Innovation and Cluster Policy in Japan

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Facts

• “Innovation” & “Cluster” becoming key policy issue
  – US, European countries, Asian countries, …
    • Innovation hotspots, InnoRegio, VINNVÄXT, Pôles de compétitivité, European Cluster Alliance, …
    • JAPAN is no exception!
  – Convergence (globalization oblige!) or isomorphism?

• “Cluster policy” in Japan
  – Into practice since 2001
  – Two approaches
    • Ministry of Economy, Trade & Industry (METI) & Ministry of Education, Culture, Sport, S&T (MEXT)
    • Complement, in competition, toward coordination or integration?
  – Accumulation of experiences on the ground!
  – Policy learning?
Science & Technology Policy
Policy Framework for S&T

• **Science & Technology Policy**
    • Background
      – Economic recession ⇒ To legitimate investment in R&D
      – Government’s agenda: “Nation based on the creation of S&T”
    • Implication
      – Toward a “National Policy”!
  – The S&T Basic Plans (5-year)
    • 1st BP(96-00), 2nd BP (01-05) , 3rd BP (06-10), & 4th BP ( )

**Cluster Policies** initiated & implemented by
- Ministry of Economy, Trade & Industry (METI): 2001-
- Ministry of Education, Culture, Sport, S&T (MEXT): 2002-

**Innovation Policy** initiated by
- Council for S&T Policy (CSTP)
  Implemented by
- MEXT, METI, · · ·

**Strategy for Regional S&T** initiated by
- CSTP

Relation?
What is a “Basic Plan”?  

• “Basic Plan” express  
  – Government’s vision of S&T  
  – Priority Setting in S&T  
  – Strategies to promote S&T  
  – Total budget for 5 coming years  

• “Basic Plan” implies  
  – Implementation of S&T related policies  
  – Budget allocation  
  – System reforms in S&T  

http://www8.cao.go.jp/cstp/english/basic/index.html
3rd Basic Plan

- Evolving scope and use of S&T
  - Toward Innovation
  - Contributing to Regional development and Society
  - Promoting cooperation with Asian countries

- Total budget
  - 25 trillion yen (≈ 150 billion €)
    - 1st BP: 17 trillion yen (≈ 102 billion €)
    - 2nd BP: 24 trillion yen (≈ 144 billion €)

Beyond the scope of S&T?

Innovation 25
Projects for accelerating the transfer to society
Science & Technology Diplomacy
Strategy for Regional S&T
Innovation 25

• Former Prime Minister Abe’s vision (2006)
  – “Innovation” and “Openness”
  – Innovation 25 Strategy Council (Cabinet Office)

• Long Term Strategic Guidelines “Innovation 25”
  – Adopted at a Cabinet meeting (June 2007)
  – Policy roadmap towards Japan based on innovation
  • Strategies for social system reform
  • Roadmap for technology innovation strategies
  • Institutional reform, including inter-ministry cooperation
“Projects for Accelerating the Transfer to Society” (CSTP)

• Characteristics of “Projects for Accelerating the Transfer to Society”
  – Interdisciplinary approach
  – Public-Private cooperation
  – Inter-ministry approach
  – Embedded system reform

• Projects aiming for:
  – “A society where all can stay healthy throughout life”
  – “A safe and secured society”
  – “A society with diversified lifestyles”
  – “A society contributing to resolve the global issues”
  – “A society open to the world”
Cluster Policy
In the Past…

- Constitution of industrial agglomerations in the Pacific Belt Zone (After WWII)
- Comprehensive National Development Plan (since 1962)
  - Ministry of Land, Infrastructure, Transport and Tourism: MLIT
    - Balanced development (60th)
    - Decentralization + Habitat (70th)
    - Formation of Network (mid-80th)
    - Four National Axial Zones promoting international interactions (00th)
  - MLIT, METI, Ministry of Agriculture, Forestry and Fisheries: MAFF
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  - METI
    - Formation of Regional Platforms
- SMEs’ New Business Activity Promotion Law (2005)
  - METI
Genesis of “Cluster Policy”

• Ground broken by
  – National land development policy
  – Regional economic development policy
  – Industrial policy
  – SME policy

• Increasing interest in (knowledge based economy & Globalization obligent!)
  – Science & Technology
  – Innovation, in particular Open Innovation
  – Economic Competitiveness

Industrial Cluster Program
Knowledge Cluster Initiative
Strategy for Regional S&T
Information Source

• METI
  – http://www.cluster.gr.jp/relation/data/brochure_e.html

• MEXT
  – http://www.mext.go.jp/a_menu/kagaku/chiiiki/cluster/h20_pamphlet_e.htm
## METI versus MEXT (1)

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<th>METI</th>
<th>MEXT</th>
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<td><strong>“Region”</strong></td>
<td>National territory divided into 9 blocks (METI regional bureaus)</td>
<td>Localities (local authorities)</td>
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| **Target**       | • Developing innovation friendly business environment  
                   • New business ↑                                              | Forming regional cluster:  
                   • World-class innovative clusters  
                   • *Medium-size clusters (City area program)*                 |
| **Design**       | METI’s regional bureaus’ vision  
                   → Proposal for Industrial cluster program                      | Local government’s cluster vision  
                   → Proposal for the Knowledge cluster initiative                |
| **Approach**     | • Networking & Promoting collaboration (cross-sectoral &  
                   University-Industry-Government)  
                   • Implementing incubators  
                   • Exploiting regional resources                                | • Conducing joint research  
                   • Promoting business development  
                   • Promoting cross-regional collaboration (expansion program)  |
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<th>Phase</th>
<th>METI</th>
<th>MEXT</th>
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| Phase I | **Launch** (2001-2005)  
• Formation & Expansion of Networks  
• On-the-ground experience of different schemes | **Launch** (2002-)  
• Preparation (2001)  
  Conceptualization of “Cluster” & Identification of regions for feasibility study (→30 regions)  
  Feasibility study lead by local authorities  
• Inducing local initiative |
| Phase II | **Development** (2006-2010)  
• Promotion of product commercialization & self-sustaining networks  
• On-the-ground experience of different schemes | **World class clusters** (2007-)  
• More selective  
• Local authorities’ enrollment ↑  
  Matching-fund  
• Inducing synergy with other initiatives  
• Global dimension |
| Phase III | **Growth** (2011-2020) | ? |
Industrial Cluster Phase I

18 Projects

Network of 5800 Companies & 220 Universities

Source: METI
Industrial Cluster Program Phase II: 18 projects

Wide-area human networks are composed of approx. 10,700 small and medium enterprises aiming at world markets and approx. 290 universities (including technical colleges) collaborating nationwide. (as of 3/31/2007, as an interim number)

Source: METI
Knowledge Cluster Initiative Phase I

Source: MEXT
Knowledge Cluster Initiative Phase II

- **Hokkaido Area** (With Sapporo as the core)
  - Life Sciences, IT

- **KANSAI** (Saito & Kobe)
  - Life Sciences

- **Nagano Prefecture region**
  - Nanotech/ Materials

- **Greater Sendai Area**
  - Life Sciences, IT

- **Hamamatsu**
  - Life Sciences, IT, Nanotech/ Materials

- **Kyoto and Keihanna**
  - Nanotech/Materials, Environment

- **Tokai Greater Area**
  - Nanotech/Materials, Environment

- **Fukuoka Kitakyushu Iizuka**
  - IT

- **Toyama / Ishikawa**
  - Life Sciences

**9 clusters**

6 Cluster (Started in 2007)
3 Cluster (Started in 2008)

Source: MEXT
City Area Program

< 30 areas (except end 50 areas) >

Source: MEXT
Strategy for Regional S&T (1)

• Rational
  – 3rd Basic Plan & Innovation 25
    → To promote Regional S&T
  – To empower innovation capacity of regions
    → Through Regional S&T

• CSTP’s view
  – Key actor = Region
  – To guarantee the diversity and identity of regions
  – Globally acting clusters and regionally oriented cluster in symbiosis
  → Ecosystem
Strategy for Regional S&T (2)

• Key issues to be tackled
  – Against the phenomenon of hollowing out of the labor force
    • Vis-a-vis metropolitan areas
  – Empowerment of local governments’ capacity to design their own policy
  – Structural reform to support innovative regions
    • Deregulation, tax system reform, etc.
  – Management of regional assets
  – Local universities’ contribution in regional development
Policy Coordination (1)

• Decentralized coordination
  – **Joint actions** initiated by METI & MEXT’s heads of cluster policy

• Top-down coordination
  – CSTP’s initiative (2005-2008)
    → “Group of Coordinated S&T Policies”

• Horizontal coordination
  – Initiative of METI & MEXT → Joint Preparation Committee (2008/11-)
    → “Centers of Industry-University-Government Collaboration” forthcoming?
Policy Coordination (2)

• On-the-ground joint actions
  – Through “Committee for Regional Cluster Promotion”, “Joint Conferences to Discuss Projects Results,” etc.
  – Preliminary discussion to prepare the budget
  – Shared objective
    • To exploit the complementarity between et “Industrial Cluster program” and “Knowledge Cluster Initiative”
Policy Coordination (3)

• Group of Coordinated S&T Policies (CSTP)
  – Compartmented central administration
  ➔ Duplication, Competition, Conflict among Ministries & Agencies

  ➔ Need for a coordination of S&T policies
    • 8 themes selected
    ➔ Among them, Regional Clusters

  – Means
    • Liaison Meetings & Coordinator
Policy Coordination (4)

• Group of Coordinated S&T Policies (cont’d)

  – “Regional Clusters”

    • Participants

    • Information sharing via “Portal Site”
      – Under the responsibility of the Ministry of Internal Affairs and Communications (http://www.chiiki.go.jp/)

• “Liaison Meetings” among representatives of related ministries

• “Supporting Meetings” at the regional level
Global Dimension

• Region’s Initiatives
  – Direct contacts, Through matching events, Visitors from abroad, etc.

• Knowledge Cluster Initiative Phase II
  – Expansion Program

• Japan External Trade Organization’s Role
  – Services provided
    • Invest Japan Business Support Centers
    • Regional Information
    • Industrial Cluster, Local companies, etc.
  – Supporting Programs
    • Local-to-Local Project (1996-2006)
    • Regional Industry Tie-Up Program (2006-)

Key to success:
• Link with region’s development policy
• Involvement of active companies
• Taking advantage of industry-university-government networks
• Sufficient communication
• Long term perspective

Source: Survey on success factors for international partnership in industrial cluster, JETRO
Lesson From the Japanese Case
Achievements of Industrial Cluster Programs

Total budget of \$7.5 billion (2001-2007) contributing to total sales of about \$40 billion

[2007 annual performance]
- Participants at business confab events: 165,000 persons
- Individual business meetings: 14,300
- Company visits and researcher visits: 65,000
- R&D budget adopted at industrial cluster-related businesses: \$12.9 billion
- E-mail publication subscribers: 73,000
- Access to websites: 5.7 million hits (5,800 hits per support organization)

Successful cases/technology transfer: 2,219 cases

University ventures (2006)
- Participating university ventures: 425 (1590 in total)
- IPO companies among them: 13 (19 in total)

Result of monitoring survey (2007)
- Degree of satisfaction: 62.4%
- Degree of expectation: 73.9%
- Wide-range cooperation or cooperation with businesses or research institutes: 29.9%
- Launches of new products or services: 21.0%

Sales: 22% increase
Net income: 47% increase
Number of employees: 6% increase

Source: METI
What has changed after 8-year experience?

- **Learning effects**
  - Ability to self-evaluate, to project in the future, to formulate a vision, to exploit external resources, etc.
  - **Institutionnal, political, & cultural barriers ↓**

- **Effect on the human resources**
  - New professions (technology transfer, Intellectual property management, Venture capital, Incubator, Coaching, Coordination, etc.
  - **Professionnalisme ↑**

- **Increased visibility**
  - New structures or institutions → **Fonctionning ↑**
  - Switchboard companies, or those acting as an incubator → **Emergence of the 2nd generation**
  - Key players → **Capacity to evolve ↑**

Difference among regions!
Exit Strategy

• The aim of Cluster Policy
  – Supporting regions to become “cluster”
  – Industrial agglomeration
    • To become a “Center of Excellence” in a specific industrial sector
  – Or/and Innovation hub
    • To equip region with capacity to generate new ideas, incubate, design, & translate them in terms of business model
  – Or/and Innovation eco-system
    • To become a self-evolving region through learning process

• Fundamental
  – Region’s vision & engagement!

• Need for a candid dialogue between “policy maker” and “region” to find out an exit strategy!