

# **Japanese public initiatives for SMEs and cluster cooperation**

**February 15<sup>th</sup> 2011**

**Workshop**

**EU-Japan Clusters Policies toward SMEs' Innovation**

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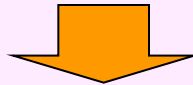
# ***Background of the birth of the industrial cluster policy***

***(Changes in regional economic development methodology)***

## **Industrial decentralization and development of regional core cities**

**(1970s to mid-1990s)**

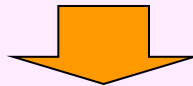
- **Dispersing industrial agglomerations of the megalopolis to the regional core cities for the purpose of promoting balanced regional growth**  
The typical example is so called “Technopolis” program started from 1983.



## **Prevention of hollowing-out and support for development of new growing sectors**

**(since mid-1990s)**

- **Revitalizing existing industrial agglomerations** (mainly Marshall type)
- **Organizing comprehensive support systems for creating new businesses**  
(Organizing one-stop support system for creating new businesses, enhancing incubation functions including building of facilities)



**Support for development of regional economies and competitive industries through continuous innovations utilizing regional resources** (since FY 2001)

## ***Industrial cluster policy***

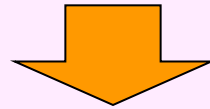
**Promoting industrial clusters which accelerate innovation and facilitate world-viable new businesses to be created one after another**

# Target terms of the Industrial Cluster Program

*Term I (FY 2001-2005)*

**Industrial cluster launch period**

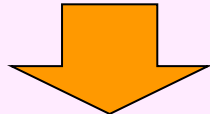
through 18 projects led by regional bureaus of METI



*Term II (FY 2006-2009)*

**Industrial cluster development period**

through 18 projects led by regional bureaus of METI



***FY 2010- New Scheme***

***for industrial cluster autonomous growth***

- Support the activities according to the basic plan made by local governments based on the “Act on Promotion of Establishment of New Business Facilities”.
- Promote new competitive cluster project start-ups by “Regional Competitive Edge Projects for Strengthening Business (new)”.

# Industrial Cluster Program

18 projects: As of March 31st 2010

**METI finished Industrial Cluster Program in FY 2009.**

→ Project Output;

- Industry-government-academia networks are composed of 10,200 SMEs and 290 universities collaborating nationwide.
- New businesses launched: over 70,000.



◇ OKINAWA Industry Promotion Project

◇ Next Generation Key Industry Creation Project  
◇ Recycling-oriented and Environment-friendly Society Establishing Project

◇ Kyushu Recycle and Environmental Industry Plaza (K-RIP)

◇ Kyusyu Silicon Cluster Project  
◇ Kyusyu bio Cluster Project

◇ SHIKOKU Techno-bridge Project

◇ KANSAI Bio-Cluster Project "Bio Cluster"  
◇ KANSAI Front Runner Project "Neo Cluster"  
◇ Environment Business KANSAI Project "Green"

◇ HOKKAIDO Cluster Project  
Hokkaido IT Innovation Project,  
Hokkaido Biotech Industrial Growth Strategy

◇ TOHOKU Manufacturing Corridor

◇ Regional Industry Revitalization Project

Network formation support activities for: Western Metropolitan area (TAMA); area along Chuo Expressway; Tokatsu-Kawaguchi-Tsukuba (area along TX Line); San-En-Nanshin area; Northern Tokyo metropolitan area, and Keihin area

◇ Fostering Bio-ventures  
◇ Fostering IT ventures

◇ TOKAI Monozukuri Revitalization Project  
◇ TOKAI Bio- Monozukuri Revitalization Project  
◇ HOKURIKU Monozukuri Revitalization Project

# Two types of industrial cluster initiatives supported by METI

**From FY 2010**

## ① *Bottom-up initiatives of industrial clusters with local roots*

Regional clusters are supported by local governments, and METI provides financial support for various activities decided by the basic plan made by local governments according to the “Act on Promotion of Establishment of New Business Facilities”.

## ② *Top-down initiatives promoting international competitive clusters*

METI has been promoting new competitive cluster project start-ups (ex. aerospace, environmental business, bioindustry etc.) under the initiatives of regional bureaus of METI.

Industrial Cluster Program 18 projects

International potentiality  
in area or projects

① *Bottom-up initiatives by  
industrial clusters with local roots*

② *Top-down initiative promoting  
international competitive clusters*

# The changes of Industrial cluster policy budget

~ FY 2009

Support based on "Act on Promotion of Establishment of New Business Facilities"  
(2.22 billion yen)

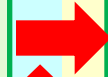
○ Support for promotion of establishment of new business facilities

- Promotion of establishment of new business facilities
- Personnel training
- Maintenance of common facilities
- R & D, etc.

Support in form of Industrial Cluster Subsidies  
(1.14 billion yen)

○ Support for forming 18 industrial cluster projects

- Forming networks
- Creating new businesses
- Promoting cooperation
- Developing market
- Dissemination, etc.



FY 2010 ~ Competitive funds

Support based on "Act on Promotion of Establishment of New Business Facilities"

- FY2010 2.19 billion yen
- FY2011 1.00 billion yen

○ Support for promotion of establishment of new business facilities

- Promotion of establishment of new business facilities
- Personnel training
- Maintenance of common facilities
- R & D, etc.

○ Support for developing industrial clusters

- Cluster tie-ups
- Creating new businesses
- Developing market, etc.

Regional Competitive Edge Project for Strengthening Business

- FY2010 1.39 billion yen (NEW)
- FY2011 1.30 billion yen

○ Create new growth industries

- Business matching
- Coordinator arrangement
- Cooperation with support organs
- Coordinator training, etc.



Bottom-up initiatives by industrial clusters with local roots

Top-down initiatives promoting international competitive clusters

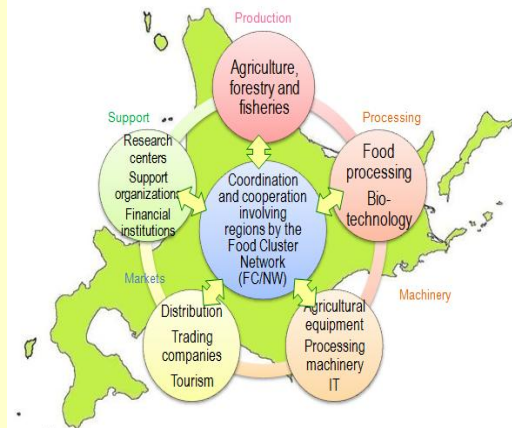
# Case of bottom-up initiatives by industrial clusters with local roots

## Hokkaido Food Cluster

- Hokkaido is located in the most northern part of Japan. This region has experienced serious economic sluggishness over an extended period. But Hokkaido has abundant forestry and fisheries, and comparative advantage in terms of large scale agricultural production.
- The purpose of food-cluster formation is to establish a wide range of food clusters by strengthening a cooperation system that encompasses various food related businesses including food processing, biotechnology, machinery manufacturing, distribution, IT and tourism. Additionally, steps are also taken to add high value to food resources and develop hot-selling products and to promote their sales in other areas of Japan and abroad.
- On May 19, 2010, the Hokkaido Economic Federation, the Hokkaido Central Union of Agricultural Cooperatives, Hokkaido Bureau of METI and the Hokkaido regional Government held a launch ceremony for the “Food Cluster Network (FC/NW)”. As of December 31, 2010, the network had some 800 members, including businesses, government institutions and other organizations.
- Hokkaido Bureau of METI allocates approximately 500 million yen of its budget for expenses related to food cluster development, such as those incurred in engaging coordinators and implementing R&D.



Food Cluster Network (FC/NW) launch ceremony (May 19, 2010)





## Next Generation Aircraft Cluster

The Aerospace Industry Forum was launched in April 2008, in order to promote Japan's aerospace industry collectively, at Nagoya which is the center of the Chubu region where we can find large factories and many SME parts manufacturers not only for the automobile but also for the aerospace sector.

The Forum offers a vital opportunity to integrate and cultivate players in the aero parts industry, without necessarily being affiliated with a particular manufacturer, and also encourage newcomers to join.

### Support activities by the Aerospace Industry Forum

#### 1. R&D

Providing a total support system, from R&D to commercialization, is being reviewed under collaboration between industry, academia & government.

#### 2. Expand markets

Dispatch of an overseas missions, for Paris Air Show and Farnborough Air Show Seminars and the like. Where domestic equipment makers seek new vendors.

#### 3. Human resources cultivations

Comprehensive human cultivation programs in wider regions, including R&D of aircraft, designing, production technology/skills, production management, etc.

#### Committee for the promotion of the Forum

[ Chairman ] Mr. Fumio Kawaguchi (Chairman of Chubu Economic Federation and C-ASTEC)

[ Industry ] Chubu Economic Federation, C-ASTEC, Mitsubishi Heavy Industries, Ltd Nagoya Aerospace Systems, Kawasaki Heavy Industries, Ltd. Aerospace Company, small/medium, aircraft parts manufacturers

[ Academia ] Nagoya University, College of Naka-Nippon Aviation

[ Government ] Chubu Bureau of METI , Aichi Prefecture, Gifu Prefecture, Nagoya City



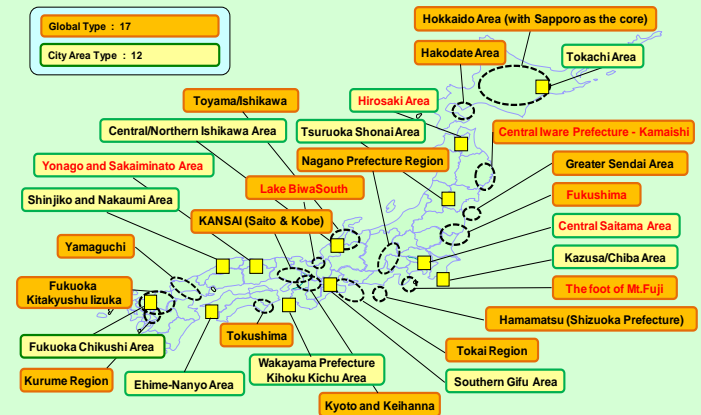
# Support Program For Regional Innovation by MEXT

○ Ministry of Education, Culture, Sports, Science and Technology (MEXT) will continue the “Regional Innovation Cluster Program” until FY 2013.

Budget; FY 2010 10.9 billion yen

※ “Regional Innovation Cluster Program” is the combined and modified system of “Knowledge Cluster Initiative” and “City Area Program” which started in FY 2002

- Areas of “Regional Innovation Cluster Program” -



○ On the other hand, MEXT is going to start a new initiative “Support Program for Regional Innovation” in FY 2011.

Budget; FY 2011 11.1 billion yen

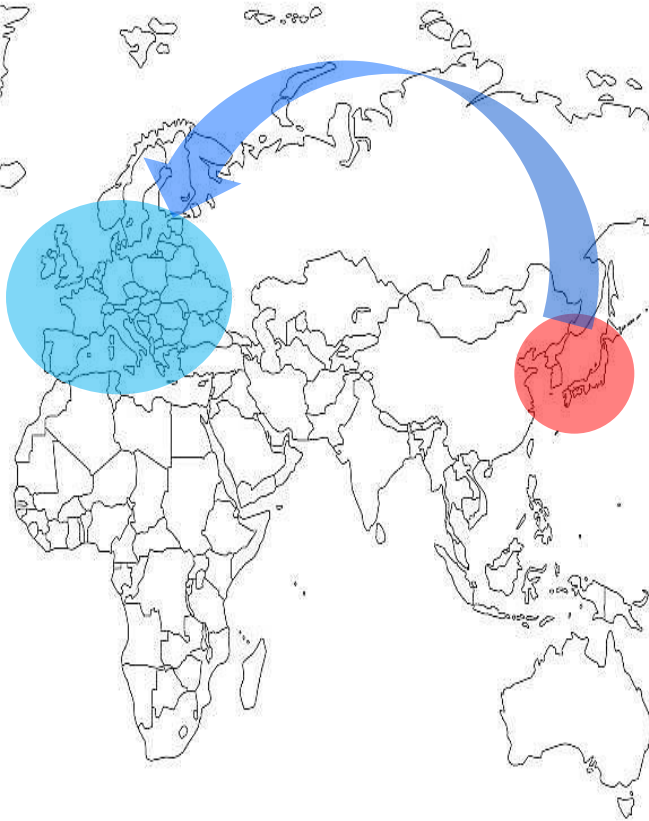
MEXT jointly selects new areas with METI and Ministry of Agriculture, Forestry and Fisheries (MAFF), and supports activating regional R&D through collaboration with local universities.

## Support Menu

- Gathering researchers for realizing the local strategies.
- Establishing local universities networks.
- Developing training programs .
- Sharing of university equipment with SMEs.
- Promoting use of the technological seeds.

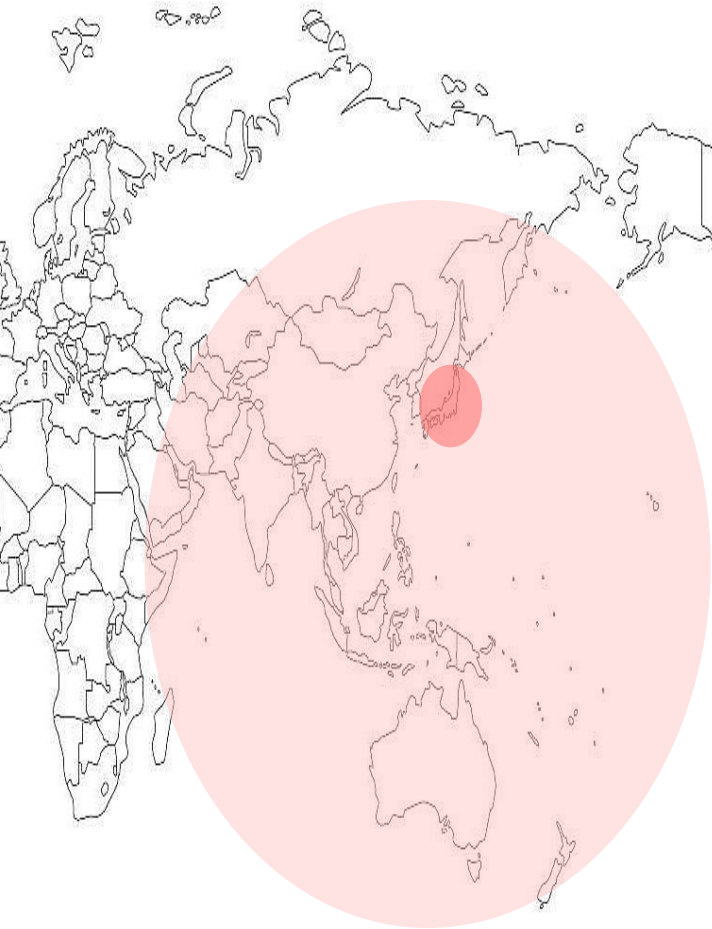
※ “Regional Innovation Cluster Program” areas are supported in this program until FY2013.

# List of Exchanges and Tie-ups with Overseas Clusters **【Europe】**



| Europe   |   |
|--|---|
| <b>【UK】 Biotechnology</b><br>Kazusa Biotechnology project<br>⇔ UK  | <b>【UK】 Biotechnology</b><br>Kanto Biotechnology project ⇔ South West England       |
| <b>【The Netherlands】 Functional food</b><br>Kansai Biotechnology project ⇔ Food Valley                   | <b>【Germany】 Automobile</b><br>Chugoku Next Generation Industries project ⇔ Germany |
| <b>【Germany】 Biotechnology</b><br>Kazusa Biotechnology project<br>⇔ Dusseldorf                           | <b>【Germany】 Optoelectronic equipment</b><br>Hamamatsu ⇔ Jena                       |
| <b>【France】 Medicine, medical equipment, etc</b><br>Kansai Biotechnology project ⇔ Life Science Corridor | <b>【France】 Cosmetics, functional food</b><br>Hokuriku ⇔ Loiret                     |
| <b>【France】 Functional food</b><br>Shikoku Techno Bridge plan ⇔ Lyon                                     | <b>【Switzerland】 Micro machinery</b><br>Suwa ⇔ Geneva, etc                          |
| <b>【Italy】 IT, health and welfare</b><br>TAMA project ⇔ Veneto   | <b>【Italy】 IT, manufacturing</b><br>Tokai Manufacturing project ⇔ Torino            |
| <b>【Sweden】 Manufacturing</b><br>Kansai Front Runner Project ⇔ Sweden                                    | <b>【Denmark】 Medical treatment</b><br>Kansai Biotechnology project ⇔ Medicom Valley |

# List of Exchanges and Tie-ups with Overseas Clusters *[Asia, Oceania]*



## Asia, Oceania

**【China】 Recycling, environment purification**  
 Kyushu K-RIP project  
 ⇔Dalian, Qingdao

**【China】 IT**  
 Hokkaido IT project  
 ⇔Beijing, Shenyang, Dalian, etc

**【China】 Waste management, reduction of environmental burdens**  
 Environment Kansai project  
 ⇔Guangdong, Liaoning

**【China】 Environment, manufacturing**  
 Kansai Front Runner project  
 ⇔Beijing, Zhongguancun

**【China】 Manufacturing**  
 TAMA project  
 ⇔Shanghai

**【China】 Biotechnology**  
 Kanto Biotechnology project  
 ⇔Shanghai

**【China】 New energy, energy conservation**  
 Chugoku circulation and environmental project  
 ⇔Shanghai

**【South Korea】 Recycling, environment purification**  
 Kyushu K-RIP project  
 ⇔Seoul

**【South Korea】 Biotechnology**  
 Kansai Biotechnology project  
 ⇔Seoul National University

**【South Korea】 Manufacturing**  
 TAMA project  
 ⇔Hanyang University

**【Thailand】 Waste management, reduction of environmental burdens**  
 Environment Kansai project  
 ⇔Thailand

**【Indonesia】 Wastewater treatment**  
 Shikoku Techno Bridge plan  
 ⇔West Java

**【Saudi Arabia】 Environment**  
 Chugoku Recycling and Environment project  
 ⇔Saudi

**【New Zealand】 Function food**  
 Hokkaido Biotechnology project  
 ⇔New Zealand

# Dynamic relations between industry-lifecycle, region and type of innovation according to Audretsch et al (2008)

|           | Product lifecycle: conventional explanation | Industry lifecycle by Audretsch et al.(2008) | Regions corresponding to industry lifecycle | Main players in production of goods and innovation | Types of innovation   | Knowledge spillover  | Products   |
|-----------|---|--|---|--|---|--|--|
| Phase I   | Introduction                                | First entrepreneurial phase                  | Urban agglomerations                        | SMEs   | Product innovation  | Inter-industry knowledge spillovers (Jacobs externalities) | Brand-new products                               |
| Phase II  | Growth                                      | First routinization phase                    | Industrial agglomerations                   | Large firms  | Product & process innovation within top-performing incumbents | Less knowledge spillovers                                  | Standardized products                            |
| Phase III | Maturity                                    | Second entrepreneurial phase                 | Industrial districts* & Urban peripheries   | SMEs   | Product innovation  | Intra-industry knowledge spillover (MAR externalities)     | Niche products supplied by complement incumbents |
| Phase IV  | Decline                                     | Second routinization phase                   | Peripheries                                 | -  | -   | -  | -  |

\*Rather specialized regions located in more peripheral areas, often near industrial agglomerations

# Typology of the industrial cluster policy targets

| Target        | Phase of Audretsch et al. (2008)                                       | Industry / Products   | Technology           | Type of business   | Present status   |
|---------------|--|---|----------------------|--|--|
| <u>Type 1</u> | <u>Phase I</u><br>(Embryos of new cluster in the metropolitan areas)   | New industries ( <u>bio, ICT</u> etc.)  | <u>Most advanced</u> | <u>Start-ups</u>   | <u>Spin-off from large enterprise</u>  |
|               |  |   |                      |  | <u>Spin-off from university</u>  |
| <u>Type 2</u> | <u>Phase III</u><br>(Hidden champions located in the industrial areas) | New products in the broad range related to <u>machinery, materials and metal processing</u> | <u>Advanced</u>      | <u>Second-time Start-ups</u><br>(New entrants to different markets from where their present businesses belong) | <u>Subcontracting firms of still competitive industries</u><br>(automobile, high-end electronics etc.) |
|               |  |   |                      |  | <u>Independent niche-top business</u>  |

# ***GNT companies and their importance***

The high competitiveness of Japan's manufacturing industry has one of its roots in the fact that there are a lot of SMEs which can be called "global niche top (GNT) companies." Their characteristics are quite similar to those of the "Hidden Champions" named by Dr. Hermann Simon.

Importance of GNT companies ;

1. Operating as regional representative companies in their respective regions, GNT companies bring a number of benefits to regional economy and society including the provision of quality job opportunities.
  2. Amid concern over the hollowing out of industries resulting from the expansion of overseas production, GNT companies are counted on to succeed and further develop the manufacturing technologies accumulated to date in Japan while at the same time continuing to maintain an "absorptive capacity" to properly respond to the emergence of new technologies in the future.
  3. Even under the environments of relatively high wage and yen appreciation, GNT companies continue to maintain a degree of domestic production bases and penetrate foreign markets because of the strong competitive advantages of their products.
- Promoting the developments of GNT companies can be expected to maintain a minimum production base as a whole of Japan, protecting Japan from massive technology drain to competing countries, resulting in the growth of the regional and national economy.

# What is the “Hidden Champions” Concept?

Dr. Hermann Simon, a German scholar and specialist in business administration, conducted a systematic survey in the 1990s and showed that number of companies exist that can be identified as "hidden champions" in Germany.

*\*Simon, Hermann.(1996), “Hidden Champions,” Harvard Business School Press.*

A hidden champion, as defined by Simon, is a family owned/unlisted small and medium enterprise (SME), which is headquartered in a regional city, has a relatively long history, holds an extremely large share in a niche area of the world market, and earns the majority of its sales revenue from exports.

It is believed that there are some 500 to 1,000 such hidden champions across Germany, together accounting for a substantial portion of German exports. Furthermore, his book (1996) points out that similar companies are observed extensively around the world, particularly in developed countries.

In Japan, many of the SMEs that are referred to as GNT companies fall under the definition of hidden champions. For instance, several Kyoto-based measuring instrument manufacturers, such as Shimadzu and Horiba used to be typical examples though they are no longer "hidden" today. The reason why they do not relocate their headquarters to Tokyo is that they see no need to do so as they have been dealing with the global market from a very early stage.



## *The necessity to support potential Hidden Champions (candidates of GNT companies)*

Today, however, although Japan has past its peak, there are still SMEs belonging to matured manufacturing sectors in existence and operating in various areas across the country. Quite a few of them are dynamic SMEs that boast excellent technological capabilities and seek to explore market niches by utilizing their existing capabilities and reinventing themselves in order to venture into a new business. Such SMEs can be seen as **potential Japanese Hidden Champions, that is, candidates of GNT companies.**

The large portion of GNT company candidates still remain in the position of a domestic niche top (DNT) company. Making DNT outgrown to GNT can be the important policy target.

- However, the actual status of these companies is not necessarily clear as no systematic or analytical survey has been conducted to date. Led by the Small and Medium Enterprise Agency (SMEA)'s initiative to highlight 300 dynamic manufacturing SMEs nationwide, local governments, chambers of commerce and industry, and other organizations have compiled and published the directories of companies forming local manufacturing clusters. Nonetheless, the information provided by these directories is limited to the profiles of companies and their products in most cases.
- By conducting a comprehensive survey and thus extracting traits for constructing the competitive advantages unique to GNT companies as well as their secrets of success and know-how, we can enhance soft-side measures provided by cluster promoting organizations designated to support GNT company candidates.
- METI launched the “Study group for business system strategies of GNT companies” in November 2010. Under the supervision of the study group, an interview survey has been conducted for 30 typical GNT companies all over Japan since January 2011.

# ***New alliances of SMEs with the hub role of GNT company***

The expansion of overseas production and the massive shift of mass production factories of large companies abroad have caused drastic changes in the landscapes of Japanese manufacturing, such as,

- 1. Decrease in orders for SMEs providing processing service of only a limited process of manufacturing and Increase in the number of such kind of SMEs going-out**
- 2. Weakening role of large companies, such as, demanding high spec processing , showing needs or ideas for new products, directing and guiding production technique and providing financial support for dies and molds which are necessary to trial production**
- 3. Production abandonment of materials, equipments and machines by large companies because of the small market size**

→The cases of new alliances of SMEs where GNT companies substitute the roles of large companies can be seen, such as,

- A. Receiving orders for high spec parts and equipments from abroad and placing orders and providing adequate supports to processing service SMEs**
- B. Product development using patent or technology held by large companies which give up commercialization because of the small market size**
- C. Production of missing manufacturing goods used to be supplied by large companies**

# Case of joint receiving and placing of orders by SMEs



# Innovation Initiative Network Japan (National cluster association)

**Innovation Initiative Network Japan (launched April 2009)**

**Local economy revitalization by promoting regional innovation**

1. Augmenting human resources for supporting cluster activities through training, providing qualifications etc.
  - Development of training programs and system
  - Networking between coordinators
2. Developing evaluation system for SMEs technology and business plan
3. Translating patent information of national research institutes into the form which is easy to understand for SMEs
4. Cooperating between members and financial Institutions. (Tie up with Regional Banks Association of Japan)
5. Sales promotions of SMEs under mutual cooperation of member institutes

## Member

Industrial Cluster Program Promotional Organization

Knowledge Cluster Initiative Core Organization

The supporting organization of the local government

University/Research Organizations

TLO

Financial Institution

⋮

## Cooperate

### National organizations concerned

**SMRJ**

(Organization for Small & Medium Enterprises and Regional Innovation, JAPAN)

:Support of SMEs for new business establishment

**AIST**

(National Institute of Advanced Industrial Science and Technology)

:Transfer of industrial technology development result

**JETRO**

(The Japan External Trade Organization)

:The overseas operations support of the cluster

**JST**

(Japan Science and Technology Agency)

:Funding R&D of university etc.

**JILC**

(Japan Industrial Location Center)

:Training the professionals providing various support

Cooperate

Support

Support

**METI**

**STATE**

**MEXT**