Linking National Science, Technology and Innovation Policies with FDI policies

Thomas Andersson

January 2005
**IKE D’s areas of work include:**

- Globalisation, innovation and growth issues in the Nordic countries, including: secretariat for Finance Ministers “new economy project”; chairing innovation policy review in Sweden, action plan for a Norwegian Innovation Policy; Work on Commercialisation of University Research with Industry.
- Regional integration, innovation and entrepreneurship in Central and Eastern Europe, the Baltics, Poland, Slovenia, Turkey - towards competing in the Single Market
- ASEM-agenda, KBE in Asia, and ICT for development
- Dynamism in Latin American countries, from Chile to Cuba
- Regional Economic Cooperation; Cross-border Issues; Integration cross-border issues

**Flagship publications**

- World Competitiveness Proceedings: The Cluster Policies Whitebook
- ASEM Proceedings: Globalisation and ICT: The Role of Government, Private Sector and Civil Society in an Information Society for All
- Swedish Innovation Policy Review (IPE)
- Norwegian Policy Review: Towards a New Growth and Innovation Policy in Norway
- The Baltic Countries and Poland: Towards effective policies for innovation and enterprise development in the Baltic Sea Region
- Handbook for Evaluation of Innovation Policy
- SME Policy Review of Turkey
- The Global Venture Capital Market and Challenges for Individual Countries
High tech exports as share of total manufactured export

Source: UNCTAD Technology Indicators Database.
Systematic reductions in transport and communication costs

Phase 2: freight rates stabilize; communication costs plummet

Legend:
- Bandwidth cost
- Ocean freight
- Air freight
- Satellite charges
- Transatlantic phone call

Data updated from World Bank (1995)
The Digital Divide and ICT Infrastructure

Government role in R&D varies considerably across countries, % of GDP 2000
Abandoning the linear model

Supply: R&D

Innovations

Demand: Market

Increased intensity in linkages through ICT

Ideas tecnologies

Researchers

Entrepreneurs

Competitors

Customers

Source: IKED
“Bilateral Investment Treaties”, 2003

Source: UNCTAD, 2003
Application of Rule of Law Varies by Region
(based on aggregation of surveys/polls 1997-99*)

High

Index of Rule of Law Application

Low

Index

OECD
East Asia
Middle East
South Asia
Eastern Europe
Latin America
Sub-Saharan Africa
Former Soviet Union

The cluster lifecycle

Cluster dynamics and linkages: cooperation and competition

Gap in the form of lacking seed funding
Innovation policies

• **Science background**
  - Scientific freedom and excellency, basis for education
  - Technology diffusion through research institutes

• **Systemic perspective, linkages**
  - The quality dimension of human capital
  - Public private interface in research and innovation

• **Concrete issues subject to reform**
  - Incentives within universities, science-industry linkages, private R&D
  - Seed and venture capital, entrepreneurship and risk-reward ratio
  - Standards, regulations
  - Assessment, evaluation and monitoring
R&D globalisation and specialisation

• Knowledge search
  - Need to search, develop and use knowledge anywhere
  - Adjusting to costs and opportunities in multiple locations

• Changing organisational properties
  - Asset-exploiting vs. Asset-augmenting
  - Affiliates more independent vs. more integrated in TNCs

• Evolving linkages
  - Greater capability to manage technology transfers
  - Stronger linkages within TNCs
  - Stronger potential for local linkages
  - First mover advantages vs. herd behaviour
FDI policies

- Traditionally adverse
  - Nationalisation, prohibition, barriers
  - Taxes, performance requirements

- Information, marketing, attraction
  - Provision of information, privatisation, selective incentives
  - Offering infrastructure, subsidised inputs, a favourable environment

- Fostering ”spillovers”
  - Encourage higher value-added R&D in affiliates
  - Facilitate training combined with labour mobility
  - Strengthening domestic suppliers and competitors
  - Cluster approaches, networks, triple helix
Integrated framework innovation and globalisation

- **Country characteristics**
  - Size aspects: proximity, domestic market, flexibility, openness
  - Level of development, resources, nature of limiting bottlenecks

- **Interplay TNCs - domestic**
  - Creating win-win situation between TNCs and domestic actors
  - Selective public role, allowing professional private services development

- **Governance mechanisms**
  - Initiative from the top, countering vested interests, letting go of control
  - Engaging stakeholders
  - Division of labour: national – regional, allowing specialisation
  - Ministerial responsibilities
Innovation Policy Positioning: Traditional
Innovation Policy Positioning: Implicit
Innovation Policy: Explicit positioning
Innovation Policy: Explicit Positioning