

The globalization of innovation: The role of venturesome consumption

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Two common tendencies

- ◆ Focus on “upstream” development of products and technologies
- ◆ Equate prosperity with international leadership

Quasi-militaristic conception

Exhibit A: Clyde Prestowitz

“American Wealth, economic growth and national security have long been based on technological leadership”

“For more than a half century America’s broad technological leadership has been unchallenged”.

America’s Technology Future At Risk

“Well on its way to surrendering leadership in advanced telecom products and services”

\$55 b trade deficit in Advanced Technology Products

“VCs pressing the start-up firms they finance to move R&D to Asia

Many telecom and technology companies [cutting] vital R&D spending by 10-40%.... Government R&D spending in these areas has fallen by over 30%”

“Foreign companies make up the majority of the top ten recipients of U.S. patents each year and the United States has fallen behind the EU and lost ground to Asian countries in the publication of scientific articles”

Fewer BS degrees than in 1985 and far fewer than Japan, the E.U., China, India and even Korea.

Puzzle:

Why hasn't the US productivity lead declined (and in fact has probably increased)? And why have the EU and Japan stagnated while their shares of PhDs, scientific articles etc. increased?

My hypothesis

- ◆ Focus on “upstream” indicators obscure importance of downstream capacity
- ◆ Net gain from “loss” of upstream share

Not zero sum

Work in progress

- ◆ 1983 HBR article “Demand Side Economics”
- ◆ Ongoing research on the globalization of VC-backed businesses

Outline

- ◆ The modern innovation system
- ◆ Consumers' role and rewards
- ◆ Hypotheses about U.S. productivity
- ◆ Policy Implications

1. The modern innovation system

Insights – and limitations of – ‘Schumpeterian model’

- ◆ Drives economic growth
- ◆ Destructive **and** non-destructive
- ◆ Evolutionary: incremental trial and error
- ◆ Extensive specialization – massively multi-player game
- ◆ Horizontal and vertical dialogue

2. The consumers' role...

- ◆ Supply impetus or core idea
 - ◆ Co-development through participation in experimentation and dialogue
 - ◆ Risk-taking – gambling on
 - Utility
 - Performance
 - Lifecycle cost
 - Vendor continuity and commitment
 - ◆ Problem solving
- Neglected and/or assumed to be passive

...and share of rewards

Most of the value created goes to end
consumers

- ◆ Limited research
- ◆ MRI study (Manuel Trachtenberg)
- ◆ Comprehensive ongoing research by
Nordhaus

(No data on 'mid-stream' consumers however)

3. Hypothesis about US productivity

Trade deficit in high tech symptom of strength

- ◆ IT < 10% of GDP
- ◆ But significant impact on the other 90+%
- ◆ Source of productivity edge over Europe and Japan:
 - More -- and more effective -- IT spending
 - Particularly in the service sector

Underpinnings: Basic conditions

- ◆ Education (Nelson Phelps)
- ◆ Free markets (consumer and producer autonomy)
- ◆ Satisfaction of basic wants

Distinctive (and subtle) US factors

Business users

- ◆ Predisposition to believe in technology
- ◆ Grow or die imperative
- ◆ Managerial capacity

Business Users

Knowledge sharing across firms

- ◆ Specialized organizations
- ◆ User groups / reference sites
- ◆ Expert mobility

Distinctive US factors

Individual consumers

- ◆ Staying ahead of the Joneses
- ◆ Disregard for thrift
- ◆ Information sharing and dissemination

4. Policy Implications

1. Welcome globalization of upstream innovation

- ◆ Innovations available at low costs (sometimes free)
- ◆ US natural magnet for upstream innovations
- ◆ Threat to “post-innovation” incomes modest

Untradeables

Transportation and logistics costs

Off-shoring unrelated to origin of innovation

4. Policy Implications

Examples. Japanese innovations in

- ◆ Automobile Industry
- ◆ Electronics

Policy Implications

2. Consider effects on downstream

- ◆ Spending on Science and R&D
- ◆ Higher vs. basic education
- ◆ Make vs. import engineering and science skills
- ◆ Antitrust (static versus dynamic efficiency)
- ◆ Savings and investment
- ◆ Trade Imbalances

Concluding thoughts:

Three thought experiments

- ◆ What's the difference between a small advanced European country and say Nigeria? Is it the capacity to produce (or even pay for innovations) or to implement and use modern technology?
- ◆ The US lost its "commanding lead" over Europe and Japan after the second world war? Did this erode or enhance US prosperity (or national security for that matter)?
- ◆ Suppose the US "loses share" in the development of cancer treatments to China but the total number of cures increases. Should we complain?