The Globalization of the Information Technology Workforce: Policy Implications

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Globalization of IT Workforce: 3 Fundamental Questions

- What types of positions and how many will move offshore?
- What impacts will this have?
- What should policymakers do?

IRAQ: THE STAKES FOR THE ECONOMY—AND BUSH

BusinessWeek

FEBRUARY 3, 2003 WWW.BUSINESSWEEK.COM

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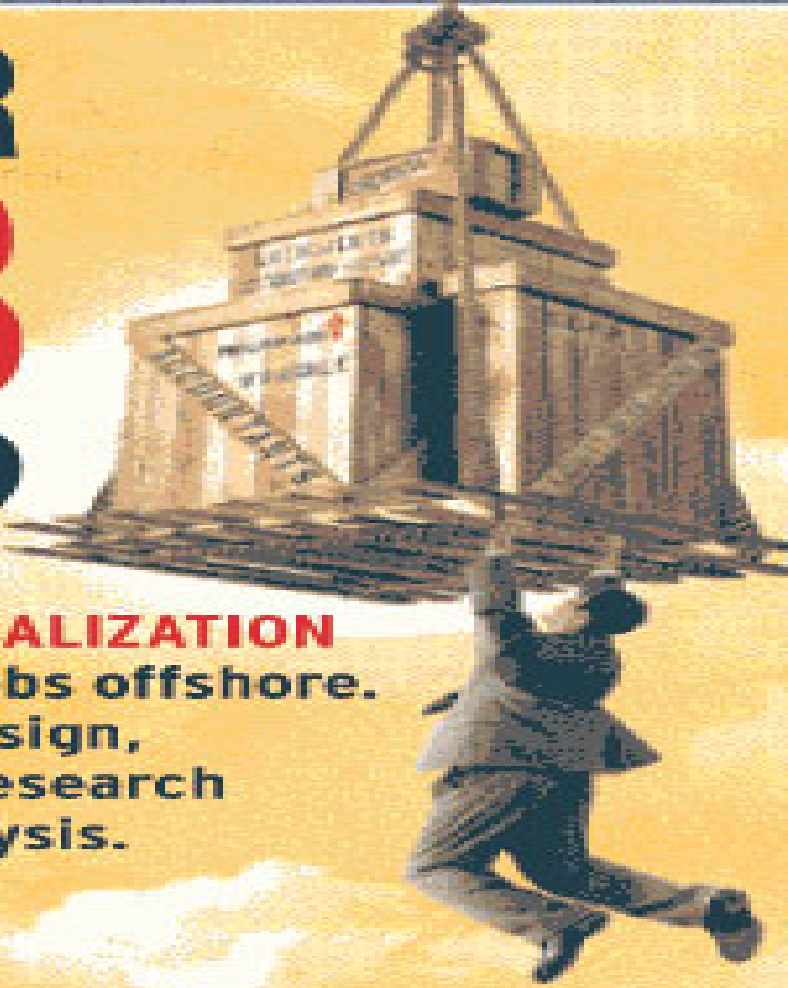
SILICON VALLEY
TALE OF A HIGH-TECH ZOMBIE

AIRLINES
HOW SOUTHWEST WEATHERS THE STORM

STOCK OPTIONS
COMPANIES ARE GROPING FOR A BETTER WAY

AOL Keyword: BW

IS YOUR JOB NEXT?



A new round of GLOBALIZATION is sending upscale jobs offshore. They include chip design, engineering, basic research —even financial analysis. Can America lose these jobs and still prosper?

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Claim:

3.3 Million Service Sector Jobs To Go Offshore

- "The IT industry will lead the initial overseas exodus."

  - *John McCarthy, Forrester Research, November 2002*

- "Lethal Outsourcing"

  - Similar to Manufacturing exodus

  - *Paul Craig Roberts, Washington Times, Feb. 27, 2003*

- "**Can America lose these jobs and still prosper?**"

  - *BusinessWeek, Cover, Feb. 3, 2003*

Why do Companies Utilize Offshore Engineering Talent?

- Cost
- Exceptional talent? Quality?
  - Shortage of U.S. workers? Ph.D.'s?
- Politics & Access to the local market
  - Trade, e.g., China & Russia – Boeing Engineers
- Developing countries' strategy?
- 24/7 Capabilities
- Collaborative engineering technology
- **Managers are now aware of it!**

Cost Equivalence of a $70k U.S. Engineer

A Russian Engineer is **very** happy with a $14,000 salary

Country	PPP	Salary
U.S.	1.0	$70,000
Hungary	0.367	$25,690
China	0.216	$15,120
Russia	0.206	$14,420
India	0.194	$13,580

Bad Data Abounds

- "Equally worried was Ray Bingham, CEO of Cadence Design Systems in San Jose, …'**China produces 600,000 engineers a year, and 200,000 of them are electrical engineers**,' he said in his presentation at the conference."

  - "The Reverse Brain Drain", *FORTUNE*, Tuesday, October 29, 2002

  - China had 195,354 engineers graduates in 1999 (NSF: 2002)

- International R&D data is also suspect.

1. What types of positions and how many will move offshore?

- We do not know, but it is increasing
  - Engineering colleges in India are growing rapidly
- It is an important growth strategy for developing countries

1. What types of positions and how many will move offshore?

- It will no longer be low level mundane work such as maintenance of old software applications
- It will not just affect IT workers but other services professionals – R&D, accountants, etc.

2. What impacts will this have?

- U.S. workers will lose jobs
  - Engineers face far greater career risks
  - Wasted human capital – Unprecedented unemployment
    - 7.5% computer software engineers and
    - 6.5% computer hardware engineers
- U.S. innovation system
  - Will the U.S. be able to create new products and industries and exploit them?

2. What impacts will this have?

- Military capacity
  - Access to and assimilation of technology
- Homeland defense
  - Critical information housed abroad
- Improved productivity
- Open new markets
- Lift economic development abroad
  - Improve international relations and cooperation

3. What should policymakers do?

- Track the phenomenon by collecting credible data
- Reform the current non-immigrant system:
  - The H-1B and L-1 visa rules have ***accelerated*** the movement of work offshore (Hira: 2003)
  - WTO General Agreement on Trade in Services (GATS) Mode 4 will impact U.S. ability to control H-1B and L-1 visas

3. What should policymakers do?

- Help workers who are displaced or at risk
  - Current engineering workforce efforts are misdirected
    - Current focus is on increasing the number Americans studying engineering
    - Should increase effort towards the existing pool of engineers
  - Need substantial government support for lifelong learning
    - New institutions
    - Creative policies for engineers to invest in themselves since companies are not
  - Policies to help high-skilled workers find new jobs and switch careers

3. What should policymakers do?

- Learn from the Manufacturing Competitiveness policies of the 1980's
  - Many new institutions and creative policies were established (e.g., Sematech)
  - The difference is that U.S. companies have not yet been threatened, just U.S. workers