

CAI's IT METRICS & PRODUCTIVITY INSTITUTE



Innovation With & In China



**ITMPI Conference
April 15, 2010
Wilmington, DE**

Presented By:

**Richard A. Bendis
President and CEO
Innovation America**



CAI's IT METRICS & PRODUCTIVITY INSTITUTE

Realities, Opportunities & Innovations for the Next Decade

- Continued fiscal difficulties
- Sorting out of the capital markets
- More opportunities for entrepreneurship
- China as a potential market if consumers spend
- Reshaping of manufacturing
- New tech frontiers (e.g., alt energy, climate change)
- Continued growth of open innovation
- Workforce issues among the U.S. and global populations
- **INNOVATION** is essential to remain competitive



CAI's IT METRICS & PRODUCTIVITY INSTITUTE

Why Is Innovation Essential?

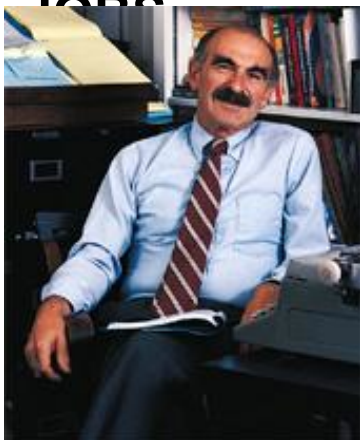


INNOVATION IS THE SPECIFIC INSTRUMENT OF ENTREPRENEURSHIP. THE ACT THAT ENDOWS RESOURCES WITH A NEW CAPACITY TO CREATE WEALTH."

-PETER F. DRUCKER

INNOVATION DISTINGUISHES BETWEEN A LEADER AND A FOLLOWER."

-STEVE



"JUST AS ENERGY IS THE BASIS OF LIFE ITSELF, AND IDEAS THE SOURCE OF INNOVATION, SO IS INNOVATION THE VITAL SPARK OF ALL HUMAN CHANGE, IMPROVEMENT AND PROGRESS!"

-TED LEVITT

Knowledge Economy: Definitions & Terminology

- Knowledge is the confident understanding of a subject, potentially with the ability to use it for a specific purpose
- Knowledge economy is based on creating, evaluating, and trading knowledge
- Innovation is the creation and transformation of knowledge into new products, processes, and services that meet market need

CAI's IT METRICS & PRODUCTIVITY INSTITUTE

Goals of Innovation-Based Economic Development

Intervene at the margins of private sector investment flows of capital (financial and intellectual) to:

- Address economic transition
- Capture the benefit of investments in research and development, higher education
- Build entrepreneurial cultures
- Help existing industries modernize
- Diversify both rural and urban economies
- Develop global innovation network



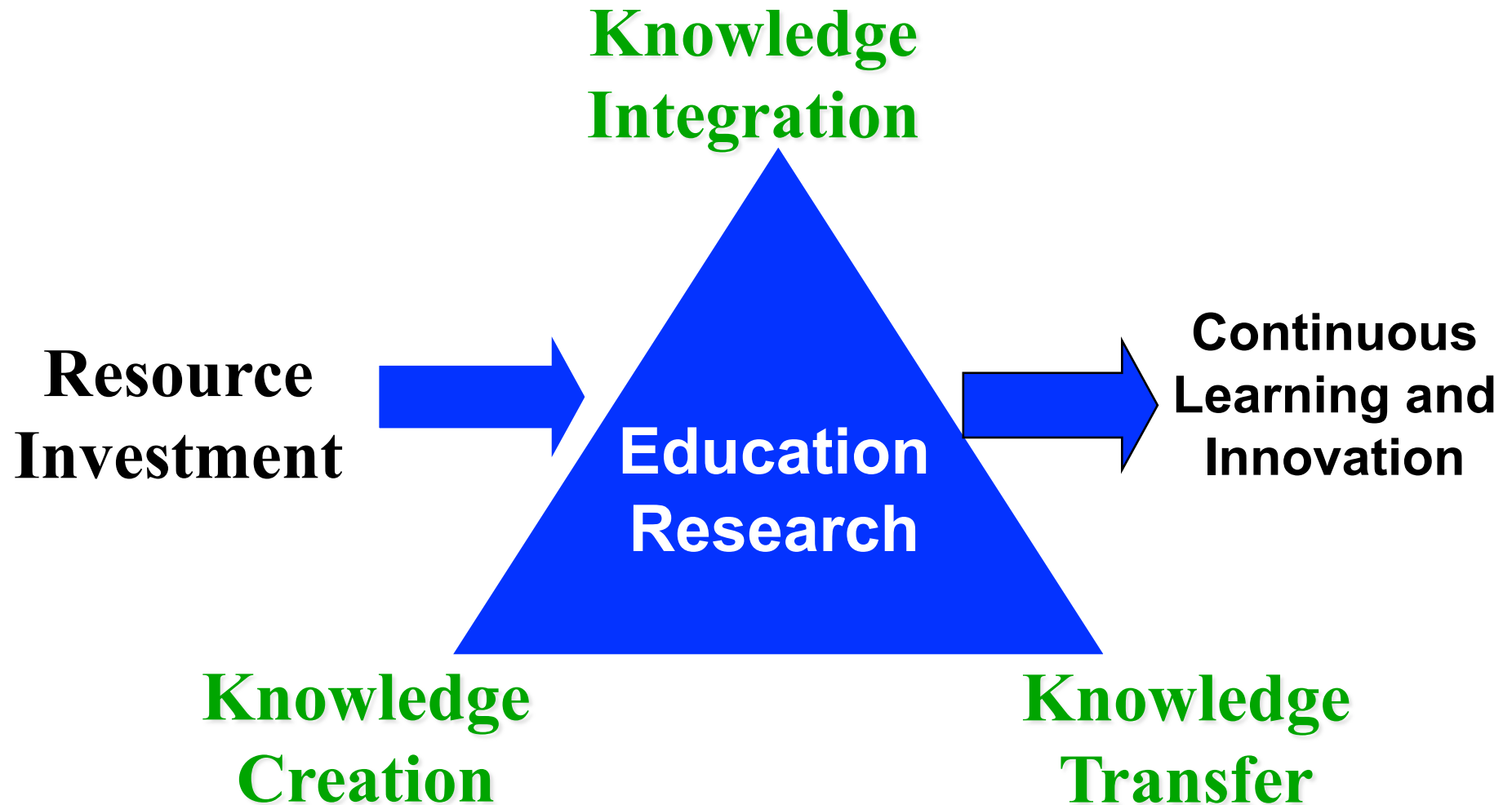
Implementing a New Innovation Paradigm

- Willingness to deviate from traditional and parochial perspectives
- Encourage public investment and risk taking
- Developing trust through collaboration
- Ensuring the paradigm is responsive to partners' missions
- Building consensus of all constituents through education, participation, and positive outcomes
- Move from technology-based economic development

Government's Role in S&T

- Long term vision and planning
- Identify gaps and trends in science, technology and innovation
- Be a catalyst through strategic investments and partnering
- Develop a balanced and flexible innovation capital investment portfolio
- Encourage private sector innovation
- Establish performance-oriented innovation-based economic development strategy and implementation plan

The Role of Academia



CAI's IT METRICS & PRODUCTIVITY INSTITUTE

The Role of Industry: Wealth Creation

Capitalism is a Process of Creative Transformation

“The interaction of technological innovation with the competitive marketplace is the fundamental driving force in capitalist industrial progress.”

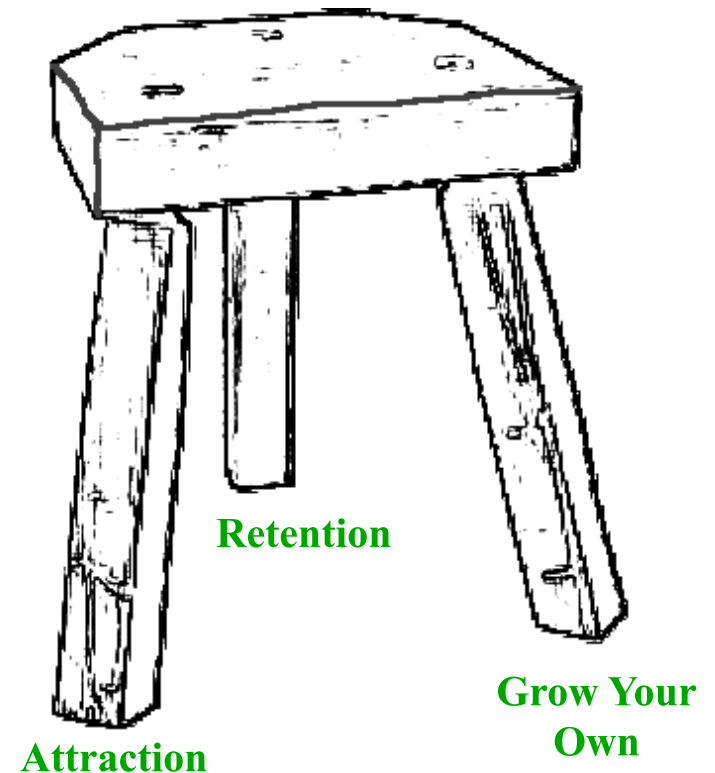
Joseph A. Schumpeter, 1942



CAI's IT METRICS & PRODUCTIVITY INSTITUTE

Economy Building

- Economic Development is like a three-legged stool:
 - **Attraction**
 - **Retention**
 - **Grow Your Own**
- IBED requires patience and persistence, continuity and consistency.
- Working with early-stage companies takes time.
- Balanced portfolio economic development strategy is best!



CAI's IT METRICS & PRODUCTIVITY INSTITUTE

Public/Private Partnership

- Progress is promoted by strong industry, government and university leadership
- Sustained by dynamic public/private partnerships
- These leaders create new, responsive models of governance



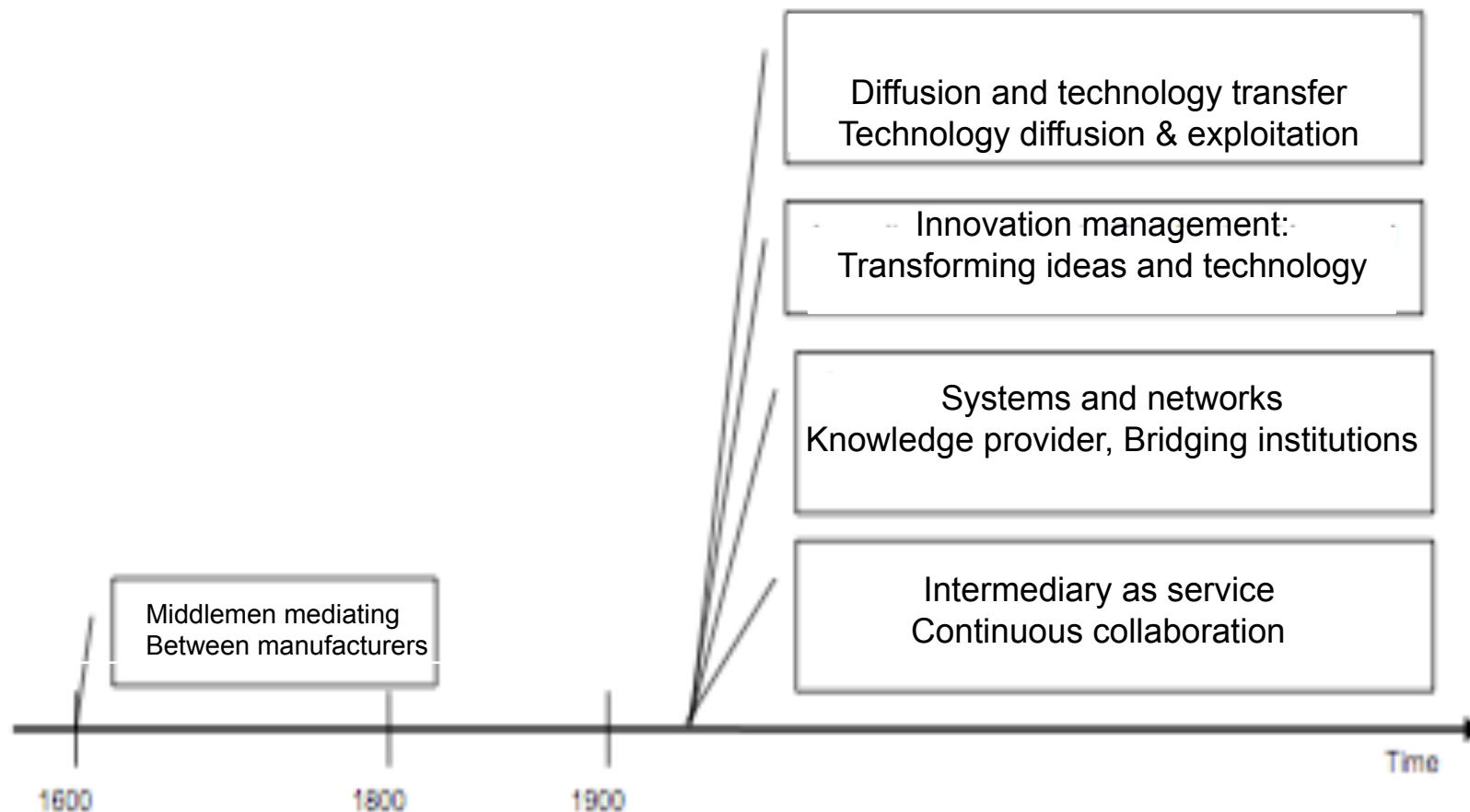
CAI's IT METRICS & PRODUCTIVITY INSTITUTE

Traditional ED vs. Innovation-Based ED

| | <u>Traditional ED</u> | | <u>Innovation-based ED</u> |
|--------------------------|---|---|---|
| • Competitive Basis | Natural resources Highways / Rail Proximity Costs i.e. PHYSICAL | ➡ | Specialized talent Networks, information University research / professors Market understanding i.e. KNOWLEDGE |
| • Key values / offerings | Business parks Incentives | ➡ | Access to research Workforce competencies Lifestyle |
| • Lead Organization | Chambers / EDCs | ➡ | Innovation intermediaries, |

CAI's IT METRICS & PRODUCTIVITY INSTITUTE

Evolution of Intermediaries

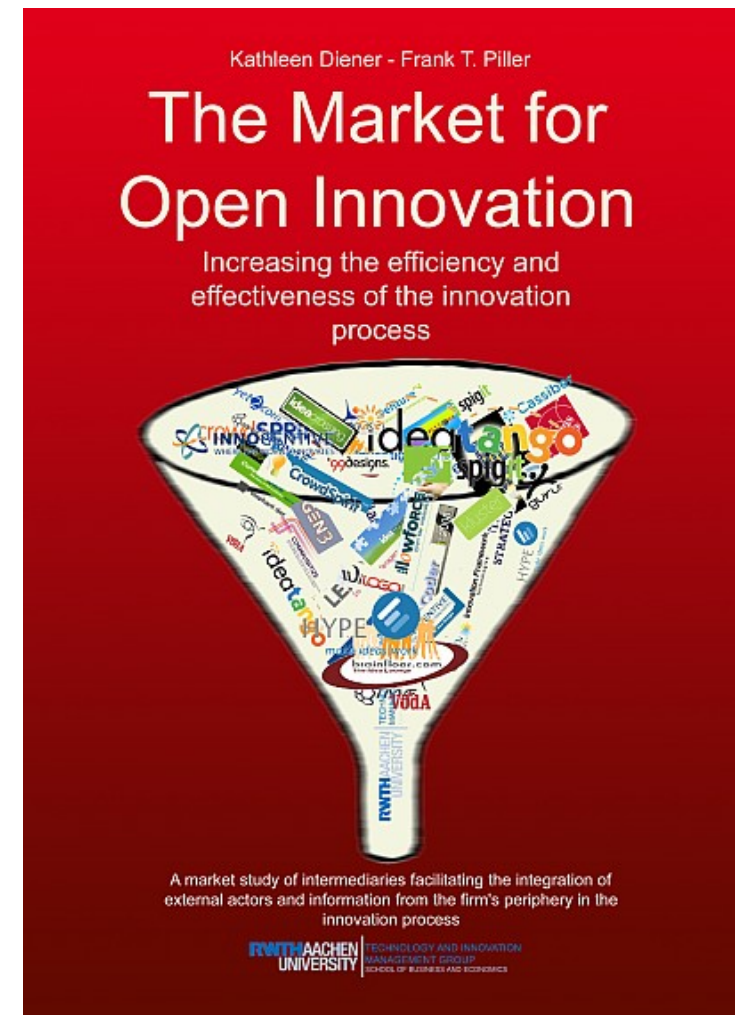


CAI's IT METRICS & PRODUCTIVITY INSTITUTE

Market for Open Innovation

**The First Study
Comparing More Than 50
Brokers, Intermediaries,
and Consultancies for
Open Innovation**

Kathleen Diener
&
Frank Piller



CAI's IT METRICS & PRODUCTIVITY INSTITUTE

What is an Innovation Intermediary?

- An Organization at the Center of the region's, state's or country's efforts to align local technologies, assets and resources to work together on advancing Innovation.



CAI's IT METRICS & PRODUCTIVITY INSTITUTE

21st Century Innovation Intermediary

Connectivity of Key
Human & Institutional
Players

Leverage & Alignment
of Funding & Resources



Research & Marketing of the
Strengths of the
Innovation Economy

Programs

Commercialization

Direct Investment

Angel Capital

SBIR Programs

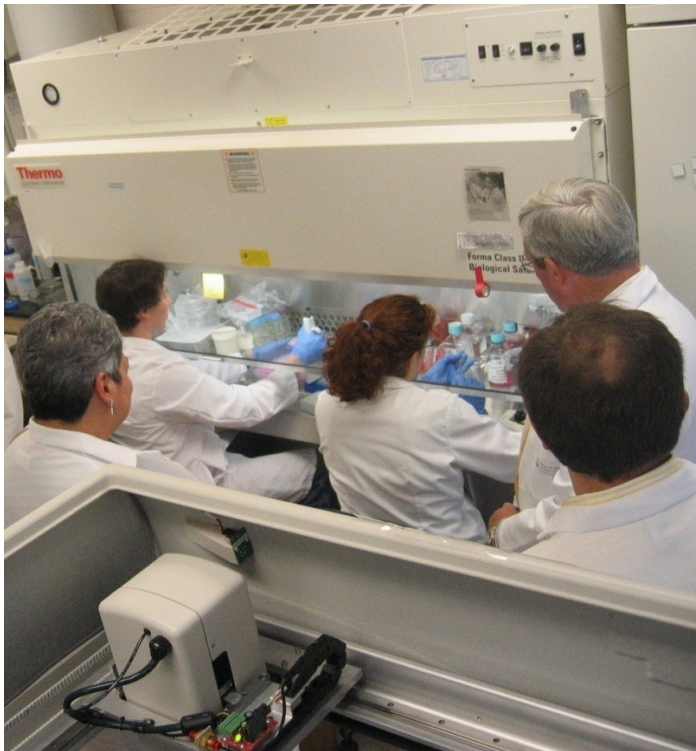
**Technology Mining / Intellectual
Property Programs**



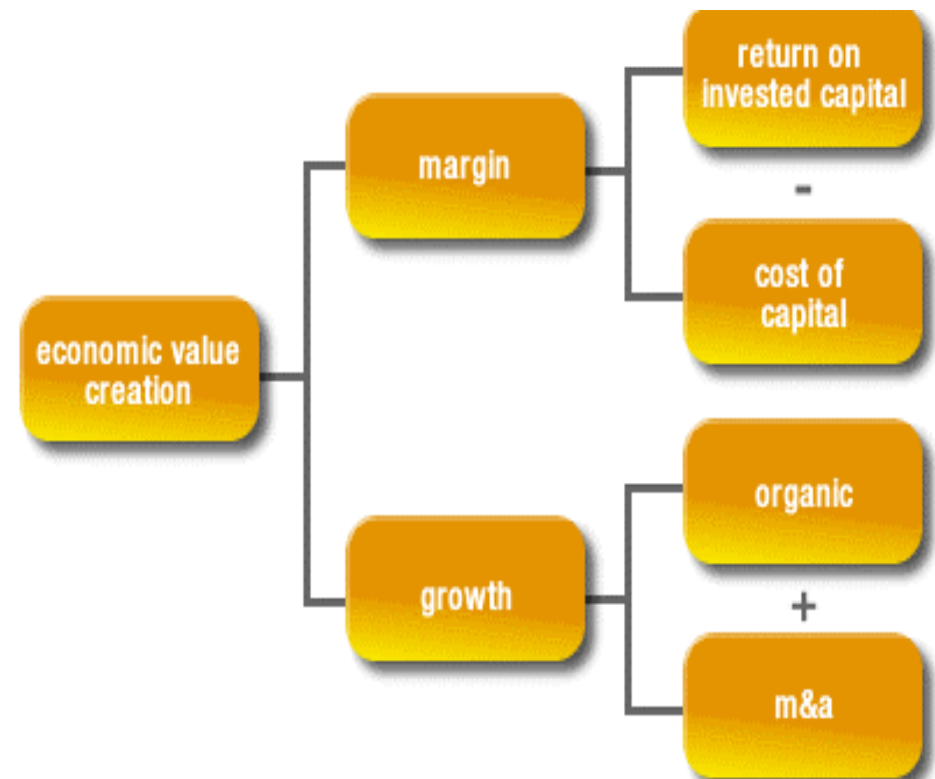
CAI's IT METRICS & PRODUCTIVITY INSTITUTE

Innovation Paradigm Shift

PROOF OF CONCEPT
(Technological Feasibility)
“It Works!”

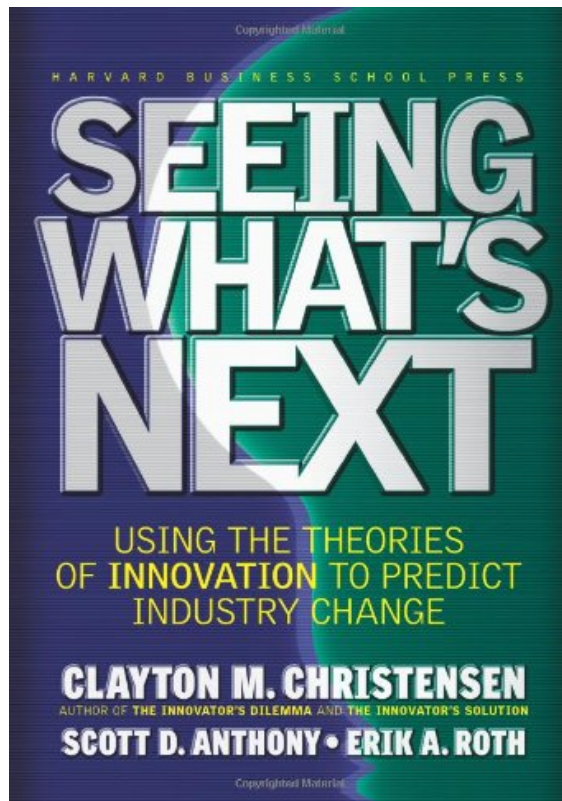


PROOF OF RELEVANCE
(Market Pull)
“I’ll Buy It!”



CAI's IT METRICS & PRODUCTIVITY INSTITUTE

More Reading on Innovation



INNOVATION NATION



HOW AMERICA IS LOSING ITS INNOVATION EDGE,
WHY IT MATTERS, AND WHAT WE CAN
DO TO GET IT BACK

JOHN KAO

Author of the bestseller *Jamming*



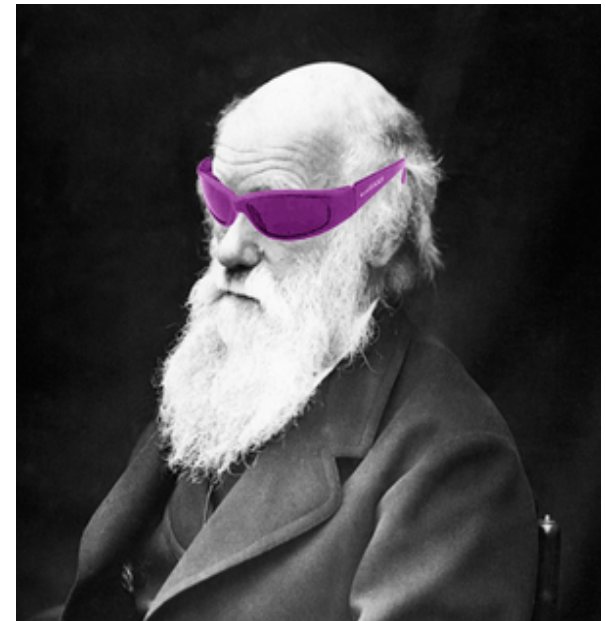
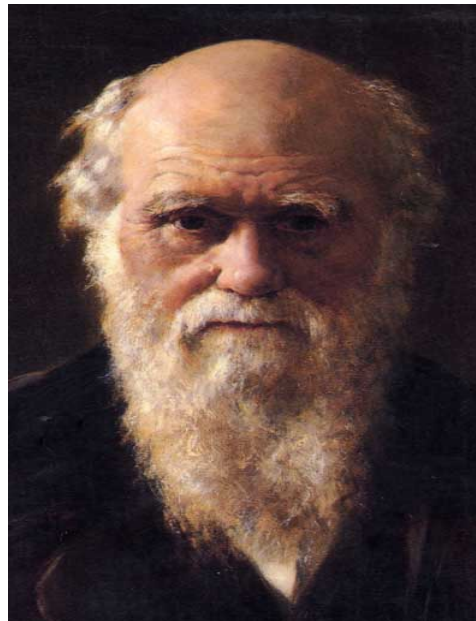
China's Science & Technology Outline (2006-2020)

- **Identified innovation** as the new national strategy, placing innovation capability strengthening as the strategic basis for S&T development and the core of industrial restructuring and growth mode transformation.
- **Goal:**
 - Driving China into an innovative nation by 2020
 - Key indicator = Gross expenditure on R&D (GRED) will exceed 2.5% of GDP with the contribution rate of S&T progress to economic development reaching above 60%.
 - The Outline has drawn the blueprint for future S&T innovation in China with an emphasis on creating a favorable policy environment for innovation.

CAI's IT METRICS & PRODUCTIVITY INSTITUTE

Change Is Inevitable

“ It is not the strongest of species that survive, nor the most intelligent, but the ones most responsive to change.”



China's Improving Innovation Metrics

Last 20 years...

- 150,000 private high-tech enterprises in China recruited more than 1.8 million personnel involved in innovation activities
- 90% of the 40,000 high-tech enterprises in the 54 national high-tech industrial development zones are private-owned, such as Lenovo and Huawei.
- Incubation - China boasts the second largest number after the U.S., with 534 incubators established with government support.

China's Innovation Strategy

- Across China, universities are minting new graduates at record rates, half of them majoring in science or engineering.
- This has doubled the number of people working in science and technology over the past two decades and tripled the number working in R&D.
- China is also pouring money into R&D to the point where it is now the third-biggest spender, behind the U.S. and Japan.
- Only one in 10 of China's R&D workers has a master's degree or higher.
- R&D money is not generating a commensurate volume of new patents. Taiwan manages five times as many a year and Japan 30 times. Most significantly, China isn't commercializing its inventions, a result of top-down-driven allocations of R&D money, not naturally innovative state-owned companies and a lack of a system of venture funding.

Goal of China's Innovation Strategy

- Encourage enterprises including private enterprises to become the major players in innovation activities
- Accelerate the formation of an enterprise-led, market-oriented technology innovation system featured by industry-university-research institute collaboration.
- Encourage universities and research institutes to establish diversified innovation partnership with enterprises to promote technology transfer and startups as well as create more job opportunities.

China

The Need for Innovation as the Engine for Growth

- Underpinned by economic reforms and the “open door” policy, the Chinese economy has performed extraordinarily over nearly three decades.
- China's re-emergence as a major power in the world economy is one of the most significant developments in modern history.
- The Chinese economy is now the fourth largest in the world and its macro-economic performance remains strong.

Sustainable Economic Growth In China

• *High rates of economic growth, industrialization and urbanization are putting increasing pressure on the sustainability of economic growth and social development owing to:*

- High consumption of energy and raw materials.
- Environmental degradation which also leads to damage to human health.
- Uneven distribution of the benefits of economic development across regions, & between urban and rural populations.
- Large migration flows that contribute to rapid urbanization and strain the social fabric and the environment.

CAI's IT METRICS & PRODUCTIVITY INSTITUTE

China's Innovation Advantages

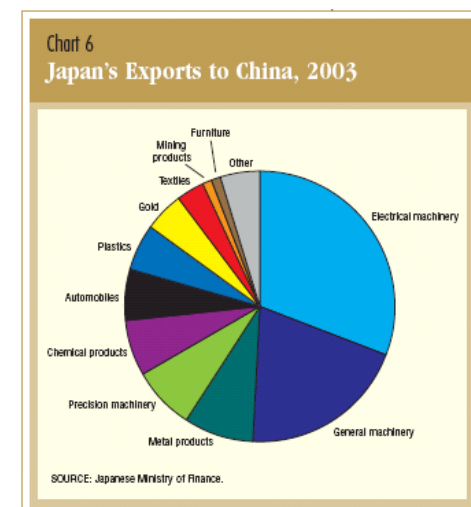
- Abundant human resources and their innovation capability
- S&T personnel reaching 38 million
- 1.2 million are involved in R&D activities, ranking 2nd in the world after the U.S.

Source. Dr WAN Gang, Minister of Science and Technology, China



China - A Major Destination for FDI

- China has become a major destination for foreign direct investment (FDI) and a trading nation of global rank, with an increasing share of high-technology products in its export structure.
- A significant and continuing increase in income per capita and an impressive reduction in poverty levels imply huge domestic demand for goods and services.

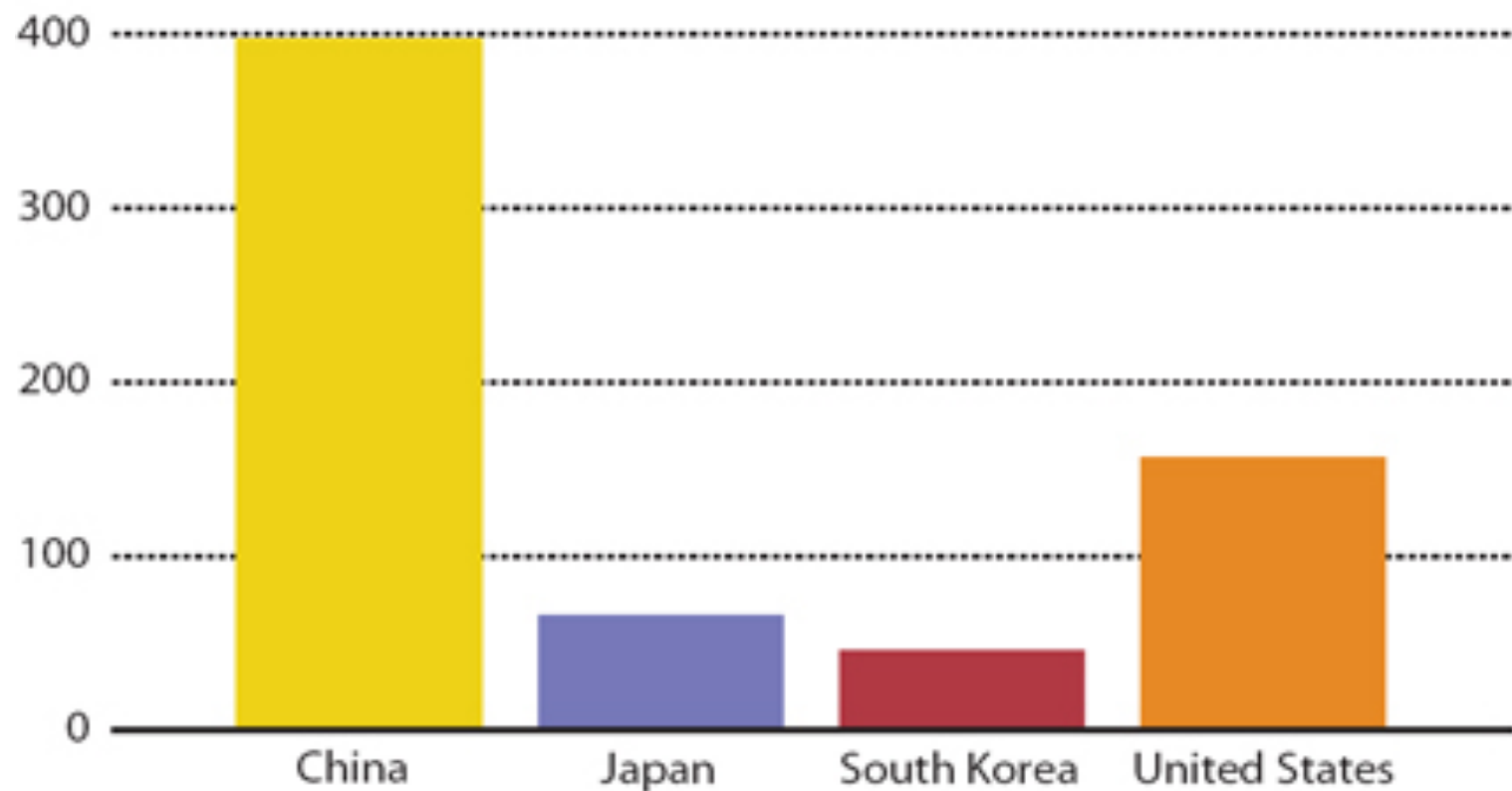


Priority Fields for S&T Innovation in China

- Technological development of clean energy and environment protection
- Improvement of nutrition and public health as a major S&T innovation mission and strive to reduce the threat of major diseases.
- Encourage the development and application of pre-competition common technologies to upgrade industrial structure and provide technological support for SMEs.
- Reinforce basic and frontier researches.

Rising Tigers, Sleeping Giant

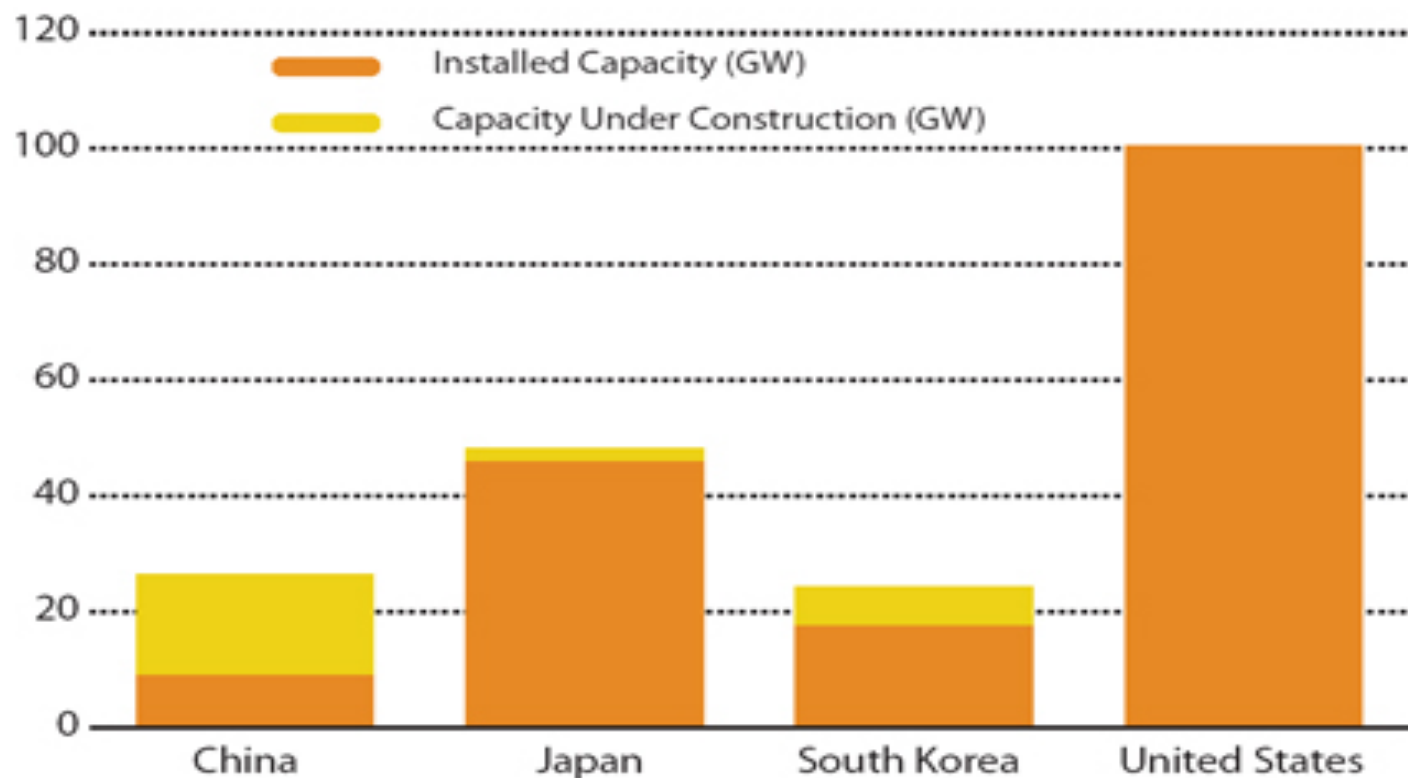
Public Investments in Clean Energy Technology
(US \$ Billion)



CAI's IT METRICS & PRODUCTIVITY INSTITUTE

Rising Tigers, Sleeping Giant

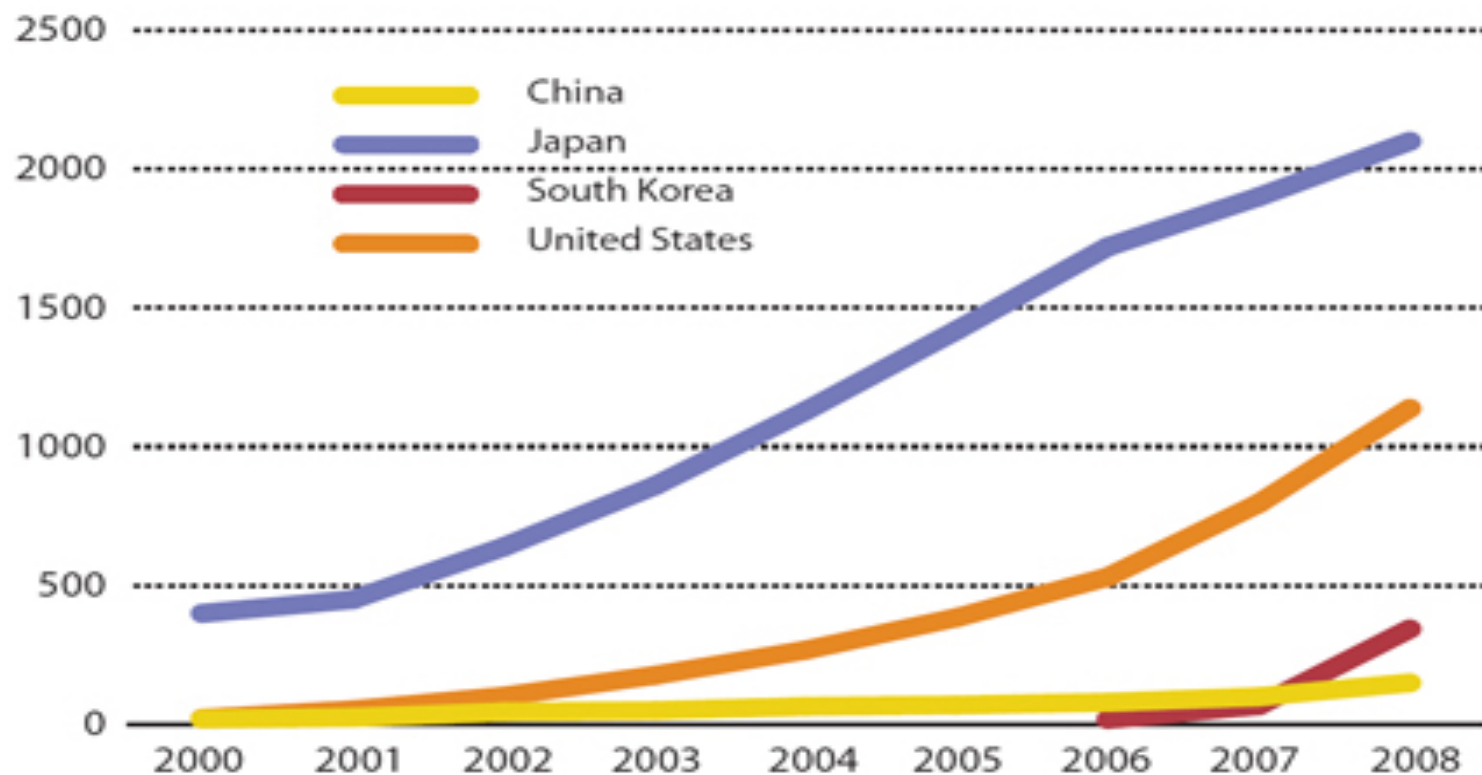
Domestic Nuclear Markets (Gigawatts)



CAI's IT METRICS & PRODUCTIVITY INSTITUTE

Rising Tigers, Sleeping Giant

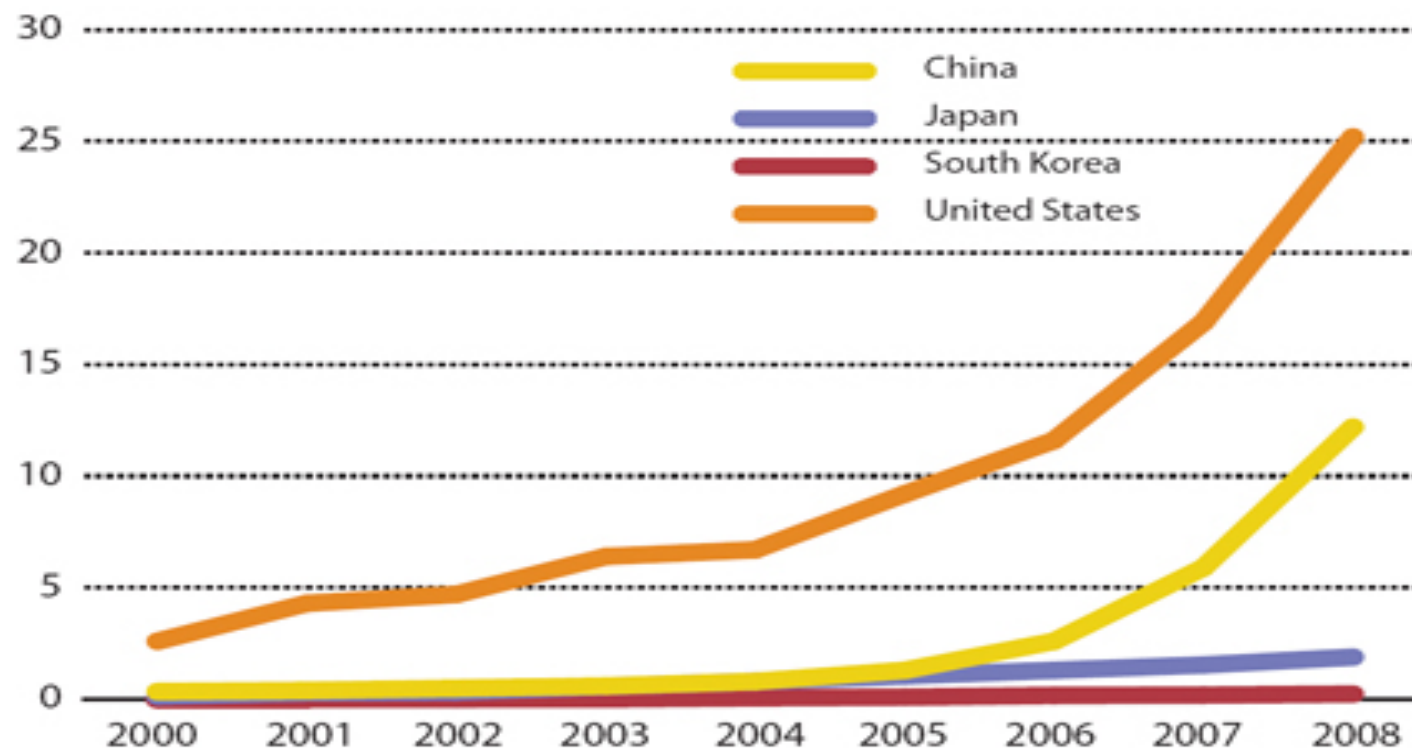
**Domestic Solar Markets, 2000-2008
(Cumulative Installed Megawatts)**



CAI's IT METRICS & PRODUCTIVITY INSTITUTE

Rising Tigers, Sleeping Giant

**Domestic Wind Markets, 2000-2008
(Cumulative Installed Gigawatts)**



China and the US Cooperative Programs

- Promote joint R&D in key areas with common interests, including *clean energy, natural resources, environment protection, public health, agriculture, disaster prevention and mitigation, basic research, etc.* Efforts should be made breakthroughs based on the existing efforts and intensify technology transfer for public welfare.
- Enhance bilateral cooperation in innovation policy-making and technology standard setting by jointly holding various seminars.
- Facilitate academic cooperation and exchanges between scientists of the two countries.
- Establish partnership between universities and laboratories of the two countries.

Institutional Barriers that Inhibit China..... Despite Tremendous Growth in Science & Technology.

Ineffective public funding.

- Ministry of Science and Technology (MoST) and other public sources of R&D funds have traditionally done a poor job of distributing these resources to those who might best realize innovation returns. Peer review panels can incline to favoritism, collusion or even incompetence. MoST's brief move towards blind review panels to address issues of collusion and favoritism has been reversed.

Public procurement.

- The procurement process favors firms with strong government connections and thereby hinders efficient allocation of public resources to support domestic innovation.

CAI's IT METRICS & PRODUCTIVITY INSTITUTE

Institutional Barriers that Inhibit China..... Despite Tremendous Growth in Science & Technology.

- Only one in 10 of China's R&D workers has a master's degree or higher.
- R&D money is not generating a commensurate volume of new patents.
- Taiwan manages five times as many a year and Japan 30 times.
- *Most significantly, China isn't commercializing its inventions, a result of top-down-driven allocations of R&D money, not naturally innovative state-owned companies and a lack of a system of venture funding.*

Source: Forbes.com



VC Capital Surges into China

- VC and PE firms invested US\$418 million in 46 businesses through March, compared with US\$292 million in 18 cases a month earlier
- Investments in information technology sector totaled US\$192 million, accounting for 46.2 percent of the total
- Total of US\$69.13 million was invested in eight businesses in traditional industry and US\$35.2 million in six healthcare industry projects.
 - Beijing ranked the first among all provinces by attracting US\$148 million investments from private equity and venture capital firms,
 - Shanghai was 2nd with US\$112 million.
- Shanghai will launch a pilot program in Pudong New Area to facilitate foreign investors to access domestic private equity funds to push the city toward its goal to become a global financial hub.

CAI's IT METRICS & PRODUCTIVITY INSTITUTE

Venture Capital Returns By Investment Stage

Historic Venture Capital Returns

Early stage VC funds historically out-perform the overall venture asset class:

| | <u>1 Yr</u> | <u>5 Yr</u> | <u>10 Yr</u> | <u>20 Yr</u> |
|-----------------------|-------------|-------------|--------------|--------------|
| Early Stage VC | -20.6 | 3.7 | 36.0 | 21.8 |
| Balanced VC | -26.9 | 8.4 | 13.5 | 14.5 |
| Late Stage VC | -6.8 | 8.7 | 7.5 | 14.5 |
| All Venture | -20.9 | 6.4 | 15.5 | 17.0 |
| S&P 500 | -36.1 | -4.0 | -3.0 | 6.1 |

Data Source: Thomson Reuters' US Private Equity Performance Index, National Venture Capital Association, April 2009

CONFIDENTIAL
Copyright © 2009 by Right Side Capital Management, LLC



CAI's IT METRICS & PRODUCTIVITY INSTITUTE

IBED Best Practices, Common Attributes

- Longevity
- Bipartisan Support & Champions
- Independent Organizations
- Continuous Reinvention
- Private Sector Involvement
- Understand Return On Investment
- Sustainability In Funding
- Accountable
- Innovative
- Effective Leadership



CAI's IT METRICS & PRODUCTIVITY INSTITUTE

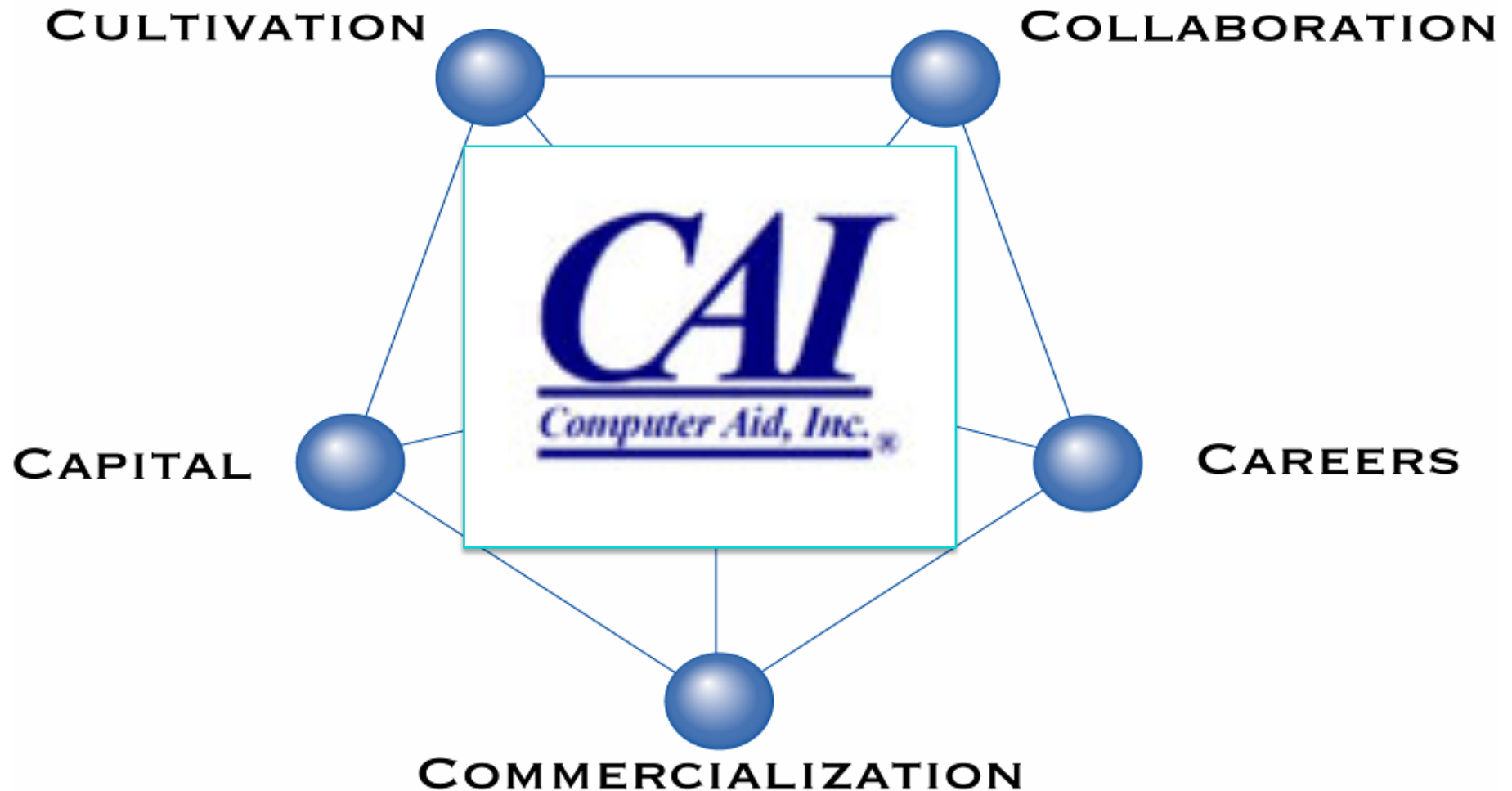
Innovation Road Map Elements China Needs

- 1. Asset Mapping**
- 2. Cluster analysis**
- 3. Innovation Benchmarking (Peer 2 Peer)**
- 4. Innovation and Entrepreneurship resource identification**
- 5. Innovation Economic Development organizational analysis and matrix**
- 6. Gap Analysis (programs & services)**
- 7. Public policy recommendations**
- 8. Recommended organizational structure, governance, budget, and funding sources (Private Public Partnership)**
- 9. Organizational leadership and staffing**
- 10. Program portfolio/implementation**
- 11. Economic Impact Analysis**



CAI's IT METRICS & PRODUCTIVITY INSTITUTE

China's Innovation Paradigm



CAI's IT METRICS & PRODUCTIVITY INSTITUTE

A Call to Action



"Somebody has to do something, and it's just incredibly pathetic that it has to be **US."**

**--Jerry Garcia of the
Grateful Dead**

The US is YOU!

CAI's IT METRICS & PRODUCTIVITY INSTITUTE

innovationDAILY

Get a FREE subscription to
Innovation America's
innovationDAILY newsletter.

Subscribe to:

www.innovationamerica.us/daily

You're receiving this newsletter because of your interest in InnovationAmerica.us.
Subscribe or Unsubscribe. Having trouble viewing this email? [View it in your browser.](#)



The Daily pulse of Global Innovation!

Thu Dec 03 16:09:15 -0500 2009

Innovation vs. "Awesomeness"

This "Awesomeness Manifesto" by Umair Haque hinges on a rather narrow definition for "innovation" so as to draw a contrast, but lets undermine the whole thing by highlighting the most glaring weakness.

Obsolescence is what's obsolete" means what? For nothing to ever be made obsolete, nothing new and better may be created. Haque appears to dislike the concept of creative destruction becomes some peoples' wealth is destroyed in the process of making new people wealthy... but what's the alternative? Those who are presently rich and powerful must be allowed to stay that way? Societal calcification. Stagnation. Creative destruction isn't perfect, but generally, over time, what is destroyed is less valuable than what is created. That's not a waste of our seed-corn, that's how it's supposed to be used. Seeds are consumed when you plant them, but the resulting crops are worth more than the seed. Then you collect more seed and start the next round. peoples

[back to top](#) ♦

Can an 'Innovation Economy' Save the U.S.?

We need more political leaders like John F. Kennedy. He envisioned going to the moon and inspired the innovation to make it manifest.

I have got to be honest. I didn't have any idea of what an "innovation economy" had to do with me until yesterday. True, I don't cover business issues normally, sticking to what I know best, which is politics, with the primary focus of foreign policy. But when I was offered the opportunity to attend the Innovation Economy Conference held in Washington, D.C. yesterday, I jumped at the chance. (I tweeted the conference as well.) Because if ever there was a time we need some out of the box thinking on our economy this is it. The event, hosted by The Aspen Institute, Intel, Democracy (a journal of ideas), and The News Hour with Jim Lehrer, I went to check out, expecting to stay for a couple of hours, but ended up staying all day. I by no means caught every speech or break-out session, but what I did witness proved one thing to me. If the U.S. doesn't get moving we're going to be in even more serious trouble.

THE HUFFINGTON POST

ADVERTISE HERE
FOR MORE
INFORMATION
CLICK HERE

About Innovation America
Our Mission: To accelerate the growth of the entrepreneurial innovation economy in America.

InnovationDAILY is a service of Innovation America and Richard Bendis

For more information visit us at InnovationAmerica.us.

Forward
Know someone who might be interested in this email? Forward it.

Subscribe or Unsubscribe
To subscribe or unsubscribe to this mailing, please visit innovation DAILY.

innovation DAILY distribution is a service provided by:

DMVG
DELMARVA GROUP, LLC.





Richard A. Bendis

President and CEO

Innovation America

2600 Centre Square West

1500 Market Street

Philadelphia, PA 19102

(215) 496-8102

rbendis@bendisig.com

www.innovationamerica.us

<http://www.innovationamerica.us/daily>