The Evolving Global Talent Pool: Issues & Challenges

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For Africa”
University of Capetown
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"FLUIDITY"
Innovation SPEED!
The New Face of Global Competition in the 21st Century

- Technology Wars
- Patent Wars
- Talent Wars
- Standards Wars
- IPR Wars
“There are no strategies for creating wealth in the long-term that are not driven by innovation.”

Gary Hamel
Fortune
Sept 6, 2004
The WEF Davos Transformation

- New theme: Innovation, Creativity & Design Strategy
- Cost & quality integrated with innovation
- Six special workshops
  - Building a Culture of Innovation
  - Making Innovation Real
  - Outsourcing Innovation
- Beyond outsourcing perspective
- India, not China...the new hot spot

“In the past century, policy makers have generally crafted economic agendas around overarching goals defined as natural resource development, industrial development, or development of robust financial markets. …economic policy agendas of the twenty-first century must instead focus more aggressively on talent development. Development of other resources and markets will of course continue to be important. But the value of these resources and markets will increasingly be shaped by the relative success in building comparative advantage in talent markets.”

The Role of Talent

“Today, the heightened international competition boils down to a competition for human resources.”

HU Jintao, General Sec of the CCP at the 1st CCP Conference on “Creating a More Skilled Professional Work Force”
Beijing, Dec, 2003
Global Talent Pool: Core Issues

• Is there really a global talent pool?—some suggest approx 2/3 of US S&E pool comes from abroad
• How is the globalization of talent tied to key international issues:
  – Competition --Development
  – National security --Innovation --Education
• What are the challenges associated with creating and maintaining an “attractive” pool of talent?: national/corporate/regions/NGOs
• What are the keys to realizing value from a talent pool?
• What are the barriers to a truly global talent pool? How much mobility is too much—from perspective of buyers and sellers of talent?
Features of Global Talent Pool

- Flat or declining growth in # of knowledge workers
- Steadily increasing reduction of college-educated, experienced boomers
- Slower immigration of skilled workers: US has had a 30% decline since 2001
- Intensification of competition in global hunt for talent
- Growing reliance on virtual, remote workers from emerging markets: by 2009, ¼ (850m) of world’s workforce will use remote access and mobile technology to work on the go or at home
- Corporations report talent “shortages”—45% in PwC study reported IT talent scarcity…and 61% predict situation worse in 3 years
- Value of intangible assets—everything from skilled workers to patents—has grown from 20% of the value of the companies on S&P 500 to approx 70%
“Western business leaders cannot afford to focus their talent acquisition plans on the domestic workforce and skills immigrants. Increasingly, organizations of all sizes will need to develop & manage remote, virtual project teams and an entire workforce in order to compete. The winners will build networks into the farthest reaches of the planet and master the challenges of assembling and designing a global virtual workforce.”

Human Resource
10/17/2006
Global Talent Pool—Drivers?

- Paradigm change—from pools to a pool
- Blame it on the software revolution
- Intensification of competition
- Simultaneity
- Innovation speed
- 6 Cs
  - Capacity, capability, creativity, cost, capture and coordination
1. Paradigm change

- Five major continental economies enter global playing field: China, India, Russia, Brazil & Mexico
- Plus the four Asian dragons…and add in Ireland, Scotland, & Israel…..+ perhaps former E European economies
- Driven and magnified by communications, transport and IT revolutions
- Facilitated by economic & trade liberalization: WTO
- Supply chain is borderless: Li & Fung sourcing + contract manufacturing, e.g. Flextronics (Japanese network manufacturing)
- Onset of knowledge economy…on a global scale
- New corporate platforms for value creation & capture
- World is getting flatter for some, not everybody!
Example A.

Changing Face and Configuration of the Corporation
The New “Innovation-focused” GE

- Imelt Revolution inside GE (leadership beyond Jack Welch)
- Imagination Breakthrough projects
- More globally integrated workforce
- Strategic role of global labs as innovation magnets and catalysts
- Globalize R&D to get closer to customer
- Compensation tied to innovation performance
- Open up existing business boundaries of GE: generate blockbuster ideas
The Globally Cooperative Corporation*

- Ecosystem of knowledge creation shifting toward transborder innovation communities and networks
- Focus on leveraging the collective intelligence of employees, customers, and outsiders around world
- Expanded use of outside knowledge networks: P&G—35% of products outside of firm—up from 20% 3 yrs ago
- Mass collaboration on the Internet: shared knowledge, social networks, communities
- Mathematical targeting of customers and segments
- Firms are more porous & decentralized…and global
- Inno-Centive: network of 80,000 independent problem solvers in 150+ countries
- Shift from focus on firms and markets to “peers”

*“The Future of Technology,” Business Week, June 20, 2005
Accenture’s “Connected Corporation”

- “The corporate model of the 20th century—essentially *hierarchical* and *isolated*—is disintegrating.”
- “…corporations exist within an ecosystem characterized by a huge number of complex relationships and the blurring of industry and organization boundaries.”
- “…businesses are embedded in a complex system of networks. Many of these networks are underpinned by radical developments in information and communication technologies, though the implications of these changes go well beyond the technological.”
- “…for CEOs, the greatest challenge in [the] new environment is ensuring that the corporation makes the right connections.”
- “Competing successfully in the new ecosystem requires not only being customer focused but also customer driven. This means placing the customer at the center of everything the corporation does—even integrated customers into areas such as product design and the supply chain.”

Vernon Ellis, “Does the Corporation Have a Future?” Accenture, 2006
The Globally Modular Corporation

- Transformational outsourcing—leveraging offshore talent to strengthen firm performance/productivity
- Introduction of radical biz models to change nature of competition
- Configuration of work processes on global chessboard—from payroll to product design
- Liberation to enhance innovation
- Move to the “totally disaggregated corporation”
- Management challenges ahead—biz culture and country cultures

Example B.

The Rise of China
Global R&D Spending: China Moves to #3

Total World R&D = US$764 billion in 2003

Source: AAAS, Washington DC, 2005 (numbers adjusted for purchasing power)
“Independent innovative capability (zizhu chuangxin) is the core of national competitiveness. A nation should underscore independent innovation provided it wants to succeed in development and benefiting the world. China should do more to advocate the spirit of independent innovation, improve its mechanism for such innovation and its capability for original innovation, and innovation through integration or learning from imported technology.”

Hu Jintao
November 26, 2005
Changing Drivers of PRC Growth

- Low Cost Labor Drives Growth
- Low Cost Capital Drives Growth
- Low Cost IP Drives Growth

1985

1995

2005
Growth of GERD in China

- GDP (100 million RBM)
- GERD as % of GDP

Year:
- 1990
- 1991
- 1992
- 1993
- 1994
- 1995
- 1996
- 1997
- 1998
- 1999
- 2000
- 2001
- 2002
- 2003
- 2004

GERD and GERD/GDP trends over the years.
Growth of GDP vs. GERD, S&T Spending

Since 1990, S&T spending has been growing about twice as fast as the overall economy.
China’s Growing S&T Talent Pool

R&D Personnel (1000 FTEs)

<table>
<thead>
<tr>
<th>Year</th>
<th>R&amp;D Personnel</th>
<th>S&amp;Es</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998</td>
<td>755.2</td>
<td>485.5</td>
</tr>
<tr>
<td>1999</td>
<td>821.7</td>
<td>531.1</td>
</tr>
<tr>
<td>2000</td>
<td>922.1</td>
<td>695.1</td>
</tr>
<tr>
<td>2001</td>
<td>956.5</td>
<td>742.7</td>
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<tr>
<td>2002</td>
<td>1035</td>
<td>810.5</td>
</tr>
<tr>
<td>2003</td>
<td>1095</td>
<td>862.1</td>
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S&Es in R&D per 10,000 Labor Force

<table>
<thead>
<tr>
<th>Year</th>
<th>S&amp;E/10,000 Labor</th>
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<tbody>
<tr>
<td>1998</td>
<td>6.6</td>
</tr>
<tr>
<td>2000</td>
<td>10.3</td>
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<tr>
<td>2002</td>
<td>11.2</td>
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<tr>
<td>2003</td>
<td>12.0</td>
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</tbody>
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The Supply-Side of the Talent Pool

New enrollment at regular institutions of higher education (1,000 persons)

New enrollment in graduate education (1,000 persons)

Average annual growth: 13.0%

Average annual growth: 28.9%

Average annual growth: 12.4%

Average annual growth: 24.0%
China Talent Pool in Global Perspective (2003)

Unit: 1000 FTE

Source: China Science and Technology Statistical Yearbook, 2004
US and China Graduate Enrollment in Engineering

Year

Enrollment (10,000 persons)

Growth rate (%)


Source: NSF and MoEd (PRC)
2. Software revolution

- Low barriers to entry: smaller role for capital
- Relentless technical change
- Limited government role
- Leveraged model of engineers/technical talent across broad platforms: 70% cost in people
- Structured industry re: value chain segmentation
- Standards set across large market base
  - India has nearly 70% of CMM Level 5 sites in world—China too!
- Fostered focus on provision of IT/business services
  - Follow manuf: production & consumption not in same location

.....leading to global search for specific skills/costs
3. Intensification of competition

- Shift from variable cost to fixed cost competition: everyone has equal access
- Integration of capital markets
- Active search for new markets → saturation at home
- Technological leveling → complementarities
- More rapid movement of technology overseas at earlier point in life cycle: win through tech advantage......need to overcome ‘talent constraint’

.....leading to globalization of activity from medicine to commerce, from law to accounting
4. Simultaneity

- Not just about costs…
- Not just about time….
- Not just about resource access…
- Not just about access to cheap capital….
- Not just about leadership….
- Not just about organization design….
- Not just about technology….
- And…not just about cross-cultural sensitivity…

…but about doing all of these things well at same time, all the time, any time, any place, and anywhere…with the RIGHT PEOPLE
4. Innovation speed

- Acceleration in tech development: less time between recognition \(\rightarrow\) commercialization
- Greater emphasis on turnover in new product & service introduction: demand from industrial/ consumer users, e.g. Akihabara (Tokyo)
- Tech excellence = national priority \(\rightarrow\) urgency
- Technology attracts technology: location matters (Porter)
- New knowledge develops from within and across networks…..new R&D configurations

…..innovation pace has become the life blood of survival for all organizations…driving demand for brains instead of brawn
NAS MNC R&D Study

- Research work of MNCs will increasingly be sent to strong, fast growing economies with strong education systems
- More than 38% of 200+ MNCs surveyed plan substantial changes in the worldwide distribution of their R&D work over next 3 years
- NAS study reinforces earlier study by Economist in 2004
- Lower labor costs and tax incentives not the key drives: quality of S&Es and local product adaptation
- Huge shift about to occur in knowledge creation activities: impact on OECD nations huge
The number of R&D centers established by foreign companies in China has witnessed a dramatic increase over the last 3 years.

- MNC R&D centers are expanding focus from only the Chinese market to global markets.
- Foreign companies have changed their core strategy in China. They now are bringing world class technology rather than simply ‘tweaking’ existing products for local market.
5. Search for talent, globally

- Issue of global talent is not simply about cost reduction and job displacement....6Cs
  - **Capabilities expansion**: new skills
  - **Capacity enlargement**: pursue more opportunity
  - **Creativity enhancement**: new approaches/ideas
  - **Cost abatement**: with manageable spending
  - **Capture & retention of talent**: NOT UNLIMITED
  - **Coordinated across time and space**: manage transactions costs and risks, e.g. IPR, regulatory
Barriers to global talent: who can play and who wants to play?

• Supply Side
  – Inadequate investment in education
  – Skill mismatch—demand versus supply
  – Poor IPR protection environment
  – Exchange rate issues
  – Language issues

• Demand Side
  – Managerial challenges and inhibitions
  – Creating a “culture” for creativity
  – Country risk, e.g. government intervention or visa policy
  – Glass ceiling: career barriers
  – IPR concerns: piracy
  – National security issues
  – Privacy
Core Skills for Managing Across Borders and Cultures

-- Leading and managing cross-cultural, cross-functional teams
  – Leveraging technology across borders and cultures
  – Cross border market assessment and evaluation
  – Effective communications & collaboration across borders and cultures
  – Managing across multiple regulatory environments
  – Managing risk and uncertainty on a global/local level
  – Managing the ethical challenges of a multi-cultural world

Is the world of games/gaming preparing people for the new demands of globalization?
Some parting thoughts…

- How really “flat” is the world?
- Is the demand for talent a nirvana for developing nations?
- How “soft” is the demand for talent? How might technology change the demand?
- How comfortable are companies with managing a global talent pool? What types of leaders are required?
- How significant are ethnic-based networks of talent?
- What about new talent alliances, e.g. India + China?
- What is the link between entrepreneurship & talent?
- What other factors are helping to make talent so strategically important, e.g. venture capital
Levin’s Executive Mgt Program for Software Professionals

Goal:
The goal of China Software Industry Executive Management Program is to be an incubator of leaders for China’s software industry.

Definition of a Leader:
- Global perspective
- Strategic thinker—markets and technology
- Synthetic mind & collaborative player
- Deep understanding of software market dynamics
- Ability to create, implement and lead a software company from “build to last” and “from good to great”

Definition of the Incubator:
- New knowledge and best practice approach
- Real life experiences & support
- Learning by doing/living
The Program’s Value Chain

The ability to arouse enthusiasm & motivate others

The will, passion and capacity to be a leader

Technical & market Knowledge

The ability to communicate ideas

The New Participant

Chinese Software Executive Management Program

The Leader

The Goal
Key Elements of Success: Self Transformation & Enhancement

- Faculty
- Company Diagnostic
- Market Analysis
- Students

Enthusiasm
Experience
Relevance
Unique Opportunities
Program Structure

- Module Studies
- Workshops/Guest Speakers/Lectures
- Active Case Studies
- Learning by Living/Doing
Program Orientation

• General speaking, orientation helps students get started for the exciting four months that they will study in the Levin Program

• The orientation program is built on 3 components:
  – *Understanding the logistics of living and working in NYC*
    • New York subway system
    • New York Public Library system
    • Guided walking tour in Chinatown, Wall Street
    • Understand America as a second business culture
  – *Keys to Business & Marketing Success*
    • Presentation and communication skills
    • Business etiquette
    • Dress for success
    • Business writing
  – *Training in Business Culture: How entrepreneurial businesses operate*
    • Understanding the business environment
    • Negotiation and cooperation across corporate & international borders
# Modular Design

## Macro Management
- Leadership & Executive Development
- Competitive Dynamics of Software Market
- Evaluating Emerging Technologies
- Technological Entrepreneurship

## Operational Management
- Marketing Software Products
- Project Management: Discipline & Leadership
- High-tech Human Resource Management
- Cost Accounting & Corporate Venturing
How Do We Do It?

• We move out of the traditional 3 credit course model and typical classroom experience....to create a customized teaching and learning situation.

• Our pedagogy is:
  – Modular
  – Experiential
  – Team Oriented
  – Project Based
  – Globally Connected
  – Cross Cultural
  – Interdisciplinary
  – Focused on Integrated Learning & Innovation
Leaders, Heroes and Innovators

• This will be the students’ initial exposure to the Levin curriculum. Accordingly, the goal of this short course is to excite them about innovation and entrepreneurship…so they can understand the potential for being a real change agent and market leader.

• Discussions built around successful and unsuccessful innovators in business, government and society

• Materials will be drawn from inside and outside the management literature to demonstrate alternative leadership modes for bringing about dramatic as well as evolutionary change.
Managing on the Edge

• Coming at the end of the program, this course is designed to put students on “edge” and make them “uneasy” as they come towards the end of their study experience. The goal is to place them in non-linear, unstable, uncertain situations and to encourage them to develop innovative solutions for dealing with risk and uncertainty in rapidly changing markets.

• Materials will be drawn from inside and outside of management to assist the students discover how best to manage uncertainty and deal with surprises and the un-anticipated.
Company Visits

Company Site Visits

Fundtech Corporation
(New Jersey, Banking)
UTStarcom
(New Jersey, Telecom)
BEA
(New York, Middleware)
Checkpoint
(New York, Network Security)
AMS
(Virginia, e-Government)
Thoughtworks
(New York, Agile Management)

Guest Speakers

Software Association of New Jersey
Chinese Software Professionals Association
Effective Communication for Managers
Venture Capital Firms
Incubators
Attend software conferences
Active Case Studies

- Students will engage in an extensive diagnostic study of each of the companies they are going to visit.
- Based on the eight modules, students will prepare a questionnaire for each company before the visiting.
- Students will meet with the leadership teams to learn about past, present & future strategies.
- After the visits, student teams will prepare a post-mortem report and present it to the class by group.
- Emphasis will be on understanding marketing strategy, business plans, technology capacity, and potential for international cooperation.
Meet Our Graduates
Program Outcomes

- Enhanced understanding of the competitive dynamics of the global software industry
- Stronger appreciation of the strategies for expanding into foreign markets—products and services
- Improved capabilities for developing and managing joint ventures and cooperation with foreign firms
- Deeper understanding of the policies and practices needed to manage, motivate & retain knowledge workers
- Better skills for effective project management and efficient financial management in the software business
- Enhanced leadership skills in terms of strategic thinking and effective decision-making
Thank you
Global Talent Index

• Levin Institute and IBM have partnered strategically to design, collect and analyze data
• Project will proceed in three phases:
  – Phase I: Develop a prototype country model (China) to design a common template or method for future country studies (done)
  – Phase II: Using common template method, engage global research team(s) to create baseline cases for the initial key 20-25 countries in the project (6-8 months) (on-going)
  – Phase III: Move into maintenance mode for continuous updating and improvement on website and hard copy — Global Talent Index
• Future phases may include workshops or conferences to discuss trends and issues as well as critique the model
• Discussion still underway on whether to use an “index” or some other approach, with the cross-country comparisons this enables
Supply & Demand for Scientists and Engineers

- Forecasts about the supply and demand of S&Es in most OECD nations continue to reflect serious concerns about “shortages,” especially in current projections regarding the number of new entrants into S&E fields
  - Supply: Career attractiveness issues
  - Demand: Lack of soft skills needed for current job environment (people-technology interfaces)
- Spurred on by the growing emergence of high quality talent pools in many non-OECD economies, global firms are engaged in a sustained effort to “capture and harness” these resources
- To promote indigenous innovation and attract greater levels of higher value-added foreign investment, governments in non-OECD nations are actively investing in building the local talent stock
- While world indeed may be “flatter” in terms of homogenization of S&E skills and talent levels, these emerging economies face numerous challenges
  - In rapidly growing economies such as China and India, continuously rising demand for talent currently seems to be outstripping supply
Human Resources in Science and Technology (HRST) lags Gross Expenditure on R&D (GERD) in most economies

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<th>Annual average growth rate of HRST</th>
<th>Annual average growth rate of GERD</th>
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Source: OECD: Science, Technology and Industry Scoreboard 2005