

# **Optimum Procurement Strategy**

Determinants of Parts Localization under Regional Linkage and Competition\*

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**Junichi Mori**

Fletcher School, Tufts University

**Kenichi Ohno**

Vietnam Development Forum

National Graduate Institute for Policy Studies

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## **Abstract**

Parts localization is one of the crucial elements in the business strategy of multinational corporations. Japanese manufacturing firms operating in Vietnam are studied closely. To remain competitive under globalization and regional competition, the best parts from any location in the world, especially East Asia, must be wisely combined rather than aiming at 100% localization. Optimum procurement needs to balance conflicting targets including conformity to original design, cost reduction, and short lead-time in production. The key variables to determine whether to localize or import are bulkiness and specificity of the part in question. Firms selling domestically have a more urgent desire to localize parts than firms which mainly export. Nevertheless, exporting firms also have an incentive to localize plastic and metal parts and basic production processes. While these parts and processes may seem low-tech, they are actually not. These are also the kind of supporting industries that FDI firms desire most, but no ASEAN countries can at present supply them adequately. To promote supporting industries, Vietnam should fully understand and strongly respond to the requirements of foreign manufacturers.

## 1. Introduction

There is a broad consensus that the development of supporting industries—industries that produce inputs for final or intermediate assemblers—is important for the industrialization of Vietnam. However, 100% localization should not be the goal of industrial policy. Under global integration, no country should try to produce everything domestically in a vertically integrated fashion as if the economy were closed. To survive and win international competition, the best inputs from all over the world, including those from Vietnam, must be wisely combined under appropriate technology, management and marketing.

The crucial questions we must ask are: *what should be localized and what should be imported in each case* and *what factors determine it?* In pursuing an ever-higher ratio of localization, policy makers sometimes forget that competitiveness is the primary objective of any business enterprise, not the localization ratio per se. The targeted ratio of localization, if it is to become a part of industrial policy, must be realistic in the sense that good combined effort of business enterprises and the host country should be able to achieve it.

The strategy for promoting local supporting industries must therefore be based on a full understanding of the procurement requirements of multinational corporations (MNCs) which are competing fiercely in the global market. Over-localization will not only undermine the competitiveness of the existing producers in Vietnam but also discourage further FDI inflows. Forced and unnatural localization may even cause existing foreign manufacturers to exit the host country.

This paper examines optimum procurement strategy with special attention on Japanese electronics firms operating in Vietnam. In the following section, the concept, determinants and decision-making process of procurement strategy are explored. In Section 3, the procurement patterns of MNCs which target domestic and export markets, respectively, are shown with concrete examples. Section 4 argues that supporting industries that produce plastic and metal parts or perform basic processes like molding, casting and pressing are particularly needed to accelerate industrialization in Vietnam. Section 5 is a conclusion.

## **2. Optimum Procurement Strategy**

### **2.1 The concept**

Optimum procurement strategy refers to an enterprise's decision to purchase various physical inputs—raw and processed materials, parts and components, packing materials, and so on—from the most suitable suppliers at home or abroad to enhance competitiveness<sup>1</sup>. As such, it is a part of the entire business strategy of any MNC. An appropriate combination of localization and imports is essential for improving the product quality and reducing the parts and logistics cost.

As an example of an integrated decision-making, take the case of a foreign firm contemplating investment in Vietnam. The firm will deliberate on the relative merits of building a factory in Vietnam rather than elsewhere with regards to wage, labor productivity, infrastructure services, policy and legal environment, market size, political stability, and so on. In this deliberation, whether the firm can realize a desired procurement pattern in Vietnam is certainly one of the most critical factors in deciding to invest. If a country other than Vietnam is chosen as an investment destination, the question of optimum procurement strategy will become no longer relevant, at least for Vietnam.

Localization can take place in three different procurement patterns which bear entirely different implications for raising domestic capability. In the ascending order of required domestic capability, they are as follows:

- (1) Internal production within the assembler's factory
- (2) Purchasing from FDI manufacturers operating in the host country
- (3) Purchasing from local manufacturers

Depending on which modality is dominant, the same ratio of localization may be associated

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<sup>1</sup> In this study, we do not take into consideration such factors of production as labor, land, capital as well as productive services like transportation, insurance, electricity, water, housing and so forth. In other words, we focus only on those inputs which materially go into the product.

with quite different levels of technical competence by local firms. From the viewpoint of industrialization of the host country, the third type of localization is most desirable (but more demanding) followed by the second type, provided that FDI parts producers are willing to disseminate skills and technology through training, delegation of authority, and the localization of various activities related to production. By contrast, the first type is practiced when the assembler has just arrived without adequate knowledge of potential local suppliers or when local capability is so low that suitable suppliers cannot be found.

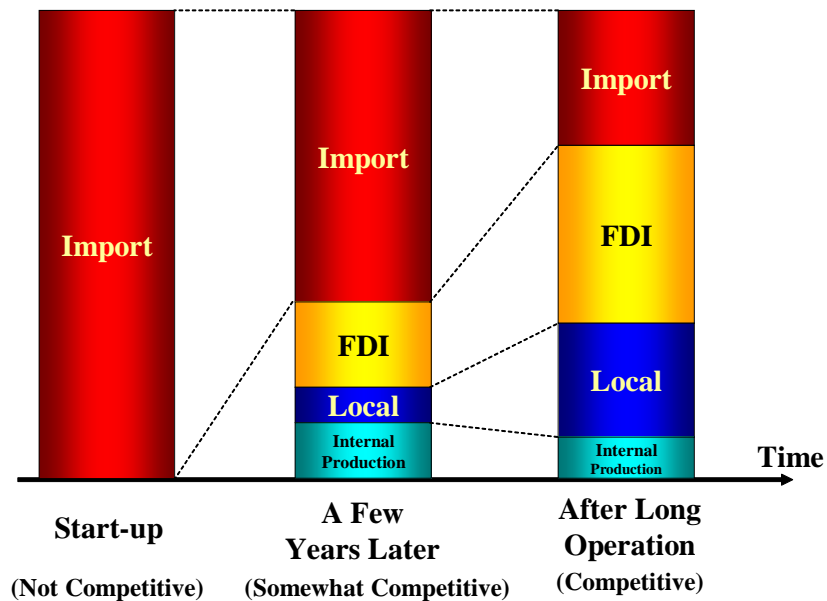
Another important distinction is between *short-term* (or *actual*) localization and *long-term* (or *ideal*) localization. The dividing line between the two situations is whether the FDI assembler has had enough time to realize the highest competitiveness in the host country given the capability of domestic parts producers. Normally, it takes a substantial amount of time for FDI firms to find (or foster) a large number of competent domestic suppliers or invite enough foreign parts makers. In addition, ideal parts procurement can hardly be realized unless the production scale reaches an efficient level. Until that time, which typically requires several years, the localization ratio remains below what is desired. Figure 1 depicts this time aspect of localization in a schematic fashion.

Even in a country where incoming FDI has continued for a long time and significant industrial agglomeration has been realized, so that actual localization has converged to the ideal level, 100% localization is rarely seen. For instance, in the case of the Thai automobile industry which boasts the largest agglomeration of that industry in ASEAN, roughly 30% of parts are still imported while the remaining 70% are domestically produced. Of this domestic procurement, about 45% are supplied by FDI firms and about 25% are produced by local firms<sup>2</sup>. Similarly, the ASEAN countries in general, and Thailand and Malaysia with substantial electronics agglomeration in particular, continue to import virtually all raw materials used by their electronics parts producers.

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<sup>2</sup> Information provided by the Nomura Research Institute in August 2004 based on its recent survey in the ASEAN countries.

**Figure 1**  
**From Short-term to Long-term Procurement**  
**A Hypothetical Illustration**



## 2.2 Factors determining localization

Other than the time element mentioned above, there are three main factors that determine the extent of *long-term* or *ideal* localization: (i) part characteristics, (ii) domestic capability, and (iii) business strategy of each MNC.

The characteristics of the part have a significant effect on whether it should be locally procured or imported. Among many characteristics, perhaps the most important is whether it is bulky or compact. For example, automobile seats or the plastic casing of printers are quite large relative to the value. Since importing and transporting such items is too costly, they are invariably produced near assembly plants. Another factor is whether the part is common across products

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<sup>3</sup> Information provided by the Nomura Research Institute in August 2004 based on its recent survey in the ASEAN countries.

and countries or it is made for a particular product only. Computer memory chips are both globally common and easy to trade, but the parts and components for Japanese motorbikes are not.

Second, domestic capability to produce the part in desired quality, stable quantity and specified time obviously affects the procurement decision. Domestic supply may be provided by either FDI or local firms. In the former case, the crucial question is whether a sufficiently large number of FDI parts suppliers have come to the host country. In the latter case, the question is usually whether the technology and production management of local firms are up to the standard required by foreign assemblers. There is often a significant gap between the self-assessment of local producers and the evaluation of foreign buyers regarding the quality of locally produced parts.

Third, even within the same industry, the business strategy of each MNC influences their procurement behavior. It is known that Japanese and Chinese manufacturers have different business architectures: the former are usually *integral* (use only order-made parts) while the latter are highly *modular* (purchase common parts available in the market). Even among Japanese electronics firms, Sony and Matsushita, for example, have different business scopes and cultures. All these factors affect the way a firm builds up its international production network in general and the way it procure parts locally in particular.

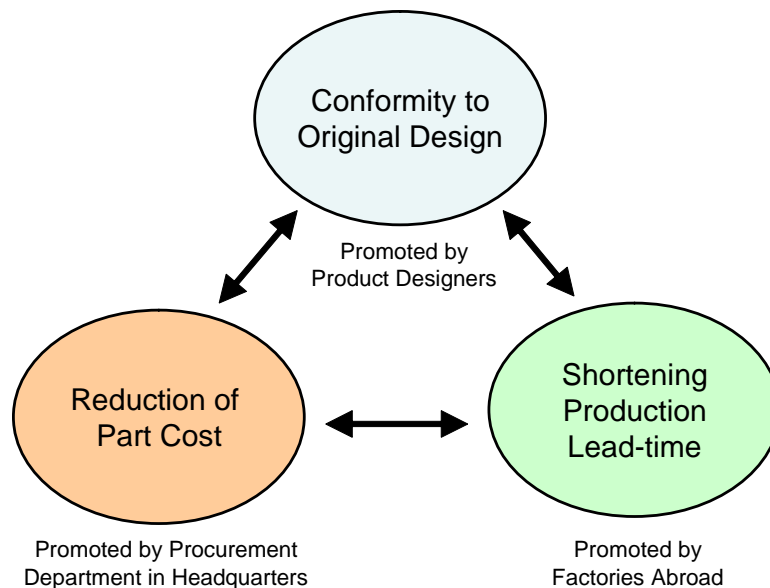
### **2.3 Decision-Making Process of Japanese MNCs**

Furthermore, even within one corporation, alternative views on how to procure necessary parts and materials may co-exist and compete with one another. To produce an effective procurement strategy, they must be coordinated internally. Let us look at the case of a typical Japanese electronics MNC. In general, the decision-making process of Japanese MNCs is more centralized in comparison with MNCs of other nationalities.

The percentages of imports, internal production, and localization are determined by balancing the conflicting targets of individual decision-makers within an MNC. In a Japanese MNC, there are normally three decision-makers—(i) product designers in the headquarters, (ii) the

procurement department in the headquarters, and (iii) manufacturing factories abroad. While all three share the ultimate goal of supplying high-quality products and expanding the market share, they propose different intermediate targets reflecting their primary functions. Product designers are mainly concerned about the conformity to original design. The procurement department in the headquarters presses for the reduction of parts cost. Meanwhile, the general directors of overseas factories often place emphasis on achieving the minimum lead-time in production.

**Figure 2**  
**Coordination among Conflicting Procurement Demands**



If product designers and the procurement department in the headquarters dominate in shaping the overall strategy of parts procurement, the result may not be optimal. Due to the communication problem, the headquarters often do not fully understand the specific requirements in each country in detail even if they frequently visit that country. Meanwhile, the product designer may be too conservative regarding innovation in procurement—they are prejudiced against the quality of locally supplied parts and excessively favor those supplied by existing foreign parts vendors. The procurement department may also be biased toward scale merit gained by consolidating part production sites. This tends to lengthen the lead-time for



manufacturing factories which are forced to import a large amount of parts.

Alternatively, there can be internal joint decision-making where the manufacturing factories abroad take the initiative in part procurement, while product designers and the procurement department in the headquarters reserve the right to approve their decisions. In this case, the three parties can more easily find a compromise among design conformity, cost reduction through scale merit and quick lead-time. As the operation of a new factory rises to a high and stable level and domestic supporting industries emerge to supply necessary parts for localization, Japanese MNCs may be able to adopt this decision-making process. This factory-led decision making is more decentralized than the traditional headquarters-led one.

There is also another possibility in which designers are near or inside the manufacturing factories. In this case, the factories can also play a major role in determining the part procurement strategy, although the headquarters may still instruct them to maximize scale merit through the integration of parts suppliers. If highly-skilled designers and an effective procurement department of the factory are combined to take full advantage of local supporting industries, an optimum procurement pattern may be achieved. For this reason, many Japanese manufacturers in Vietnam are striving to establish an optimum procurement strategy based on the close collaboration among the three parties within a company.

### **3. Procurement Patterns of Japanese MNCs in Vietnam**

Japanese manufacturers in Vietnam can be classified into two types according to their main markets: domestic or international. The two seem to have quite different optimum procurement strategies due to differences in the characteristics of targeted markets and main products. Among the various factors affecting the procurement strategy, for simplicity we take up the following two characteristics of the parts: (i) bulkiness in terms of size and weight, and (ii) whether it is commonly traded or product-specific.

#### **3.1 MNCs Targeting the Domestic Market**

In the electrical and electronics products, the main items that Japanese firms produce for the

Vietnamese market are TVs and home appliances (such as refrigerators, washing machines, and so on). In addition, there are also some audio products including hi-fi stereos and DVD players that are produced by Japanese firms.

TVs and home appliances are products whose demand rapidly increases in the early stages of economic development driven by the people's strong desire to improve the living standard. MNCs usually build their factories near the growing markets in order not to lose sales opportunities. Furthermore, these products are usually bulky and heavy so that MNCs need to be near the market to reduce the transportation cost.

In general, MNCs targeting domestic markets have very strong incentives to localize parts. Many of the parts used in TVs and home appliances are bulky and heavy, especially plastic (e.g., cabinet) and metal parts (e.g., metal shaft). Importing these parts is very costly. Moreover, due to the nature of their production, the international concentration of production location brings little scale merit. Besides the parts, MNCs also prefer to localize material-related basic processes like molding, pressing, casting, forging and heat treatment. Frequent modification and quick response needed in these basic processes compel them to be located near the factories which receive their services.

Internal production—the production of parts within the MNC's assembly factory—may be stimulated by similar reasons (bulkiness, need for quick response, etc.). However, it requires a relatively large investment for MNCs to install needed machinery and equipment to produce them. The parts to be produced internally must therefore carry high values to justify such extra outlays. Since it is generally difficult to find parts which are both bulky and of high value in the production of TVs or home appliances, MNCs targeting domestic market have little incentive for internal production (the only possible exception is CRT used in TV assembly). Several MNCs in Vietnam are internally producing plastic or metal parts which are of relatively low value and add to production cost, but this is only because domestic supporting industries are too weak or small to satisfy the demand of MNCs. It is far more efficient for specialized plastic and metal factories to serve a large number of assemblers rather than each assembler purchasing plastic injection machines, for example.

Those parts with strong scale merit in production should better be imported than localized, by concentrating suppliers in one or a few countries. Compact, globally common and capital-intensive parts—such as semi-conductors, IC, resistors and connectors—are usually produced in one location and exported to the rest of the world. A typical strategy of an MNC is to import such parts from existing large-scale factories it has already built in other East Asian countries. As JODC (2003) reports:

The construction of a vertically integrated plant containing both front- and back-end processes would entail an immense investment of tens of billions of yen. Unlike a plant that simply assembles components, it will be difficult for foreign firms to diversify investment in such a way, especially for firms which already have many plants in ASEAN countries such as Singapore, Malaysia and Thailand as well as in China.

Compared with other products, TVs and home appliances require more bulky parts. Moreover, they contain relatively less globally common and compact parts like semiconductors. They also use parts with less complicated functions than audio or computer products.

The above analysis can be simplified in the schematic diagram below which highlights the degrees of bulkiness and commonness of the parts used for assembling a washing machine. Bulkiness affects logistics cost while commonness is related to scale merit in parts production. The relative sizes of the four cells in the matrix graphically suggest the amount of parts which may fall into each category, that is to say, whether the part should better be localized or imported. In the case of domestically targeted products like TVs and home appliances, the need for localization is very high on account of both bulkiness and specificity of the parts. MNCs producing these products usually prefer to localize most parts including plastic casings, metal shafts, transformers, packing materials and the like, in order to gain competitiveness and expand the domestic market share.

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<sup>4</sup> Japan Overseas Development Corporation, *Preparatory Study on Formulation of Measure for Cultivation and Enforcement of the Electronic/Electrical Industry in Vietnam* (Tokyo, 2003), p.27.

**Figure 3**  
**Part Procurement for Domestically Targeted Products**  
**The Case of Sanyo Washing Machines**

		Low <--- Scale Merit ---> High	
		Locally Specific	Globally Common
Low <--- Logistics cost ---> High	Bulky & Heavy	<b>Localization</b> Plastic cabinet Metal parts Molding & pressing tools Packing material	Plastic pipe
	Compact & Light	Decorative parts (plate, seal) Valve Timer Users' Manual	<b>Import</b> Motor IC Semiconductor Resistor

**Case Study 1: Sanyo HA Asean Corp.**

Sanyo HA Asean Corp. (Sanyo), located in Bien Hoa II Industrial Zone, manufactures washing machines, refrigerators and air conditioners mainly for the domestic market. Sanyo has pursued part localization very aggressively and now achieves the localization ratio of about 70% as far as washing machines are concerned. While the majority of parts are supplied by FDI companies, Sanyo is purchasing parts from a number of local suppliers as well. For further localization, Sanyo is looking for domestic producers that can supply specific parts for washing machines such as a water control valve and a timer.

However, Sanyo is still compelled to produce some plastic and metal parts by itself mainly due to the unavailability of those parts from the domestic supporting industries. The Sanyo management points out that it is particularly difficult to procure metal parts in

Vietnam, including casting and pressing tools. In addition, although Sanyo has business relations with many local suppliers, these relations have been established at the initiative of Sanyo and not by the active marketing of local suppliers.

This means that there is a potentially much larger demand for locally-made parts if domestic suppliers strengthen their capability in production management and marketing to take over and replace the part production which now takes place inside Sanyo's factory. Collaboration with an MNC like Sanyo, which strongly welcomes part localization, will certainly contribute to the upgrading of the local manufacturing firms.

### **3.2 MNCs Targeting the International Market**

Many Japanese MNCs targeting the international market in Vietnam produce computer peripherals and audio products. Compared with TVs and home appliances, the factories of these products tend to be located relatively far from the final market. Many MNCs produce computer peripherals and audio products in East Asia and export them to the huge markets in the United States, EU and Japan.

One reason for not needing to build their manufacturing bases close to the final market is that the demand for these products rise only gradually as the economy grows, in comparison with TVs and home appliances. Another reason is that, since computer peripherals and audio products are relatively small, production in East Asia is still profitable even after paying the logistics cost for exportation.

Some analysts argue that MNCs targeting the international market in Vietnam have no incentive to localize parts since they can import all parts without paying import duties, as long as they are granted the status of an Export Processing Enterprise (EPE) or located in the Export Processing Zones. However, this argument is not entirely true. All MNCs, whether they are selling domestically or abroad, want to minimize production lead-time and logistic cost by promoting localization. Exporters to American, EU and Japanese markets are strictly required to deliver the products quickly and on demand. For this reason, MNCs targeting the international market also have incentives to localize production parts, particularly plastic and

metal parts as well as material-related basic processes like molding, pressing, and casting tools for internal use, just like MNCs targeting the domestic market.

Nonetheless, relatively speaking, it is true that the desire for part localization by MNCs targeting the international market may be less urgent than those targeting the domestic market. Since the parts for audio and computer products are less bulky than those for TVs or home appliances, the importing costs for them are also lower. Thus, MNCs which come to Vietnam to export may promote parts localization more carefully and gradually. They may continue to import even relatively bulky parts from their previous parts suppliers in China, Indonesia, Thailand, and so on, for a considerable time.

Another important fact about MNCs targeting the international market is that there are not many parts that can be produced internally (within their factories) because high-tech and high-value parts they use tend to be compact and globally common. However, mechanical devices such as CD and MD mechanisms may be potential candidates for internal production although, strictly speaking, these are assembled components rather than parts. These mechanical devices, which are used more often in audio or computer products than TVs and home appliances, are relatively bulky and high-value, and do not require huge investment. They can be produced internally provided that the factory has good engineers to manage the production process, install and maintain necessary jigs, and assure consistent quality. Thus, some MNCs may produce mechanical devices inside their factories if that fits the company's overall procurement strategy.

MNCs targeting the international market prefer to import parts that enjoy scale merit in production, such as semi-conductors, IC, resistors, and connectors. One (or a few) factory somewhere in the world should suffice for its production, and the part is exported from this factory to the rest of the world for assembly. The proportion of such parts is larger in audio and computer products than in TVs and home appliances, since the former are functionally more complicated and require a large number of electronics parts. Moreover, audio and computer products use more compact parts than TVs and home appliances, since their final products are comparatively smaller and lighter. MNCs targeting the international market may even import some plastic parts such as plastic gears.

Measured by the bulkiness and specificity of the part, as before, the optimum procurement strategy of MNCs targeting the international market can be summarized in the following diagram.

**Figure 4**  
**Parts Procurement for Internationally Targeted Products**  
**The Case of Canon Printers**

		Scale Merit <---> High	
		Locally Specific	Globally Common
Logistics cost <---> High	Bulky & Heavy	<b>Localization</b> Plastic cabinet Metal parts Molding & pressing tools Packing material	Mechanical parts Plastic gears
	Compact & Light	Decorative parts (plate, seal) Users' Manual	<b>Import</b> Motor IC Semi-conductor Resistor

The proportion of the parts requiring localization is still larger than imported parts, but the dominance of parts that need to be localized is not as overwhelming as in the case of MNCs targeting the domestic market. However, if domestic supporting industries are successfully developed to satisfy the urgent demand of MNCs targeting the domestic market, the demand for part localization by MNCs targeting the international market may also be stimulated. This virtuous circle will accelerate the industrial agglomeration of the entire electronics industry.

**Case Study 2: Canon Vietnam Co., Ltd.**

Unlike typical export-targeting MNCs, Canon Vietnam Co., Ltd, (Canon) is actively pursuing parts localization. According to its general director, Canon wishes to localize as many parts as possible in order to minimize production lead-time and logistic cost. However, he says that there is no choice but to import some parts due to the limited capacity of domestic supporting industries in Vietnam.

Canon places priority in localizing those parts that: (i) incur high transportation cost due to size or weight; (ii) require high precision; and (iii) require a long lead-time and thus affect the cash flow. The criteria for internal production are similar to those for localization. Canon has invested in molding machines for plastic and metal parts because it could not find capable part suppliers in Vietnam that could meet Canon's quality standard.

Canon is making an additional investment of US\$100 million to increase their production capacity from 600,000 to 1,200,000 sets per month by FY2005. In the new factory adjacent to the existing one, it will produce multi-function printers with scanning and photocopying capability. Canon aims to raise the part localization ratio from 5% to at least 15% as production increases. Although Canon's localization ratio is not yet as high as those of TV and home appliance producers, the acceleration of its localization will surely contribute to the industrial agglomeration of Vietnam.

Canon's active localization strategy may not be generalized, however, since other MNCs targeting the international market are less eager to promote part localization. Even so, if Vietnam fully utilizes the opportunity provided by Canon to build supporting industries, other MNCs seeing this may be convinced of the competitiveness of Vietnam's supporting industries which may lead to the bandwagon effect. Just as with Sanyo, Canon says it has never been approached by local suppliers for possible business deals even when its plan to expand the factory was officially announced. By contrast, many foreign suppliers contacted Canon for a possible business relationship. It is necessary to strengthen the marketing capacity of local suppliers, and it should start with an investigation into the reason why they hesitate to approach Japanese MNCs.



### **Case Study 3: Fujitsu Computer Products of Vietnam Inc.**

Analyzing the optimum procurement strategy of Fujitsu Computer Products of Vietnam Inc. (Fujitsu) sheds light on the case of products which are mostly made up of compact and globally common parts. Fujitsu's products are not finished goods but semi-finished goods, namely, circuit boards for hard disks, mobile phones, digital cameras, and personal computers.

A circuit board mainly consists of electronic parts such as IC, semiconductors, registers and connectors. Since it is a semi-finished product, no plastic casing is needed to cover the product. Neither are metal parts required since a circuit board does not contain mechanical devices. Thus, Fujitsu is importing most of the parts from Japan, Singapore and China where there are already large-scale part manufacturing centers or suppliers.

The exception to this rule is the board to mount these devices which is made of copper, resin and glass fiber. Fujitsu produces 50% of boards inside the factory with mostly imported raw materials, since a board is bulky and requires frequent changes in size and shape.

**Figure 5**  
**Parts Procurement for Internationally Targeted Products**  
**The Case of Fujitsu Circuit Boards**

		Low <--- Scale Merit ---> High	
		Locally Specific	Globally Common
Low <--- Logistics cost ---> High	Bulky & Heavy	Localization Packing material	
	Compact & Light		In port IC, Sem-conductor Resistor, Connector

It is very difficult for Vietnam to increase the local supply of electronic parts greatly and immediately since most MNCs have already established global production networks to procure them from integrated manufacturing centers or suppliers. In contrast, increasing the local supply of the board is a more attainable goal. Although the board may seem to be a very simple part, it needs delicate technology in chemical engineering and machine processing. Thus, if Vietnam aims to strengthen its competitiveness in supporting industries for circuit boards, the realistic strategy is to learn the technology to produce high-quality boards first and gradually expand the supply of other processes that Fujitsu wishes to outsource later.

If Vietnam succeeds in producing competitive circuit boards, Fujitsu may consider expanding its production capacity and other MNCs that use such boards may also come. Furthermore, the availability of circuit boards may attract investments in other related

processes such as the assembly of hard disk. This agglomeration may ultimately ignite substantial investments in a broad range of electronic parts. To put it in another way, if Vietnam fails to strengthen the competitiveness of parts strongly wanted by MNCs like circuit board production, there is always a risk that MNCs may move to other developing countries with lower business cost in the future.

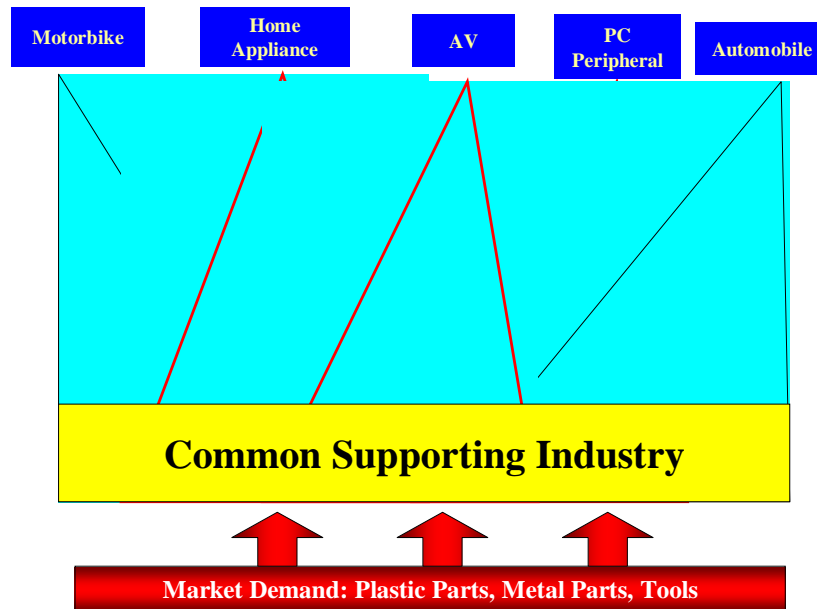
#### **4. Demand-driven and Competitiveness-enhancing Development of Supporting Industries**

The above analysis of optimum procurement strategy has shown that MNCs, regardless of domestic or international market orientation, have a strong incentive to localize bulky or heavy parts such as plastic cabinets, metal shafts, and molding, pressing and casting tools. The localization demand of MNCs targeting the domestic market is more urgent than those targeting the international market due to the characteristics of their products.

Since producing plastic and metal parts look less “high-tech” than producing IC or semi-conductors, some people question whether the development of such “low-tech” supporting industries will really contribute to the industrialization of Vietnam. But this concern is misguided. On the contrary, the development of industries producing plastic and metal parts and providing material-related processes like molding, pressing and casting is the most realistic path for Vietnam to improve its industrial capability. Three reasons can be cited for this.

First, technology acquired through the development of such industries can be applied broadly not only to the electronics industries but also to other industries including motorbike, automobile, general machinery, electrical machinery, and so on. The final product mix of any industry is constantly shifting, especially rapidly in the case of the electronics industry. For example, liquid crystal display (LCD) is quickly taking over the traditional picture tube as a computer monitor. However, plastic and metal parts and related processes will remain essential regardless of the change in the final product mix. Therefore, a country with technology to produce high-quality plastic and metal parts and conduct related processes will be able to secure its competitive position as a manufacturing center for a very long time.

**Figure 6**  
**Common Basic Supporting Industries Can Serve Many Industries**



Second, producing plastic or metal parts for industrial use and tools for making them is not low-tech at all but requires *production-oriented* high technology. Electronic products invariably consist of delicately designed plastic and metal parts including mechanical components which are highly sophisticated. Producers of these parts must achieve high precision to realize the full potential of electronic products, since even a tiny defect in a plastic or metal part can spoil the entire mechanical function of the final product. Moreover, the skill to produce, maintain and repair molding or pressing tools provide additional value by minimizing production lead-time and logistic cost. At present, only Japan, Korea and a few other developed countries boast such capability in part production.

Finally, it should be noted in this connection that a sufficient agglomeration of local supporting industries in plastic and metal parts has not been achieved anywhere in ASEAN, including such relatively successful industrializing countries as Malaysia and Thailand (Mitarai 2004). Thus,

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<sup>5</sup> Hisami Mitarai, "Issues in the ASEAN Electric/Electronics Industry and Implication for Vietnam," Nomura Research Institute, Tokyo (2004), pp. 15-16, 22-23.

Vietnam will obtain a huge competitive edge over other ASEAN countries if it successfully establishes these supporting industries. Agglomeration should attract final assembly factories from relatively high-cost ASEAN countries like Malaysia as well as promote the expansion of existing assemblers in Vietnam.

#### **Case Study 4: DMC-Daiwa Plastics**

DMC-Daiwa Plastics (Daiwa) supplies high-quality industrial plastic parts to motorbike and electronic MNCs. Its management points out that low labor cost alone cannot generate significant competitive advantage even in Vietnam, since labor outlay occupies only around 10% of total production cost. In this plant, many expensive machines are used. For example, to produce the inner surface of a plastic casing for an electronic product, it is necessary to use the newest 3-D measurement machine, which costs around US\$100,000, to eliminate the smallest defects that may lead to the malfunctioning of mechanical components. Competent production engineers and machine operators are also crucial because the quality of parts depends very much on the skills of engineers and operators who use the machine.

The success of Daiwa gives us two important lessons for the development of supporting industries in Vietnam. First, MNCs' strong and constant demand for high-quality plastic parts supports Daiwa's stable business condition and sufficient profits. Second, this type of supporting industries is created and developed not by low labor cost but by production-oriented high technology.

#### **Case Study 5: Cat Thai Manufacturing & Trading Co., Ltd.**

A sign of growing local supporting industries may be found in the factory of Cat Thai, a company run by a Vietnamese national producing plastic parts for several Japanese and American MNCs. Cat Thai tries hard to improve its production technology and quality and delivery control by responding to the demands of its Japanese customers. The requirements of Japanese MNCs are exceedingly strict but the firm wants to learn the global standard from them and expand the business further.

Cat Thai's managing director also notes that, while business inquiries from MNCs are increasing rapidly, the most serious problem was difficulty in raising enough capital from local banks to expand production capacity. He laments that banks lack the understanding of how essential it is for MNCs to purchase high-quality plastic parts of which there is an acute shortage in Vietnam, and that his factory can supply them. Banks do not appreciate the value of a large number of long-term supply contracts between Cat Thai and MNCs and are unwilling to finance the purchase of expensive machines. But he believes that, as long as high standards are maintained, the business will be very secure and prosperous.

Although Cat Thai's production scale still remains small by the standards of supporting industries in developed countries, its booming business suggests that reliable plastic parts suppliers are greatly wanted and steadily emerging in Vietnam. To accelerate its growth, the importance of their activities must be recognized socially and officially. Otherwise, they are prevented from raising capital for expansion. This will unnecessarily slow down the development of local supporting industries, harming Vietnam's competitiveness in the East Asian production network.

## **5. Conclusion**

As the AFTA requirements are fully implemented and the process of WTO accession proceeds, Vietnam is pressed to strengthen its competitiveness against other East Asian countries. Malaysia and Thailand have had a sufficient time to develop supporting industries step by step, taking advantage of large FDI inflows. However, conditions that Vietnam now faces are quite different from those that confronted Malaysia or Thailand in the previous decades. Vietnam must act faster and more skillfully to strengthen its supporting industries in order to attract a critical mass of FDI. To design an effective policy to promote supporting industries, Vietnam needs to fully understand the optimum procurement strategies of MNCs and the parts that they urgently require to be procured locally.

The analysis of the behavior of Japanese MNCs in Vietnam has shown that, regardless of their

market orientation, they generally want to localize plastic and metal parts as well as the related processes and tools in molding, pressing, casting, forging and so on. This indicates very clearly that one of the most effective ways to accelerate Vietnam's industrialization is quickly develop this type of supporting industries which are shared by a number of assembly industries. If successfully established, the existence of such industries will differentiate Vietnam from other East Asian rivals as a country that possesses production-oriented high technology. This, in turn, will surely attract more FDI from MNCs.

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