

Mobility, international collaboration and innovation: What is happening and what should happen?

Sachi Hatakenaka

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Tokyo, GIES

Agenda

- Why encourage mobility/international collaboration?
- What is already happening? What are other countries (e.g. US/Europe) doing?
- What are the neglected areas?
- What should Japan do?

Context

- Almost all countries focusing on innovation
- Key emphasis on strengthening universities and human capital formation
- Globalizing corporate R&D
 - With key developments in emerging economies such as China and India
- Mobility and international collaboration emerging as key words – but why?

Why encourage mobility/international collaboration?

- Four rationales/benefits
- Quality improvement of scientific community
 - Avoiding fragmentation and isolation,
 - encouraging competition and dynamism
- Internationalize educational environment
 - Creating global outlook in the new generations
 - Encouraging creativity and individuality (Japan)
- Linkages to global innovation networks
 - Links to centres of innovation
 - Link to emerging economies which can have a positive feedback a la India/Taiwan
- Global scientific community for global challenges
 - E.g. Climate change, energy, poverty alleviation

What is happening globally?

- Global competition for students
 - Initially market-driven - competition for fee paying students
 - Increasing competition for talents – through scholarships
 - Insufficient emphasis on graduate (particularly PhD) students
- Global competition for academics
 - Key countries beginning to ‘repatriate’ scholars particularly from the US
 - Increasing appointments of ‘foreign’ leaders for centres of excellence and global universities
- Global research collaboration
 - Thematic big projects such as ITER
 - Increasing funding to support international research collaboration (e.g. Europe, bilateral agreements)
 - Institutional partnerships – with/without government support
 - Some initiatives for developing countries

Neglected areas

- Global graduate education (particularly PhD)
 - Many countries making efforts in funding, immigration rules etc.
 - But need more ‘structured’ change/support to enhance mobility
 - Important to learn from the US
- International collaborative research in Asia
 - European framework projects – including non EU members
 - Many bilateral agreements
 - Insufficient efforts to join forces across Asia?
- Innovation agenda of developing countries
 - Difference between rhetoric and reality
 - OECD governments focus on ‘national’ competitiveness or global agenda relevant to them
 - Some initiatives emerging for developing countries – but largely supported by foundations

Why focus on graduate students?

- Key ingredients for ‘brain-circulation’
 - global innovation networking experience of India/Taiwan and the Silicon Valley
- Good target group for internationalizing researcher or enhancing mobility
 - PhD students more likely to be internationally mobile than mid-career researchers
 - Once mobile, more likely to be mobile later
- The greater the number of international grad students, the easier for foreign academics to work

Lessons from the US

- Long standing popularity among international graduate students – why?
 - Simplified admission process – based on globally available tests
 - Readily available financial aid – nearly half of students are funded by universities
 - Competition in funding – for supervisors and students
 - Course-based teaching – allows entry with diverse backgrounds
 - Learning/advisory structure – good for interdisciplinary work
 - Content orientation – good for industry recruitment
 - Possibility to stay and work
- Changing domestic policy debate
 - Originally divided: ‘why should we subsidize foreigners’ and ‘we need global talents’
 - Increasingly unified voice about the need for international talents

Renewed emphasis for global scouting

- AMERICA COMPETES provides a legal provision for increased fellowships/financial support for graduate students
- Increased funding particularly to support PhDs in interdisciplinary fields
- Council of Graduate Schools
 - “NDEA21, report in 2006
 - “Graduate Education, the Backbone of American Competitiveness and innovation”, April 2007
 - Calls for comprehensive action
 - For government - legal changes in immigration, funding etc
 - For universities and businesses to work together for better quality programmes
- No other country gives this level of streamlined opportunities!

Funding for international collaboration

- Europe – transformed through Framework programmes
 - Greater ability to link with specialized expertise
 - Greater ‘international’ orientation
 - Greater visibility
- Denser networks across the Atlantic
 - US-Europe
- Tigers in action
 - China and India
- Is Japan on the map?

Innovation needs for developing countries

- Key needs for R&D and innovation in developing countries
 - They cannot afford to fund themselves
 - E.g. Innovation to tackle diseases particular to developing countries
- OECD countries increasingly fund research
 - As part of development assistance
 - But still insufficient for addressing thematic issues with R&D needs
- Main initiatives occurring sporadically
 - With support from private foundations
 - Private-public partnerships and other initiatives for drug discovery

What should Japan do?

- Orient K-12 for globalization and innovation
- Systemic and on-going review of rationale for international collaboration and specific actions
 - With diverse inputs
- Focus on internationalizing graduate education
 - Basic improvement needed in the structure and content as well as funding
- Create greater international collaboration
 - With Europe and US
 - But also across Asia
- International collaboration for development agenda