

# **Innovation Policy in an Enterprise-Centred Innovation System**

## **Presentation at the Conference Review of China's National Innovation System and Policy**

**co-organised by  
Organisation for Economic Cooperation and Development (OECD)  
and  
Ministry of Science and Technology (MOST), China**

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## **Purpose and content**

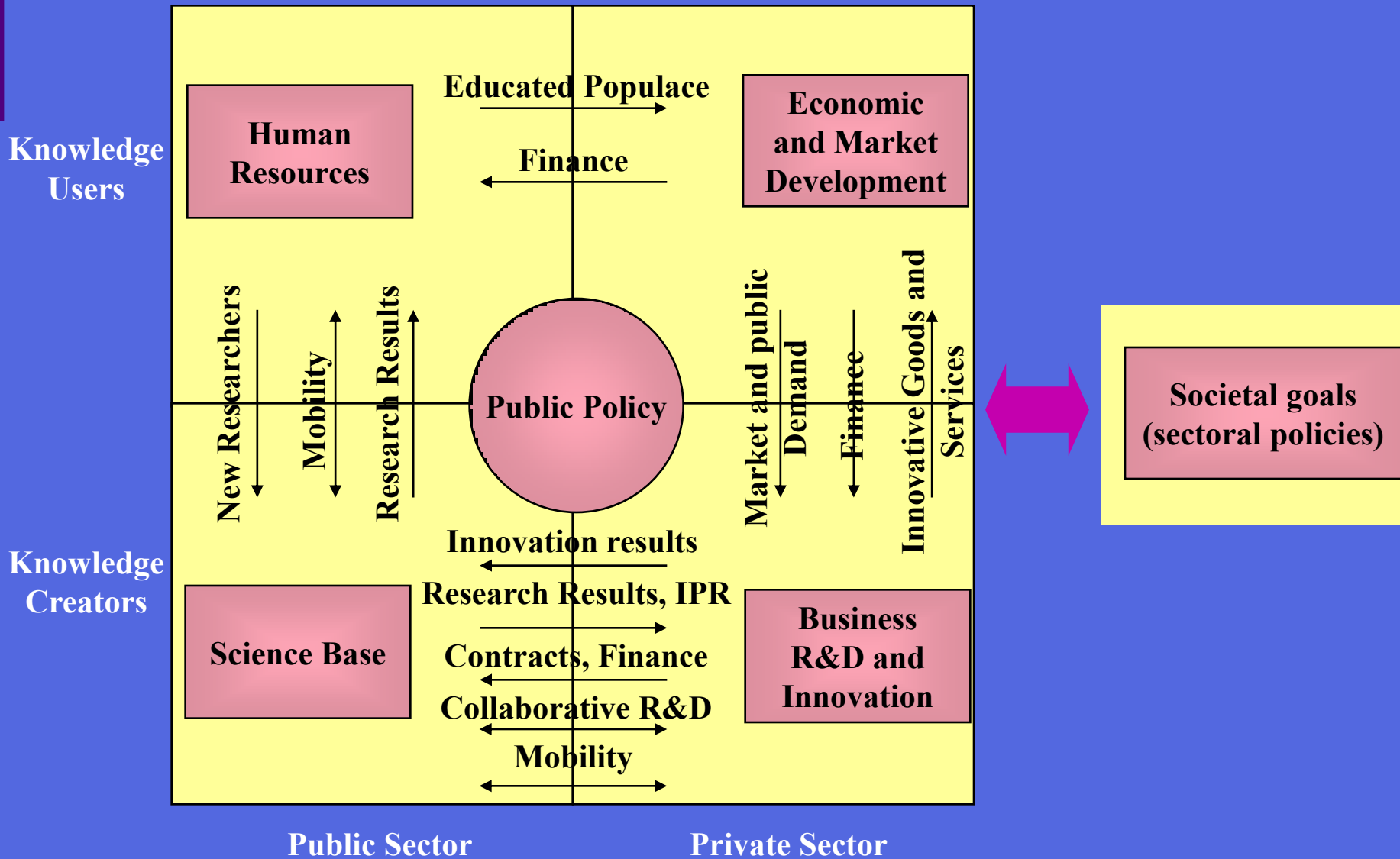
**Not analysing the Chinese situation, but...**

- 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 enterprise 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



## 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 (w. budget above \$100 millionen) reserved for SMEs**
- **Mission: technolog. commercialisation, support for early stage development**
- **Projects in cooperation (large firms, Universities, SME / start ups)**
- **Since 1983: 19.2 Billion USD, 50000 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  
[http://cordis.europa.eu/technology-platforms/individual\\_en.html](http://cordis.europa.eu/technology-platforms/individual_en.html)
- 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

November 22 and 23 at Manchester

organised by

Manchester Institute of Innovation Research (MloIR)

Manchester Architecture Research Centre (MARC)

Centre for Chinese Studies

University of Manchester

# Thank you very much for your attention

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