Industrial Activation Project for the Greater Tama Region

Aiming to Become a Leading Base for Creating New Industries

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Background of the Project and Characteristics of the Greater Tama Region

The Japanese economy followed a path of gradual recovery after touching bottom in the autumn of 1993. But, hit by the declining credibility of the financial system caused by the insolvency of banking institutions and the economic and currency crises in Asia, the economy has been slumping with increasing severity since the autumn of 1997. On the industrial front, production is tending downward, and corporate income is generally receding. In the manufacturing sector, there was a gap in business confidence between major companies and smaller enterprises in the first half of 1997. Now they share the view that the economy is "worsening." In such a climate, there has been an increasing tendency toward globalization of industrial activity in Japan. And the fears of the hollowing out of industry persist as a result of production being shifted offshore by such major industries as electric home appliances and automobiles. Some big manufacturers are even reviewing their business deals with subcontractors. Especially, those small and medium-sized manufacturers, which produce and process parts at home, have been coming under increasing pressure from big companies year after year to reduce prices. Now their business confidence is eroding.

Notwithstanding, there is a region where small and medium-sized enterprises are achieving future-oriented growth. The Greater Tama Region includes the western part of Tokyo (somewhat distant from the downtown section of Tokyo), the inland section of Kanagawa Prefecture south of Tama and the southwestern part of Saitama Prefecture to the north of Tama (Map). A survey report concerning the Greater Tama Region, published by the Kanto Bureau of International Trade and Industry in June 1997, notes that product-development-type industries in the region were quickly recovering from the recession that resulted from the bursting of the bubble economy and had accomplished steady growth.

In the Greater Tama Region, there are a large number of factories and laboratories that serve as development bases for such prominent semiconductor, computer and communications equipment manufacturers as NEC Corp., Hitachi Ltd. and Toshiba Corp. There are also more than 20 universities with science and engineering departments. This region is characterized by the presence of many small and medium-sized enterprises that not only process and assemble parts, but also market their own products developed with their own design expertise.

In the Greater Tama Region, small and medium-sized companies in particular suffered heavy damage from the post-bubble recession and deployment overseas of production

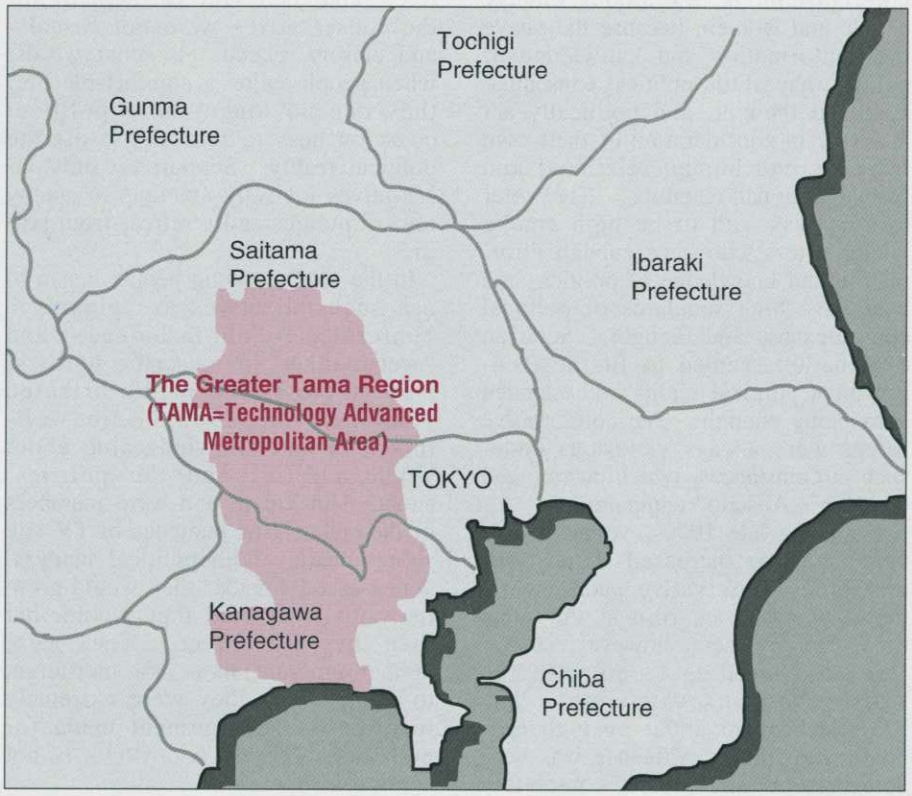


Chart: Growth Rate of Product Shipment

	All Manufacturers 1993-1996	Product-development-type enterprises in the Greater Tama Region 1993-1996
Large Enterprises	0.7%	2.5%
Medium-sized Enterprises (less than1,000 employees)		6.1%
Small-sized Enterprises (less than 300 employees)	-0.3%	7.0%
Average	0.2%	4.8%

lines of major manufacturers. However, product-development-type companies, mostly small and medium-sized, turned in a fine performance, favorably influencing subcontractor-type small and medium-sized enterprises in the region. After 1993, product shipments by product-development-type manufacturers in the Greater Tama Region grew 3 to 4 % year on year despite the negative growth of all manufacturing industries. In the region, while major companies in the product-development-type sector are stagnant because of restructuring and relocation of manufacturing bases overseas, shipments by small and medium-sized firms are scoring high growth in the order of 6 to 7%(Chart).

Small and medium-sized companies in the region, for instance, have developed and manufactured equipment for manufacturing and testing semiconductors; high-precision measuring and control devices; and material analysis equipment. Many of them unobtrusively have big market shares and are rated as No. 1 in domestic and worldwide rankings in particular product fields. For example, Rigaku Corporation (284 employees) manufactures X-ray diffraction meters essential for physical analysis of silicon wafers and other materials. Stack Electronics Company (85 employees) makes oscilloscope probes to measure electric movements. Japan Electron Optics Laboratory (1,120 employees) is known for producing electronic microscopes; Elionix (51 employees) for 3D electron probe surface roughness analyzers which measure surface roughness in nanometers; and JASCO Corporation (312 employees) for fourier transform infrared spectro-meters required for the structural analysis of materials. These manufacturers all have big market shares at home and abroad.

The strong point of these enterprises is that they have a large number of customers abroad and their products precisely satisfy customer needs. They are also favored by the presence of many processing subcontractors near by, who can process parts with high precision and swiftly respond to changes in product design.

In terms of technologies owned by product-development-type industries in the Greater Tama Region, there is an accumulation of optomechatronics technologies, which cover computer-aided design (CAD), computer-aided manufacturing (CAM), computer-aided testing (CAT), and CAE (computer-aided engineering), and other design technologies, ultraprecise processing and micro-scopic processing technologies measuring control technologies hardware and software computer technologies, and information and communications technologies, including optical transmission technology.

As reviewed above, the Greater Tama Region has a big group of premier factories and laboratories of Japan's representative manufacturers encompassing semiconductors/IC, electronic equipment, telecommunications equipment and transportation equipment. The existence of more than 20 universities with science and engineering faculties (nearly 90 if those with other departments are counted) adds to the region's outstanding accumulation of research and development efforts. Besides, there are many smaller businesses featuring basic techniques for processing, which are indispensable to manufacturing. These establishments form one of the most outstanding industrial congregations of research and development that has unsurpassed potential.

It is much to be regretted, however, that these enterprises and universities have gone their own way and have not been able to utilize each other's potential nor have the environment or mood for using such potential been engendered.

On the other hand, Japan is entering a new era of reform for future activities. Efforts are being made to build up a new socioeconomic system and improve the environment to induce vigorous economic activities which will inject vitality into that system. The creation of new industries in particular is one of the important tasks that should be tackled continuously for the future of Japan. This makes it important to build up the environment for the sustained development of new technologies and new products (for instance, making new frameworks to promote collaboration between enterprises and matching company needs with those of universities and laboratories).

Greater Tama Region Project

(1) Purpose and Significance of the Project

The Greater Tama Region is one of the biggest industrial conurbations in Japan. In the face of drastic changes

Representatives from various quarters concerned gather for the inaugural meeting of the TAMA Initiative on April 23, 1998

in the Japanese social and economic environment, this region is important to Japan and is expected to surge further ahead by adeptly coping with the changes. To this end, it is necessary to make adequate use of the potential of the Greater Tama Region and bolster its potential itself. In other words, efforts should be made to increase opportunities to create new industries by making effective use of existing management resources and the fruits of research and development, through mutual cooperation between efficient product-development-type smaller businesses with basic techniques and major businesses, universities and public research institutions, and also by providing a new framework to facilitate such efforts. This attempt at creating a new framework will not only lead to further industrial activation of the Greater Tama Region but also provide valuable suggestions in dealing with other integrated industrial regions. Its outcome is thought to be of great significance as it contributes to the invigoration of Japanese industry as a whole.

(2) Concrete Ways to Tackle the Project

From such a point of view, the Kanto Bureau of International Trade and Industry called on industries, universities and self-governing entities in the Greater Tama Region to form a partnership promotion council. A preparatory body for inaugurating such tieup machinery was inaugurated in September 1997 by 54 companies, universities, public research institutes, commerce and industry organizations and administrative organs which assented to the proposal. Its preparatory activities included fostering a mood among parties concerned to organize the forum and recruit prospective members.

In April 1998, a meeting was held to inaugurate the council with the participation of representatives from more than 300 small and medium-sized companies, universities, public research institutes, commerce and industry organizations, administrative organs and big companies linked closely with the region.

(3) About the TAMA Initiative

The council was named the "Technology Advanced Metropolitan Area (TAMA) Initiative," and it was decided that the conference be run under the initiative of its members as a private sector-led organization. The chairmanship was assumed by Professor Furukawa Yuji, director of the Tokyo Metropolitan University Center for Urban studies. Professor Furukawa is president of the Japan Society for Precision Engineering and a Japanese delegate to the International Steering Committee of the Intelligent Manufacturing Systems (IMS) program, an industry-academia-government international joint research program proposed by Japan in 1989. IMS has Japan, the United States, Canada, Australia, Switzerland and the EU as members. The TAMA Initiative, now with a membership of more than 410, is preparing to continue recruiting in the region.

The TAMA Initiative has as its top decision-making organ a "general meeting," as its executive organ the "Board of Trustees" and as its advisory organ, the "Board of Councilors." Under it there are various committees to promote individual projects, and, to administratively support them, there is the Secretariat and three branches under it. The Secretariat is located in the city of Hachioji, Tokyo.

The conference has as its immediate undertakings the "information network project," "event project," "international exchange project," "academia-industry project," "R&D promotion project" and "new venture creation support project." Introduced below are the individual projects.

The "information network project" builds an information and telecommunications system based on high technology. Through this system, the project promotes member companies' utilization of high technologies developed by science and engineering universities and product-development-type companies in the Greater Tama Region, speeds up business information exchange and business transactions among members and enterprises at home and abroad, and supports members' activities for securing capable human resources. A prototype of this system was structured and is now in operation.

Stored in the system is information about the favorite technologies, know-how, patents and products of member enterprises, and information on research results, patents held by universities and profiles of their professors and other staff. Operated and managed by an information center in the city of Sagamihara, Kanagawa Prefecture, the system offers information for retrieval by and transmission and reception among members. It also transmits various messages from the Secretariat to members.

TAMA Initiative has a management committee to propel information network operations, which designs concrete systems and develops software for information exchanges with parties at home and abroad, and the functional upgrading of hardware. The system is scheduled to go into operation shortly.

The "event project" is intended to increase business chances for members and participating companies by opening and exhibiting to the public products developed by product-development-type small and medium-sized companies, processing technologies held by basic-technology-type small and medium-sized enterprises, and a rich variety of technologies and patents held by major manufacturers' research divisions and universities.

In May this year, a "technological exchange exhibition" was held in Kawagoe City, Saitama Prefecture, with exhibits contributed by more than 70 major manufacturers, science and engineering universities, and small and medium-sized enterprises with advanced technologies in the Greater Tama Region.

More than 2,600 participants, including researchers from local enterprises, participated. The exhibition, which drew a far bigger turnout than expected, was the first event staged in a provincial area since the conference's creation. Participants voiced their hopes for increased interchanges between universities and enterprises that seldom get in touch with each other. They also hoped that the conference will continue to hold exhibitions of this kind in the future.

Patent Technology Fairs venue is crowded with visitors on February 19,1998

Technological Exchange Exhibition on May 22-23, 1998: Animated discussion took place at the venue between company executives and university scholars and students

Heretofore, "patent technology fairs" have been held to promote the utilization of unused patents and "regional animation forums" to conduct joint research between member enterprises and universities. Among the events planned for this year is a seminar for the conversion into business rights of research achievements born out of national laboratories and universities, and their management and operation.

The "international exchange project" has as its aim the promotion of intercompany cooperation and investment through interchanges between enterprises outside Japan and those in the Greater Tama Region. Under the project, the conference smoothes the way for such exchanges and sends and receives survey missions to support the objective.

At the preparatory stage, survey missions were dispatched to Silicon Valley, Calif. and the Greater Washington Region last November. In April this year, William M. Freeman, chairman of the board of directors of the Greater Washington Initiative (GWI) (a foundation jointly established by self-governing entities and enterprises in the Greater

William M. Freeman, Chairman of the board of directors of the Greater Washington Initiative, exchanges views with representatives of the TAMA Initiative

Washington Region to encourage regional businesses) visited Japan for an exchange of views and to speak at a lecture meeting.

In the current fiscal year, TAMA and GWI enterprises are preparing to stage exchange programs for mutual understanding. A delegation composed of representatives of core enterprises is to visit GWI on a promotional tour, during which time both parties will exchange opinions about information networks and industry-academia-government cooperation.

The "academia-industry project" is aimed at promoting collaboration and exchanges between enterprises and universities with a view to supporting product development among small and medium-sized enterprises. Staged or scheduled to be staged for the present under this program are an "academia-industry exchange meeting" that includes visits to university facilities and the introduction of research achievements, technological counseling and lectures by university professors, an "internship event" in which university students experience jobs at companies, and a "university liaison conference" to study the mechanism of technology transfer from university to industry.

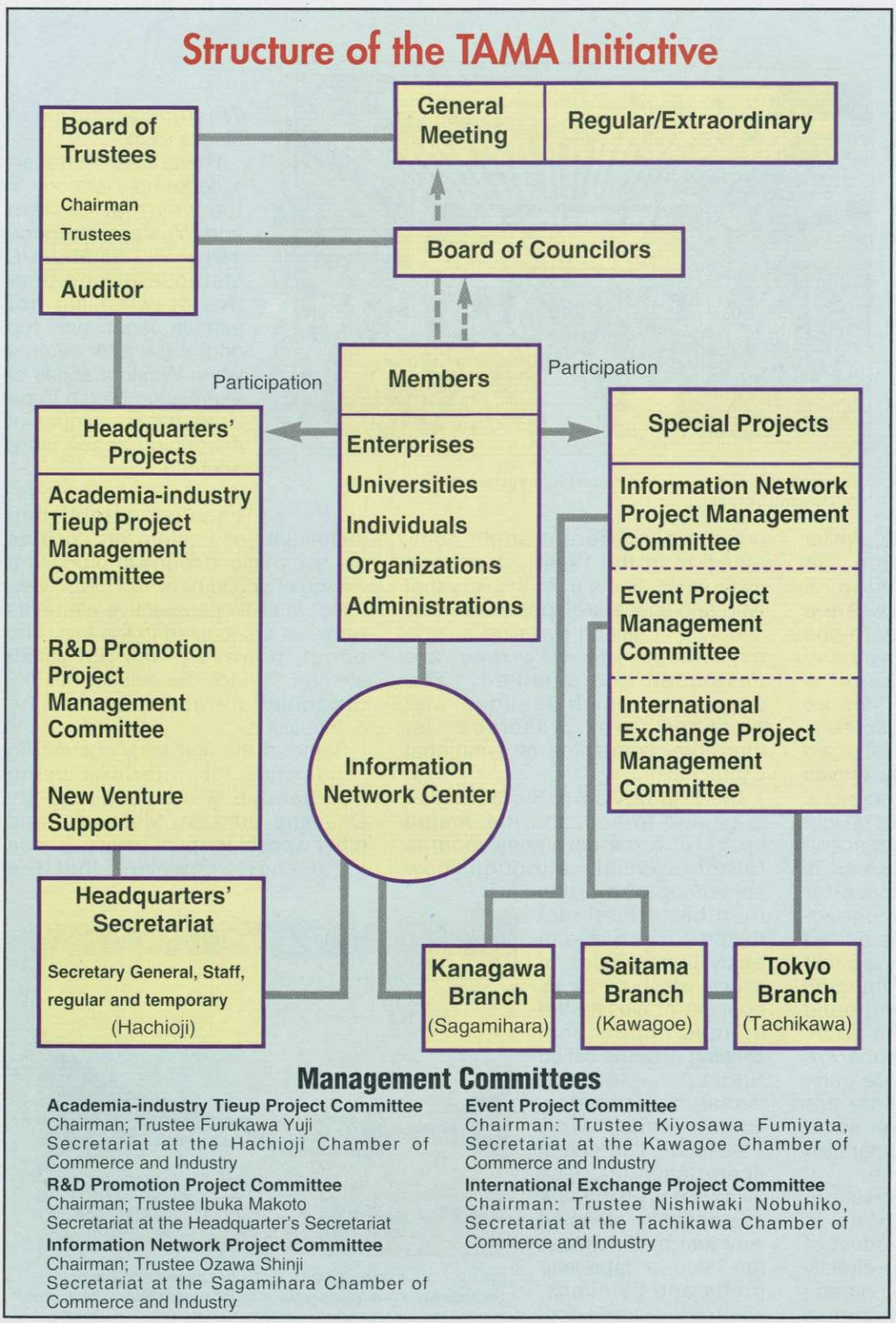
The "R&D promotion project" is designed to help universities, research institutes and private enterprises in the Greater Tama Region to conduct joint research and develop products for international markets. Studies are being made on the mechanism and themes of such joint research.

The "new venture support project" is an undertaking designed to help new companies resolve various problems in their incipient stage, such as the procurement of operating funds, product assessment, sales outlet expansion, technical cooperation and securing of human resources. To achieve this end, the conference organically deploys various management resources available in the Greater Tama Region. Concrete ways to support them in addressing start-up problems are being studied by certified accountants, licensed tax accountants and patent lawyers among conference members.

Expectations for the Greater Tama Region

The Greater Tama Region has the potential to nurture Japan's next-generation industry, but little has been done and there is even the danger that opportunities will be lost unless the environment for the effective utilization of regional resources is built up.

The Greater Tama Region activation project is designed to frame a system for the maximum use of regional resources and thereby develop the region into one of the world's most viable industrial regions to lead industry in the 21st century. The TAMA Initiative, a private sector core organ to drive this project ahead, has been playing a spectacular role since its establishment in April. In a short span of a few months, its membership has grown to more than 410 from 300 at the outset despite the recession plaguing the whole of Japan. This shows what big expectations are pinned on the conference. The project, however, is at its incipient stage



rather than well under way, with a host of problems awaiting solution. To accomplish its objectives, the conference must overcome a number of difficulties.

For all that, the region has a big advantage: there are many R&D-type and product-development-type enterprises, large, medium and small, and highly reliable parts processing and assembling enterprises that can respond to their needs, and many universities with science and engineering faculties.

There also exist a diversity of high technologies. Above all, the conference members and parties concerned are brimming over with passion and enthusiasm, the most important factors for such a painstaking project.

As diverse forms of tieups within the area and the spread of information overseas make progress, the Greater Tama Region stands a good chance of prospering as did Silicon Valley and Greater Washington. The presence of such a region is little known in Japan, but big expectations are pinned on it becoming a major integrated industrial zone that can play a pivotal part in the high-tech industry not only in Japan but also in the rest of the world.

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