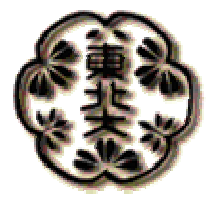


Comparative Study on Industry-University Linkage in Japan

Yuko Harayama

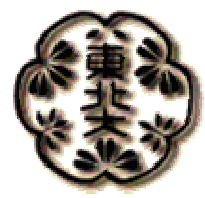
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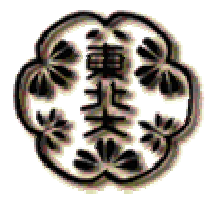
Overview of presentation

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



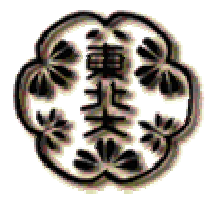
Industry-University Linkage in Japan: New Trend (1)

- 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



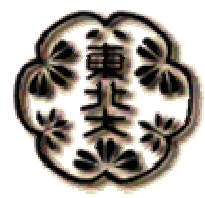
Industry-University Linkage in Japan: New Trend (2)

- 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 \Rightarrow Patenting & Licensing \Rightarrow Financial return \Rightarrow Reinvested in R activities



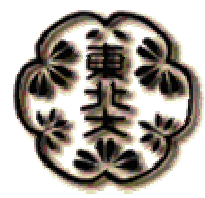
Industry-University Linkage in Japan: New Trend (3)

- 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



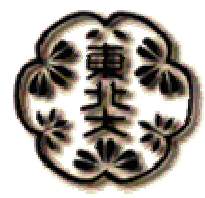
Industry-University Linkage in Japan: New Trend (4)

- 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



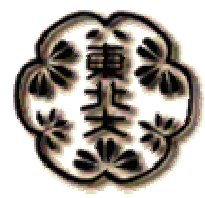
Industry-University Linkage in Japan: New Trend (5)

- 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)



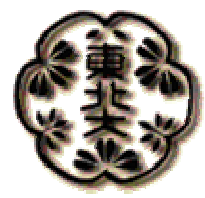
Industry-University Linkage in Japan: New Trend (6)

- 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



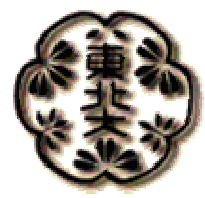
Industry-University Linkage in Japan: Old Story (1)

- 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 (!)



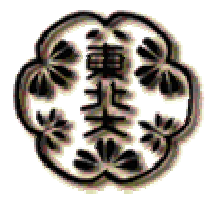
Industry-University Linkage in Japan: Old Story (2)

- 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!



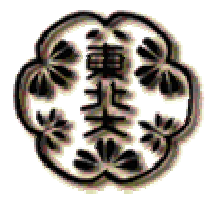
Industry-University Linkage in Japan: Political Issue

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



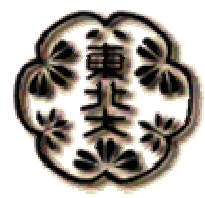
Industry-University Linkage in Japan: Economic Issue

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