The Information Technology Agreement and Innovation

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Scope of this presentation

1. Information Technology and Innovation
2. Evidence from Intellectual Property Indicators
3. Challenges to Innovation in Information Technology
1. IT and Innovation

Ministerial Declaration on Trade in Information Technology Products (13 December 1996)

…

*Desiring* to achieve maximum freedom of world trade in information technology products;

*Desiring* to encourage the continued technological development of the information technology industry on a world-wide basis;

*Mindful* of the positive contribution information technology makes to global economic growth and welfare;

…
1. IT and Innovation: Concept

- Innovation

“the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organisational method in business practices, workplace organization or external relations”

IT as a General Purpose Technology facilitates innovation across downstream sectors.
1. IT and Innovation: **Multiplying mechanisms**

- **IT as a General Purpose Technology**
  - rapid development in itself
  - wide range of applications throughout the economy
    -> organisational improvements, efficiency gains
  - ability to facilitate technological improvements in downstream sectors
    -> “innovational complementarity“

- **Demand Behaviour for IT multiplies positive trade effects**
  - Price elasticity of demand for IT products
  - Income elasticity of demand for IT products
2. Evidence from Intellectual Property Indicators

- Patent statistics as indicators of Innovation have shortcomings ...
  - only represent a small share of innovation
    - Innovation not passing patentability criteria is screened out
    - Protection not sought for all innovations
  - only represent a particular type of innovation
    - mostly technological innovation
    - mostly product innovation – less process innovation
- ... yet remain useful due to standardization and availability of international data.
2. Evidence from IP Indicators: Patent applications

Worldwide patent applications by residents in selected industries:
WTO Secretariat based on WIPO Statistics Database and EPO PATSTAT Database, 2011
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2. Evidence from IP Indicators: Patent applications

Russian Federation

Mexico

Brazil

Graphs showing trends in patent applications from 1990 to 2009 for Russia, Brazil, and Mexico, with different categories such as computer technology, semiconductors, telecommunications, and cross-industry average.
2. Evidence from IP Indicators: Patent applications

- Since 1996, most top-trading ITA participants have deepened or developed a relative focus of innovative activity in IT-related industries.

- Increased trade share of developing country ITA participants is accompanied with a disproportional shift into IT-related innovative activity in these countries.

- Illustrates a relationship between trade and manufacturing in certain products, and the use of the intellectual property system for related inventions.

- Suggests that high-tech manufacturing can spur high-tech innovation.
3. Challenges: The effects of outsourcing

❖ Outsourcing and Offshoring ...
  ❖ generally associated with increased productivity through cost reduction, leading to increased competitiveness, resources for R&D and marketing

❖ ... in areas where product design is highly integrated with manufacturing ...
  ❖ outsourcing manufacturing may remove an important feedback loop, and lead to long-term loss of technological competence
  ❖ ownership structure of manufacturing facilities may influence investment decisions, removing control from OEMs

❖ ... may have detrimental effects on the ability to innovate.
  ❖ will depend on:
    ❖ degree of independence of R&D from manufacturing
    ❖ maturity of the manufacturing technology
3. Challenges: **Strategic use of the Patent System**

- The Patent System’s original function was to incentivize ...
  - rewarding qualified inventions with temporary exclusive rights
  - thereby mobilizing market forces and guiding R&D investment

- ... but if patents are used for increasingly strategic purposes ...
  - patent thickets - leading to strategic patent portfolio acquisitions
  - rent-seeking by non-practising entities through strategic litigation

- ... the system’s ability to deliver innovation may be affected.
  - may block competition and discourage innovation in certain areas
  - can bind considerable resources for strategic acquisitions or litigation
  - may lead to sub-optimal research decisions
Thank You

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