Strengthening American Manufacturing

The Role of the Manufacturing Extension Program

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The National Academies

Welcome to the National Academies

- **National Academy of Sciences**
  - **Chartered by Congress in 1863**
  - **A self-perpetuating Honorary Society**
- **National Research Council (1916)**
  - **The Operating Arm of the National Academies**
- **National Academy of Engineering (1964)**
- **Institute of Medicine (1970)**

The Global Innovation Imperative

- **Key Points**
  - **Innovation is Key to Growing and Maintaining a Country's Competitive Position in the Global Economy and to address Global Challenges**
  - **Collaboration among Small and Large Businesses, Universities, and Research Institutes is Essential for Innovation**
  - **Proven Innovation Programs like SBIR are needed to support collaboration and accelerate innovation**

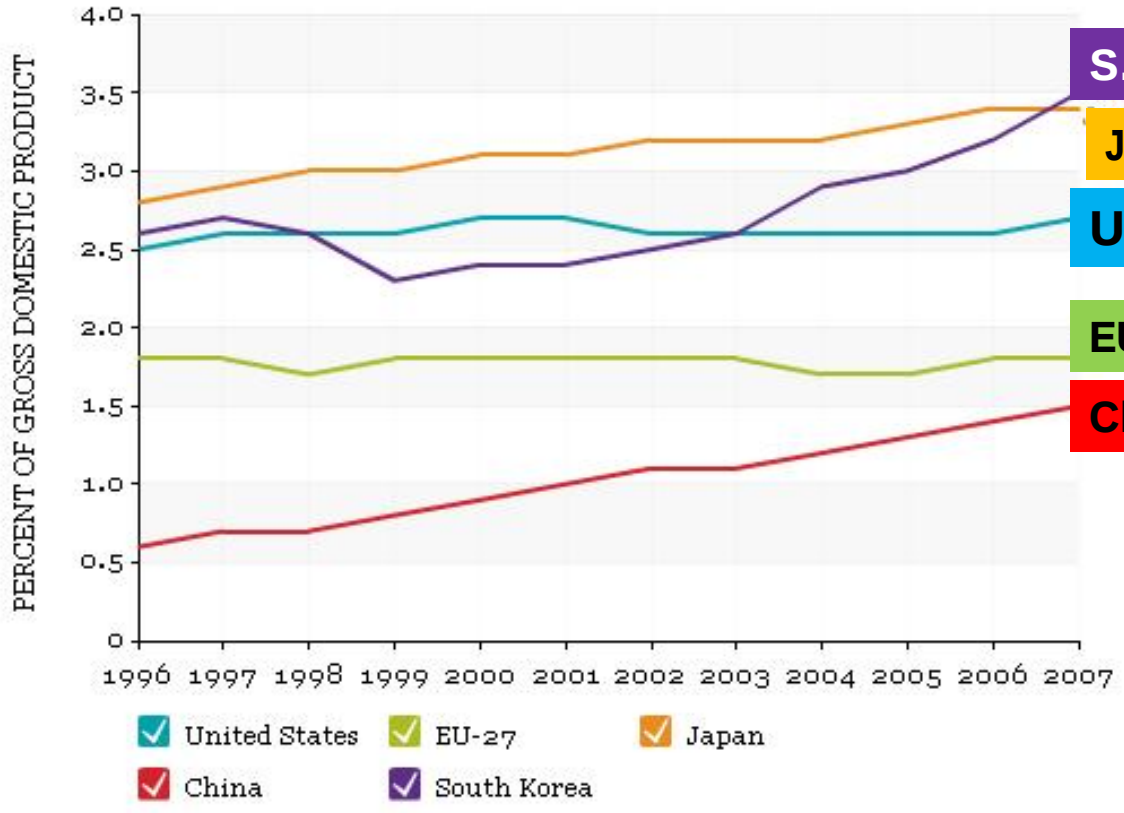
Leading Countries and Regions are Responding to the Innovation Challenge

- **They are Focused on Growth and Strength through:**
  - Sustained **Support** for Universities
  - Rapidly Growing **Funding for Research**
  - Support for Innovative **Small Businesses**
  - Focus on **Manufacturing**
  - Developing **Public-Private Partnerships** to bring new products and services to market
- **They are investing very substantial resources to create, attract and retain the industries of today and tomorrow.**

Global R&D: Measuring Commitment to Innovation

Chart | Data | Download

R&D expenditures as share of economic output for selected countries: 1996–2007



SEI 2010: Comparison of Country R&D Intensities, Chapter 4.

S. Korea

Japan

U.S.

EU-27

China

Changing Shares of Global R&D Spending

Source: NSF 2010 S&E Indicators

China's Goal: To Become an "Innovation-Driven Economy" by 2020

- **Boosting R&D Investments**
  - **Expenditure on basic research doubled between 2004 and 2008**
  - **Tax incentives for enterprises that invest in R&D**
- **Building R&D Infrastructure and Facilities**
- **Focus on building world class universities to create a Skilled Workforce**
- **Government procurement favors National Firms**
  - **Foreign-owned technologies targeted for "assimilation"**
- **Financial Support for large projects**
- **Facilitating Credit and investment capital for SMEs**

Singapore's Innovation Strategy: To Become a Global Innovation Hub

- **Total Focus, Commitment, and Long-Term Spending**
- **Singapore's Innovation Agency (A*STAR) is:**
  - **Investing in and attracting a skilled R&D workforce**
  - **Attracting major investments in pharmaceuticals and medical technology production**
  - **Building major New S&T Parks—Biopolis & Fusionopolis**
  - **$5 Billion in innovation funding for a population of 4.5 million**
- **But generating local entrepreneurship and firm growth remain challenges**

Australia's Innovation Strategy

- **Funding: more R&D and university-industry collaboration**
- **Build the Facilities: Invest in the research infrastructure**
- **Early Stage Capital: Work with the private sector to increase the supply of venture capital**
- **Commercialize: New Commonwealth Commercialisation Institute to help Australian firms to get their ideas to market**
- **Innovative Procurement: Use public procurement to drive research, innovation and technology development**
- **Patents that work: Reform the Australian patent system to increase innovation, investment and trade**
- **Outreach: Increase international collaboration in research by Australian universities**
- **Institutions: Strengthen the Prime Minister's Science, Engineering and Innovation Council**

Source Government of Australia Strategy Paper: Powering Ideas, 2009

Germany's Strong Manufacturing

- **Germany is a high-wage, developed economy**
- **Yet, Manufacturing remains a National Priority, supported through…**
  - **Investments in job training**
  - **Investments in higher productivity to offset high wages**
  - **Assistance to small manufacturers in getting their products to global markets**
  - **Energy and transportation policies that have fostered a German edge in manufacturing**
    - **Everything from kitchen equipment, to high speed rail and wind turbines, to capital equipment**

German Manufacturers are even Succeeding in the Chinese Market

- **Rising exports to China are driving Germany's economic expansion**
  - **Driving growth of both large and small manufacturing firms**
- **German exports have jumped 17 percent this year, driven in large part by a 55 percent rise in overall exports to China**
  - **Exports now account for more than one-third of Germany's national output, more than double the rate in the United States**
- **Focus on manufacturing excellence make German products sought after**
  - **Chinese consumers see them as superior to goods made in China**

Source: Washington Post, "Made in Germany, Sold in China," September 17, 2010

The World is Changing Rapidly

We can learn from others as they can learn from us.

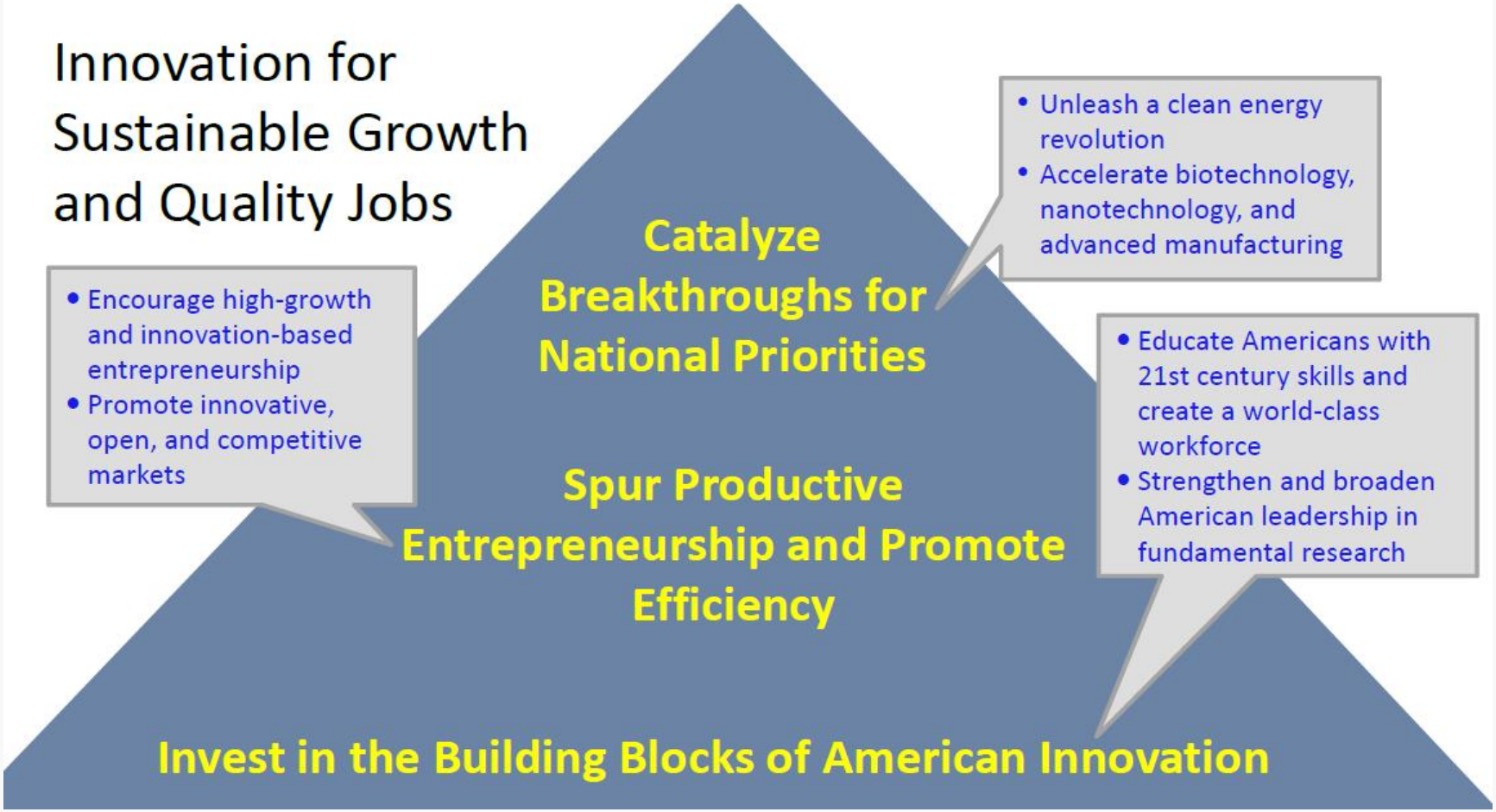
Are we paying attention?

America's Innovation Imperative

- **"The first step in winning the future is encouraging American innovation."**
- **"We know what it takes to compete for the jobs and industries of our time.**
  - **We need to out-innovate, out-educate, and out-build the rest of the world."**

- **President Obama, January 25, State of the Union Message**

President's Strategy for American Innovation



Source: http://www.whitehouse.gov/innovation/strategy

What are the key Elements of the President's Innovation Strategy?

- **Invest more in R&D**
- **Grow and Attract a Skilled Workforce**
- **Invest in Infrastructure for Innovation**
- **Invest in Clean Energy Innovation**
- **Reform the Patent System**
- **Encourage Entrepreneurship**
- **Strengthen Manufacturing**
- **Source: "A Strategy for American Innovation, White House NEC, OSTP, February 2011**

Quite an Agenda!

- **Arguably the most comprehensive and well though-out Innovation Policy the U.S. has ever seen.**
- **Key Questions Remain:**
  - **Will these proposals be enacted?**
  - **Will they have sufficient funding?**
  - **Will they work?**

The National Academies' Board on Science, Technology, and Economic Policy (STEP) is an Internationally Recognized Center of Expertise on Innovation Policy

- **STEP studies identify means of:**
  - **Accelerating innovation**
  - **Advancing competitiveness and**
  - **Improving our understanding of the nation's economic performance and of other nations' policies and practices**

STEP Work on Innovation Policy

- **Conflict and Cooperation in National Competition for High Technology Industry**
  - **Called for an activist and effective trade policy**
- **Best Practice in Public-Private Partnerships: Guidance on What Works**
  - **Chaired by Gordon Moore, Chairman Emeritus, Intel**
- **Innovation in Global Industries**
  - **Chaired by David Morgenthaler, Morgenthaler Ventures**
- **Patents in the Knowledge Based Economy**
  - **Chaired by Richard Levin, Yale University & Mark Myers, University of Pennsylvania**

STEP's Current Innovation Work

- **Comparative National Innovation Policies: Best Practice for the 21st Century**
  - **Chaired by Ambassador Alan Wm. Wolff, Dewey & LeBoeuf, Former Deputy USTR**
- **Best Practices in State and Regional Programs**
  - **Chaired by Mary Good, University of Arkansas, Former Under Secretary for Technology at the Department of Commerce**
- **Crossing the Valley of Death: An Assessment of the SBIR Program**
  - **Chaired by Jacques Gansler, University of Maryland and Former Under Secretary for Defense for Acquisition, Technology, and Logistics**

STEP's Newest Innovation Study

- **21st Century Manufacturing: The Role of the Manufacturing Extension Program**
  - **Highlight the global focus on manufacturing**
  - **Evaluate the operation, achievements, and challenges of the MEP Program**
  - **Review practices of similar national programs**
  - **Identify new opportunities or MEP and opportunities to strengthen U.S. manufacturing**

It is now my pleasure to introduce the Chair of this study: Dr. Philip Shapira

- **Professor of Innovation, Management and Public Policy at the Manchester Business School, University of Manchester**
- **Professor of Public Policy in the School of Public Policy at Georgia Institute of Technology**
- **Professor Shapira has a keen sense of policy. His interests encompass**
  - **Science and Technology Policy**
  - **Economic and Regional Development**
  - **Innovation and Management Policy**
  - **Technology Assessment**
  - **Policy Evaluation**

Thank You

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