

# Clusters Clustered

In this, the last article in our Clusters series, the authors describe the future orientation of Japan's industrial cluster policy drawing on the conclusions reached in the May 2005 "Report of the Industrial Cluster Study Group."

**T**he Industrial Cluster Project is aimed at forming accumulations of businesses, called industrial clusters, in which local enterprises use technology seeds developed by universities and other institutions to supply to the market competitive products and goods based on innovative technologies and ideas and thereby to increase national competitiveness.

Since fiscal 2001, the Ministry of Economy, Trade and Industry (METI) has been working on building broad human networks consisting of local enterprises, universities and other research institutions, local governments, and business support organizations to create a business environment in which they make reciprocal use of management resources to set up new businesses. There are nineteen projects of this kind nationwide. A significant number of major companies as well as some 6,100 small and midsize businesses and about 250 universities participate in the projects and around sixty percent of these firms have launched new businesses.

To perform a review of past industrial cluster projects to study future orientation, METI set up the Industrial Cluster Study Group, chaired by Furukawa Yuji, a professor in the Faculty of Engineering at Tokyo University of Agriculture and Technology, as a private study group for METI's deputy

director-general for Regional Economic and Industrial Policy. After six months of deliberations, the study group prepared a report entitled "Report of the Industrial Cluster Study Group" in May 2005.

The report argues that it is imperative to expand the framework of the Industrial Cluster Project by defining a longer term target range for the Project, introducing a program assessment system for creating, implementing, reviewing, and modifying individual projects and the program and boosting collaboration with local governments and business support institutions.

The report is available in its entirety in Japanese at [www.meti.go.jp/press/20050524002/20050524002.html](http://www.meti.go.jp/press/20050524002/20050524002.html)

## Current State and Achievements of the Industrial Cluster Project

There are four major domains in which local industrial cluster projects are run: manufacturing, information technology, biotechnology, and environment and energy. At the moment, METI offers support for the development of regional networks linking businesses, universities, and public administration and for technical development based on regional characteristics in an attempt to boost the creation of extensive clusters.

To confirm the achievements and chal-

lenges of the Project, METI conducted a case study analysis and a monitoring survey on individual projects. The research findings are outlined below.

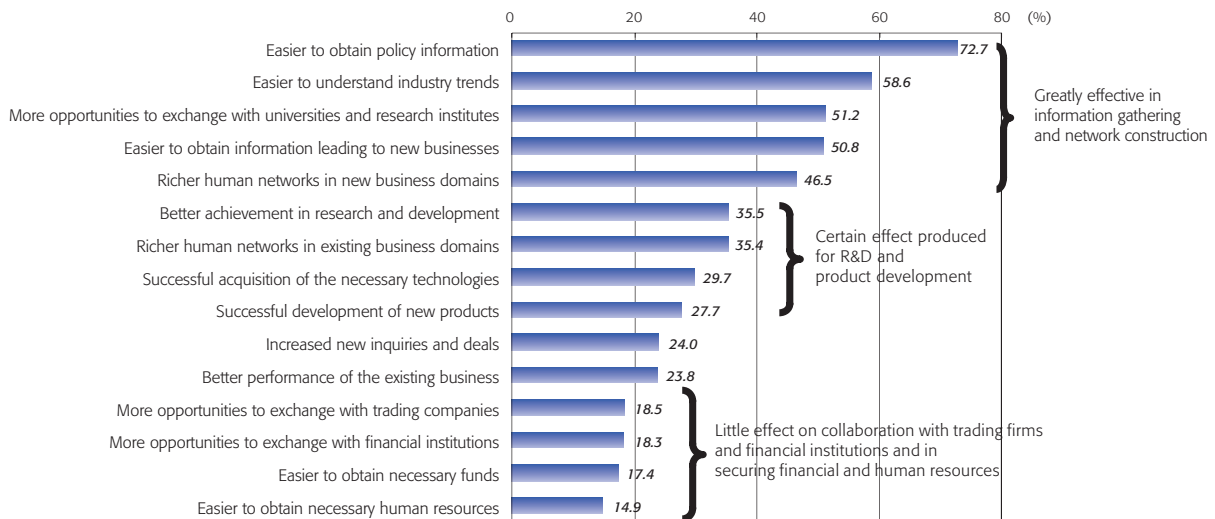
With respect to the effect of the Project in comparison with the situation before participation in industrial cluster projects, the research has confirmed some improvement in the environment for obtaining information about industry policies and trends as well as in the aspect of network expansion including opportunities for exchange with research institutions. A certain effect has also been confirmed in terms of the initiatives for research and development and in maintenance and improvement of technologies. However, it has also been revealed that it has yet to produce any effect on collaboration with trading firms and financial institutions and on the acquisition of funds and human resources (**chart**).

In addition, it has pointed to companies that launched new partnerships and new businesses, firms that revamped their management, and the creation of university-born ventures. It has revealed that network construction in the Project is producing the effect of encouraging innovation (**table**).

## Future Developments of Industrial Cluster Policies

To implement industrial cluster policies in future, it will be vital to set an even clearer goal and to better understand and review the achievements on the basis of the principle of the plan-do-check-action (PDCA) cycle of policy evaluation management. A longer term target range for the overall policy should be presented. Individual project plans consisting of the vision, the goal, and the process flow based

## Effect of Participation in Industrial Cluster Projects in Comparison with the Situation Prior to Participation



**Source:** METI's questionnaire survey to businesses participating in the Project

**Note:** Survey conducted from December 2004 to January 2005, targeting approximately 6,000 companies and university researchers participating in the cluster program. The response rate was nearly 40%.

## Innovation Effect

Companies with new partnership formed	38.5%
Companies with new businesses launched	58.7%
Companies with managerial revamp	18.9%
University-born ventures in cumulative total	133

**Source:** METI's questionnaire survey to businesses participating in the Project

**Note:** Survey conducted from December 2004 to January 2005, targeting approximately 6,000 companies and university researchers participating in the cluster program. The response rate was nearly 40%.

on an analysis of regional characteristics and industrial resources should be prepared. And the plan should be carried out in accordance with the PDCA system.

There are six major areas to be bolstered through such policies. In each of the areas, the current situation and future challenges must be confirmed to address them. And measures for expanding the framework of the industrial cluster project should be implemented.

There are four specific challenges to be tackled as discussed below.

First, it is necessary to set overall target ranges. The longer term time span that was initially envisioned must be reexamined in light of subsequent changes. As is evident from several overseas cases, no industrial cluster can be created without a long-term effort that lasts about twenty years. In particular, at the initial stage of forming a cluster, it takes at least five years to establish a network of the business, academic, and public sectors and to develop a system of collaboration among the three sectors, among different businesses, and among businesses in different industries. In light of the current situation from this viewpoint, it will be appropriate to set different target ranges for three separate phases. Phase I, which refers to the period from 2001 to 2005, is a phase for setting up industrial clusters, in which a human network as a foundation of industrial clusters is formed. Phase II, 2006 to 2010, is positioned as a growth phase of industrial clusters. They will run specific projects in parallel with the formation of networks. And Phase III, 2011 to 2020, is a phase of independent development, in which industrial clusters will strive to attain financial independence in project activities and to make autonomic development.

Second, the Industrial Cluster Project must be upgraded and a policy management system introduced. It is necessary to set out a basic principle and strategy relating to the policy to develop individual project plans and an overall program. A project plan consists of the goal, the vision of cluster formation, and the process flow in an individual project.

Third, there are challenges in six different support areas. Based on the monitoring

survey findings and project case studies, the following challenges are considered major:

### 1) Formation of networks

To strengthen the structure of promotional bodies and further bolster and expand the networks, local industries, including large companies, trading companies, and central support bodies in the regional platform system will be supported. Collaboration with different industrial support organizations will be established and reinforced.

### 2) Support for technical development

The link among technology transfer organizations, universities, and public testing



Just some of the many innovative products developed through the Industrial Cluster Project

and research institutions will be strengthened to raise awareness of the importance of intellectual property rights in the implementation of joint research and development projects.

### 3) Incubation facilities and organizations

It is necessary to set up and operate incubation facilities in an intensive and strategic manner. Incubation managers will be installed to strengthen ties between them and the Industrial Cluster Project.

### 4) Development of new sales channels

A sales agent system and large trading firms will be deployed to successfully develop new sales channels. With the help of marketing experts, the product planning capabilities will be raised.

### 5) Fund supply

The link with financial institutions will be strengthened to secure funds. The necessary support will be provided to help financial institutions themselves build up their capabilities to examine technical capacity and to supply funds on the basis of intellectual property (in the form of loans secured by intellectual property).

### 6) Human resource development


To continuously stimulate the Industrial Cluster Project, human resources that support the projects, such as engineers, will be developed. Also, business coordinators, entrepreneurs, and personnel that support the businesses will be found and cultivated.

And fourth, efforts must be made to expand the framework of the Industrial Cluster Project. Aimed at establishing a structure for ties among different offices and ministries involved in regional cluster policies, a liaison conference has just been set up. In the future, it will be focused on better linked different initiatives with one another and on constructing a system to



support new businesses by organizing joint events. In addition, to create a nationwide network for establishing and supporting new industries and businesses, the link among projects, between projects and local governments, and between projects and privately run business support activities will be bolstered, increasing awareness of the Project. In terms of links with overseas clusters, the cultivation of overseas markets and domestic direct investment will be among those to be implemented.

With reference to the Report of the Industrial Cluster Study Group, METI is set to develop an overall plan in addition to individual plans on regional projects within this fiscal year in a bid to operate projects to create industrial clusters in different areas in a steady yet comprehensive manner.

Japan's industrial clusters are still not very well known overseas. To boost the partnership between Japanese and overseas industrial clusters, it will also be important to provide more information about Japanese industrial clusters to the rest of the world. 

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