The Nordic countries - Leaders in the New Economy? ICT, Innovation and Economic Performance

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Systematic reductions in transport and communication costs

Note: 1) Average ocean freight and port charges per short ton of import and export cargo. 2) Average air transport per passenger mile. Cost for 1920 not available. 3) Cost of a 3 minute telephone call New York to London. Cost for 1920 not available.

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The Economic Evolution towards the Networked Society

- **Data**
  - Product
  - Competition
  - 50’s – 70’s

- **Information**
  - Solution
  - Cooperation
  - 70’s – 90’s

- **Knowledge**
  - Innovation
  - Collaboration
  - 90’s – 2000’s

- **Ubiquitous**
  - Ecosystems
  - Coopetition
  - Today?
ICT for Business Ecosystems

The Digital Divide and ICT Infrastructure

Telephone mainlines (per 1,000 people)

Source: World Development Indicators, 2005
The Digital Divide and ICT Infrastructure: Internet Users (per 1,000 people)

Source: World Development Indicators, 2005
The Digital Divide and ICT Infrastructure: Mobile Phones (per 1,000 people)

Source: World Development Indicators, 2005
Mobile subscribers across regions, 2004

Subscribers in Million, 2004

- Asia
- Europe
- U.S.
- China

Current growth Rates, %

- Asia
- Europe
- U.S.
- China

Source: International Telecommunication Union (ITU)
Looking for the effects

• From producer to the user side
• Levels: firm, industry, aggregate
• From individual production factors to total factor-productivity
• From static to dynamic: processes over time
• Complementary/enabling factors
Crucial determinants

- Regulation - competition
- Human capital: from quantity of education to quality, learning, use of skills, learning
- Research, innovation, linkages
- Organisational change
- Entrepreneurship, risk-taking
Investment in education in relation to GDP 2001

Exchange of tertiary level students, 2000

Note: Luxembourg and Greece are not included in the EU aggregate. Brunei, Singapore and Vietnam are not included in the A.ASEM aggregate.

Source: OECD Education database.
Social trust ranking

R&D in the OECD and non-OECD area 2003, GERD in billion USD

Source: OECD, Main Science and Technology Indicators 2005-2 (MSTI) and OECD Science, Technology and Industry Scoreboard (STI) 2005
Business R&D expenditure in relation to GDP 1981–2003, percent

Source: OECD MSTI, 2005
Cluster dynamics and linkages: cooperation and competition

R&D expenditure in relation to GDP 2003

Source: OECD MSTI 2005
Science & Engineering articles by country 2001

Source: National Science Indicators (NSI) database, 2002 and World Development Indicators 2005
Patents to EPO & USPTO, relative to population, 2004

High-technology exports in percent of manufactured exports, 2000-2003, percent

Source: WDI Database, 2005
GDP based on PPP per capita GDP (USD), 1980=100

Source: IMF World Economic Outlook Database.
Abandoning the linear model

Increased intensity in linkages through ICT

Supply: R&D

Innovations

Demand: Market

Ideas
technologies

Researchers

Entrepreneurs

Customers

Competitors

Source: IKED
Lack of seed funding

Public

Gap

Private

Science > Developm. > Launching > Expansion > Established technology
High-tech venture capital as a percentage of total venture capital investment, 2000-2003

Source: OECD, Science Technology and Industry Scoreboard, 2005
Entry and exit of firms, manufacturing and business services, 1997-2000, percent

Source: OECD, STI Scoreboard 2003
Female and male entrepreneurial activity

Source: Scientific Analysis of Entrepreneurship and SMEs (SCALE) paper N200510, 2006.