey Mervis | Oct. 2, 2014 , 7:15 PM

Science, Oct 2014

More Context

- The "Truthy" incident in CISE; SBE under siege

- Prior reports went relatively unnoticed – a chance to make the case for computing

- Keith Marzulo in NCO – more effective at implementing recommendations

- Siedel --- unknown to me, but in the HPC world which ties to history of NITRD

- No industry person on the panel.

The Game Plan

- Highlight the importance of an expansive view of Computing Research and its ties to national priorities
  - Cybersecurity
  - IT & Health
  - IT & the Physical World (Robotics, IoT)
  - Cyber-human Systems
  - Privacy
  - High-Capability Computing
  - Big-Data & Data Intensive Computing
  - Foundational IT Research
  - Education and Training

  My remarks tended
  to emphasize the value
  of SBE collaboration

- Argue for reorganizing NITRD to better reflect these priorities

- Hope it's a friendly hearing that doesn't include Lamar Smith

Hearing Day!

- Surprise 1: Lamar Smith is there!
- Surprise 2: Ed Seidel says this:

Hearing Day: Back and Forth

- Two examples Q&A with video –

- Interesting chit-chat afterwards with the subcommittee co-chairs

Post Hearing Day: Questions

- Hultgren
  - How can we improve the effectiveness of NITRD?
- Lipinski
  - Siedel: More coordination between NITRD and Committee on Science?
  - Should we broaden the notion of infrastructure? To what?
  - Can/should NITRD be more strategically oriented?
- Esty
  - How can we better grow the K-12 pipeline; how are your recommendations different?
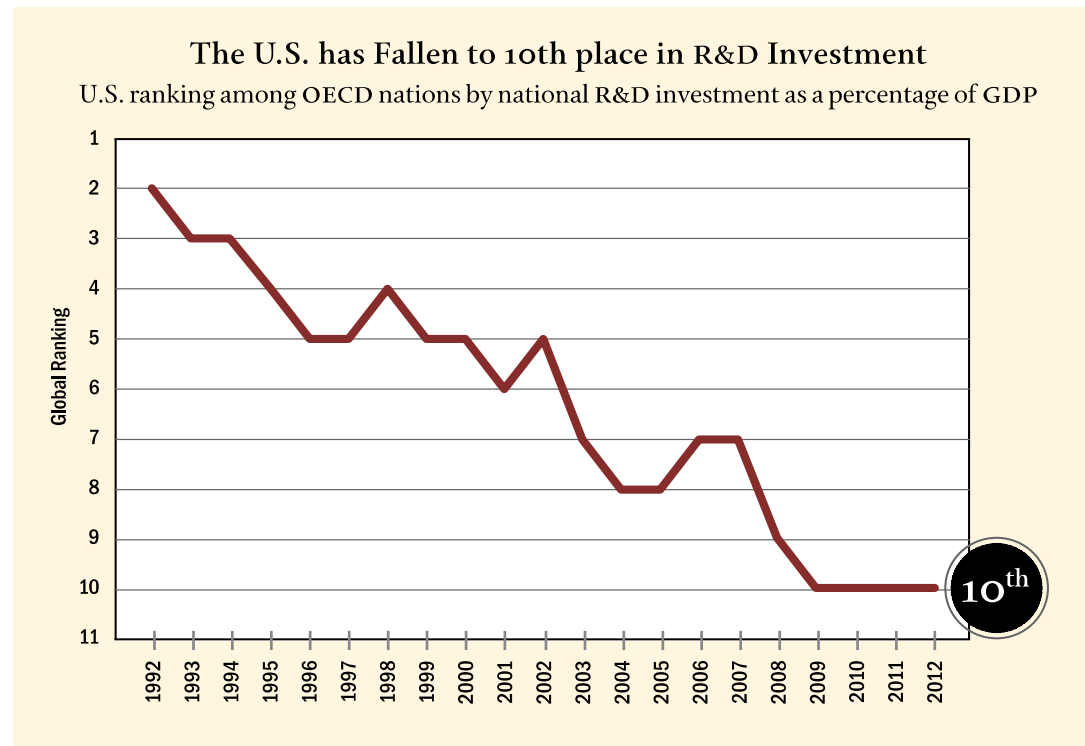
Post Hearing Day: Questions

- Comstock
  - How do you choose the areas?
  - What is most important?
  - How can NITRD improve cybersecurity?
  - Are agencies responding to cybersecurity needs?
  - Is there more they can do?
  - How does NITRD support supercomputing research efforts like COMET?
  - **Why is investing in NITRD activities important?**
  - **Where can we save money?**
  - How can we grow the student pipeline?
  - How does NIT enhance national security and competitiveness?
  - Should industry be involved?
  - Explain end-to-end security
  - **What are the important areas for research in the future?**

Why is investing in NITRD activities important?

IT Sectors With Large Economic Impact
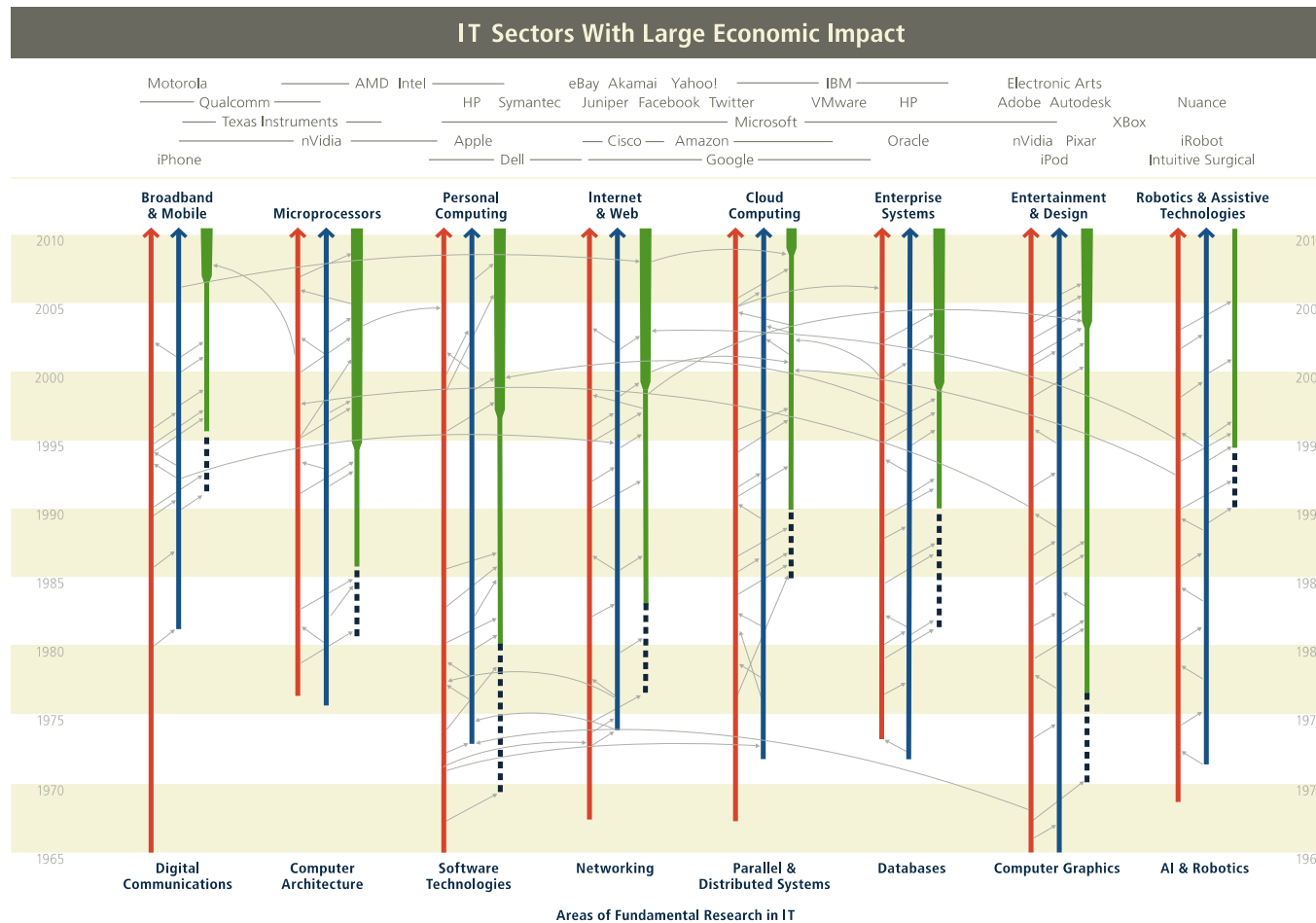
Where should Congress focus its federal IT R&D investments when it faces tough budget and deficit decisions and why?

The U.S. has Fallen to 10th place in R&D Investment

U.S. ranking among OECD nations by national R&D investment as a percentage of GDP

… I would strongly advocate that Congress, rather than mandating where funding is spent, allow the NITRD agencies to set their own priorities to ensure they maintain a robust and broad-based program, and one which encourages the most creative and enterprising researchers to pursue their ideas.

What are the important areas for research in the future?

Information technology evolves continuously and rapidly. As our Working Group noted in the report, our choices today are governed by the evolution of technology itself, the implications of that technology for society, and the influence of society on technology needs. The research questions of the future will be necessarily different from the issues of the present and are difficult to predict. Indeed, this is why continuous review of our research investments in IT R&D is important -- to keep identifying the important topics of the time in order to maintain the lead that the U.S. has enjoyed so far.

The final result: