

Chapter 4

Designing and Managing Supporting Industry Databases[†]

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1. Introduction

It is generally agreed that local procurement of parts and components benefits both FDI assemblers and local parts suppliers. With more locally sourced parts, FDI assemblers are able to reduce transportation cost associated with imports, while local suppliers can increase business volume and absorb up-to-date technology through business relations with FDI assemblers. Thus, promoting local procurement is a key to FDI-led industrial growth in developing countries.

However, in Vietnam, most FDI assemblers do not have sufficient information on where good Vietnamese parts suppliers are located, despite the fact that they desperately seek locally procured parts for cost competitiveness. Many Japanese firms use very primitive methods such as telephone directories and workers' personal connections to look for potential suppliers. This information gap impedes fruitful business cooperation between Vietnamese suppliers and FDI assemblers. To bridge this gap, establishment of a supporting industry database has long been requested by Japanese FDI assemblers. However, no significant progress has been made, in part because the Vietnamese side does not know the precise requirements of an effective supporting industry database.

This paper explores the desirable features of the supporting industry database and considers various issues in its operation. For this, existing databas-

[†] Research and surveys for this paper were conducted from July to August 2006, when the author was affiliated with the Vietnam Development Forum (VDF) and the National Graduate Institute for Policy Studies (GRIPS). He would like to thank the officials, experts and enterprise managers who provided valuable information.

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es in Japan, Malaysia, Thailand, and Vietnam have been examined. In particular, local officials and chambers of commerce of six Japanese cities which have successfully established supporting industry databases were visited and interviewed¹. Their experiences offer important lessons for Vietnam, not only for designing databases but also for operating and maintaining them. With proper design, operation, and maintenance, supporting industry databases can contribute to expanding business between FDI assemblers and local suppliers.

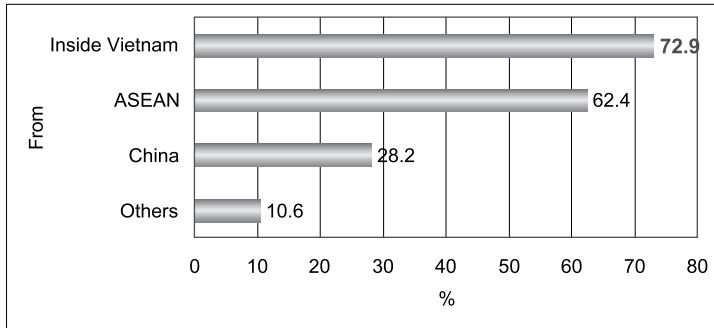
2. Why supporting industry databases are necessary

Rising demand for supporting industry databases is closely linked with the development of supply chain management (SCM). The idea of SCM has been practiced for a long time by advanced firms such as Toyota, but the concept became particularly popular in the 1990s. From the viewpoint of building SCM, as more parts are locally sourced, greater reductions can be made in logistics costs and production lead time. For this reason, FDI assemblers in East Asia began to make great efforts in increasing locally sourced parts. The average local procurement ratio of Japanese manufacturers in ASEAN4 (Malaysia, Thailand, Indonesia, Philippines) rose from 41.9% in 1998 to 51.8% in 2003. The same ratio in China also rose from 46.8% in 1998 to 55.9% in 2003 (Ministry of Economy, Trade and Industry [METI], 2006).

This trend is also observable in Vietnam. Although most FDI assemblers initially came to Vietnam for the low-wage and high-quality labor force, they are now trying to strengthen cost competitiveness by increasing local parts procurement. According to a JETRO survey in 2004, 72.9% of Japanese manufacturers in Vietnam said that they planned to increase local procurement of parts (Figure 1).

In Vietnam, however, FDI assemblers face serious difficulty in promoting parts localization. According to the same survey, the average ratio of local parts procurement in all manufacturing sectors remained at 22.6% at the

¹ These six cities are Sumida-ku (Tokyo Metropolitan Area), Kawasaki City and Sagami-hara City (Kanagawa Prefecture), Hamamatsu City (Shizuoka Prefecture), and Okaya City and Chino City (Nagano Prefecture). See Appendix A for the locations of these cities.

Figure 1. Procurement strategy of Japanese manufacturers in Vietnam

Source: Japan External Trade Organization (2005).

value base, which was much lower than in other ASEAN countries². The survey also pointed out the problem of insufficient product quality of local suppliers. However, a more fundamental problem in Vietnam seems to be the information gap described above, which impedes business interaction between FDI assemblers and local suppliers in the first place. One Japanese firm noted that it had to visit approximately 100 firms to find one good supplier (Vietnam Development Forum [VDF], 2006). Because this is too costly and time-consuming for private firms, FDI assemblers do not have sufficient incentives to replace parts import with local procurement. Thus, it is essential to establish an effective supporting industry database, which will reduce the cost of finding potential suppliers.

Development of the supporting industry database will shorten the process FDI assemblers must go through to select suppliers; the process consists of preliminary search, factory inspection, and sample evaluation. An effective supporting industry database can drastically reduce the time needed for preliminary search, in which company profiles, production facilities, quality level, and so forth, are reviewed. In addition, it can also reduce the time needed for factory inspection and sample evaluation, by allowing FDI assemblers to screen low potential suppliers and focus on only high potential suppliers.

² Local procurement of all Japanese manufacturing sector in 2004 was 47.9% in Thailand, 45.0% in Malaysia, 38.3% in Indonesia, and 28.3% in the Philippines.

3. Desirable characteristics of the database

The Vietnamese government and the Japanese government officially agreed on the importance of a supporting industry database in the Vietnam-Japan Joint Initiative Phase 1 (2003–2005), but such a database has not been constructed³. It is likely that the Vietnamese side does not have sufficient information on the difference between supporting industry databases and business directories.

In Vietnam, a number of yellow-page-type business directories already exist, operated by joint-stock companies, public organizations, and business associations. For example, Vietnam Yellow Pages⁴ is one of the most popular directories, which contains data of 60,000 companies. This directory offers free access through the Internet. Printed and CD-ROM versions are also available. The Vietnam Chamber of Commerce and Industry (VCCI) also manages the web-based Vietnam Business Directory⁵, which includes data of 20,000 firms. This is also available in printed and CD-ROM versions. Moreover, several business associations such as the Vietnam Saigon Plastic Association publish sectoral business directories.

These business directories may help FDI assemblers to find contact addresses of local suppliers by specific company names and main products. However, that is not enough for FDI assemblers to shorten the preliminary search period. For effective search, more details of local suppliers are needed. The main difference between supporting industry databases and business directories is the depth of firm-level data. Business directories tend to cover a large number of firms in many business sectors, but data of individual firms are basic and limited. In contrast, supporting industry databases cover a relatively small number of firms in a specified business sector, but they contain detailed data of each company. This will enable FDI assemblers to narrow down targeted suppliers based on suitable technology and production facility. In this way, FDI assemblers will not waste time by avoiding suppliers with no potential, and can

³ See MOFA (2003, p. xii).

⁴ Vietnam Yellow Pages: <http://www.yellowpages.com.vn/>

⁵ Vietnam Business Directory (VCCI): <http://www.vidc.com.vn/Default1.htm>

minimize the search cost of replacing imported parts by locally sourced parts, especially in the preliminary search.

The content of the supporting industry database should closely match the supplier selection criteria of FDI assemblers. In addition to main products, which are covered by most business directories, Japanese manufacturers usually choose suppliers by the following criteria: (i) general director's attitude, (ii) quality, (iii) cost, (iv) capability of on-time delivery, and (v) production scale⁶. As a prerequisite to starting a business partnership, FDI assemblers want to see the seriousness of the general director in improving his or her business. Several local suppliers that have successful relationship with Japanese firms say that Japanese firms helped them even if their initial ability was low, as long as the general director made a serious effort to meet the high requirements set by the Japanese side (VDF, 2006). After the seriousness of the general director is confirmed, the core criteria of supplier selection are quality, cost, and delivery (QCD). Furthermore, information on production scale is necessary to infer the maximum production capacity of suppliers.

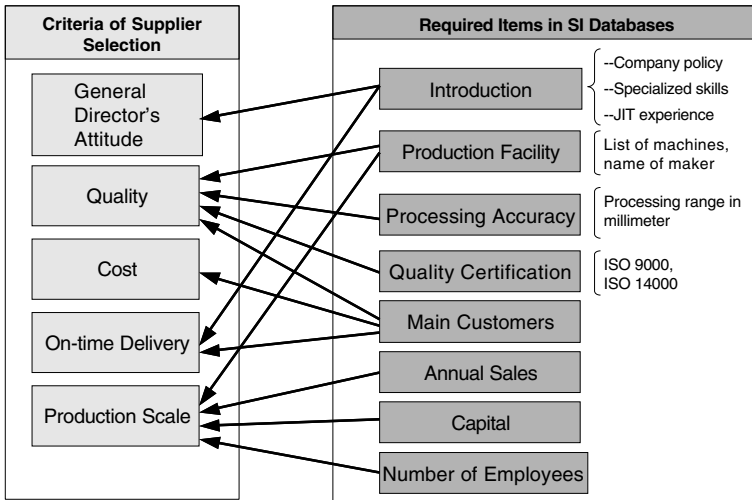
To satisfy these criteria, supporting industry databases should provide information on the above five items, either explicitly or implicitly, in addition to basic information such as company name, contact address and main products (Figure 2).

First, a well-written self-introduction can express the general director's sincere attitude. This is not a perfect indicator, however, because how well it is written depends on the drafter's ability. Nevertheless, it can still be useful in eliminating low potential suppliers who do not have ability to express their strength plainly. In addition, suppliers may indicate the experience of Just-In-Time delivery in this column, because there is no other way to quantitatively measure delivery accuracy.

Second, detailed information on production facilities (machine and equipment) will help FDI assemblers to infer the quality and scale of production. With a list of machines including manufacturers' names, FDI assemblers are able to guess the level of product quality. The number of machines can also

⁶ These criteria are identified through a large number of interviews the author conducted from 2004 to 2006. See VDF (2006).

Figure 2. Information required in supporting industry databases



tell the maximum production capacity.

Third, processing accuracy expressed in millimeters can be an indicator of product quality, in particular when FDI assemblers need high-precision products such as mold and die. Suppliers may also emphasize the high ability of engineers and technicians in this column, even if the factory has only relatively old machines.

Fourth, relevant quality certifications such as ISO 9000 and ISO 14000 are a good reference for general operation quality. They do not show capability in any specific technology, but they are still useful to screen out low potential suppliers.

Fifth, a list of main customers is an implicit indicator of QCD. If suppliers have consistent business relations with other FDI assemblers, there is high possibility that their QCD levels meet high requirements for competition. In addition, with such a list, FDI assemblers can exchange information on certain suppliers with each other.

Finally, information about annual sales, capital, and labor force is useful in measuring the production scale.

4. Supporting industry databases in Japan

Gathering detailed firm-level data is not easy. Even more advanced ASEAN countries, such as Malaysia and Thailand, have not succeeded in establishing a good supporting industry database. However, some Japanese localities operate high-quality supporting industry databases (see Appendix B for a list).

Japan has an agglomeration of highly competitive supporting industries, which consist mostly of small and medium enterprises (SMEs). Our research has confirmed that some Japanese local governments and local chambers of commerce (henceforth “local public organizations”) have well-designed supporting industry databases, which carry almost all of the information proposed in Section 2. These databases were established as a business matching tool between assemblers and suppliers. Since SMEs with excellent manufacturing skills are not necessarily good at public relations and marketing, local public organizations need to help them link with potential buyers.

Furthermore, in the 1980s and 1990s, many large Japanese assemblers transferred their manufacturing bases overseas, under the pressure of the sharp appreciation of Japanese yen after the Plaza Accord in 1985. Consequently, many SME suppliers which were located near large assemblers lost long-standing domestic customers. In order to revitalize these SMEs, local public organizations began to assist them to explore new business opportunities in other areas of Japan through supporting industry databases.

4.1. Okaya City database

For example, the municipal government of Okaya, which is a part of the Suwa Lake Region in Nagano Prefecture, created a high-quality supporting industry database⁷. Okaya has a concentration of various types of parts suppliers which receive a large volume of orders from Seiko Epson, Olympus, and Kyocera. There are approximately 700 to 800 SMEs in Okaya, of which 80% are small enterprises with four or fewer employees. Most have produced metal precision parts for cameras and watches, but some companies are gradually

⁷ Okaya City's Enterprise Database: <http://www.tech-okaya.jp/top.html>

shifting to the production of automobile parts⁸.

Okaya City's database contains very detailed information on each registered company (Appendix C). In the self-introduction column, firms can showcase their company policy and specialized skills. Potential buyers can assess product quality and production scale of registered companies from detailed lists of machines with makers, model names, and stock. The section for production processing technology states the range of processing accuracy in the unit of millimeters to show production quality. Another indicator of quality is the acquirement of quality certifications such as ISO, which is found in the column of international standards. Furthermore, potential buyers can evaluate the level of QCD from the list of main customers. Finally, production capacity can be inferred from capital and the number of employees.

Moreover, another feature of Okaya City's database is ease of search. Potential buyers can quickly narrow down the targeted group of suppliers by multiple choices, which include business category, business sector, and specialized skills.

4.2. Monozukuri-net

Another good database is Monozukuri-net, an inter-city project by four chambers of commerce in Hamamatsu City⁹ in Shizuoka Prefecture, Sagamihara City and Fujisawa City in Kanagawa Prefecture, and Ogaki City in Gifu Prefecture. Monozukuri-net was initiated by the Chamber of Commerce of Hamamatsu City, where Yamaha Motor Co., Ltd. and Suzuki Motor Co., Ltd. are located. In 2003, at the invitation of Hamamatsu, the Sagamihara Chamber of Commerce joined Monozukuri-net, and the Fujisawa Chamber of Commerce and the Ogaki Chamber of Commerce also joined in 2004. Member cities are expected to increase further in the future.

In addition to its sophisticated database design, this inter-city project has the mechanism of cost reduction and information sharing in managing the

⁸ One of the companies, Okaya Seiken Co., Ltd., which produces both automotive and electronics parts, has established a subsidiary in Ho Chi Minh City, with the name Okaya Vietnam Co., Ltd. See <http://www.okaya-seiken.co.jp/>

⁹ Monozukuri-net of Hamamatsu: <http://www.monozukuri.net/hamamatsu/>

databases. The Hamamatsu Chamber of Commerce is recovering initial investment cost by collecting monthly user fees from the other three cities. On the other hand, the other three chambers of commerce can save initial investment cost by participating in the existing database and paying relatively small monthly user fees. Moreover, by sharing inter-regional information, it is expected that inter-city business deals will increase, taking advantage of each city's comparative advantage.

5. Motivating SMEs to participate in the database

Many Japanese local public organizations have established sophisticated supporting industry databases with considerable effort. However, effective operation of databases is often more difficult than designing them. Japanese local public organizations have operated the databases by trial and error. The major common problem is that SMEs do not participate actively in the databases. A supporting industry database will not function well without proper operation and regular maintenance, no matter how elaborately it is designed.

In Japan, data registration is normally conducted as follows. First, the local public organization distributes registration forms to local SMEs by post. Local officials usually interact with SMEs through paper-based communication, because most SMEs are unfamiliar with information technology (IT). Second, SMEs fill in the form and send it back to the local public organization. Third, the local public organization checks the information filled in by local SMEs and key all the data into the database. Finally, for updating, some local public organizations issue passwords and ask registered firms to update the data by themselves through the Internet. Others periodically send registration forms to SMEs by post and ask them to report updated information.

In order to have an active database, it is essential to attract a sufficient number of registrants. However, not many SMEs send back registration forms, despite earnest requests from local public organizations. For example, one public organization in Japan reported that they sent out registration forms to about 1,000 firms, but only eight responded. Small enterprises with ten employees or less often do not reply because they lack time and human resources to fill in the form. In addition, most SMEs are unfamiliar with IT and do not recognize the

benefit of registering with a web-based database. Similar problems also occur in the data updating process. SMEs often do not update information such as new investment in the production facility. Even though a password is issued for self-updating through the Internet, few SMEs revise company data by themselves.

To resolve these problems, local public organizations with successful databases have utilized three measures: (i) designing the database in public-private partnership, (ii) conducting intensive company visits, and (iii) providing business matching services. Each is explained in detail below.

5.1. Designing the database in public-private partnership

Most local public organizations design supporting industry databases in cooperation with local IT venture firms specializing in web services. However, if targeted SMEs are also involved in designing the database, they will be more willing to participate in it. For example, Chino City in Nagano Prefecture designed the database called *Monozukuri-net Chino*¹⁰ in public-private partnership. The municipal government of Chino organized a database committee, which consisted of local government officials, representatives from the SME business association, and a professor of Suwa Tokyo University of Science. This partnership obliged SMEs to participate actively in the database. As a result, about 80% of local manufacturing firms in Chino City have participated in the database from the very beginning. This registration ratio is extremely high in comparison to those of other cities. Another reason for the high registration ratio may be that SMEs in Chino City are medium-size firms with 100–200 employees rather than micro or small firms.

In addition, public-private partnership can make the database format more user-friendly, which promotes participation of SMEs in the database. For further development, it will be beneficial to involve targeted buyers in the designing process. In the case of Vietnam, such buyers are mainly FDI assemblers. Listening to their opinions will also improve the database design, which will contribute to business expansion between FDI firms and local suppliers.

¹⁰ Monozukuri-net Chino: <http://kougyou.chinoshi.jp/>

5.2. Intensive company visits

The supporting industry database is a sophisticated IT product, but its operation requires labor-intensive, face-to-face service. Local public organizations which achieve high registration ratios of local SMEs often employ senior experts with experiences working in manufacturing firms as managers or engineers. These senior experts visit SMEs one by one to help them fill in registration forms, and at the same time they provide technical or managerial advice for these SMEs. Similarly, one local public organization combines database creation with IT training service. When IT instructors visit SMEs for employee training, they also teach how to fill in the registration form and explain the benefits of participating in the database.

Intensive company visits may take several years before they succeed. In the meantime, great patience is required from database builders. For example, the municipal government of Okaya started to gather detailed firm data in 2003. It mailed out registration forms to about 800 firms, but only 116 firms replied. To increase registration, two senior experts were hired by the municipal government to visit local firms one by one and gather the required data. After three years of continued effort, they had collected data from 600 firms, or 75% of all firms in Okaya City.

Intensive company visits also strengthen mutual trust between SMEs and local public organizations through face-to-face interaction. Trust is an important factor to increase SMEs' participation in the database. One local public organization stated that SMEs often hesitated to disclose company data because they did not know how local public organizations would use it. Another organization reported that some SMEs did not want to submit data to a private survey company which had a contract with the local authority. Therefore, intensive company visits with face-to-face conversation can reduce SMEs' psychological barriers to participate in the database. Another point is that local public organizations can ensure the credibility of database information because experts can check consistency between submitted data and actual conditions of the factory and machines in company visits.

5.3. Providing business matching services

Business matching services, which provide more business activities

for SMEs, can attract more companies to participate in the supporting industry database. In order to execute these services, it is necessary to establish a service window at the local public organization, which receive inquires from buyers and recommends suitable local suppliers.

Buyers may directly contact suppliers if they are large firms with a competent procurement team or if they have already found very specific information in the database. On the other hand, if buyers are small and need more information or recommendation from local public organizations, or if they cannot get sufficient information from the database, a service window will play an important role in linking buyers with potential suppliers. For example, the Sumida SME Center in Tokyo has a supplier discovery service which is operated by senior experts in management and engineering¹¹. At buyers' requests, they search databases, select several suppliers as candidates, telephone them to see if they are interested in new business, and send the short list of potential firms to the buyers. Other databases such as Okaya City's database and Monozukuri-net also have similar business matching services.

6. Issues surrounding performance indicators

The rest of this paper examines three issues related to the management of supporting industry databases: (i) performance indicators, (ii) choice between national and local databases, and (iii) disclosure versus confidentiality of company data.

In addition to the three supplementary activities explained in the previous section, statistical evidence of expanded business opportunities provides an important incentive for SMEs to participate in the databases. However, few Japanese local public organizations accurately grasp the increase of business volume due to the existence of a database. For one thing, most of the databases were established after 2000 and have not yet reached the evaluation stage. More importantly, however, there is no established methodology to measure the impact of databases. Local public organizations often count indirect inquires, in

¹¹ Sumida Enterprise Guide: <http://www.techno-city.sumida.tokyo.jp/sumida/index.htm>

which buyers ask for the recommendation of suitable suppliers through service windows. However, they do not have information on the increase of direct inquires, in which buyers contact local SMEs directly after looking at the database. For example, the Sumida SME Center received 130 indirect inquires in 2006, of which 40 led to actual business, but they do not have a systematic way to count the number and results of direct inquires. Ironically, direct inquires are likely to increase as the database becomes more sophisticated and user-friendly. If buyers can find sufficient information in the database, they do not need additional support from local public organizations.

Performance indicators are also necessary for local public organizations to prove the usefulness of the database and secure the budget for its operation. In fact, some local public organizations are facing difficulty in obtaining additional budget to hire experts for intensive company visits because they cannot produce clear evidence of effectiveness. As a result, registration of targeted companies may remain low despite the fact that the database is constructed in a sophisticated way.

Ideally, this problem will be solved if there is a mechanism in which SMEs periodically report the number of all incoming business inquiries and the amount of actual business increase thanks to the database. Also, several local public organizations plan to conduct surveys on the performance of the database. But gathering of precise data on a continuous basis may be costly and time-consuming to both SMEs and local public organizations.

7. National versus local databases

Some argue that the national government should establish a nationwide supporting industry database because standardizing the format improves operation efficiency. However, in general and in light of the Japanese experience, local public organizations are in a better position than the national government to operate databases efficiently.

First, it is unnecessary and even undesirable to completely standardize the database across all areas in the country. Instead, database format should be customized to reflect regional features and priorities. In addition, inter-regional competition for providing good database service is healthy and can

improve the quality of databases.

Second, database size will become unmanageable at the national level. A nationwide database would require operators to control an immense volume of company data. Practically speaking, it is impossible to visit and gather detailed data from a very large number of firms. In Japan, where 489,115 SMEs exist in the manufacturing sector¹², no successful supporting industry database has been constructed at the national level. Although Vietnam has a much smaller number of manufacturing firms, it would be equally difficult to compile a nationwide database because of the undeveloped data collecting system¹³. In contrast, at the local level, registrants of a database are limited to those in relatively small administrative areas. This is why successful databases in Japan are operated by city- or ward-level public organizations¹⁴.

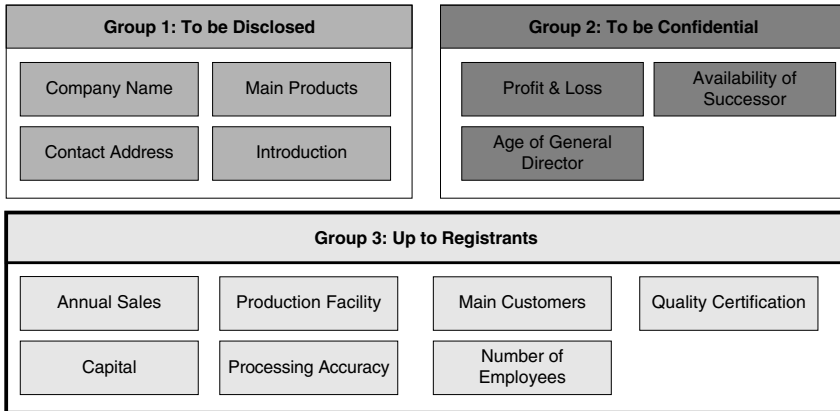
The proper role of the national government is to indirectly facilitate the development of local-level databases in each region. First, the national government can set the guidelines for minimum data requirements or provide subsidies and technical assistance to reduce entry or maintenance cost of databases. Second, it would be beneficial if the national government initiated a pilot project to develop a model database, as local public organizations often lack sufficient administrative capacity. In such a database, the targeted sector should be narrow and the number of firms to be included should be kept small to match the operation capacity of most local public organizations. At the initial stage, the database may contain very detailed data of a very small number of firms, say 10 to 20. In this regard, one good example in Vietnam is the business matching program organized by the Technical Assistance Center (TAC), which belongs to the Agency for SME Development (ASMED) under the Ministry of

¹² Data for 2004 as cited in Small and Medium Enterprise Agency (2006). In Japan, an SME is defined as a company with a capital of less than JPY300 million (about US\$2.6 million) or whose employees are fewer than 300.

¹³ According to the General Statistics Office (GSO, 2006), 20,531 manufacturing firms operate nationwide. Decree 90/2001/ND-CP defines that an SME is a company with a capital of less than VND10 billion (about US\$0.6 million) or whose employees are fewer than 300. With this definition, 76.1% of Vietnam's manufacturing firms are SMEs. However, almost all firms in Vietnam are considered as SMEs by the Japanese standard. For example, in 2003, about 90% of the firms had capital of less than VND50 billion (about US\$3 million) according to GSO (2005).

¹⁴ The ward (*ku*) is an administrative unit within a large city such as Tokyo, Yokohama, and Osaka, corresponding to *quan* in Vietnam.

Figure 3. Information categories in Japanese databases



Planning and Investment (MPI). This program has collected relatively detailed information on ten high-potential suppliers in selected sectors, and distributed the list to Japanese assemblers through the Japan Business Association. Ideally, interested provincial governments should learn database methodology from this pilot project and initiate their own databases, which also include unique regional features.

8. Disclosure versus confidentiality of company information

In principle, firms are not obliged to disclose *all* company information in the supporting industry database; participation in databases is voluntary. Firms should have the right to selectively provide information that can be published. In Japan, registration forms usually consist of three groups of information: (i) information that must be disclosed for all firms, (ii) information that must remain confidential for all firms, and (iii) information whose status can be chosen by individual registrants (Figure 3).

The first category of information usually contains company name, contact address, main products, and self-introduction. The second category of information includes profit and loss, age of general director, and availability of successor. It is not posted in the database but is used as confidential inputs for policy formulation.

The third category of information constitutes the core of the supporting industry database. It includes many items directly related to the supplier selection criteria explained above (Figure 2), such as annual sales, capital size, production facility, processing accuracy, main customers, number of employees, and quality certifications. Although these data are less sensitive than those in the second group, it is appropriate to allow registered companies to decide which information is to be disclosed and which information is to be confidential. If database operators require firms to disclose all data in the third group, some of them may opt out of the database altogether. For example, one Japanese local public organization asked firms to choose whether to disclose or hide all data in this category without permitting them to select item-by-item. As a result, more than half of the registered firms decided to keep all the data secret.

Although allowing companies choices about disclosure is important, the database will not function well if firms withhold too many items in the third group. Without disclosing them, a supporting industry database becomes a business directory. To avoid this situation, database operators should patiently persuade firms to disclose these data. In Okaya City, only 520 firms agreed to fully disclose their data in the database among the 600 firms that submitted data. The remaining 80 firms filled in all required information in the registration form, but did not want to show it in the web. Some of them are afraid that the web-based database may allow anyone, even unwelcome people or companies, to access company information freely. For example, several firms in Okaya City expressed their concern that releasing company information would increase junk mail and random sales calls rather than serious business inquiries. The municipal government of Okaya is now trying to convince them that the benefits of disclosing information should outweigh the demerits. Another solution may be to limit database access to selected potential buyers screened in advance by database operators, until the time when registered firms fully recognize the benefits of data disclosure. In Vietnam, this may be an option in particular for pilot projects, but such screening will inevitably increase the administrative load of database operators.

9. Concluding remarks

Several years ago, few FDI assemblers were interested in increasing local procurement in Vietnam because most of them were busy stabilizing their daily operations. In the initial stage of operation, FDI assemblers have to depend on imported parts. However, an increasing number of FDI assemblers are now eager to move local procurement to the next stage, in which they must improve cost competitiveness for survival. Vietnam's integration into the global and regional free-trade systems such as World Trade Organization (WTO) and ASEAN Free Trade Area (AFTA) also accelerates this movement, because FDI assemblers, even when they mainly target the domestic market, must compete with imports after tariff protection is removed.

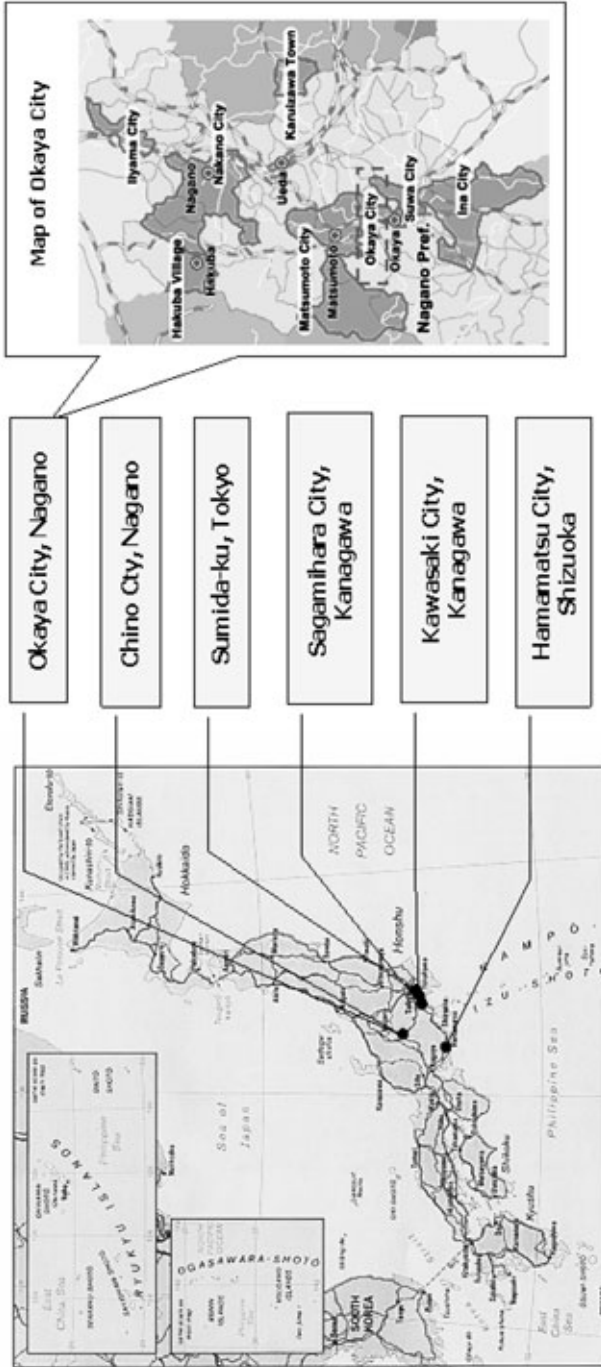
In order to catch this wave of local procurement, effective supporting industry databases are urgently required. Databases will assist FDI assemblers to increase local procurement and allow local suppliers to establish business relations with FDI assemblers. Some are concerned that, because FDI assemblers will trade only with FDI suppliers, local suppliers will not be able to expand business even if supporting industry databases are constructed. However, this view is myopic and unwarranted. Although FDI assemblers buy parts mainly from FDI suppliers at first, they will gradually be forced to seek local suppliers if they hope to reduce procurement cost. Moreover, parts industries are multi-layered, and FDI suppliers also need to buy parts from local suppliers. Supporting industry databases can increase business not only between FDI assemblers and local suppliers but also between FDI suppliers and local suppliers. For these reasons, supporting industry databases are a necessary lubricant in promoting the strategy of FDI-led industrial development as well as providing benefits to local firms.

References

General Statistics Office (GSO). (2005). *The real situation of enterprises: Through the results of surveys conducted in 2002, 2003, 2004*. Hanoi: Statistical Publishing House.

- _____. (2006). *Statistical yearbook of Vietnam*. Hanoi: Statistical Publishing House.
- Japan External Trade Organization (JETRO). (2005). *Japanese-affiliated manufacturers in Asia (ASEAN and India): Survey 2004*. Tokyo: JETRO.
- Vietnam Development Forum (VDF). (June 2006). Supporting industries in Vietnam: From the perspective of Japanese manufacturing firms, VDF Policy Note No. 2. Tokyo: VDF.
- Ministry of Foreign Affairs (MOFA). (2003). *The report of Vietnam-Japan joint initiative to improve business environment with a view to strengthen Vietnam's competitiveness*. Tokyo: MOFA.
- Ministry of Economy, Trade and Industry (METI). (2006). *Dai 34 kai kaigai jigyou katsudou kihon chousa kekka gaiyou: 2003 nendo jisseeki (The 34th survey on overseas business activities: Actual results in 2003)*. Tokyo: METI.
- Small and Medium Enterprise Agency. (2006). *Chuushoukigyou hakusho 2006 nenban (White paper on small and medium enterprises in Japan)*. Tokyo: Gyosei.

Appendix A
Six Cities Visited by the Author, Map of Okayama City and Vicinity



Appendix B Comparison of Supporting Industry Databases in Japan, Malaysia, Thailand, and Vietnam

Country	No.	Administrator	Name	Registered Firm	Registered Information										
					Contact Address	Year of Foundation	Capital	Annual Sales	No. of Employees	Introduction	Main Product	Main Customers	Production Facility	ISO	
Japan	1	Segamihara Chamber of Commerce	Monozukuri-net	98	○	○	○	○	○	○	○	○	○	○	○
	2	Fujisawa Chamber of Commerce		54	○	○	○	○	○	○	○	○	○	○	○
	3	Hamamatsu Chamber of Commerce		194	○	○	○	○	○	○	○	○	○	○	○
	4	Ogaki Chamber of Commerce		31	○	○	○	○	○	○	○	○	○	○	○
	5	Techno Plaza Okaya	Okaya-city Enterprise Database	600	○	○	○	○	○	○	○	○	○	○	○
	6	Kawasaki-city Industrial Development Foundation	Kawasaki Database	1,300	○	○	○	○	○	○	○	○	○	○	○
	7	Sumida SME Center	Enterprise Database	2,500	○	○	○	○	○	○	○	○	○	○	○
	8	Ota-ku Industrial Development Association	OTA-TECH.NET	?	○	○	○	○	○	○	○	○	○	○	○
	9	Chino-city	Monozukuri-net Chino	about 400	○	○	○	○	○	○	○	○	○	○	○
	10	Suwa-city	Suwa-city Industry Guide	?	○	○	○	○	○	○	○	○	○	○	○
Vietnam	1	Yellow Pages JSC	Vietnam Yellow Pages	60,000	○	○	○	○	○	○	○	○	○	○	○
	2	VCCI	Vietnam Business Directory	20,000	○	○	○	○	○	○	○	○	○	○	○
Others	1	BOI, Thailand	ASEAN Supporting Industry Database	?	○	○	○	○	○	○	○	○	○	○	○
	3	SMIDEC, Malaysia	Enterprise 50	?	○	○	○	○	○	○	○	○	○	○	○

Appendix C

Sample Company Data of Okaya City's Enterprise Database

Company Name	xxxxxxxxxx			
Company Policy	1. To improve working environment by combining wisdoms of all the employees. 2. To improve the ability and to bring out the full potential all the time.			
Address	xxxxxx			
Name of Representative	xxxxxx			
Tel	xxxxxx			
FAX				
e-mail	xxxxxx			
Company URL	xxxxxx			
No of employeess	50 employees			
Year of Foundation	1961/3/1			
Capital	¥25,000,000			
Domestic Branch				
Overseas Branch				
Business Category	Metal Processing Industry			
Business Sector	Camera, Automobile, medical devices			
Main Product	Mold & die for metal precision parts of camera and electronics goods, jigs, cutting tools			
Main Customers	Koshina, Sanko Manufacturing, Kyosera, HOYA-SCHOTT			
Receiving CAD Format	DXF	MI	IGES	
Using CAD/CAM Software	JAPT	2MR	2MX	
International Standard (ISO,etc.)				

Mode of Receiving Orders
Finished Products, Parts Processing

Production and Processing Technology				
Processing Technology	Specialized Skills	Range of Processing		
		Maximum	Minimum	Accuracy
Wire Cut	Material which is very difficult to cut	W520 D370 H320		1/1000
Wire Cut	Super-fine Processing			
Wire Cut	Short Lead-time			
Others	Material which is very difficult to cut			
Others	Super-fine Processing			
Others	Short Lead-time			
Others	Low Cost			

Handling Material			
Casting Iron	Iron	Stainless	Copper, Alloyed Metal
Aluminum Alloy	Magnesium alloy	Lead Alloy	Tungsten, Molybdenum Alloy
Nickel Alloy	Others		

Main Production and Processing Facility				
Name of Machinery or Facility	Model Number	Maker	Unit	Remarks
Wire Cut Machine	U53K, etc.	Makino, Soddec, etc	33	Short lead time processing, irrespective of material
Electric Discharging Machine	M35C5, etc	Mitsubishi Electric	3	
Machining Center	V-M II	Roku-roku 3	General	Usage
Milling Machines	VHR-AF, etc	Shizuoka Tekko, etc.	0	
Lathe Machine		Takizawa, etc.	3	General usage
Flat-surface grinding machine	GS-BM II	Kuroda Seiko	6	
Jig grinding machine	3SB	Mitsui Seiki	1	
Super-hard Tool Grinder	T-CTG4	Tsugami	1	
Power Press	HISG-35, etc.	Endo Press	30	
Tupper	BTO-263	Brother	Industry	10
Precise and Small Drill Unit	AFI-III	„	4	
High Spin	BRI-103	„	13	
Leveler	RP5-151	„	2	
Sheet Metal Processing Facility	SGAC, etc.	Amada	1	
Shirring	AAA, etc.	Aizawa Tekkojo, etc.	5	
Barrel finishing machine			5	Combination, Rolling, Vibration

Main CAD/CAM Facility				
Facility, Machine Name	Model Number	Maker	Unit	Remarks
CAD/CAM	2MR/X	Y.J.S	6	
„	EAPT	Fanac	1	

Main Measuring Device				
Facility, Machine Name	Model Number	Maker	Unit	Remarks
Hardness Gauge	MVK-HI	Akashi	1	
Projector	PV-5000	Mitsutoyo	7	Twenty fold
Microscope	TM	„	5	
Pinch age	EP-2A	„	5	0.50-6.00

Note: Confidential information is blocked out with xxx.

Source: Okaya City's Enterprise Database, available at <http://www.tech-okaya.jp/top.html>, as translated by the author.