
European Cluster Policy Group

Study Visit to Japan – 4-9 October 2009

Report

Objectives of the Study Visit

The European Cluster Policy Group (ECPG), established by the Commission to give advice on how to provide better assistance to Member States in supporting the emergence of more world-class clusters in Europe, undertook its first study visit to Japan from 4-9 October, 2009. The aim of the Japan study visit was to identify best available practice in support of world-class clusters and to get inspiration for stronger policy recommendations for the EU. The ECPG looked in more detail at a number of topics:

- § best practices in Japan for fostering world-class clusters (emphasis on lessons learnt and evaluation practices);
- § how international cluster cooperation is supported in Japan and what kind of policy incentives exist;
- § what can be the potential barriers of international cluster cooperation and how to overcome them;
- § how Japan supports clusters in emerging industries and service clusters; and
- § a specific programme fostering EU-Japan cluster cooperation such as a “Cluster Ambassador scheme”¹.

Programme

The programme included meetings with the Delegation of the European Commission to Japan, the EU-Japan Centre for Industrial Cooperation, the Cabinet Office, the Ministry of Economy, Trade and Industry (METI), the Ministry of Education, Culture, Sports, Science & Technology (MEXT), the Japan External Trade Organization (JETRO), the Innovation Initiative Network, Libertas Consulting Company (assisting METI with their measurement and evaluation framework), and Professor Yoko Ishikura (Professor and former CSTP expert member), as well as a full-day cluster visit to Hamamatsu. The programme also included informal discussions with the Delegation of the European Commission to Japan and the EU-Japan Centre for Industrial Cooperation and a joint reception with METI.

Main Findings

The study visit aimed at learning from the good practices in Japan for fostering world-class clusters – to be used as a source of inspiration for policy recommendations in Europe. In addition to gaining a general understanding of the institutional frameworks, key programmes and policy mechanisms to support clusters in Japan, the groups examined two topics in more depth: instruments to support international cluster cooperation and approaches to the measurement and evaluation of cluster performance. A summary of findings from these three areas follows.

Institutional Frameworks, Key Programmes and Policy Instruments

In Japan, cluster policy is essentially an instrument of regional development providing subsidies to SMEs for facilitating technology transfer in order to address the changing nature of close buyer-

¹ The Medicon Valley Alliance’s life science ambassador programme serves as a “good practice” example and source of inspiration for such possibilities (see http://www.mva.org/ambassador_programme).

supplier chains which existed in the past between big, multinational organizations and product-developing SMEs.² Cluster policy is basically an instrument for supporting SMEs' capacity to create jobs, to upgrade their technical and marketing competence, and to enhance their capacity to apply scientific research results to commercial products. The aim is to stimulate the development of clusters with strengths that utilize regional characteristics for launching new businesses (however small in scale) and supporting those which have the potential to develop as world-class clusters.

The use of the cluster approach to regional economic development dates back to the mid 1990s, and coincides with the legal formation of the Council of Science and Technology Policy (CSTP). The current national S&T strategy – the 3rd Basic Plan for S&T – covers the period FY2006-2010 and has a total budget of 25 trillion yen (about EUR 185 mn). It focuses on human resource development for science and technology (more creative S&T personnel) as well as decreasing operational costs and introducing competitive funding. The change of focus from the 2nd Basic Plan (2001-2005) is a consequence of the attained level of development. Publicly funded applied research was important during the catching-up period; today, the emphasis is on fundamental research and human resource development to meet the challenges of technological frontiers. Thus the key policies of the current plan include: further reform of S&T systems; strengthening education in general and the tertiary education system in particular by promoting university excellence through competition; nurturing of creative S&T resources; and strategic prioritization of R&D themes. This is an important change in strategic orientation compared to the 2nd Basic Plan which prioritized four broad sectoral fields in emerging industries to receive preferential allocation of resources: life sciences, information and telecommunications, environmental sciences, and nanotechnology/materials. These four priority fields will continue to be preferentially treated, however, on the basis of intra-sectoral prioritization that follows certain criteria: level of contribution to S&T, economy and society is generally high; people's expectations and interests are high; trends of S&T strategies in other countries are taken into account; and demonstration of strategic viability and adoption of research sites. The share between government and private funding of R&D is 20:80%.

Four additional fields are promoted within the sectoral promotion strategy: energy, manufacturing technology, social infrastructure and frontiers (i.e. technologies that enable full command of the frontiers of ocean and outer space). In addition, other R&D fields are targeted for concentrated investment if they fit one of following three criteria: 1) S&T to resolve social issues immediately; 2) S&T to win international competition; or 3) S&T as a key technology of national importance.

Within the current Basic Plan for S&T, cluster policy is viewed as a way of promoting regional innovation systems (with focus on SMEs) and creating vital regions by aggregating resources with universities at the centre. This is enacted through the regional S&T promotion programmes of two ministries: the Ministry of Education, Culture, Sports, Science & Technology (MEXT) and the Ministry of Economy, Trade and Industry (METI). Comparable funding schemes are available to enterprises that do not participate in a particular cluster project. SME membership in cluster projects is free. Japanese companies with established competitive advantages generally do not participate in clusters.

² Product/developing SMEs are those which have design capability and have original products in their sales portfolio. These SMEs are research-oriented and usually employ many parts-processing SMEs as subcontractors. When a product-developing SME succeeds in developing a product to be purchased by large firms, the economic effect spreads through the region through the parts-processing SMEs (sub-contractors) that are suppliers to the particular product-developing SME. With globalization, this kind of relationship was broken, which significantly jeopardized the level of welfare in the regions where this kind of relationship predominated.

MEXT supports the formation of regional clusters through the Knowledge Cluster Initiative and the City Area Program. These programs are focused on connecting university R&D functions with regional SMEs and industry. The Knowledge Cluster Initiative supports the formation of medium-size clusters to help regions with technological strengths develop “world class innovative clusters” (based on past results), whereas the City Area Program supports small to medium-sized clusters that leverage unique regional resources through industry-academia-government collaboration. In both MEXT programs, 80% of funding goes to university R&D activities (for projects conducted together with regional SMEs), and 20% of funding is for coordination activities of the knowledge cluster initiatives. Funding is channelled through “knowledge cluster headquarters” (i.e. cluster organisations) designated by local government. The innovative stage promotes areas not supported by previous knowledge cluster initiatives and focuses on globalising the local knowledge clusters.

METI supports the development of regional competitive industries and enterprises in a global market through the Industrial Cluster Project. The main goal is to utilize local SMEs for innovation and therefore to support linkages with universities. The Industrial Cluster Project supports coordinator activities, cluster networking activities, and strategic SME commercialization activities. Approximately 50% of support goes to coordinator activities, as the coordinator’s job is to identify new business opportunities and catalyze action. Subsidies to regional industrial clusters are granted based on competitive tenders at national level. Currently, 18 projects – involving more than 10,000 SMEs and 290 collaborating universities – are supported within phase II of the industrial cluster project.

METI highlighted a number of challenges related to the Industrial Cluster Project that they are working to address:

- Decreasing dependence on national financial support (i.e. self-sufficient regional cluster activities) and delegating more power from central government to regions so that METI and MEXT will play supportive (rather than driving) roles of cluster development in the future
- Increasing involvement of large enterprises
- Strengthening regional brand creation
- Strengthening skills of cluster coordinators and enlarging pool of cluster coordinators, and decreasing overhead costs – which are currently too high
- Motivating increased (company) participation in regional cluster activities, using evaluation results (among other things)
- Improving the measurement and evaluation of cluster performance to objectively assess economic value of cluster projects
- Increasing international learning and commercial activities, particularly for cluster coordinators and priority SMEs
- Increasing inter-regional cluster cooperation
- Increasing effectiveness of S&T policy

Some of the characteristics of Japanese cluster policy and policy instruments:

- The formation of university funds (through the MEXT industrial cluster project) to develop the innovation capabilities of SMEs.
- The R&D cooperation schemes and the focus on commercialization of research (by SMEs, in particular, and where large enterprises also play a catalytic role).
- The role of cluster coordinators (individuals with substantial, usually private sector, experience) – leveraging both technical and market skills, activating project actors and ‘sub coordinators’, and acting as business angels.
- The use of cluster policy as a channel for subsidies targeted specifically towards increasing SMEs innovation capabilities, R&D (particularly of product-development SMEs)

with strong absorptive capacity) and business skills development to apply scientific research results to commercial products).

- The focus of national S&T policy on human resource development which is reflected in cluster policies of MEXT and METI.

Instruments to Support International Cluster Cooperation

The Japan External Trade Organization (JETRO) launched the Regional Industry Tie-Up Program (RIT) in 2007. The RIT program focuses on activating regional economies internationally, and supporting local SMEs in their efforts to expand into international markets. The program has three objectives:

1. International exchanges among Japanese and overseas clusters
2. Innovation through integration of superior technologies and know-how possessed by both Japanese and overseas SMEs
3. Creation of new businesses in regional economies

The overall programme aim is to strengthen the overseas activities of Japanese SMEs. To date, 20 projects have been financed. Project activities range from workshops (in one or the other country), basic surveys/analysis, overseas business trips (of Japanese experts), invitation of experts from overseas, overseas missions, detailed joint business meetings, retain overseas coordinators. Of the 20 projects, 7 are with European partners.

In addition to JETRO, the newly-established (since April 2009) Innovation Initiative Network Japan - a national network of innovation-supporting organizations – works with promoting international cooperation between Japanese clusters and foreign counterparts (among other tasks). The Innovation-Net plans to lever JETRO's capability and offer a "one-stop service" to interested parties.

Japanese counterparts expressed a clear interest/prioritization for international cluster cooperation with European partners. At the same time, it was clear that both Japan and Europe are struggling with similar challenges to international cluster cooperation: language barriers and lack of targeted mechanisms to encourage international cluster cooperation, particularly for SMEs and cluster coordinators/organizations; lack of companies' motivation to participate in inter/regional or international exchange programs; difficulty of identifying appropriate partners and key contact persons; and difficulty in linking activities with regional policies.

Visit to Hamamatsu Cluster

The San-En-Nashin Industrial Cluster Hamamatsu branch is an initiative within the METI Industrial Cluster Programme, started in 2002. The cluster has two main objectives: to foster industry-university- government collaboration and to foster creation of new industries by utilizing research of four research groups: space and airplane technology, medicine-engineering, agriculture-engineering and optical technology. The cluster is coordinated by head of the branch, project manager and vice project manager. The cluster branch organizes activities related to commercialization of products, new product and technology development, training of industrial personnel, improvement of quality and development of technologies. The cluster is quite successful in the development of new products as a result of industry-university collaboration in the Hamamatsu area and due to significant population of product-developing SMEs with absorptive capacity. Two examples of the successful outcome of industry-university collaboration were presented during the visit:

- The Space Creation Co., Ltd, developed a laser vibration measuring system using self-mixing effect. The product was a result of networking with local universities specialized in photonics, and networking with nation-wide universities and institutes.

- Another interesting example was presented at the Hamamatsu University School of Medicine, where the cluster coordinator brought together a neurosurgeon, a company specialised in imaging, and a larger enterprise to subsequently “industrialise” and bring a new product to the market.

An additional visit to the Hamamatsu company Photonics K.K., which is a leading company in the field but not a member of cluster, confirmed the already-stated observation that companies with strong competitive advantages usually do not participate in cluster projects initiated either by METI or MEXT.

The visit to the Hamamatsu cluster was an interesting demonstration of Public-Private Partnership and the role the local clusters and cluster managers played in this project. It demonstrated that a significant role of the local cluster manager was to facilitate the partnership between a number of enterprises and the hospital as well as providing access to MEXT programs. This particular facilitation was an important part of cluster-practice in Japan that should inspire us in EU.

Approaches to the Measurement and Evaluation of Cluster Performance

METI has worked with Libertas Consulting over the past four years to develop and implement an evaluation methodology for their Industrial Cluster Project recipients (18+1 clusters). There are three main objectives of the assessments:

1. Apply a standard evaluation format to evaluate all 20 clusters
2. Identify the progress of each cluster, as well as assess the effect and clarify the satisfaction level of each cluster
3. (Most importantly) Identify possible challenges in order to further cluster progress in each Region

The evaluations are primarily based on a survey sent to all member companies of the regional clusters (totalling around 10.000 companies) participating in the Industrial Cluster Project since 2007. The survey collects information on six areas:

- Existence of cluster core (including information on each regional cluster project and participation frequency)
- Collaboration (including ratio of companies involved in industry-industry or industry-academia- government collaboration)
- R&D (including ratio of companies carrying out new R&D)
- New Business (including ratio of companies creating new products/services)
- Economic Effect (including increase or decrease in sales)
- Participant’s Satisfaction (i.e. cluster members’ degree of satisfaction with cluster activities)

Survey responses are supplemented with statistical data on economic effects (e.g. sales, profits and number of employees) and followed-up by direct interviews (to explore specific questions in more detail).

Results are analysed by making compound indices, and are presented in relation to average results of other comparable projects and average results of all other projects. An overall assessment ‘grade’ is given (based on a synthesis of the results for each of the six evaluation areas).

Evaluation results are considered, along with other informational inputs, relative to the specific cluster’s context. Evaluations are used primarily as a tool to adjust regional cluster activities and national government services to clusters. In addition, METI uses survey results to influence a small percentage (10%) of the regional project grants.

METI also makes a comparison between economic effect data of the cluster projects' participating SMEs and national trends. These comparisons are used to illustrate the benefit of participating in clusters.

Summary

In general, the Group concluded that the study visit was a success. Even though the Group gained a lot of knowledge through very open exchanges with Japanese counterparts, they still had many questions to explore – possibly through future policy learning exchanges. Japanese counterparts (at METI, MEXT and other organisations) were very actively engaged throughout the study visit and expressed interest in pursuing cooperation with the EU on three areas:

1. Continued policy learning and possible exchanges (of civil servants), linked to their interest in the European Initiative for the Excellence of Cluster Organisations
2. Building from Japan's interest in EU activities for cluster coordinators, continued exchanges of perspectives on this field
3. Exploring instruments to facilitate internationalisation of SMEs' activities

FINAL PROGRAMME – ECPG Study Visit to Japan Attachment I

October 4th SUNDAY	October 5 th MONDAY	October 6 th TUESDAY	October 7th WEDNESDAY	October 8th THURSDAY	October 9th FRIDAY
Morning (8-12)	Morning (8-12)	Morning (8-12)	Morning (8-12)	Morning (8-12)	Morning (8-12)
		9:30-12:00 Meeting with METI, MEXT and JETRO (at MEXT, 3-2-2 Kasumigaskeki, Chiyoda-ku) <ul style="list-style-type: none"> - Industrial Cluster Program and EU-Japan networking - Knowledge Cluster Initiatives and Internationalization - Regional Tie-Up Initiative 	FULL DAY CLUSTER VISIT to Hamamatsu at Shizuoka Pref. 8:30 transport to train station 9:03 depart on Shinkansen rapid train "HIKARI 465" from Tokyo 10:33 arrive Hamamatsu 11:00 Meeting with Hamamatsu Chamber of Commerce and Industry, including SME representative at Grand Hotel Hamamatsu (http://www.hamamatsu-cci.or.jp/english.html)	9:00 Meeting with Yoshiaki Igarashi, Director, Libertas Consulting Co, Ltd. (who assist METI implement model to measure and benchmark cluster performance) 10:00-12:00 Meeting with representatives of Japan Industrial Location Center, secretariat for the new national network of institutions involved in facilitating innovation and cluster cooperation (Tokyo YWCA Building 8F, 1-8-1 Surugadai, Chiyoda-ku)	Departure from Tokyo
LUNCH	LUNCH	LUNCH	LUNCH	LUNCH	LUNCH
		12:30 at Elio (near the EU-Japan Centre)	12:40 depart from Grand Hotel	12:30 at Argo (French) (http://www.tojo.co.jp/argo/en/html/location.html)	
Afternoon (13-18)	Afternoon (13-18)	Afternoon (13-18)	Afternoon (13-18)	Afternoon (13-18)	Afternoon (13-18)
Departure from European cities	Arrival to Tokyo Check-in Grand Prince Hotel Akasaka (http://www.princehotels.com/en/akasaka/) 17:00 Welcome session with EU Delegation (at EU delegation, 9 – 15 Europa House, Sanbancho, Chiyoda-ku, meeting room 1F) <ul style="list-style-type: none"> - Overview and latest developments in EU-Japan cooperation (Barbara Rhode, EU delegation to Japan) 	14:30-15:30 Meeting with the EU-Japan Centre for Industrial Cooperation (at EU-Japan Centre, 13-3 Ichibancho, Chiyoda-ku) 16:30-17:30 Mr. Masahiro Arimatsu, Director for Science & Technology Policy, Cabinet Office, Government of Japan (Government Offices Joint Building No 4, 3-1-1 Kasumigaseki, Chiyoda-ku)	13:10-13:55 Meeting with Hamamatsu University School of Medicine (http://www.hama-med.ac.jp/index_e.html) and 14:10-15:15 Hamamatsu Photonics KK (http://jp.hamamatsu.com/en/index.html) 15:50 arrive Hamamatsu station 16:10 depart on Shinkansen rapid train "HIKARI 476"	14:00 Closing briefing and questions, with participation from EU-Japan Centre and EU delegation (EU Delegation, 9 – 15 Europa House, Sanbancho, Chiyoda-ku) <ul style="list-style-type: none"> - Latest developments in Japanese cluster policy (Prof. Yoko Ishikura) 15:30 Rounding-up <ul style="list-style-type: none"> - What have we learned? - What are next steps? 	Arrival to European cities

			17:40 arrive Tokyo station		
Evening (from 18:00)	<p>Evening (from 18:00)</p> <p>19:00 Dinner at Zipangu Akasaka (Akasaka Excel Hotel, Tokyu 14th floor, 2-14-3 Nagata-cho, Chiyoda-ku) together with representatives from EU-Japan Centre for Industrial Cooperation (Julien Guerrier and Aiko Higuchi) and EU delegation (Barbara Rhode)</p>	<p>Evening (from 18:00)</p> <p>19:00 Dinner at Umayu Akasaka tatami room (4-2-32 Akasaka, Minato,ku) - debriefing from the day, together with Barbara Rhode (EU delegation)</p> <ul style="list-style-type: none"> - Tools for international cluster cooperation - Evaluation frameworks 	<p>Evening (from 18:00)</p> <p>19:00 Joint dinner/reception with METI (at EU-Japan Centre, 13-3 Ichibancho, Chiyoda-ku)</p> <ul style="list-style-type: none"> - approx. 30 representatives from Japanese "cluster policy sphere" - Julien Guerrier and Aiko Higuchi from EU-Japan Centre - Barbara Rhode from EU delegation 	Evening (from 18:00)	Evening (from 18:00)

List of Participants

I. Delegation of ECPG

Name	Title	Organization
Constantin Christofidis	Head of Innovation & Competitiveness Department	European Investment Bank
Maciej Dzierżanowski	Head of the Corporations and Innovations Research Area	Gdańsk Institute for Market Economics
Juan Manuel Esteban	(Past) President	The Competitiveness Institute (TCI) and Coordinator of Basque Country Cluster Policy
Finn Lauritzen	Director General	Danish Enterprise and Construction Authority
Tea Petrin	Chair of ECPG and Professor	University of Ljubljana and Former Minister of Economic Affairs
Rene Tonnisson	Founding and Executive Board Member	Institute of Baltic Studies

Name	Title	Organization
Emily Wise	Coordinator	ECPG Secretariat

Name	Title	Organization
Carsten Schierenbeck	Policy Officer	European Commission

II. Delegation of the European Commission to Japan

Name	Title	Organization
Dr. Barbara Rhode	Minister-Counsellor, Head of S&T Section	Delegation of the European Commission to Japan
Akira Kimura	Research Officer, S&T Section	Delegation of the European Commission to Japan

III. EU-Japan Centre for Industrial Cooperation

Name	Title	Organization
Hiroshi Tsukamoto	President and General Manager	EU-Japan Centre for Industrial Cooperation
Julien Guerrier	General Manager	EU-Japan Centre for Industrial Cooperation

Aiko Higuchi	Manager	EU-Japan Centre for Industrial Cooperation
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