Innovation Policy in an Enterprise-Centred Innovation System

Presentation at the Conference

Review of China’s National Innovation System and Policy

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Purpose and content

Not analysing the Chinese situation, but…

1. Rationales: a comprehensive look on “innovation policy” (very brief)
2. Selected issues illustrated with international examples
3. Conclusion
The need for adequate policy mix and framework conditions

• All policy – and framework conditions shaped by public policy – is relevant that shapes and influences the conditions for the generation and diffusion of innovations.
• Increasingly recognised: demand orientation (and related sectoral policies and frameworks) as complement to traditional supply policies

➢ Needed: a comprehensive, holistic view for policies in enterprize centred innovation systems
➢ The „mix“ is not trivial: see current EU Policy Mix Initiative
Policies in innovation systems: The challenge of connections and the right mix

Source: OMC policy mix group 2007, Ken Guy; modified J. Edler
2. Selected issues illustrated with international examples

Covering a (small) selection of challenges in China:

A. Enabling SMEs (*Market Development – Innovation*)
   - Absorptive capacity and broadened innovation activity

B. Intelligent cooperation (*Science Base and Innovation*)
   - Making use of strong Universities and raising attractiveness

C. Broad discourse (*Innovation – Science Base – Policy – Societal Goals*)
   - Creating forward looking, inclusive and responsive strategies
A. Enabling SMEs

• Why?
  – Countries in transition to enterprise-focused systems tend to focus on the science base and on activating large companies, forget the breadth of the economy
  – SME as major source of new ideas and employment, the basis of the economy
  – Specific challenges faced by SME in terms of innovation: risk, early financing, intellectual property, partnership, Human Resource, market entry/credibility, ability to adopt latest management techniques and technology
Small Business Innovation Research Programme, USA

– Biggest US partnership programme, since 1982/83
– Mandatory: 2.5% of large mission oriented programmes in major Federal Ministries / Agencies (with budget above $100 million) reserved for SMEs
– Mission: technological commercialisation, support for early stage development
– Projects in cooperation (large firms, Universities, SME / start ups)
– Since 1983: 19.2 Billion USD, 50,000 patents
– Assessment largely positive, both in terms of firm creation/growth and contribution to mission (some countries have copied (e.g. SWE))
– Key features:
  • Application bottom up within missions (need focused)
  • Three stage approach, last stage: potential public procurement by agency (combining bottom up and mission orientation)
  • Enforced: Intellectual property with SME (protection against large companies)
  • Essential: Local infrastructure and additional venture capital
Manufacturing Extension Programme USA

- Mission: to enable SMEs to access latest innovation expertise and technology, build up own absorptive capacity and related networks
- Large network of ME-centres across the country
- 2005: almost 25000 companies served
- Activities done: Training, Techn. Assistance, Assessment
- Mixed financing through all three policy levels and private sources (main responsibility: National Institute of Standards and Technology in DoC)
- Results: on national, regional, firm level
  - productivity gains, modernization (diffusion), increased networking, management and absorptive capacity (creation and application of innovation)
  - Quantitative: 1 USD has 6 USD effect
  - in networked economy effects also for large companies (suppliers, clients)
- Challenge: build up of multiplicator expert network
B. Intelligent cooperation in systems with strong Universities

Example: Competence Centre Programmes (CCP)

- Why:
  - University orientation towards companies and their need low
  - Ability of companies to express needs low
  - Research systems too fragmented
  - Little mobility science - industry
  - Financial incentive needed to stimulate co-operation, especially longer term

- Main Idea: Financing of "quasi-institutes" (or networks) run together by universities and industry for a limited time period (generally 7 years),

- Examples: U.S. (NSF Engineering Research Centres (ERC), Australia (CRC), Sweden VINNOVA’s CC, Hungary (KKK), Austria (K plus).
Intelligent Cooperation in systems with strong Universities

Example: Competence Centre Programmes (CCP)

- **Objectives (example Kplus Programme Austria):**
  - improve the long-term co-operation between science and industry;
  - stimulate pre-competitive research and multi-firm co-operations;
  - improve the transfer of know-how (especially through people);
  - focus and create critical masses;
  - use public funding to trigger additional private expenditures;
  - define new areas of research through bottom-up approaches;
  - ensure internationally competitive quality of K plus centres through a strict selection process and
  - periodic evaluation;
  - create examples of best practice in research management (spill back in Universities)

- Programmes are planned and implemented by specialised agencies, and have gained from international policy learning
Intelligent Cooperation in systems with strong Universities
Example: Competence Centre Programmes (CCP)

- **Effects:**
  - Overall very positive
  - Built up economic rationales in Universities and business centred strategy planning
  - New powerful corporate structures
  - Flexible multi-party cooperations (from 1 on 1 to large consortia)
  - High returns for companies
  - **Attraction also for foreign companies (embeddedness)**
  - CCP can support high tech strategies and S&T based initiatives with a more bottom up, company inclusive approach
  - Regionally focused
C. Creating broad innovation and technology discourse

Why?

- Future direction in R&D and Innovation determined by 3 pillars: market developments (demand, production capabilities), scientific knowledge production and long term societal preferences/needs

- Often, public R&D programmes
  - only catch part of the picture,
  - are not coordinated with sectoral policies and needs,
  - do not meet common preferences by industry and (public) science („imposed“)
  - do not reflect long term developments

- Modern innovation policy:
  - supports discourse to define long term goals and capabilities and bring them in line with societal needs
  - Brings together private and public actors for strategic action
Creating broad innovation and technology discourse: The example of Technology Platforms

- European discourse structures facilitated by the European Commission
- Aims:
  - design long term strategic research agendas in Europe and road maps
  - organise variable funding (research programmes, industry, ppp)
- 34 TP established as of August 2007
- Features
  - Industry driven (including SME), but also scientists and societal groups (plus policy makers), including Non-European MNEs
  - Largely bottom up and self-governed (differentiated structures / processes)
  - Not only science – industry, but also: clear signals to policy makers and markets, creating culture of innovation discourse
- Effects (observed): new level of future oriented discourse, very influential on companies, governments and public discourse, setting the scene for research and development in selected areas
Conclusion

- Countries in the transition: often focus on the science based model.
- Needed: a combination of science based and innovation diffusion model
  - Link science base and innovation production intelligently
  - Provide for a broad innovation culture, absorptive capacity: include all actors, entrepreneurial spirit in Universities, innovation management and life long learning in companies
  - Open and inclusive (foreign actors) up discourse among and with stakeholders

- Again: if policies shall be effective, and if learning, cooperation and embedding (foreign companies) are key elements:
  - strong institutional framework and compliance needed
  - Strategic intelligence on all levels (learning, credibility, responsiveness)
A related conference to come

Innovation and Sustainability in a Globalised Economy.
A dialogue with China

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Manchester Institute of Innovation Research (MIoIR)
Manchester Architecture Research Centre (MARC)
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University of Manchester
Thank you very much for your attention

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