Present State and Issues of the Industrial Cluster Policy of Japan

21st June, 2005

YOSHIAKI TSUKAMOTO

Director
Industrial Cluster Projects Promotion Office
Regional Economy and Industry Group
Ministry of Economy, Trade and Industry (METI)
Government of Japan
Trends in regional economic and industrial policy

Industrial decentralization/ development of regional core cities
(1970s～mid-1990s)

Decentralization of growth industry fields in Japan (attract enterprises outside of the area), creating a driving force behind the regional economy and surrounding areas
- Industrial Relocation Promotion Law (1972～)
- High-tech Industrial Zone Promotion Act (1983～1998)

Prevention of the hollowing-out of Japanese industry and support for development of new growth fields
(mid-1990s～)

Revitalization of the underlying cluster, comprehensive support for development of new business
- Law on Temporary Measures for Activation of Specific Regional Industrial Agglomerations (1997～)

Support for development of new competitive business in a global context
(2001～)

Industrial Cluster Projects
- compiled of economic and industrial policies

Provide comprehensive support for development of new competitive business in a global context. It’s extremely important to make an invisible trust network in the region to form industrial clusters. It is anticipated that these industrial clusters will support the development of new business by SMEs, and give rise to university-generated venture businesses.
Examples of typical overseas clusters (high-tech type)

<table>
<thead>
<tr>
<th>Country</th>
<th>Area</th>
<th>Main fields</th>
<th>Economic scale (area, population, etc.)</th>
<th>Main universities and research organizations</th>
<th>Main companies and ventures</th>
<th>Development history</th>
</tr>
</thead>
<tbody>
<tr>
<td>Britain</td>
<td>Cambridge</td>
<td>Bioproducts</td>
<td>Workforce within 50km radius of central Cambridge: 32,000+</td>
<td>Cambridge University (little UC Berkeley, UCSF at a slight distance). Enormous number of venture companies</td>
<td>1250 high-tech companies, including about 150 biotech companies</td>
<td>Successive spin-offs from Cambridge University from 1980s. Next-level spin-offs from these in the 90s.</td>
</tr>
<tr>
<td>Britain</td>
<td>Northeast Britain</td>
<td>Nanotechnology (new)</td>
<td>Population: approx. 2,600,000 (new high-tech enterprises have created about 13000 jobs)</td>
<td>Five universities including Durham, Newcastle, and Northumbria. COE project.</td>
<td></td>
<td>Northeast England development corporation established in 1999. COE in five fields including nanotechnology in cooperation with five universities.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Austin (Texas)</td>
<td></td>
<td>Information communication</td>
<td>Workforce: About 100,000 (mainly high-tech companies)</td>
<td>University of Texas at Austin</td>
<td>About 1750 high-tech companies, including Dell.</td>
<td>National semiconductor research project in the 1980s. George Kozmetsky’s activities led to large number of venture companies.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Medical apparatus, biotechnology</td>
<td>Population of about 700,000 concentrated along Route 128. (Boston + Cambridge)</td>
<td>MIT, Harvard University, Boston University, etc. Major hospitals such as Massachusetts General.</td>
<td>250 biotech companies (18% of US total). Includes 65 venture companies. 100 medical device companies.</td>
<td>Harvard and MIT researchers set up one biotech venture after another in the 1970s and 1980s</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Silicon Valley</td>
<td>Information communication</td>
<td>Area about 50km long and 15km across with population of approx. 2,300,000 (Santa Clara County)</td>
<td>Stanford University (little UC Berkeley, UCSF at a slight distance). Enormous number of venture companies</td>
<td>About 5000 high-tech companies (approx. 1500 manufacturers, 2000 R&amp;D and service companies) HP, Intel, Oracle, Sun Microsystems, etc.</td>
<td>Science park established in the 1950s. Spin-off from Fairchild. Major businesses from around the world set up research institutes in the 1990s.</td>
</tr>
</tbody>
</table>

Source: Ministry of Economy, Trade and Industry industrial cluster study group data FY2005 (compiled by the industrial cluster study group secretariat based on various data)

<table>
<thead>
<tr>
<th>Country</th>
<th>Area</th>
<th>Main fields</th>
<th>Economic scale (area, population, etc.)</th>
<th>Main universities and research organizations</th>
<th>Main companies and ventures</th>
<th>Development history</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germany</td>
<td>Outskirts of Munich (especially the Martinsried area)</td>
<td>Pharmaceuticals and bioproducts</td>
<td>The population of Munich is about 1,300,000, 20% of Germany's biotechnology workforce is concentrated there. Biotechnology ventures are especially concentrated in Martinsried, 10km from central Munich.</td>
<td>Munich college of engineering, Ludwig Maximilian University, Max Planck Society new biology research institute, national environment and health research center, etc. BioM also plays a large role. About 20 venture companies.</td>
<td>Bayer, Hoechst, Boehringer-Ingelheim. About 100 biotech companies. 31 biotech ventures, including MediGene. □</td>
<td>Bioregio cluster policy which promotes bio-industrial development in Germany launched in 1996, based around concentration of Max Planck Society research institutes.</td>
</tr>
<tr>
<td>Finland</td>
<td>Oulu</td>
<td>Information communication, biotech, medical treatment</td>
<td>Population: 1,240,000^2, more than 7500 of whom work in Technopolis enterprises.</td>
<td>Oulu university National technical research center (VTT) Technopolis</td>
<td>500 or more high-tech company in Technopolis. Nokia affiliates, etc.</td>
<td>Head of VTT proposed regeneration of Oulu city through a science park in 1980. As a result, Technopolis undertakes incubation activities.</td>
</tr>
<tr>
<td>France</td>
<td>Sofia Antipolis</td>
<td>IT, environment, life science, etc.</td>
<td>24 square kilometers Employees: 22,000</td>
<td>National science laboratory, Nice university science laboratory, Paris ecole des mines graduate school, etc.</td>
<td>1100 companies including IBM, Air France, and France Telecom.</td>
<td>Concept developed in the 1960s. Specified as a national project in 1972. Took current form in 1980s. Ventures have been created since the 1990s.</td>
</tr>
<tr>
<td>South Korea</td>
<td>Daedeok Research park</td>
<td>High-tech</td>
<td>Employees: approx. 17,000 Students: about 30,000 Population of taejon City, approx. 5 kilometers to the west, is about 1,300,000</td>
<td>59 research organizations. 25 private sector research institutes. 30 government research institutes, 4 institutes of higher education, 7 government organizations. □</td>
<td>300 tech ventures created since 1995. 130 companies in incubation facilities within universities.</td>
<td>National project announced in 1971. Many spin-offs since Asian currency crisis in 1997.</td>
</tr>
<tr>
<td>China</td>
<td>Zhongguancun (Northwest Beijing)</td>
<td>High-tech</td>
<td>360,000 or more people work in a 340 square kilometer area in northwest Beijing □</td>
<td>Qinghua University, Beijing University and 30 other universities. 200 or more national research organizations.</td>
<td>10,000 companies. Increasing at the rate of 2000 companies every year. □</td>
<td>Government specified high-tech industry development area in 1988, and Beijing specified science park in 1999.</td>
</tr>
</tbody>
</table>

Reference: Led by Michael Porter, the U.S. competition committee has undertook 4 case studies on the research triangles and 4 other areas in 2001. The Ministry of Education, Culture, Sports, Science and Technology's National Institute of Science and Technology conducted a study on the success of national innovation and policies for promoting it. The study looked at Munich, Boston Zhongguancun and Daedeok Silicon Valley and the Boston city zone are frequently cited as model clusters, since the publication of Saxenian’s “Tale of Two Cities.”

Source: Ministry of Economy, Trade and Industry industrial cluster study group data FY2005 (compiled by the industrial cluster study group secretariat based on various data)
Conceptual figure of a cluster

Network

The government and a self-governing body

A university and a research organization

Policy support

Innovation

Physically close enough to meet face-to-face

Company accumulation

Spin-off

Competition and cooperation

Tacit sharing of the spillover of knowledge

New entry

Entrepreneur

Recession and metabolism

Supply of investable funds, management support, etc.

Various support organizations

Source: Cabinet Office, “Currents in the World Economy, Autumn 2004”
<table>
<thead>
<tr>
<th>Outline of cluster-related policies of central governments overseas</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Timeframe</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>Central govt. jurisdiction and budget</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>Region</strong></td>
</tr>
<tr>
<td><strong>Central govt. policy</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>Local promotion led by:</strong></td>
</tr>
<tr>
<td>Local cluster example</td>
</tr>
<tr>
<td>-----------------------</td>
</tr>
<tr>
<td>Resource</td>
</tr>
<tr>
<td>Promoting body</td>
</tr>
<tr>
<td>Project contents</td>
</tr>
</tbody>
</table>

Source: Ministry of Economy, Trade and Industry, FY 2004 industrial cluster study group data (created by industrial cluster study group secretariat based on various data)
## Changes in society and in regional economy policy

<table>
<thead>
<tr>
<th>Time</th>
<th>Classification</th>
<th>The 20th century</th>
<th>The 21st century</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Character</td>
<td>Industrial society</td>
<td>Knowledge-based society</td>
</tr>
<tr>
<td>19th century</td>
<td>Economic development</td>
<td>Low-cost, good-quality infrastructure is established in a district with the aim of resolving overcrowding and overpopulation (industrial complex, water for industrial use, etc.).</td>
<td>Knowledge creation infrastructure (universities, research organizations, talented people, etc.)</td>
</tr>
<tr>
<td>20th century</td>
<td>Social innovation</td>
<td>Meeting of the basic needs of life (food, clothing and shelter)</td>
<td>Meeting of diverse and advanced needs</td>
</tr>
<tr>
<td>21st century</td>
<td>Industrial rearrangement policy (moving factories, etc. from the three major metropolises to local areas)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regional economy policy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knowledge-based society</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Knowledge-based society

- **Character**
  - Low-cost, good-quality infrastructure is established in a district with the aim of resolving overcrowding and overpopulation (industrial complex, water for industrial use, etc.).

### Knowledge-based society

- **Character**
  - Meeting of the basic needs of life (food, clothing and shelter).

### Knowledge-based society

- **Character**
  - Meeting of diverse and advanced needs.
The Industrial Cluster Projects in Japan (19Projects)

A total of 19 projects nationwide, and about 500 of government staff of the regional bureaus of METI in cooperation with private promotion bodies have formed close working relationships with 5,800 SMEs and over 220 regional-university researchers, working to begin new businesses and promote the Industry Cluster Project. (FY2001–)

Hokkaido Bureau of Economy, Trade and Industry

- Hokkaido Super Cluster Promotion Project
  Biotechnology/IT fields: About 300 companies and 16 universities

Kansai Bureau of Economy, Trade and Industry

- Bio Five-Star Company & Tissue Engineering Project
  Bio-related fields: About 220 companies and 36 universities
- Active Manufacturing Industry Support Project
  Manufacturing fields: About 460 companies and 26 universities
- Kansai Information Technology Cluster Promotion Project
  IT fields: About 300 companies and 12 universities
- Kansai Energy & Environment Cluster Promotion Project
  Energy fields: About 110 companies and 23 universities

Kansai Information Technology Cluster Promotion Project
IT fields: About 300 companies and 16 universities

Kansai Energy & Environment Cluster Promotion Project
Energy fields: About 110 companies and 23 universities

Kanto Bureau of Economy, Trade and Industry

- An Industry Promotion Project for Information Technology, Life Science and Cutting-edge Manufacturing
  IT/Health/Manufacturing fields: About 230 companies and 21 universities
- An Industry Promotion Project for a Recycling-oriented Society
  Environmental/Energy fields: About 280 companies and 20 universities
- Regional Industry Revitalization Project
  - TAMA
  - Region along the Chuo Expressway
  - Tokatsu/Kawaguchi areas
  - Sannannansin district
  - Northern Tokyo metropolitan area
  Manufacturing fields: About 1,720 companies and 56 universities
- Fostering Bio-Ventures
  Biotechnology fields: About 210 companies and 13 universities
- Fostering IT-Ventures
  IT fields: About 200 companies

Chubu Bureau of Economy, Trade and Industry

- Project to Create Manufacturing Industry in Tokai Region
  Manufacturing fields: About 650 companies and 29 universities
- Tokai Bio Factory Project
  Biotechnology fields: About 30 companies and 34 universities
- Project to Create Manufacturing Industry in Hokuriku Region
  Manufacturing fields: About 140 companies and 12 universities

Shikoku Bureau of Economy, Trade and Industry

- Shikoku Techno Bridge Plan
  Health and welfare/Environmental fields: About 200 companies and 5 universities

Chugoku Bureau of Economy, Trade and Industry

- Project to Newly Generate the Machinery Industry in the Chugoku Region
  Manufacturing fields: About 110 companies and 10 universities
- Project to Form a Circulative Type of Industry
  Environmental fields: About 90 companies and 9 universities

Kyushu Bureau of Economy, Trade and Industry

- Kyushu Recycle and Environmental Industry Plaza (K-RIP)
  Environmental fields: About 200 companies and 18 universities
- Kyushu Silicon Cluster Project
  Semiconductor fields: About 150 companies and 23 universities

Tohoku Bureau of Economy, Trade and Industry

- An Industry Promotion Project for Information Technology, Life Science and Cutting-edge Manufacturing
  IT/Health/Manufacturing fields: About 230 companies and 21 universities
- An Industry Promotion Project for a Recycling-oriented Society
  Environmental/Energy fields: About 280 companies and 20 universities
- Regional Industry Revitalization Project
  - TAMA
  - Region along the Chuo Expressway
  - Tokatsu/Kawaguchi areas
  - Sannannansin district
  - Northern Tokyo metropolitan area
  Manufacturing fields: About 1,720 companies and 56 universities
- Fostering Bio-Ventures
  Biotechnology fields: About 210 companies and 13 universities
- Fostering IT-Ventures
  IT fields: About 200 companies

Department of Economy, Trade and Industry, Okinawa General Bureau

- Okinawa Industry Promotion Project
  Information/health/environmental/processing trade fields: About 150 companies and 2 universities
The activity outline of the industrial cluster plan

1) Support for close industry-university-government networks in regions
   - Regional bureaus of METI act as the hub of these networks. In cooperation with private promotion organizations, they organize visits to enterprises, workshops, exchange meetings and seminars. Project coordinators also drive exchange and partnerships among businesses, universities and the government, as well as among enterprises. Consequently, enterprises, universities, research institutes, local governments and trading firms form wide-area human networks.

2) Support for the cultivation of the market in cooperation with trading firm
   - Support for the new products developed from the Industry Cluster Project with networks of specialized trading companies

3) Support for development of technologies by taking advantage of regional
   - Regional industry-university joint research commission expenses.
   - Subsidy for the development of practical application technologies.

4) Cooperation with financing organizations
   - Establishment of "Bridge Financing System" for subsidies of technology development in cooperation with "Industry Cluster Support Financial Forum"

5) Enhancing business incubator function
   - Entrepreneur development facilities play an extremely important role in promoting the start-up of university-generated venture business and new business development by SMEs. The establishment of such incubators affiliated with universities is being promoted, as is the development of incubation managers who provide support to the tenants of such facilities.

6) In addition to this
   - The example which raises an area and is tackling about personnel training required for the positive purchase activities in the private enterprises of the product of a venture business etc. and cluster formation which were produced within the cluster is also seen.

7) In addition to this
   - The example which raises an area and is tackling about personnel training required for the positive purchase activities in the private enterprises of the product of a venture business etc. and cluster formation which were produced within the cluster is also seen.

8) Raising personnel training
   - Entrepreneur development facilities play an extremely important role in promoting the start-up of university-generated venture business and new business development by SMEs. The establishment of such incubators affiliated with universities is being promoted, as is the development of incubation managers who provide support to the tenants of such facilities.
## Policy Tools to Promote Industrial Cluster Projects

### FY2005 draft budget (FY2004)

<table>
<thead>
<tr>
<th>The national budget for the Industrial Cluster Projects</th>
<th>$540 million ($470 million)</th>
</tr>
</thead>
</table>

### Forming of industry-academic-government networks

1. **Forming networks to promote Industrial Cluster Projects**  
   - $19 million ($6.5 million)
   - Subsidies for network formation activities (such as study groups, seminars, and dispatch of coordinators) implemented by the private-sector body which promotes Industrial Cluster Projects.
   - In FY2005, as well as installing in the private-sector promoting bodies “cluster managers” who supervise cluster-related activities, recipients of subsidies will be expanded to include the activities of industrial support organizations that carry out network-forming activities in fixed fields or areas within the range of activities of a private-sector promoting body, in cooperation with that body.

2. **Forming broad industry-academia-government networks**  
   - $5.0 million (new)
   - As part of the model project for power supply area promotion, there are projects to construct industry-academia-government networks which will serve as the base for the establishment of new enterprises in power supply areas. A commission will be paid to the implementing organization. This project will be carried out in the form of a model for industry-academia-government network formation in districts within the power supply areas.

3. **Promotion of exchanges and tie-ups between clusters**  
   - $0.8 million (new)
   - Along with implementing promotion of exchanges and tie-ups between private-sector promoting bodies of Industrial Cluster Projects, projects to contribute to activities for cluster formation in local self-governing bodies are undertaken.
(2) Promotion of the technical development in which the characteristic of an area was harnessed

FY2005 draft budget (FY2004)

- **Local new consortium research-and-development enterprise**  $131 million ($110 million)
  - Commission expense to the research and development which utilize the technical seeds of a university or a public research organization, and are carried out under industry, academia and government’s joint research organization.
  - The schedule which will found the cooperation frame for connecting without a break the technical seeds produced by the research-and-development measure of other government offices to utilization and industrialization in, and accelerates cooperation.
  - Moreover, the schedule which founds the reformist enterprise frame aiming at the bottom raising of the base technology of the backbone and small and medium-sized enterprises in advanced parts and a material industrial field simultaneously.

- **Local new industrial creation technical development expense subsidy**  $61 million ($59 million)
  - The subsidy to the high technical development of the risk for new foundation by the new field advance by the backbone and small and medium-sized enterprises, or the venture business.
(3) **Strengthening the function of incubation**

<table>
<thead>
<tr>
<th>Description</th>
<th>Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>It is a subsidy to the Organization for Small &amp; Medium Enterprises and Regional Innovation, JAPAN (SMRJ) and a local self-governing body fix, and institution maintenance is advanced especially in recent years the inside of the site of a university, or centering on the adjoining university cooperation type institution, and, recently, the activity based on industrial cluster plans, such as the University of Tokyo Kashiwa campus, the Kyoto University Katsura campus, and Kyushu University, is installed in the active base.</td>
<td>$22 million ($22 million)</td>
</tr>
<tr>
<td>The auxiliary enterprise over the enterprise of strengthening of the entrepreneur support function by advice of cultivation of the incubation manager who offers various kinds of support to a venture business in order to promote the new enterprise creation which utilized the entrepreneur training institution, a skill rise of the incubation manager by on-the-job training, a specialist, etc.</td>
<td>Training of the development of incubation manager $1.2 million ($0.8 million)</td>
</tr>
</tbody>
</table>
Track records of industrial cluster project

Example 1: Technology Advanced Metropolitan Area (TAMA)
- 280 companies, 35 academic institutions, 65 local/regional government agencies and chamber of commerce etc, 11 financial institutions.
- more than 40 alliances have so far been formed
  1. Cooperation with universities and companies related with affiliates.
  2. Approximately 400 products independently have been commercialized.
- Support for the establishment of 20 bio-ventures.

Example 2: Bio Five-Star Company & Tissue Engineering Project
- 230 companies, 50 academic institutions, 9 local/regional government agencies, 19 financial institutions.
- 130 joint research and development activities have been carried out.
- Support for the establishment of 20 bio-ventures.

Example 3: Hokkaido Super Cluster Promotion Project
- 360 companies, 21 academic institutions, 6 local/regional government agencies, 42 financial institutions.
- 31(3) joint research and development activities or productization.
  1. Development of the track body made from aluminum for lightweight small-size cars
  2. Cooperation with universities and companies related with affiliates.
  3. Approximately 400 products independently have been commercialized.
- 47 university-generated venture businesses have been launched (IT + biotechnology fields 40 companies)
1. 関連研究機関の基本的な調査研究報告の概要

(1) 基本的な考え

- 工業クラスター政策の背景は国内外の競争強化と、地域経済の独立を目的とする内生発展によって生まれた必要性がある。
- 地域経済は、海外産業の再配置、国際競争の強化、公共事業の減少により、多くの地域が新たな産業や企業の創出を見つめている。
- 地域の骨幹企業は、先端産業の技術を多く持ち、印刷や演劇などの産業に高い潜在能力がある。
- 大学と産業界との連携を活用し、大学が技術移転、共同研究、起業家、人材の育成に力を入れており、地域の経済活動を高める。

(2) 現状の認識

- 地域経済の現状を見ると、国際競争強化によって産業が再配置されるなど、地域経済は変わろうとしている。
- 地域経済の骨幹企業は、先端産業の技術を多く持ち、印刷や演劇などの産業に高い潜在能力がある。
- 大学と産業界との連携を活用し、大学が技術移転、共同研究、起業家、人材の育成に力を入れており、地域の経済活動を高める。

- 地域経済の現状を見ると、国際競争強化によって産業が再配置されるなど、地域経済は変わろうとしている。
- 地域経済の骨幹企業は、先端産業の技術を多く持ち、印刷や演劇などの産業に高い潜在能力がある。
- 大学と産業界との連携を活用し、大学が技術移転、共同研究、起業家、人材の育成に力を入れており、地域の経済活動を高める。

- 地域経済の現状を見ると、国際競争強化によって産業が再配置されるなど、地域経済は変わろうとしている。
- 地域経済の骨幹企業は、先端産業の技術を多く持ち、印刷や演劇などの産業に高い潜在能力がある。
- 大学と産業界との連携を活用し、大学が技術移転、共同研究、起業家、人材の育成に力を入れており、地域の経済活動を高める。
The concept of the industrial cluster

Meaning of the industrial cluster

- Generating of an external economy effect: Heighten the external economy effect of business conditions by strengthening the mutual complement relation of industry, and a related many organizations and many systems in the fixed area which approached geographically.

- The chain of an innovation: A new industry and a new enterprise make it easy for the synergistic effect by the chain between different industries to create the chain of various innovations conjointly in addition to industry, academia and government forming the horizontal network which it related for each other closely, and to be born.

- Acceleration and quality[-izing] of accumulation: The industrial cluster formed in this way heightens talented people, a company, and the centripetal force of investment, and it is [acceleration or] making it quality[-izing] much more about accumulation of industry.

The typical formation process of the industrial cluster

- Analysis of the local characteristic and industrial resources (a company, technology, talented people, a core person, local community, etc.), and market needs is performed, and the vision and scenario of an area are shared.

- The network whose face is visible” which consists of a company and a correlative industry, a university and a research organization, an industrial support organization, a governmental agency, etc. is formed.

- By performing “new fusion” by industry-university cooperation and the cooperation from industries, while promoting creation of a new enterprise, the second foundation, and venture creation, an edge is expanded outside a cluster.

- Good circulation of inducing accumulation of talented people or a company with both wheels of from inside and attraction is attained because the industrial accumulation connected by network promotes an innovation further.

- If a cluster is formed, while intellectual value, such as accumulated technology, know-how, and knowledge, will circulate quickly through the horizontal network which became meshes of a net, mobile correspondence of as opposed to [the active innovation by the mechanism of competition and cooperation is started, and] change of business conditions is possible.

- Political participation is collected by two, complementing the composition element of a ? industrial cluster, and the things (promotion of formation of an industry, academia and government network, and the research-and-development project of industry, academia and government cooperation, support of a cross-industrial cooperation enterprise, etc.) for which the interaction between ? composition (network organization and industry-university cooperation agency organization establishment-, growth support [of the core company of an area], personnel training, etc.) elements is promoted.
3. 工業クラスター政策の実施方法について

(1) 政策の目的

政策の目的は、新たな産業の創出を基盤とした新たな産業の創出を促進することである。これを実現するために、地域のネットワークの形成、企業支援、業界の連携を促進するための政策が策定されている。

(2) 政策の計画

政策の計画は以下のものである。

- ネットワークの形成
  - 領域外のネットワークの形成
  - 産業の連携
- 企業支援
  - 研究開発支援
  - 市場開拓支援
  - 基盤支援
- 業界の連携
  - 産業の連携

(3) 政策の実施

政策の実施は以下のものである。

- 産業の連携
  - 産業の連携
  - 業界の連携
- 企業の支援
  - 研究開発支援
  - 市場開拓支援
  - 基盤支援
- 業界の連携
  - 産業の連携
  - 業界の連携
The old result of the industrial cluster policy

Network formation track record
(participation company: about 5,800 companies, participation university: about 220 universities)

The network formation effect has shown up and a future preponderant subject is creation of concrete business.

Source: Participation company questionnaire (enforcement in December, 2004 | January, 2005)

<table>
<thead>
<tr>
<th>(%)</th>
<th>Effect of this project of before participating</th>
<th>Effect of this project of after participating</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Information gathering and network formation</td>
<td>High in respect of information gathering and network formation.</td>
</tr>
<tr>
<td></td>
<td>Regularity of research and development and product development side</td>
<td>Effective.</td>
</tr>
<tr>
<td></td>
<td>Cooperation with a trading company and a financial institution and reservation of a fund and talented people</td>
<td>Still future.</td>
</tr>
</tbody>
</table>

It becomes easy to acquire measure information.

An industry trend came to be found.

The exchange opportunity with a university or a research organization increased.

It becomes easy to acquire the information which leads to a new enterprise.

The connections of the new enterprise field are expanded.

The measure for research and development progressed.

The connections of the existing enterprise are expanded.

The technology to need was securable.

A new product and new goods have been developed.

A new inquiry and dealings increased.

The existing enterprise grew.

The exchange opportunity with a trading company etc. increased.

The exchange opportunity with a financial institution increased.

It becomes easy to secure the fund to need.

It becomes easy to obtain the needing talented people.
(3) 参与企業の成績変動の結果
企業のネットワーク構成による影響

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>増加</td>
<td>0.991</td>
<td>0.983</td>
<td>0.992</td>
<td>1.000</td>
</tr>
<tr>
<td>出力</td>
<td>0.883</td>
<td>0.867</td>
<td>0.895</td>
<td>0.950</td>
</tr>
</tbody>
</table>

(4) 参与企業の成績変動の結果

- 優良な結果は、ネットワーク構成による影響が大きい
- 出力の上昇は、ネットワーク構成による影響が大きい

図表は、ネットワーク構成による影響のグラフを示しています。
1. 1st term (2001〜5) 産業集団政策の推進と構築

<1st term (2001〜5) 産業集団政策の推進と構築>

産業集団政策の推進と構築

この10年間で産業集団政策の推進と構築が進み、その構築が明確化され、産業集団政策の推進と構築が進んでいる。

2. 2nd term (2006〜10) 産業集団政策の成長と発展

<2nd term (2006〜10) 産業集団政策の成長と発展>

産業集団政策の成長と発展

産業集団政策の成長と発展が進行し、その構築が明確化され、産業集団政策の推進と構築が進んでいる。

3. 3rd term (2011〜20) 産業集団政策の実現と推進

<3rd term (2011〜20) 産業集団政策の実現と推進>

産業集団政策の実現と推進

産業集団政策の実現と推進が進行し、その構築が明確化され、産業集団政策の推進と構築が進んでいる。
2. 産業構造の大幅な変革を図るための戦略

- 可能性を最大限に引き出すためのビジョンの策定
- 産業の持続可能な発展を模索するための政策の策定

3. 構造改革を図るための戦略

- シナリオ・目標設定
- 計画年度設定
- 建設策定
- 監査の重要性
4. Support for Networks and Market Exploitation

‡A Cooperation with a local self-governing body and an industrial support organization (core support organization of especially a local platform), organization strengthening of a promotion organization

‡B Development: Cooperation strengthening with a technology licensing organization, a public establishment test research organization, and a public organization, intellectual property protection

‡C Incubation organization: Strengthening of the soft support for a company, and formation of a mini cluster

‡D Market exploitation: Tie-up with specialists, such as practical use of a selling substitute system, a trading company, IT, etc., and marketing

‡E Cooperation with a supply-of-investable-funds organization: Linkage with functional strengthening of relation cypripedium banking

‡F Personnel training: Training of an excavation and training of a core person, the production talented people of a thing, and judge talented people

'S The subject according to support field

‘P Construction of cooperation organization with other government offices concerning a local cluster policy

“A local technology cluster cooperation measure group” is set up under Council for Science and Technology Policy, and a liaison conference with a related government office is installed in a center and a district block. Cooperation with an intellectual cluster enterprise is strengthened.

‘T Expansion of the framework of the industrial cluster policy

‘Q Maintenance of the nationwide network concerning a new industry and new enterprise creation support

While improving the national network which obtained broad participation of the industrial cluster promotive body of an every place region, an industrial support organization, a university, the industrial world, etc., cooperation with the core-support organization of an area is strengthened.

‘R Cooperation activities with an overseas cluster

The network of the overseas aiming at oversea market exploitation, a direct inward investment, and information dispatch is formed.

'O

5. Expansion and Improvement of the Industrial Cluster Promotion Field

(1) Construction of cooperation organization with other government offices concerning a local cluster policy

“A local technology cluster cooperation measure group” is set up under Council for Science and Technology Policy, and a liaison conference with a related government office is installed in a center and a district block. Cooperation with an intellectual cluster enterprise is strengthened.

(2) Expansion of the framework of the industrial cluster policy

While improving the national network which obtained broad participation of the industrial cluster promotive body of an every place region, an industrial support organization, a university, the industrial world, etc., cooperation with the core-support organization of an area is strengthened.

(3) Cooperation activities with an overseas cluster

The network of the overseas aiming at oversea market exploitation, a direct inward investment, and information dispatch is formed.

20
The example of the development strategy in an industrial cluster planned project, and a subject (production field of a thing)

At TAMA, it aims at a world leading new industrial creation base by connecting by network taking advantage of local potential.

By Machine Project to Newly Generate the Machinery Industry in the Chugoku region, ME field which was tackling regionally is taken up, and the activity in sub-cluster is thought as important and it is developing.

Thick cluster activity which focused.

Full-scale network formation

Further industry-university cooperation, cooperation result appearing in great numbers from industries

Organizat

Organization strengthening of independence-izing in respect of the financial affairs of a promotion organization etc.

Cooperation strengthening with the policy of a Knowledge Cluster and a local self-governing body.

A coordinator's cooperation strengthening.

Utilization technical development and personnel training of the production of a next-generation thing.

Market exploitation and strengthening of the support organization in a marketing side (even if it succeeds in technical development, industrialization is impossible, and there is no sales performance).

Cooperation strengthening with a local financial institution.

A coordinator's skill rise and the excavation by the coordinator.

Industry-university cooperation, the cooperation from industries, and cooperation of various support organization aim at the new product development of the existing company, and new enterprise deployment.

(The second foundation support)

Together with activity in a wide area, cooperation with “base” activity of a city zone and prefecture level is strengthened.

Narrowing down of the important field.

Although industrial former type accumulation is becoming weaker, on the other hand as advanced parts and a supply base of material, it has a new appreciation.

Although there is also a place which the scientific research organization for performing industry-university cooperation is locating, there are not many places where industry-university cooperation is progressing completely.

The talented people supporting the production of an advanced thing are downward tendencies.

A common matter also including other project examples (notes)

Concrete subject

The development strategy of a cluster

The conditions of a cluster

Element conditions (talented people, a fund, technology, etc.)

Competition environment

Related supporting industry

Demand conditions

Notes: It was aimed at 9 projects of An Industry Promotion Project for Information Technology, Life Science and Cutting-edge manufacturing (Tohoku), Regional Industry Revitalization Project (Kanto), Project to Create Manufacturing Industry in Tokai Region (Chubu), Project to Create Manufacturing Industry in Hokuriku Region (Hokuriku), Active manufacturing Industry Support Project (Kinki), Project to Newly Generate the Machinery Industry in the Chugoku region (Chugoku), Shikoku Techno Bridge Plan (Shikoku), Kyushu Silicon Cluster Project (Kyushu), Okinawa Industry Promotion Project (Okinawa).
The development strategy in the industrial cluster planned project, and a subject (biotechnology field) was thought as important.

In Hokkaido, a company aims at large-boned research and development and business matching as a whole in little.

- Promotion of cooperation with the big business and a biotechnology venture.
- Organization strengthening of a promotion organization.
- Cooperation strengthening with the policy of a Knowledge Cluster and a local self-governing body.
- Promotion of the further research and development, promotion of industry-university cooperation.
- Incubation institution maintenance (wet lab).
- Expand the coordination function for supporting growth of a biotechnology venture, and support enterprise cooperation and market exploitation.
- Maintenance of a biotechnology venture investment fund etc.
- A key person's excavation, training of judge talented people.
- Cultivation of the management talented people who bear industrialization of biotechnology, and technical talented people.
- Environmental maintenance of promotion of biotechnology industrialization (the national promotion of an understanding, proposal to maintenance of various standard and systems).

A common matter also including other project examples (notes)

Concrete subject

- The development strategy of a cluster
- The conditions of a cluster
  - Element conditions (talented people, a fund, technology, etc.)
  - Competition environment
  - A related supporting industry
- Demand conditions

Notes: It was aimed at 4 projects of Hokkaido Super Cluster Promotion Project (biotechnology industrial cluster)(Hokkaido), Fostering Bio-Ventures (Kanto), Tokai Bio Factory Project(Tokai) and Bio Five-Star Company •Tissue Engineering Project (Kinki).
The example of the development strategy in an industrial cluster planned project, and a subject (IT field)

In Hokkaido, the company group of various roots cooperates strategically and aims at business opportunity expansion.

In a metropolitan area, it aims at creation of IT venture business accepted in the world by harnessing and connecting the greatest accumulation in domestic by network.

- Promotion of cooperation with other types of industry and area outside.
- Training and mobilization of management system talented people.
- Construction of the business model which gazed at internationalization.
- Shift to self-supporting activity of a promotivebody etc.
- Acceleration of success case creation.
- Acceleration of suppotfor close indusry-university-government.

(Hard system)

- Cross-industrial cooperation, such as a car and biotechnology, is subjects.

(Common to a soft system and a hard system)

- Creation of a venture business.
- Creation of the model case which can lead an area.
- The technical development by the strategic cooperation in the industrial world and the universities and the product from industries, academia and government cooperation is promoted.
- Creation of the company internationally accepted in a metropolis.
- the area towards market expansion --a measure across boundaries.

(Hard system)

- The expansion of a local company with the competitive power accepted in the world with the latest technology and growth are supported.
- Personnel training and industry, academia and government wide area network construction which used the university as the core.

(Soft system)

- In a metropolitan area and other areas, it is a gap to the degree of company accumulation, and its contents of composition.
- The company about an inclusion system and the area which a researcher accumulates also exist.

(Hard system)

- The big business and the related company of the semiconductor field are accumulated.

A common matter also including other project examples (notes)

Notes: It was aimed at 4 projects of Hokkaido Super Cluster Promotion Projects (information industry cluster) (Hokkaido), Fostering IT-Venture(Kanto), Kansai Information Technology Cluster Promotion Project, and Kyushu Silicone Cluster Project.
例: 場合の開発戦略の構想は、次のような具体例が考えられる: 今後、工業化の成果を活かすためには、継続的な支援が必要である。

- 閲覧管理体制が構築される。
- 環境ビジネスの有能な人材の育成が求められる。
- 血管産業や枝業との相互補完と協力が求められる。
- 深層ネットワーク組織、例えば連携活動を加速する。
- 規制体制や特別行政区の構造改革、環境負荷低減効果を高めるための総合的な対策が求められる。

特色ある産業分野における技術革新が成長し、エネルギー分野や環境分野で世界的にトップクラスの会社が発生している。

産業団体や大学、政府との連携からの研究開発プロジェクトの形成、中小企業の技術力の向上を図る。製品を導入して環境分野への進出を可能にする。

エコタウン産業の促進、エコタウン相互連携...

個別の企業分野や産業同士、産業、大学、政府の連携で工業化の支援が強化される。

関連した産業が集積しているエコタウン計画プロジェクトがある。

個別の産業に特色ある産業やエネルギー関連メーカー、産業共生、等。一次汚染防止対策のための技術の蓄積、産業、大学、政府のネットワークを形成している地域も存在する。

地域におけるエコタウン計画の適切な実施は見られる。

産業分野における地方特性、研究機関が蓄積エネルギーや環境関連メーカー、産業共生、等。

エコタウン計画は重要な役割を果たし、地域における産業特性や大学とその重要性が考えられる。

地域におけるエコタウン計画の促進、相互連携...

産業分野や産業の部署が形成し、産業、大学、政府の連携で工業化の支援が強化される。

地域がエコタウン計画の適用を進めている例（注）

<table>
<thead>
<tr>
<th>具体例</th>
<th>具体例</th>
</tr>
</thead>
<tbody>
<tr>
<td>各分野における要素条件</td>
<td>各分野における要素条件</td>
</tr>
<tr>
<td>元々の要素条件（人材、資金、技術等）</td>
<td>元々の要素条件（人材、資金、技術等）</td>
</tr>
<tr>
<td>競争環境</td>
<td>競争環境</td>
</tr>
<tr>
<td>相関する支援業界</td>
<td>相関する支援業界</td>
</tr>
<tr>
<td>需要条件</td>
<td>需要条件</td>
</tr>
</tbody>
</table>

- 関連する産業の集積を活かしたエコタウン計画と九州地域のエコタウン計画を役立てる。'
- 調査を経て地方における大学の特色ある技術に重要性が考えられる。
- 地域におけるエコタウン計画の促進、相互連携を進める。
Hokkaido Bio-Industrial Cluster’s Developing Process

Developing networks by practical use of a subsidy
- Developing of Bio-Industrial Cluster

41 companies

- participating companies to a project : about 90 companies.
  (April, 2005)