Government-University-Industry Partnerships: Global Innovation

C. D. Mote, Jr.

Regents Professor and past President, University of Maryland

WISC-NRC Workshop:
Rising Above the Gather Storm:
Development of Regional Innovation Environments

September 22-23, 2011
Partnerships for Global Innovation

• Key Words
  – Partnerships
  – Global
  – Innovation

• Today let’s look at:
  – Partnerships
  – National → Global
  – Innovation → Global Innovation
UM National Partnerships:

- NOAA
- NIST
- DHS
- NSA
- FDA
- NIH
- NASA
- SI
- LOC
- DOE
- DOD
- DOJ
- NCI
- NARA
- USDA
- NSF
This page contains logos and mentions of the following institutions and companies:

- Berkeley and Reed
- Stanford and Berkeley
- Washington State and Harvard
- Texas
- Maryland, Michigan, and Stanford

The logos represent these entities.
1945 - 1990: national innovation platform
Between 1990 and 2000

What’s new?

– Transition from national innovation platform to a global innovation platform

– Cold War national paradigm: “isolation and control” of information for innovation control ended because information could not be controlled.

– 21st Century global paradigm: “partnerships and engagement” for information creation & accelerating innovation

– Sports analogy: switched from playing defense to offense
Global: talent, employment, markets, manufacturing, research and investment

- Expanding globalization
- Shortening product-life cycles
- Accelerating change
- No national industry (essentially)
- Growing consumer markets
- High demand for “front edge” skills/capabilities
Global G-U-I Partnership Opportunities

Governments: National, state, regional, city

Industries: Multinational, national, local

Universities: Consortiums, campus, colleges, departments, faculty, students
2000 – today : global innovation platform
Innovation’s the answer. What’s the question?

- Innovation has become the answer to just about every “How will we . . . ?” question
“the worldwide competition of overall national strength is actually a competition for talents, especially for innovative talents.”

-Pres. Hu Jintao,

October 2007 address to 17th CPC National Congress
INNOVATION at all Scales

- Scales innovative cultures
  - Organizations/Individuals: *Bottom Up*, private sector (mainly)
  - National: *Top Down*, government (mainly)
  - Regional/community: hybrid
  - States: hybrid
  - World: hybrid

- Global innovation: university-industry-government
Global Innovation

INDIVIDUAL

ORGANIZATION

WORLD

NATION

COMUNITY

STATE
Prominent Role for Universities

- About **knowledge, talent, discovery, creation, innovation**
- Act globally - like industry *(sometimes)*
- Act locally - like governments *(sometimes)*
- Partnerships & engagement
  - industries, governments, NGOs and universities
  - locally, regionally, nationally and internationally
University innovation services

- Technology Incubator
- International Incubator
- Bioprocess scale-up facilities
- Consulting for industry supported by government (MIPS)
- Venture Accelerator
- Technology Start-Up Boot Camps
- Angel Investor Networks
- Counseling & venture mentorship (MIT)
Global Innovation: World, Organization, State
Recruiting Chinese Companies, 2007

Research Park: Attracted Chinese Partners
Sponsored by MOST

Beijing
Organized by
Hi-Tech Development Center of China
科技部火炬中心

Shanghai
Organized by
Shanghai Technology Innovation Center
上海市科技创业中心

Guangzhou
Organized by
Guangzhou High & New Technology Incubation Center
广州市高新技术创业服务中心
Global Innovation: Individual, Organization, World
(Sierra Leone)
Global Innovation: World, Nation, Organization
DOE Solar Decathlon
The 21st century innovation paradigm is based on partnerships and engagement for creating information and accelerating innovation.

- The former innovation control paradigm based on information control ended because information cannot be controlled.

Universities are central players in global innovation.

- Nearly all assets needed are found around them.

Recruitment of talent to accelerate innovation is the global norm.

- “Front edge” skills are in great demand and will continue to be so.
• The global innovation platform has replaced the national innovation platform.

  – Industry has operated on the global innovation platform for a decade.

  – Universities are moving unevenly, but steadily to the global innovation platform.

  – Government has taken measured, but significant steps toward the global innovation platform.

  – Those not on the global innovation platform will be left behind because that is where the world is going.
Global Innovation: Organization, Nation, World (Brazil)
NASA Deep Impact Mission : July 4, 2005
• Innovation is a culture leading to: successful implementation

• A culture develops when an institution, an organization or a group shares characteristic attitudes, values, goals and practices.
Culture of Innovation: Shared Characteristics

1. Strong leadership committed to implementations
2. Minimal hierarchy in decision making
3. Commitment to implementations
4. Values disparate talents & entrepreneurship
5. Values ideas, the creative and unconventional
6. Moves quickly but adapts readily
7. Willingness to accept failures
1. **Strong leadership** committed to innovation

2. **Minimal hierarchy** in decision making

3. Commitment to **deliverables, implementation**

4. **Value disparate talents & entrepreneurship**

5. **Value ideas, the creative and unconventional**

6. **Move quickly and adapt readily**

7. **Willingness to accept failures**
Global Climate Change and Weather Prediction

- National Oceanic and Atmospheric Administration (NOAA)
- The Pacific Northwest National Lab Joint Global Change Research Institute (UM, DOE)
- Earth System Science Interdisciplinary Center (UM, NASA, NOAA)
Industry Gravitates Towards Universities
Global Innovation: Organization, World Executive MBA in China
Global Innovation: Organization, World

ROBERT H. SMITH SCHOOL OF BUSINESS

China Business Plan Competition

2008

马里兰大学史密斯商学院 2008 中国商业计划书大赛
Global Innovation: Organization, State, World
UM & PRC MOST - China Research Park - 2000
Global Innovation: World, Nation, Organization
VP Daniel Scioli, Argentina
Global Innovation: Organization, Community, World (Burkina Faso)
Global Innovation: Organization, Community, World (Thailand)
Points to take away:

• “Partnerships and engagement” to create information and accelerate innovation is the 21st century paradigm for innovation.
  – The former “innovation control paradigm” is dead because information cannot be controlled.

• Universities are central, not auxiliary participants in global innovation.
  – Nearly all needed assets are found there.

• Recruitment of talent to accelerate innovation is the norm.
  – “Front edge” skills are in great demand and will continue to be so.
  – Change is accelerating.

• The global innovation platform has replaced the national innovation platform.

• Industry has operated on the global innovation platform for a decade.

• Universities are moving unevenly to the global innovation platform.

• Government has taken measured, but significant steps toward the global innovation platform.
Can do nearly everything!

- education / training / workforce development
- research / discovery / creation / invention / IP
- services: self / community / government / industry
- partnerships / collaborations
- entrepreneurship / enterprise creation
Where do universities drive innovation?

Span all scales - natural partners in innovation

- individuals
- organizations
- regions / communities
- state
- national
- global
University Global Innovation

- International incubator
- Institute for Global Chinese Affairs
- Confucius Institute
- Executive Master’s degrees
- Foreign government partnerships
- Competitions / challenges
- International agreements
Universities: Driving Growth Around the World
Why a Research Park at the UM?

• Space & flexibility
• Proprietary/classified work
• Off-campus work force
• Transformational opportunities
• Non-university interests
III. National domain

- Federal laboratories
- Federal research initiatives
- Federal research missions
大学优秀的教职员工，吸引了世界各地的学生。学校的教学设施，包括各个学科和领域的先进设备，都为学生提供了良好的学习环境。同时，学校还提供了丰富的课外活动，包括艺术、体育和科技等多个方面，以满足学生多样化的兴趣爱好。学校还设有多个国际交流项目，为学生提供了走出去、看世界的机会。
Summary

For success in the connected world

- Create a global culture of innovation and entrepreneurship

- Balance partnerships with industry and government with
  - Creation & transmission of knowledge
  - Traditional university values

- Assemble talent to increase productivity and quality

- Universities are central participants
  - Not auxiliary to business and government
Countries with UM Agreements

UNIVERSITY OF MARYLAND IN THE WORLD