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
  – 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!