Comparative Study on Industry-University Linkage in Japan

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Overview of presentation

- Facts: New Trend? Old Story?
- Political, Economic, and Social Issues
- Concluding Remark

Industry-University Linkage in Japan: New Trend (1)

- The S&T Basic Law (1995)
  - Government's agenda: "Nation based on creation of S&T"
    ⇒ Signaling the end of catch-up phase
  - Economic recession ⇒ To legitimate R&D investment
  - What's new?
    ⇒ Cooperation among Monbusho, S&T Agency, and MITI
- The S&T Basic Plans (96-00, 01-05)
  - University recognized as a key-player
  - To reinforce cooperation among industry, universities, and national research laboratories

Industry-University Linkage in Japan: New Trend (2)

- Law for Promoting University-Industry Technology Transfer (1998)
  - Jointly prepared by the MITI and the Ministry of Education
  - Objective: To facilitate the technology transfer from universities to industry
  - Mean: Technology Licensing Organizations (TLOs)
  - Idea: “Virtuous cycle of technology transfer”

    Faculty-owned inventions ⇒ Patenting & Licensing ⇒ Financial return ⇒ Reinvested in R activities

Industry-University Linkage in Japan: New Trend (3)

- Current situation on the TLOs (September 2002)
  - 27 TLOs
  - 2635 Filed Patent applications (+475)
  - 57 Patent grants (+19)
  - 517 Licensing + Option contracts
    (http://www.meti.go.jp/policy/innovation_policy/index.html)
  - Problems encountered
    - Financial problems
    - Need for extending service coverage (liaison function, incubation, etc.)
    - Lack of professionals

Industry-University Linkage in Japan: New Trend (4)

- To remove the barriers against exchanging people between universities and industries
  - Amendment to the Special Law on the Public servants in Education
    - Facilitating national university faculties to conduct research or to act as consultants within the private sector
  - Law for Reinforcing Industrial Technology
    - National university faculties allowed to become member of the executive board of a private company active in technology transfer, auditor or member of the executive board of the TLO
- To improve the quality of training engineers
  - Internship Program
  - Japan Accreditation Board for Engineering Education (JABEE)
  - Management of Technology (MOT) Program

Industry-University Linkage in Japan: New Trend (5)

- Hiranuma Plan (2001)
  - "Venture businesses born in universities"
    ⇒ Slogan: To create 1000 within 3 years!
- To Support the Implementation of University linked Incubators
  - METI (through the Japan Regional Development Corporation)
  - MEXT (supplementary budget)

Industry-University Linkage in Japan: New Trend (6)

- Universities Serving the Regional Development
  - Industrial Cluster Plan (plans for revitalization of regional economies, and industrial accumulation) by the METI
    - Networking Industry, Universities, and Public Research Institutes
    - Supporting the Creation of New Businesses and New Industries
  - Intellectual Clusters by the MEXT
    - Regional System of Technological Innovations
    - Action Plan proposed by the local government
    - Based on the Industry-University-Government Collaboration

Industry-University Linkage in Japan: Old Story (1)

- Traditional Industry-University Cooperation
  - Give-and-Take Relationships Between a Company and a Specific Research Laboratory
    - Grants and Endowments as Entrance Fee
      ⇒ Source of revenue
    - Recruiting new graduates
      ⇒ Guarantee for the Placement
    - Information Gathering and Training of Engineer Through Commissioned or Joint Research
      ⇒ Source of Revenue
    - Carrying out patent procedures on behalf of the laboratory
      ⇒ Less Paper work and Sometime Source of Revenue (!)

Industry-University Linkage in Japan: Old Story (2)

- Coherence of the Old Relationship
  - Complementarity with Japanese Companies Practices
    - In-House Training, In-House Research, Lifelong Employment
    - Preference for Informal Relationship to Contract Based One
  - Flexibility
- Its Limits
  - Placing Small and Midsize Companies & Start-ups at a Disadvantage
  - Problem on the Property Rights
  - Difficulty to Spread Research Results to Industry
  - Lack of Transparency

⇒ Motive for Change!

Industry-University Linkage in Japan: Political Issue

- Relationship between MEXT and METI
  - Competition, Coordination, or Cooperation?
- University-Industry Linkage as a Point of Convergence
  - University Issue ⇒ MEXT's Competency
  - Industry Issue ⇒ METI's Competency
  - University-Industry Linkage ⇒ Overlapping Issue
- General Science and Technology Council (2001)
  - Directly Attached to the Cabinet Office
  - Role of Coordinator

Industry-University Linkage in Japan: Economic Issue

- Economic Stagnation ⇒ Expectation
  - Creation of Spin-off & Start-up Companies and New Industries ⇒ Job Creation, Economic Growth
- Universities Playing Active Role in the Economy
  - Education ⇒ Well Trained Engineers & Researchers
  - Research ⇒ Technology Seeds
  - Third Mission ⇒ Technology Transfer
- Limit of This Approach
  - Short Term Effect << Long Term Effect
  - Direct Effect << Induced Effect

Industry-University Linkage in Japan: Social Issue

- University as an Actor?
  - Lack of Juridical Personality
    - Planned to Become “Independent Administrative Institution” in April 2004
  - Problem of Governance?
- Social Contribution
  - Through Technology Transfer
  - But Also through Other Channels
    - University’s Third Mission?
- Social Responsibility
  - As a Reference of Value System
    - University’s Fourth Mission?

Concluding Remarks

- Change in the Industry-University Linkage
  - From an Informal Relationship To a More Transparent Relationship
- Looking for a New Equilibrium
  - Through a Series of Experimentations
    - By Introducing “Intermediaries”
    - By Searching together New Technological Paradigm

    ⇒ Need for an Environment Allowing these Experiences!
- Human Resource
  - University Should Improve its Responsiveness to the Social Need for Training!
  - Industry May Help University to Accomplish this Task!