

Innovation in the Software Sector

Seminar on innovation
and competitiveness policies.

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Software Industry

Increasing importance of software:

- Software is an important component of a growing number of products and processes, both for businesses and for households.

Importance of innovation in the software sector:

- Software is a highly innovative sector in its own right.
- Software is an important element of innovation in other sectors.

Innovation in the Software Industry

Distinctive features of the **software sector** :

- Short rates of lifecycles
- Potential network effect (dominant position, interoperability)
- Diffusion of broadband networks (channel of distribution, element of infrastructure)
- Increasing importance of embedded software.

Innovation in the Software Industry

Distinctive features of the **innovation process** in the software sector:

- Relatively low cost of capital - irrelevance of marginal costs of production (piracy, dominant position)
- Innovation occurs on a cumulative basis.
- Alternative means of fostering innovation exist (copyright protection, open source software)

Innovation in the Software Industry

Proper identification of **innovation incentives** driving the multi-stage innovation process.

Various incentives that drive innovation, including:

- Future profits
 - Increasing productive efficiency
 - Improving service delivery.
 - Cost reduction
- Signaling of the quality or potential of the firm
- Education and training
- Social psychology

Key dimensions for innovation incentives

(1) Friendly R&D environment

- Availability of human capital,
- Stock of public knowledge (e.g. research conducted in the public sector or from strong business-academic links)
- Access to foreign inventions
- Sound financial market (including availability of direct public financial support for business R&D)

Key dimensions for innovation incentives

(2) Low market entry barriers

- **Economic barriers**
 - Potential price threats
 - Limitations in access to distribution channels
 - Exclusive sales agreements)
- **Legal barriers**

Key dimensions for innovation incentives

(3) Long expected lifespan of a software product

- **Cooperation with developers of hardware and other technologies**
- **Good IPR protection:**
 - **commercial software - ensures flows of profits**
 - **open source software - prevents from expropriation**

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