

NATIONAL INNOVATION INITIATIVE

Public Sector Innovation

Working Group Final Report

RECOMMENDATIONS IN BRIEF

The Working Group examined public sector innovation and considered various models to categorize and prioritize the subject matter. It became clear that high priority reforms both enable the private sector and transform government. When government sets out to enable private sector innovation, it often must transform its own practices and policies to achieve that goal. When the public sector sets out to transform its own performance, it often draws on private sector innovation in management and technology, spurs private innovation to address government challenges, and frees resources for further innovation-supporting activities.

Members, therefore, sought high-leverage recommendations that would drive both public and private sector innovation – raising living standards, growing industries, and making public institutions more effective and productive.

The Public Sector Innovation Working Group focused its final recommendations on innovating health care delivery, making the public sector more innovative, and investing in long-term research uniquely suited for government.

- (A) Address National Priorities through Mission-driven Network Infrastructure:
1st Priority -- Health Care**

- (B) Enact a Public Sector Innovation Act: Competition and Performance -based Services and an Innovative Federal Workforce**

- (C) Pursue Our Children's Prosperity and Security through Long-term Research**

Public Sector Innovation Working Group Participants

Chair

Jacques Gansler
Acting Dean of the School of Public Affairs
University of Maryland

Members

Robert Atkinson
Vice President and Director of Technology and New Economy Project
Progressive Policy Institute

Dick Berner
Managing Director
Morgan Stanley

Barry L. Bozeman
Regents' Professor of Public Policy
Georgia Institute of Technology

H. Lee Buchanan
Executive Vice President
Perceptis, LLP

Fenton Carey
Consultant

David W. Cheney
Associate Director, Science and Technology Policy Program
SRI International

Timothy Coffey
Thomas A. Edison Chair at the Center for Technology and National Security Policy
National Defense University

Daniel E. Hastings
Prof of Aero, Astro & Eng Sys, Co-Dir, Eng Sys Div
Massachusetts Institute of Technology

Robert Hermann
Senior Partner
Global Technology Partners, LLC

Jacques Koppel
President
the koppel group, llc

Duncan T. Moore
CEO
Infotonics Technology Center

Christopher J. Mustain
Governmental Programs Executive, Innovation
IBM Corporation

Malcolm R. O'Neill
Vice President and CTO
Lockheed Martin

Adam L. Rosenberg
Science Fellow
U.S. Senate Energy and Natural Resources Committee

John Thomasian
Director, Center for Best Practice
National Governors Association

David S. Trinkle
Program Examiner, Science and Space Programs
Office of Management and Budget

Arnold Vedlitz
Director, Institute for Science, Technology and Public Policy
Texas A & M University

Irving Wladawsky-Berger
Vice President, Technology and Strategy
IBM Corporation

BACKGROUND

If innovation is the process of generating and applying new ideas that raise living standards, create new growth industries, and improve the way institutions operate – then government will determine America's success or failure in the innovation endeavor as much as the private sector.

The reasons why are straightforward. Government sets the framework by which private entities innovate – as a regulator, an investor, a purchaser, and a partner. Consider just a few public sector activities and their impact on putting new ideas into practice – education policy, financial regulation, research investment, tax rules, bankruptcy laws, intellectual property protection, infrastructure investment, trade policy, and defense purchases. Clearly the capacity of the private sector to innovate relies heavily on public sector practices.

Government also determines America's innovation potential because the public sector accounts for a major portion of our society's activities. Excluding tax and transfer payments, government outlays account for almost 19 percent of U.S. gross domestic product (federal - 7 percent / state & local - 12 percent). Government workers constitute over 13 percent of the U.S. workforce. Such an enormous swath of activity must be productive and efficient – *it must be innovative* – if America is to prosper and compete in the 21st century.

Government also is tasked with promoting our general welfare, including making critical investments where market forces alone cannot meet societal needs. Examples include education, defense, and health care. It also includes basic research that requires more resources, entails higher risk, and/or demands longer return horizons than the private sector can support.

Public sector innovation, therefore, is directly related to America's economic prosperity and tightly linked to whether we'll meet our greatest national challenges in security, education, energy, retirement and health. Public sector innovation is more than an opportunity to be seized or a challenge to overcome – it is an obligation if we are to govern well.

RECOMMENDATIONS

A. Address National Priorities through Mission-driven Network Infrastructure: 1st Priority – Health Care

As the number of network-connected people, applications and devices continues to grow exponentially, America's ability to innovate will rely on strategic public policies and investments to build our national network infrastructure.

A nation doesn't build infrastructure, however, for infrastructure's sake. It is built to achieve missions, be they commercial, military, or societal. U.S. government leaders at

all levels should identify priorities that require a robust information infrastructure and set strategic goals, revise policies, and invest appropriately to address them. Such an approach would accelerate the deployment of network infrastructure, raise living standards, and create a platform for further innovation, including innovation “exports” to other nations.

Government has been a catalyst for innovations like the Internet, supercomputing, and the global positioning system. In these cases, government took the lead to meet national objectives and partnered with industry and academia to achieve them.

The Public Sector Innovation Working Group believes that building an integrated health care capability should be the top network-driving priority. Falling birth rates and rising life spans present the U.S. with a great challenge – we must dramatically increase the quality and productivity of health care as a shrinking share of working-age citizens are asked to financially support a growing share of older Americans.

Health care spending accounts for 15 percent of U.S. Gross Domestic Product and is rising. Political leaders of both parties warn of Medicare insolvency and budget shortfalls if current practices remain unchanged. Rising Medicaid costs are severely challenging State governments.

Despite world leadership in many aspects of health research and care, study after study confirms that overall U.S. health care suffers from high costs, low productivity, and limited coverage.

Solving these challenges will require many steps, but perhaps the most significant step would be raising healthcare productivity through new information-based capabilities. The healthcare industry lags far behind other sectors in IT deployment. Studies estimate that the U.S. spends between 25 and 31 percent of its healthcare dollar on administrative paperwork. An American Hospital Association study found that caregivers on average spend 30 minutes on paperwork for every hour of patient care.

The problem is literally a matter of life and death. The U.S. Department of Health and Human Services (HHS) estimates that America suffers up to 98,000 avoidable deaths annually. Even more Americans suffer disabilities or complications due to inappropriate or missed treatments. Modern IT capabilities would reduce prescription errors, alert doctors to drug interaction risks, and facilitate more individualized treatment.

HHS also estimates that we spend \$300 billion annually on care that yields no health result, and that modern infrastructure would expand high quality care in remote areas. Security and privacy could actually be strengthened over our current system that still relies largely on paper, and patients could take a more active role in their own health management.



Establishing an integrated health care capability promises other major benefits. It would facilitate improved research, speed health innovations to market, and improve America's ability to address outbreaks of infectious disease or bioterror attack.

Health care also is a critical component of U.S. economic competitiveness. Rising health premiums are raising the cost of U.S. production, making our country a less attractive investment environment and a weaker export platform. Public and private spending on health care also crowds investment in education, R&D and other innovation-supporting activities. To compete and create jobs, we must address this problem.

The issue, however, is about more than solving problems – it also is about creating opportunities.

Building network infrastructure for better health care is a strategic growth strategy. Virtually every developed country like Italy, Japan, Spain, and France faces even greater aging dilemmas with less reformed or more generous benefit programs than the United States. We should partner with other nations to collaborate electronically on transborder health issues and research, creating opportunities to export not only good will and good health, but also U.S. health care management and technology.

Recommendation:

The United States should build an integrated health care capability by the end of the decade. Achieving this goal will require the private and public sectors to partner on multiple steps – from the top down and bottom up. At the national level, government and industry must set strategic goals and establish performance measures based on health outcomes. The federal government should assist state and regional initiatives that pursue the national goals. Government at all levels can lead by being early adopters of new technology and applications. Industry must lead in establishing interoperability standards and other protocols that serve as platforms for collaboration and innovation by many players.

Significant portions of this work are underway through HHS's newly formed Office of the National Coordinator for Health Information Technology (ONCHIT). ONCHIT released a July 2004 framework with four major goals: (1) bring electronic health records into clinical practice; (2) interconnect clinicians so health records can move with citizens; (3) enable individuals to manage their care more effectively through access to personal records, customized guidance, and information about clinicians and facilities; and (4) improve reporting for public health and research.

The National Innovation Initiative supports these goals, and recommends steps that would support and augment them:

1. The Centers for Medicare and Medicaid Services (CMS), the Centers for Disease Control (CDC), and the Food and Drug Administration (FDA) should accept electronic reporting by the end of the decade from hospitals, physicians, and other regulated entities.

2. Industry should prepare health IT "readiness guides" so governments and health care entities can pursue clearly defined steps to move from goals to implementation.
3. The IT infrastructure being deployed to comply with the Medicare Modernization Act should be leveraged to build an integrated IT infrastructure for healthcare. Rather than building isolated IT silos within CMS, the government should build an integrated platform for managing healthcare data across CMS, CDC, the FDA, and the private sector.
4. The United States should establish pilot programs for international electronic exchanges by 2010 for public health, research and health care delivery between the U.S. and at least one country on each continent. Such programs would expand care for Americans and establish a platform to export U.S. medical excellence. Appropriate privacy and security safeguards should be required.
5. States and companies should expand the use of performance-based purchasing agreements that create incentives to reduce medical errors and achieve other health outcomes. Government should partner with employers, providers and insurers to encourage such instruments. HHS is considering CMS pay-for-performance demonstration programs that would reward clinicians for delivering high quality care, not simply the highest volume of care.
6. Congress and Federal agencies should continue spectrum reform policies to ensure adequate wireless broadband for innovation in health care and other applications.

B. Enact a Public Sector Innovation Act

Throughout the 1980s and 90s, state and local leaders pressed by tight budgets began innovating to deliver services more cost effectively. They questioned whether services like garbage collection, check processing, or bus transport were inherently governmental duties or whether such services could be performed better and cheaper by the private sector. The federal government began similar reforms, led by the Department of Defense (DoD).

Innovation occurred in many forms. Private firms competed for government contracts and often the public sector joined the competition. In other cases, entire government operations were privatized or public-private partnerships were established. Some agencies created entrepreneurial fee-for-service entities that compete to offer services to other government agencies or the private sector.

Introducing competition and performance-standards can achieve dramatic results. DoD anticipates savings or cost avoidance of more than \$9 billion from competitions completed from 2000-2004. OMB estimates that federal competitions launched in fiscal year 2003 will save \$1.1 billion over five years. In fact, there are thousands of case studies demonstrating the ability to improve performance and productivity (on average,

significantly higher performance with savings exceeding 30 percent – no matter if the public or private sector wins the competition).

Reform, however, has generally remained incremental and limited rather than fundamental and structural. Federal agencies identified almost 850,000 positions in 2001 as not inherently governmental, but the pace and effectiveness of reform has not reached its potential. Despite growing efforts to introduce competition, relatively little progress has been made.

State and local governments generally lack consistent or comprehensive strategies to introduce competition and performance-based management reform. For most states, the greatest benefits would come from introducing performance-based regulatory systems in major budget areas like health care, education, and transportation.

The Office of Management and Budget (OMB) notes that despite the overall success of competitive sourcing, the federal results in 2003 were uneven. Some agencies “managed to capture impressive savings, cost avoidances, and performance improvements, but others have struggled to find a vision for success.”

Successful reforms tend to share common characteristics. They: (1) combine related activities within or across agencies before opening competition; (2) utilize performance and outcome-based standards; (3) preserve competition to drive excellence; (4) maintain government accountability and management; and (5) pursue improved performance at lower cost (best value), rather than simply low bids.

Accelerating competition and performance-driven government is only part of the equation to reform the public sector – we also must free the innovative capacity of over a million civil servants in the federal workforce and hundreds of thousands more at the state and local levels. If we are to rekindle a passion for public service in the U.S., we need a system that rewards performance and enables public sector employees to achieve missions.

After decades of debate and incremental reform, momentum is growing to change dramatically the system of hiring, paying and promoting federal workers. Following the establishment of new personnel rules for the Departments of Defense and Homeland Security, the prevailing debate is not whether to replace the 55-year old General Schedule (GS) system, but how and on what timetable.



Under the federal GS system, pay is based on seniority and a complex job classification system that offers far too little opportunity to promote, reward, reassign, retrain or fire based on performance. The current system aligns poorly with market conditions for similar positions and requires overly cumbersome hiring procedures and difficult transitions for political appointees. We must enable the largest employer in the nation to do better and encourage states suffering from similar systems to do the same.

Agencies like the Federal Aviation Administration, the General Accounting Office, and the Internal Revenue Service claimed that the GS system harmed their ability to achieve missions and received authority to implement performance-based personnel systems. Over half of the federal workforce will soon operate under such rules.

The nonpartisan National Academy of Public Administration (NAPA) issued a report in May 2004 calling for a government-wide performance-based pay system. NAPA consulted with over 60 federal personnel executives and state and local officials to develop its recommendations. Rather than reforming in a piecemeal fashion, the NAPA authors argue that the federal government should reform more rapidly under a unified framework that includes agencies still subject to the GS system and those that are not.

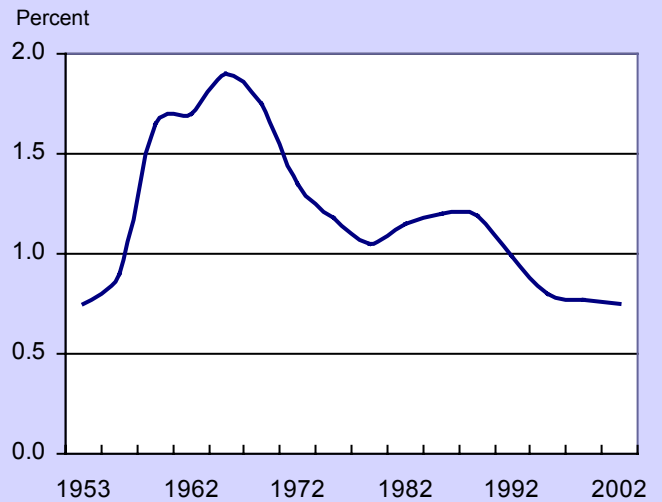
Recommendations:

The NII recommends a *National Public Sector Innovation Act* that would (1) accelerate the move toward competitive and performance-based government and (2) move the federal government to a unified performance-based pay system. State and local governments should consider similar legislation tailored to their progress on these issues.

1. Accelerate the competitive sourcing process for federal functions identified as “non-governmental.” Establish performance incentives and accountability measures for officials and agencies to complete successful competitive sourcings, including incentives to group functions across multiple agencies.
2. Expand the Government Performance and Results Act to require federal strategic plans for national issues that cross multiple departments and agencies.
3. Transform selected government agencies/programs into performance-based quasi-public corporations that have greater flexibility than traditional government agencies, but also more accountability for results (e.g. a self-funded, public corporation to control air traffic).
4. Adopt performance-based contracting and standards for procurement.
5. Require each federal agency to have a dedicated liaison to the states to receive feedback from state officials and help states navigate the agency’s bureaucracy.
6. Require the Office of Personnel Management (OPM) to establish broad job categories and common pay bands for federal employees who perform similar work. The new system should apply to all federal agencies by 2010.
7. Require agencies under the new system to adjust individual salaries based on performance and average salaries in similar non-federal occupations, eliminating automatic pay raises. OPM would approve agency performance management systems  before they were put into practice.
8. Reform the transition process for political appointees, modeled after some  the special systems employed by the Departments of Defense and State. Current conflict of interest and financial disclosure rules have the unintended effect of deterring qualified candidates from entering government service.

9. Offer innovation and risk rewards for innovative work by government employees, including financial bonuses for departments and individuals.
10. Strengthen the skills of senior executives and middle managers by authorizing agencies to use rotations among departments and agencies as a part of their performance management system for promotions and pay raises.
11. Expand the use of intergovernmental personnel act agreements (such as at NSF and DARPA) and fellowship programs (such as the AAAS fellowships) to increase the flexibility and expertise of government agencies.
12. Ease the ability of governmental agencies to hire people from industry (in a non-conflict way) for 2-3 year stints with provisions for their return.

Federal R&D share of GDP: 1953-2002



GDP gross domestic product

SOURCE: National Science Foundation, Division of Science Resources Statistics, *National Patterns of R&D Resources*, annual series. See appendix tables 4-1 and 4-3.

Science & Engineering Indicators -- 2004

C. Pursue Our Children's Prosperity and Security through Long Term Research

It is generally agreed that only the federal government has the resources and return horizon to support and conduct long-term basic research. Government expenditures supporting university and national laboratory research produce measurable innovation inputs (e.g. scientific papers and patents).

The historical record is replete with examples of how our standard of living today rests on the basic long-term research of decades past – research upon which we now rely for our security, health, food production, and economic livelihoods. Magnetic resonance imaging used for health care, for example, comes from the work of chemists, mathematicians and physicists dating back at least as far as 1938.

The U.S. remains the world leader in research investment, but we may be losing our strategic edge by neglecting the longer horizon. Federal R&D funding grew rapidly from the 1950s through the mid '60s and has declined ever since (measured as a percentage of GDP). Industrial funded R&D grew as federal R&D funding declined, but industrial R&D tends to be much shorter term than federal R&D. In fact, a large share of industrial R&D builds on discoveries gleaned from federal research dollars.

There also is a concern that federal funding for roughly the past 15 years has favored short-term applied research. Many worry that the U.S. is investing in improving what it already knows at the expense of investing adequately in new science and technology to remain competitive in the future.

Another concern with the imbalance between basic and applied research is that we may be eroding the federal government's scientific talent pool and reducing the ability of national labs to continue their historic contribution to industrial competitiveness. Federal scientific expertise is essential to make wise investment decisions and to articulate the value and a vision for U.S. research to the Congress and public.

The Public Sector Working Group believes that reversing the decline in long-term research is one of the most important acts the public sector should do to strengthen America's innovation capacity and secure the next generation's future.

Recommendations:

1. Raise long-term research supported by the Defense, Energy, and National Science Foundation budgets to at least 1 percent of GDP. This objective could be achieved over a number of years and funded by forming a national subsidy commission to end certain subsidies and applying a portion of the savings to boost federal research.
2. Establish a National Innovation Foundation (NIF) to support strategic advanced civilian research projects. The NIF would be modeled on DARPA and also could catalyze certain state and local expenditures with matching federal funds.
3. Authorize funding for the National Academy of Sciences to support high-end multidiscipline activities that require government assistance. Support could come in the form of facilities, infrastructure, or incentives for universities to conduct multidisciplinary research.
4. Reform the Small Business Innovation Research and Small Business Technology Transfer (SBIR/STTR) programs to permit follow-on awards (phase II & III) to firms even if they have outgrown their small business size. Allow companies to be defined as a small business for SBIR and contracting even if a significant portion of them are owned by large independent venture capital firms. Assume funds for efforts beyond phase II to transition into application.

