The 21st Century Global Innovation Environment

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Introduction

• The world is crazy about innovation

• Innovation is a culture – not a subject
  attitudes, values, goals and practices

• Culture of innovation is about
  “successful implementation”

• Understand the “course of the world”
  it’s uncontrollable
U.S. National Innovation Environment of the latter half 20th Century

• Science the Endless Frontier – 1945

• Delineated responsibilities: Univ, Industry, Gov
  • security, health and prosperity

• Game-changing governmental support

• Goal: maintain the U.S. at the forefront of all areas of science and engineering

• Universities’ new roles: national responsibilities, lines of business, security, innovation, research
U.S. National Innovation Environment of the latter half 20th Century

Keys
• recruitment of top global talent
• an excellent research infrastructure, and
• strong economy fueled by growing, forefront technology companies.

Note:
• “course of the world’ limited opportunities abroad for higher education and for high tech employment
• U.S. attracted an oversized share of top global talent.
• It doesn’t get better than this.
1945–1990

Industry

Universities

Government
U.S. National Innovation Environment of the latter half 20th Century

Government-Industry-University partnership on a stable *national* platform that *controlled information* & *controlled innovation* for the security, health, and prosperity of the nation.
Isolation of adversaries and control of information was imbedded in the GUI national innovation environment.

- **Cost of control: lost innovation opportunity**
  - Control was accepted because adversaries also experienced innovation loss allowing U.S. a dominant S&T position.
  - Stable paradigm – unwavering for nearly ½ century

- **Sports analog is “playing a defensive game.”**
  - You score less than you might be able to, but if you can keep your adversaries from scoring more than you do, you win the game.
Events in 1990s ended the dominance of the U.S. national innovation environment by making control of information and isolation of adversaries not possible.

- What’s next?
- End of the Cold War: no dividing line
- Public access to the Internet
- Internet search engines
- dot.com collapse circa 2000
- Globalization
Without information control, the **only** competitive alternative is to be fast in developing and first in capitalizing on information.

- Accelerating innovation was required
- Adaptable paradigm – constant adjustments

**Sports analogy is “playing an offensive game.”**

- If you cannot stop your adversary from scoring, you have to outscore her to win.
- If you cannot outscore her, prepare to move on to another sport because you cannot succeed at this one.
Over the 1990s the innovation paradigm flipped *abruptly* 180 degrees from defensive to offensive.

- From: a stable paradigm of **control of information** and isolation of adversaries for **innovation control**

- To: an adaptable paradigm of **partnerships and engagement** of contributors for **information creation** and **innovation acceleration**
Global Innovation Environment of the 21st Century

Government-Industry-University partnerships today sit on the adaptable global platform that creates information to accelerate innovation
Global Platform Today

No U.S. national industry (essentially)
  • Multinational or global industry

Governments’ major problems are increasingly global
  • the great problems are beyond the capacity of any single government to resolve

Foreign Government: partner or adversary?
  • depends on the issue not on their geography or their politics
Aside from some notable exceptions, U.S. universities are not yet engaged fully on the global platform.

Global issues continue to receive “auxiliary attention” within most university missions.

- Nice to have, but not essential
- Mistake that will be corrected
Global Expansion Higher Education is Explosive

- Developed and developing countries alike
  - Seeking innovation acceleration
- U.S. expects grad rate increase 25% within 10 yrs!
- Expansions abroad very creative
  - many fronts, many models
- Expansion in higher education is underway globally like at no other time in history
Global Innovation Environment

- **top-down innovation by governments**
  - large investments for facilities/infrastructure
  - great global problems
  - education

- **bottom-up innovation by individuals, academia, and industry**
  - globally competitive products and services
  - invention and enterprise creation
Complete Global Innovation Environment

- Complete, global innovation environment for a country integrates
  - its top-down and bottom-up innovation environments on the global platform
  - to accelerate innovation through partnerships and engagement with global partners
Global Innovation Environment

U.S. has not recognized fully the global innovation environment.

U.S. Policies reflect 20th century thinking:
Global Innovation Environment

U.S. has not recognized fully the global innovation environment.

U.S. Policies reflect 20th century thinking:

Isolation of adversaries and control of information for innovation control in a stable innovation environment

Vs.

Partnerships and engagements for acceleration of information for innovation acceleration in an adaptable innovation environment
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- U.S. industry → not global industry
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- Information control —— not information creation
- Playing defense —— not playing offense
Closing Comment

- The history of U.S. national innovation environment 1945-90 verifies that getting the policy right for protecting security and for promoting jobs and economic prosperity matters.

- Swimming upstream against the “course of the world,” against developing our global innovation environment is exhausting, depleting and will fail.

- It is something worth thinking about.
Thanks for your attention!
Government-industry-university triad has moved unevenly to the global platform

- where partnerships and engagement will create information and accelerate innovation.

‘Course of the world’ clarifies why the global positioning is required of universities expecting to be principal contributors