Chapter 6

Development of Automotive Industries in Vietnam with Improving the Network Capability

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Chapter 6

Development of Automotive Industries in Vietnam with Improving the Network Capability

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As a latecomer, the automobile industry started in Vietnam just 20 years ago. Although the country has made great efforts to promote the industry, the production scale is relatively small, with only 5,000-7,000 units per year by introducing backward and simple production, painting and welding technologies. The localization rate of the automobile industry remains low, currently only reaching about 5-10%. More than 90% of automobile parts and components are imported from parent companies or foreign suppliers. While bulky seats and some labor-intensive parts have been localized, the most valuable parts are imported. Compared with the motorcycle industry, the market size of the automobile industry in Vietnam is smaller and the growth rate is lower, which limits the strategic options to overcome obstacles. Trucks and buses have a higher localization rate than passenger cars since local firms can supply parts for passenger cabins and storage cabins. The linkage of local businesses to large manufacturers is very limited. Although MNCs in the automotive sector entered the Vietnam market nearly two decades ago, most of the important parts still are imported from other branches of parent companies or from foreign suppliers. This report seeks to understand the innovative activities, internal and external factors and the obstacles for firms to lay a foundation for the automotive industry in Vietnam.

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1. Introduction

After 20 years of *Doi moi*, Vietnam's industry has had strong stages of development and it has contributed in a large part to the rapid speed of economic growth. However, the industry is engaged primarily in processing and assembling. The growth rate in production volume is always higher than the added value. Industrial goods are less competitive than in other ASEAN countries. Competitive advantages of Vietnamese industrial goods are mainly basing on cheap labor resources and available natural resources.

The actual structure of the industry is relatively backward. The most important contribution to the total social product comes from food processing and other labor-intensive industries, such as footwear, textiles, furniture and so on. The automotive industry, with greater value added and high technology content, still makes a limited contribution. In 2009, three industries, including textile and apparel, footwear and furniture, contributed about 30% of total exports of the country (excluding oil).

Besides these traditional sectors, in recent years, several new high-tech industries such as the electric and electronics industries have begun to participate in export activities. The electronic industry exported 2.7 billion dollars in 2009, up to about 6% of total exports. Industrial machinery and equipment also exported 2.0 billion dollars in 2009 – approximately 4% of total exports. Although industries with high technological content participate, labor-intensive industries are the major export activity and they are internationally integrated.

Vietnam, which is in the early stages of industrialization, should develop its automotive industries as a top national priority in order to improve industrial capability

and competitiveness. Further progress in development and industrialization requires concentrated internal efforts in such areas as upgrading skills and technology, creating efficient logistics, and broadening the industrial base and linkages. The promotion of the automotive industry touches on all these areas and is therefore the key to accelerating Vietnam's industrialization. Without building internal capability, there are serious risks of an exodus of foreign direct investment (FDI), de-industrialization, and economic slowdown and even stagnation – phenomena which can be collectively called the "middle income trap."

This survey focuses on the automotive industry, especially its manufacturing network and technological capabilities. The research will also identify the internal and external factors of motivation and hindering, and that firms need to implement regular innovation and upgrading.

2. Automotive Industry in Viet Nam

2.1. Automotive Industry

Among the achievements in 20 years to promote the automotive industry, the motorcycle industry is considered the most successful in the formation of a system of domestic suppliers. This is due to industry characteristics, regulations relating to localization and an extremely large domestic market. Because of the market size, foreign assemblers have appealed to foreign suppliers in this industry to follow them. According to the Ministry of Industry and Trade (MOIT), by 2009, the rate of localization had reached 95% in the motorcycle industry. In the process of cooperation, there is technology transfer from foreign companies to Vietnamese suppliers.

Development steps have also been made at the technology level, and in management and labor skills.

In general, the manufacturing industry in Vietnam is still young. Despite the active participation of FDI, the basic technology level of the manufacturing industry is relatively backward, making it difficult for indigenous firms to participate in international manufacturing networks.

Vietnam's automobile industry began in 1991 with two FDI companies - Mekong Auto and Vietnam Motors Corporation (VMC). After 20 years, there are only about 100 enterprises, including 17 assemblers and nearly 80 suppliers. Although there are a number of domestic firms, a relatively large market share is dominated by FDI enterprises such as Toyota, Honda, Daewoo, Suzuki Domestic enterprises include familiar brands such as Truong Hai and Xuan Kien.

The country has made great efforts to promote the automobile industry. Import tariffs on completely built up (CBU) cars fell from 90% to 80%, to 70% and then 60% to meet domestic demand, and then gradually increased until the current 83% "out of room" (the highest import tariffs in the World Trade Organization's accession commitments). Despite such protection, domestic automakers cannot meet targets. Production is relatively small, only 5,000-7,000 units per year, backward and simple, with technology such as painting and welding. The automobile industry has a low localization rate, currently only about 5-10%. More than 90% of automobile parts and components are imported from parent companies or foreign suppliers. While bulky seats and some labor-intensive parts have been localized, the most valuable parts are imported. Compared with the motorcycle industry, the market size and growth rate of the automobile industry in Vietnam are lower, which limits strategic options to develop

the industry. Trucks and buses have a higher localization rate than passenger cars. It is easier for a local firm to supply parts for passenger cabins of buses and storage cabins for trucks than to supply parts and components for passenger cars. The linkage between local businesses and large manufacturers is very limited. Although MNCs in the automotive sector entered the market nearly two decades ago, the most important parts, such as engines and gearboxes, are imported from branches of parent companies or from foreign suppliers.

2.2. Supporting Industry

Parts and component suppliers in Vietnam, both FDI and local, are few and scattered in comparison with Malaysia and Thailand. Moreover, there is no comprehensive data on supporting industries.

The underdevelopment of supporting industries has much to do with demand size. According to data from the Industry Policy and Strategy Institute (IPSI) of MOIT, one Japanese motorcycle assembler had a localization ratio of 86% in 2009 because domestic demand for motorcycle is sufficiently large. In the same year, one Japanese automotive assembler had a localization ratio of only 9% because domestic demand for automobiles is too small for efficient operation.

Another IPSI survey on the capability of local suppliers conducted in 2008 revealed that foreign assemblers and local suppliers shared similar views. For example, they agreed that:

(i) A large number of relatively “easy” parts and components made of cast iron, steel or plastic continue to be imported because no local company can supply them.

(ii) Engineering and technical capabilities of domestic suppliers are generally low and

lack the ability to perform required QCD (quality, cost and delivery).

(iii) Capacity to supply large quantities with stable quality is low.

(iv) Too much attention is placed on the cost of materials while far less attention is paid to costs associated with waste, defects, inventories and uneven quality of inputs.

(v) Local producers under cost-cutting pressure are unable to invest in necessary human and physical capital to become viable parts manufacturers.

Of the various sectors, the supplier system for motorcycle assembly is the most developed in Vietnam. This is due to the large domestic demand as well as to previous government policies. The large volume allows assemblers to invite foreign suppliers to Vietnam and to also cooperate with local firms to improve skills. In the process of cooperation, technology and know-how are transferred from foreign assemblers to Vietnamese suppliers. Examples of successful cooperation leading to the emergence of local suppliers include F3, Dong Anh and Hanoi Plastic Company.

3. The Case Studies

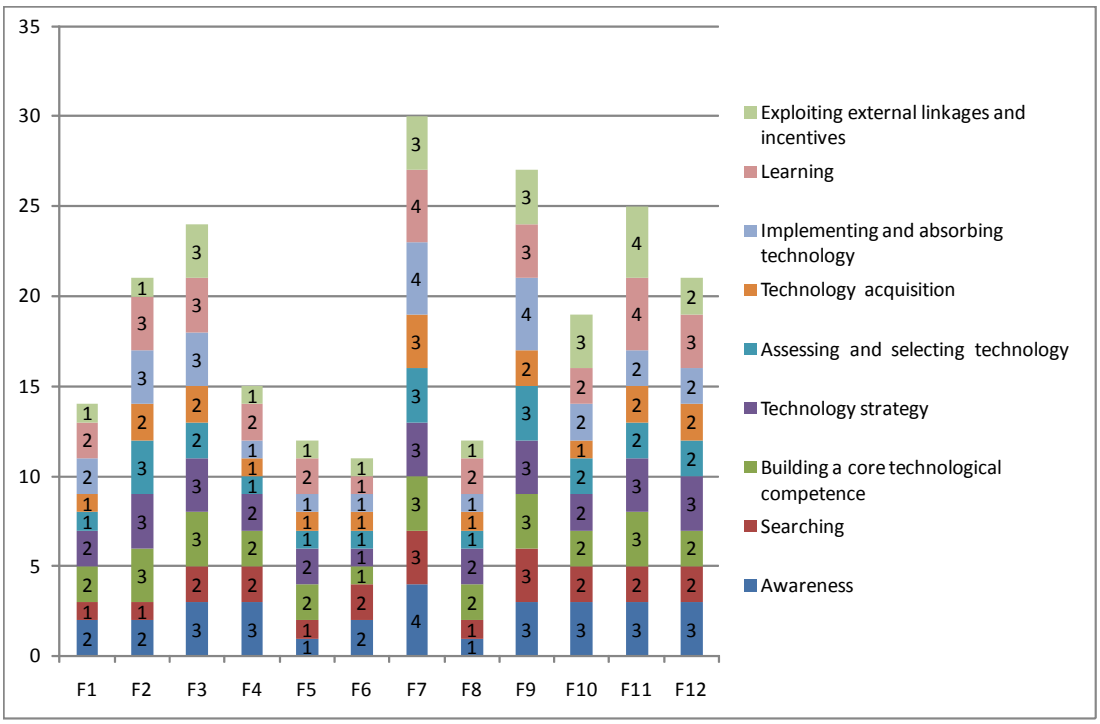
3.1. Firm Sample

Twelve automotive enterprises were selected for interviews for this study, including 5 assemblers (2 FDI and 3 domestic) and 7 suppliers (3 FDI and 4 domestic). Some suppliers of motorcycle parts and components have high potential or the expectation to manufacture automotive components. The main objective of the study is to assess the internal and external factors needed to develop the technological

capabilities of enterprises and to identify hindering factors in the automobile industry. The term “technological capability” refers to those activities which enable firms to choose and use technology to create competitive advantage. Nine activities are used as an audit tool for Hobday (2004).

Figure 1 presents the sample of the 12 firms which were analyzed during the research. As noted in the introduction, the sample focused on high-performing firms in the context of Vietnam. Most of them are innovative in a radical manner.

Figure 1: List of Firms and the Evaluation of Technological Capabilities

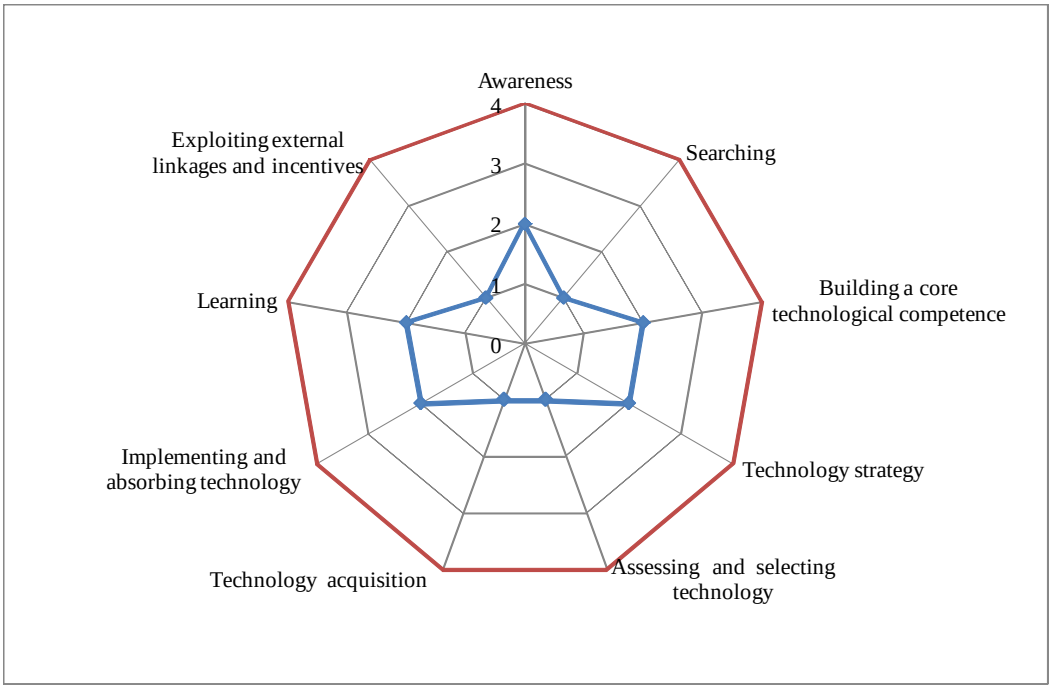


(1) F1

F1, 100% foreign capital operating in Vietnam since 2003, is a subsidiary of a company, a tier 1 supplier of Toyota. F1 mainly produces air flow meters, that is, sensors to measure air flow, exhaust gas recirculation (ERG) valves, and tumble generator valves (TGV). F1’s products are exported to Toyota for world-wide use.

F1's machinery and equipment are highly advanced and modern and satisfy the standards of the parent company as well as meeting customer demand in the global market. In addition, the company has a design center with modern equipment and staff trained in using specialized tools. With domestic purchasing only about 13%, F1 focuses on increasing local content in order to reduce the cost of raw materials and components (current mainly imported from Japan and Thailand). F1 has attracted a number of sub-suppliers to invest in Vietnam.

Figure 2: Technological Profile of F1



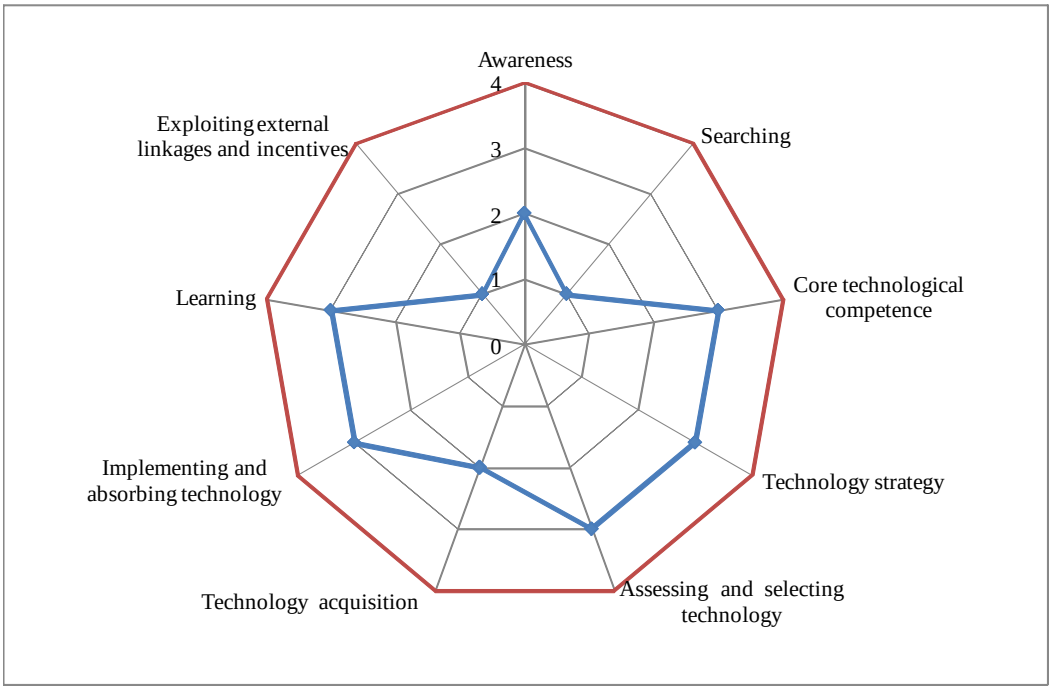
Although it is an anchor of automobile suppliers in Vietnam, the firm does not have a clear strategy or specific plans. It depends on the strategy of the parent company and on Toyota Vietnam.

(2) F2

F2 began in Vietnam in 1998 with a total investment of US$ 102 million. F2 contributes 75% and Diesel Song Cong Vietnam has 25% of the capital. This is the largest project in the automobile industry in Vietnam. F2 has introduced world-class technology into Vietnam to ensure the highest international standards. Since production began, F2 has invested in an electrostatic painting system using the most modern technology. In 2008, F2 invested nearly US$10 million to build an advanced plasma welding line. The company has also invested in a system for checking vehicles carrying high-tech products to ensure they meet all the technical requirements of the industry in the country.

Having a high level of awareness and a clear technology strategy, F2 evaluates its capabilities annually and provides strategic innovation and upgrading in specific technologies. The company is particularly interested in training management resources. According to the chief executive officer (CEO), apart from him, all staff are Vietnamese. The figure below shows the research team's assessment of the firm.

Figure 3: Technological Profile of F2



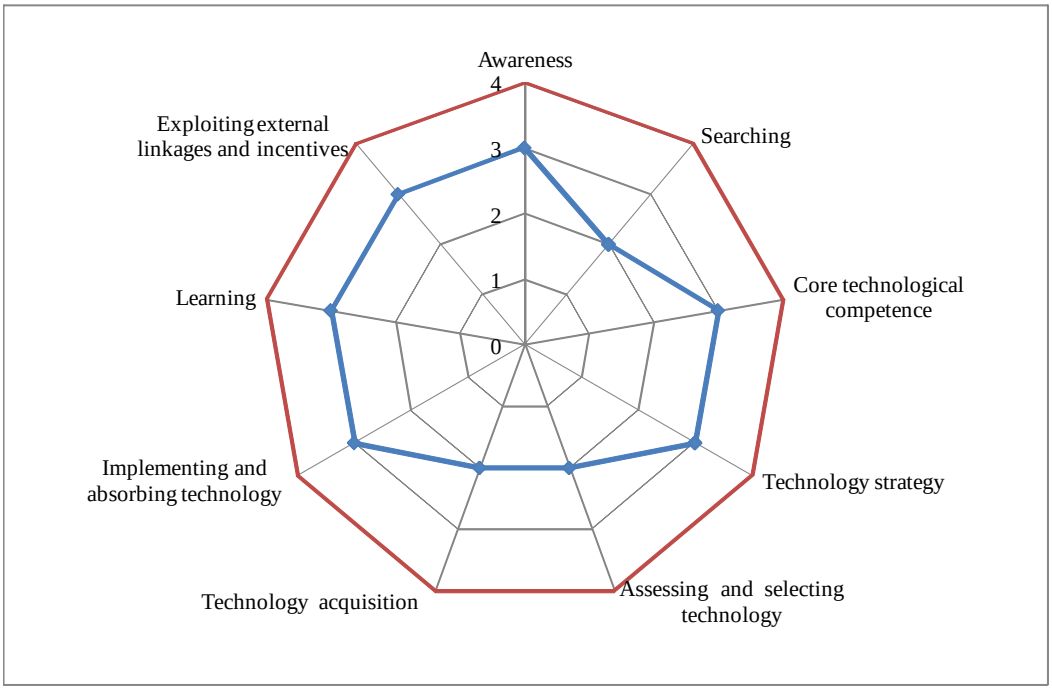
The localization ratio is still difficult to improve, due to the small production scale (over 1,000 vehicles per year per model). The company's localization strategy is neither clear nor transparent.

(3) F3

Having been manufacturing since the late 1970s and expanding under the name F3 in 2004, the company specialized in manufacturing all kinds of motorcycle spare parts and assembly parts for large corporations in Vietnam such as Piaggio, SYM, VAP (a Honda subsidiary in Vietnam), and Honda. From a small scale of production, F3 has invested sufficiently to grow and become a powerful company. In 2004, with the construction of new factories, F3 invested in new equipment with modern synchronous technology and increased its production capacity. Advanced and highly automated punching, welding, plating and processing machines meet strict assembly

requirements.

Figure 4: Technological Profile of F3



The firm focuses on human resource development, to constantly develop and improve individual skills. Weekly training sessions at the factory help improve management capacity as well as specialized professional skills for engineers and workers.

In the process of the formation and development of quality management systems, the company received support and assistance from many organizations, such as the Japan International Cooperation Agency (JICA), the Japan External Trade Organization (JETRO) and the Technical Assistance Center in Hanoi (TAC Hanoi). In 2009, the company became a partner of Toyota Vietnam and introduced a training course named “Monozukuri Show Case” to gradually produce automotive components for Toyota. In 2010, F3 also cooperated with CBI, a Dutch organization that promotes

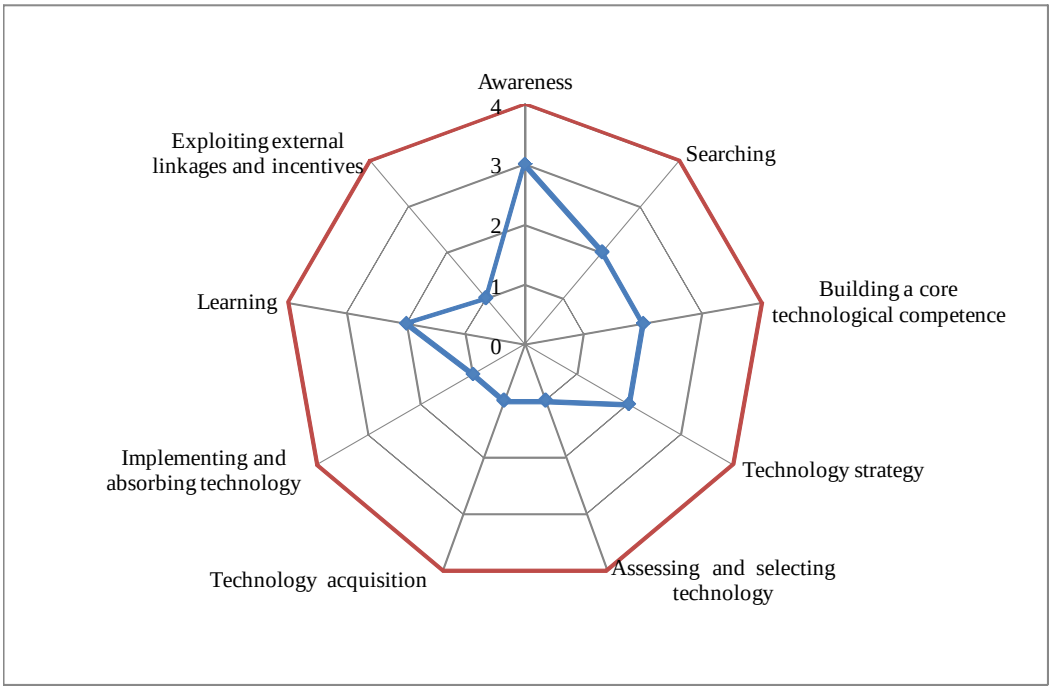
exports from developing countries to the European Union.

F3 has no difficulty in meeting the requirements of automobile assemblers, but the firm does not produce molds for automobile parts because of product scales and profit margins. Moreover, each foreign automobile assembler has a specific strategy on supply chains, which makes it very difficult for any newcomer Vietnamese firm.

(4) F4

Founded in 1981 as a small mechanical workshop, F4 has become a strong company in producing motorcycle parts. Unlike other such producers, F4 provides not only products for motorcycle assemblers in Vietnam but it also sells replacement parts and components through agents across Vietnam. The company has spacious facilities, and modern staging with synchronous high automation machines. In 2007, the company upgraded its testing equipment with machinery imported from Germany and Japan. Besides upgrading machinery and technology, F4 focuses on strengthening quality control systems, and applying advanced management standards such as ISO and 5S. It also focuses on improving research and development (R&D) activities with the aim of providing high quality products and the best designs.

Figure 5: Technological Profile of F4



The CEO has confidence in the company's facilities and machinery and in upgrading technology. But as a private enterprise, finding the capital to reinvestment is a big problem; this influences upgrade strategy and technology supplies.

(5) F5

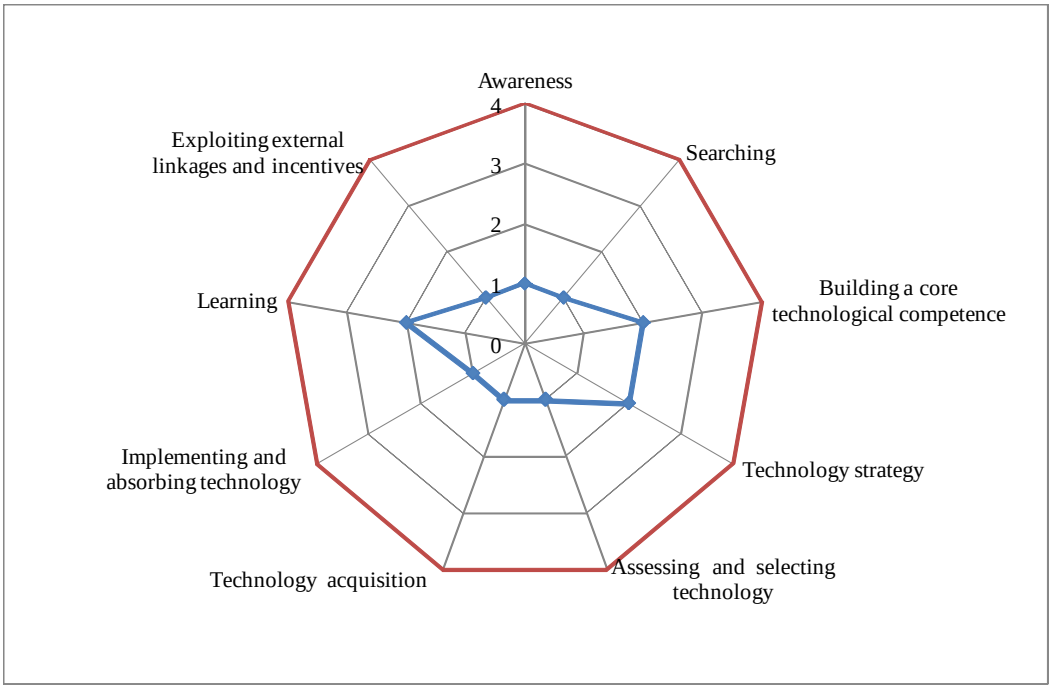
F5 Industries Co., Ltd. is an export-processing enterprise with 100% Japanese capital, a 2nd-tier supplier of Toyota, specializing in manufacturing automotive components to F1 and India, which provide 20-25% of the total production of F1.

Established in 2002, F5 invested US$15 million to produce mainly plastic injection molds and plastic parts. The company now has 70 injection molding machines. All equipment embraces modern production technology and meets the most advanced Japanese standards. Although located in an export processing zone where imported raw materials are easily available, the company is eager to develop domestic

suppliers to cut costs. However, it is difficult to find qualified suppliers.

Although production is solely reliant on existing customer demand, the firm always has to manufacture at full capacity. However, under the father company, F5 has no plans to increase plant capacity or to expand into other areas such as motorcycle and electronic parts. However, the firm always focuses on upgrading production technology and management to produce the best products and to meet the requirements of customers in Vietnam and world-wide.

Figure 6: Technological Profile of F5



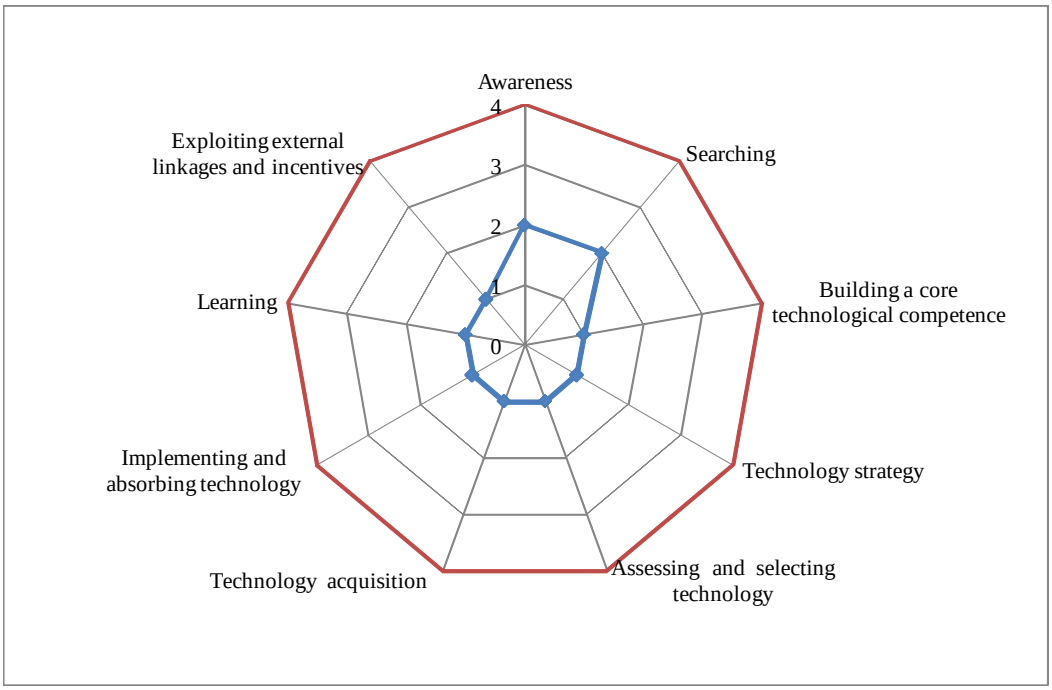
(6) F6

Starting from a small business manufacturing farm trucks at a rudimentary level, F6 is a private enterprise with 100% domestic capital specialized in assembling trucks. The company mainly produces cheap trucks suitable to the road conditions in Vietnam,

serving the rural market. With a focus on this market, F6 has gradually invested in machinery and equipment for the production of the components needed to increase the localization rate. Currently, the company produces cabins and frame bodies using electrolyte painting lines, assembly engine lines, assembly transmission lines, and other production facilities. The localization rate is up to 52%, one of the highest in the sector in Vietnam.

However, machinery and equipment are still rudimentary with a low level of automation. The domestic molds industry is underdeveloped, yet the firm cannot afford to invest in expensive imported molds, thus its products are less attractive. Without a specific strategy to incrementally upgrade existing technology, the firm needs support from external institutions. Figure 6 is the technological profile of the firm, which is the lowest of the interviewed firms.

Figure 7: Technological Profile of F6



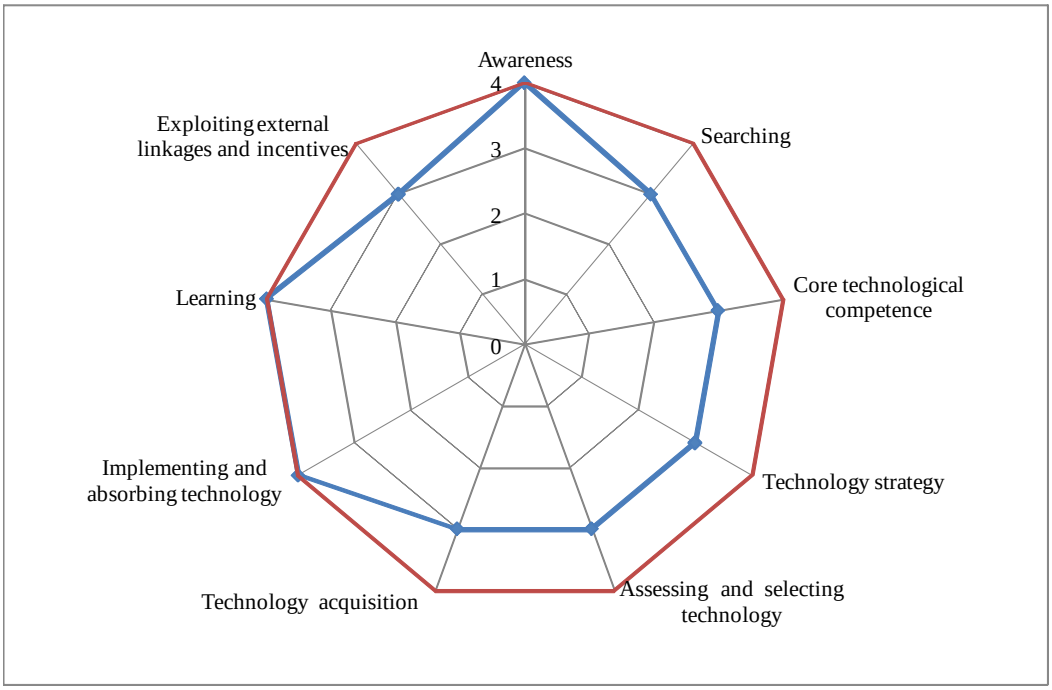
(7) F7

F7 was established in 1997. In 2001, the first F7 automobile assembly plant was built in Bien Hoa 2 Industrial Zone, Dong Nai province with a main product line of KIA light trucks. In 2003, the company changed strategy and invested in factories specializing in trucks and passenger cars at the Chu Lai Open Economic Zone. In 2007, the company started producing the F7-KIA bus, the first of its kind in the country and its modern equipment and technology make it one of the best in the region. In 2008, F7 began building factories for parts and components for buses and cars in an effort to continuously raise its localization ratio.

F7 is the only company in Vietnam producing three vehicle types: trucks, buses and passenger cars. Its production scale is 50,000 units per year. The firm deals with the problem of small market size by diversifying. F7 has four assembly plants, 8 workshops and a center for mechanical development. Its sales market share is the second-best in Vietnam, at about 23%. The firm has its own college in the central region to train engineers and workers. Based on the interview, F7's technological capability is ranked in group C.

As a partner of corporations such as Kia, Hyundai and Foton, its products must meet the standards of the group, so the company fully appreciates the importance of science and technology. The assembly plant, the manufacturing processes, the testing of components and the finished products always apply the most advanced technology. The company also uses strategic investments to expand and upgrade technological innovation. Along with its development strategy and the formation of the automotive mechanical industry Chu Lai-Truong Hai scheduled for completion in 2012, F7 aims for 40% local content by 2018.

Figure 8: Technological Profile of F7



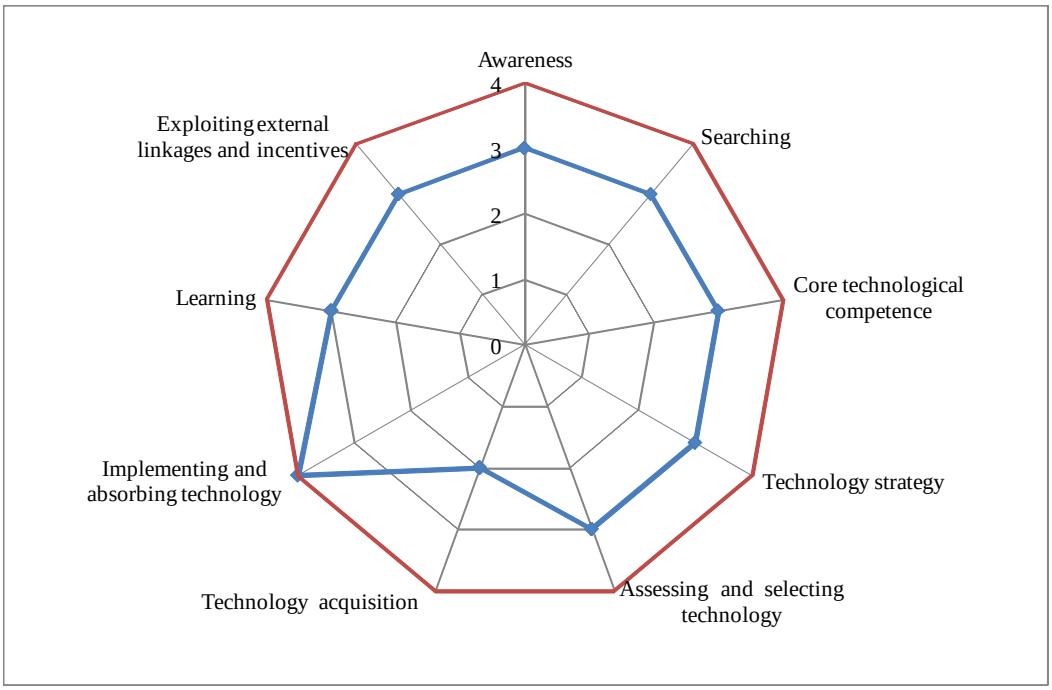
With a long-term development strategy and heavy investment, the CEO expressed concern about policy changes, especially the car import tax on CBUs. F7 strongly recommended an incentivized car strategy and preferential localization for the development of Vietnam's automobile industry.

(8) F8

F8 is a joint venture between three major partners: Toyota Motor Corporation of Japan (70%), Vietnam Engine and Agricultural Machinery Corporation (20%) and Kuo Singapore Ltd (10%). As the first FDI automobile firm in Vietnam established in 1995, the company has shown strong growth and it has continuously cornered the largest market share in Vietnam. With an initial investment of over US$49 million, F8 undertook four main production stages - stamping, welding, painting and fitting. F8 also manufactures various components and spare parts at other plants, such as oil

pipes, exhaust pipes, car carpets, sun shields, body parts and stamping factory tires. Since 2008, F8 has used its chassis workshop to strengthen its localization rate (of the Innova brand) and improve competitiveness. Instead of importing all chassis, F8 imports small disassembled details (including chassis, vertical, horizontal bars and racks) then completes the chassis using modern automatic welding and powder-coating machines. With this new factory, F8 has improved the localization ratio of Innova from 33% to 37%. In our evaluation, F8's technological capability is the highest and it plays an important role in the country's industry. Nevertheless, F8 Vietnam depends much on the parent, such as for its strategy on localization and the selection of brand names. Thus, in our evaluation, the company is at the C level of technological capability, as in the figure below.

Figure 9: Technological Profile of F8



In the spirit of Toyota, Kaizen (continuous improvement of processes in manufacturing) is instilled in all research and production, with much success, particularly in improving welding fitting systems to significantly reduce the number of fixtures, and to increase productivity and safety. F8's adaptation and improvement in efficiency allowed it to satisfy Toyota globally. F8 has also attracted suppliers to produce in Vietnam and to provide for Toyota worldwide, such us Denso, Toyota Boshoko, Toyoda Gosei. Currently, these products are exported to 10 countries in the global IMV (Innovative International Multi-purpose Vehicle) project.

In order to promote supporting industries, F8 established a center of localization in 2009 and an exhibition of automobile parts and components; this attracts domestic investors to invest in the manufacturing of automotive components. F8 also has programs to support small suppliers in production management, quality management, all in the spirit of Toyota, to enhance the ability of suppliers to provide components for F8.

Table 1: Exported Parts and Components of F8

FIRMS	EXPORTED PRODUCTS
Harada Industries Vietnam	Antennae
Yazaki Haiphong Vietnam Co., Ltd	Electric Wire Systems
Toyota Boshoku Hanoi	Seat Sets
Toyota Boshoku Hai Phong	Airbags
Toyota Gosei Haiphong	Airbags, Steering wheels
F1	Accelerator Pedal Modules, Exhaust Gases, Recirculation Valves, Duty Control Valves
Sumi-Hanel Wiring Systems Co., Ltd	Electric Wire Systems

Source: F8.

Table 2: List of 1st Tier Supplier of F8

NO	FIRMS	LOCATION	PRODUCTS
1	F1	Hanoi	Sensor Assays/ Accelerator Pedals, Valve Assays/Vacuum Switching
2	GS Battery Viet Nam	Binh Duong	Batteries
3	Harada Industries Vietnam	Dong Nai	Antenna
4	Sumi-Hanel Wiring Systems Co., Ltd	Hanoi	Electric Wire System
5	Toyota Boshoku Hanoi Co., Ltd	Vinh Phuc	Seat Set, Board assays/Door trims, Carrier sub- assays /Spare wheels, Floor Carpets
6	Summit Auto Seats Industry Co., Ltd	Hanoi	Sun Visors
7	Nagata Vietnam Co., Ltd	Ho Chi Minh	Mudguard Plastic parts
8	Vietnam Precision Industrial No.1 Co., Ltd	Hanoi	Press Parts
9	Yazaki Hai Phong Vietnam Co., Ltd	Hai Phong	Electric Wire Systems
10	Inoac Vietnam Co., Ltd	Hanoi	Dam/ Assays
11	Export Mechanical Tool Join Stock Company	Hanoi	Tool Sets

Source: F8.

Market size is the largest obstacle for the development of F8 and also for its supplier network. To develop Vietnam's automobile industry, F8 suggests the government should identify strategic vehicles and provide special incentives to increase market size and technology focus, and to attract investors.

(9) F9

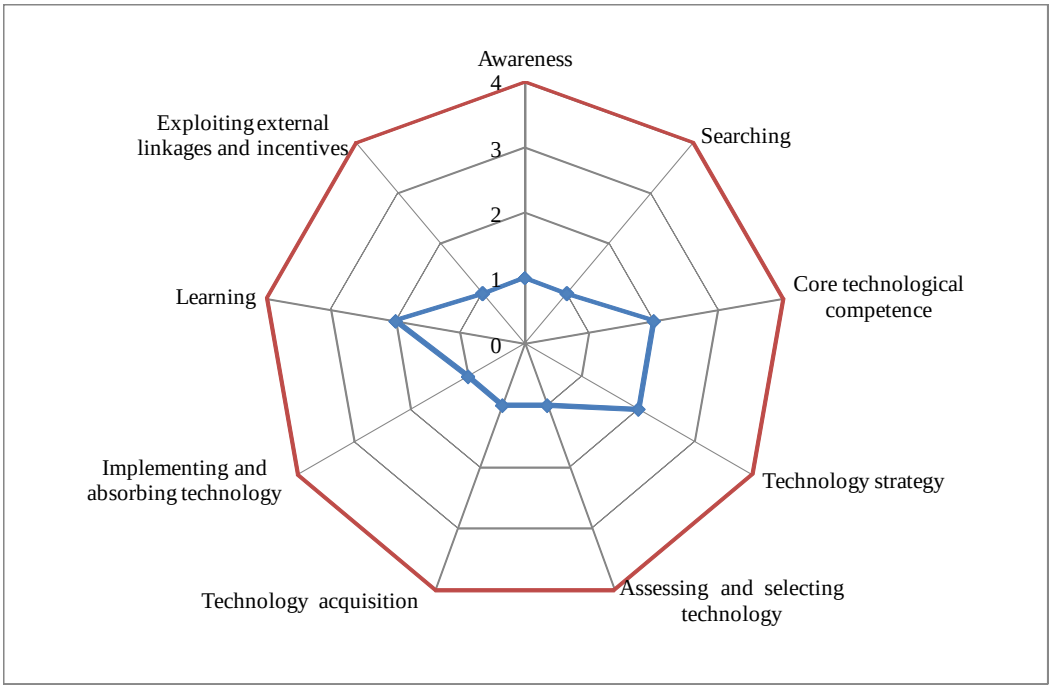
F9 is a 100% foreign capital, owned by Toyoda Gosei Japan, a brand of automobile components, and a major supplier of Toyota. The company has three factories for the production of car airbags and steering wheels.

All of products are exported, mainly to Toyota's assembly plants worldwide. Therefore, the production system uses modern machines and relies on quality inspection processes. As it falls under a large corporation, its investment and

technological strategy are always dependent on its parent company. However, its technological levels and production management processes are very high. Despite this, in comparison with domestic firms, its innovative activities are low. The figure below shows the firm's technological profile in the evaluation of the research team.

Raw materials for production are all imported. The firm would like to purchase them inside the country, but domestic enterprises cannot afford to invest sufficiently to meet quality requirements. The reason for the investment in Vietnam is a very skillful and hardworking work force, according to the CEO.

Figure 10: Technological Profile of F9



(10) F10

F10 is a state-owned enterprise specialized in the production of chains for bicycles and motorcycles. In 1998, along with the appearance of motorcycle assemblers in Vietnam, the firm began to diversify by manufacturing parts for motorcycles.

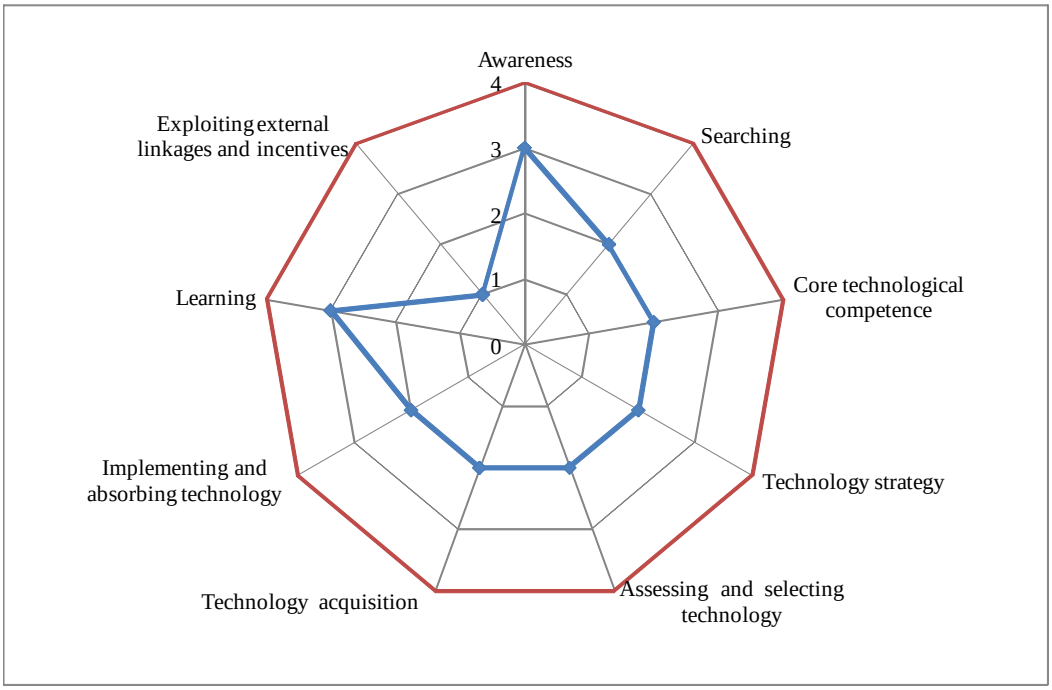
Nowadays, it has relatively modern and comprehensive machinery and testing equipment, with a full production range such as foundries, stamping, heat treatment, machining and plating. Almost all of the machines are imported from Japan and Taiwan. The company has successfully upgraded a number of old machinery. The figure below shows the technological capability of the firm.

Its most important customer is Honda Vietnam. According to the management, Honda Vietnam has helped much in building production and in improving the quality management systems of the firm. In particular, with the assistance of Honda's supplier support center, the firm imports raw materials at the best prices.

In 2005, the company began manufacturing components for F2 Vietnam, but the volume remains low. Apart from technical difficulties, the low number of orders from assemblers raises product prices. This is the main reason the automotive components industry is still underdeveloped.

For the firm, the activities of associations and research institutes in the country are not effective, doing little for its business.

Figure 11: Technological Profile of F10

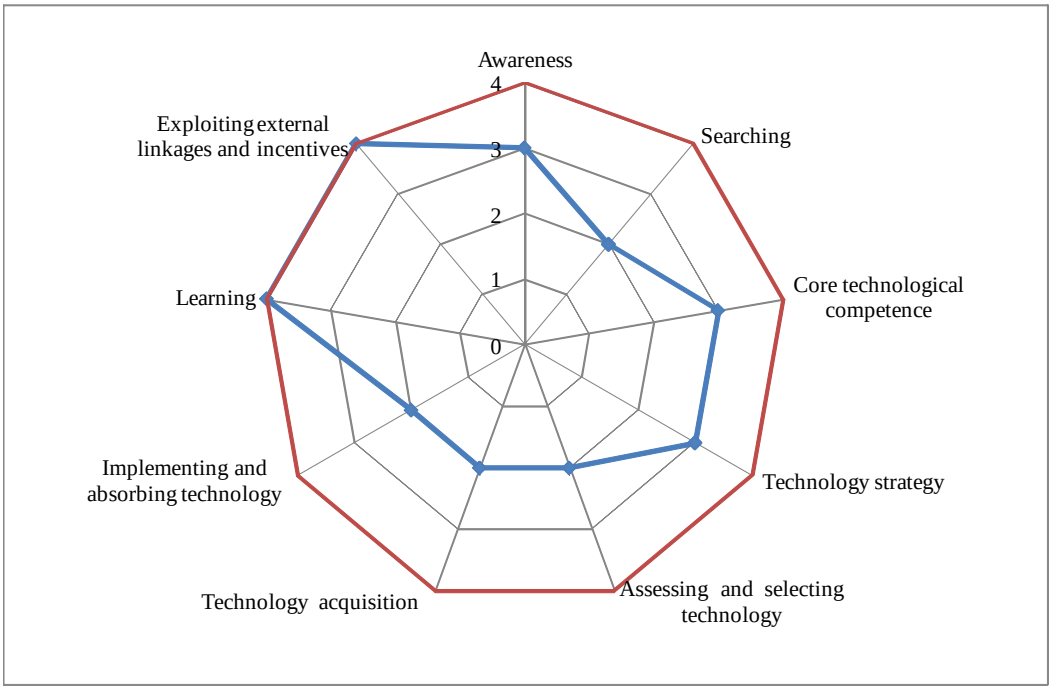


(11) F11

F11 was started by a former engineer at a state mechanical company. Using second-hand machines imported from Taiwan, F11 initially focused on producing mechanical parts with high market demand. The company has become one of the leading domestic automotive enterprises in Vietnam, with about 3,000 workers.

Aimed at low-end cars and trucks in Vietnam, F11's investment in technology was based on upgrading available equipment. This helps to reduce costs and to enhance the skills of engineers, workers as well as to strengthen their connections with the factory. Despite its lack of more modern machines, F11 is well-known in the industry as an innovator in technological upgrading. Appreciating the difficulties of local firms, the company has a program to support them to become suppliers of F11. However, the company doesn't have a clear strategy on its technology capabilities.

Figure 12: Technological Profile of F11

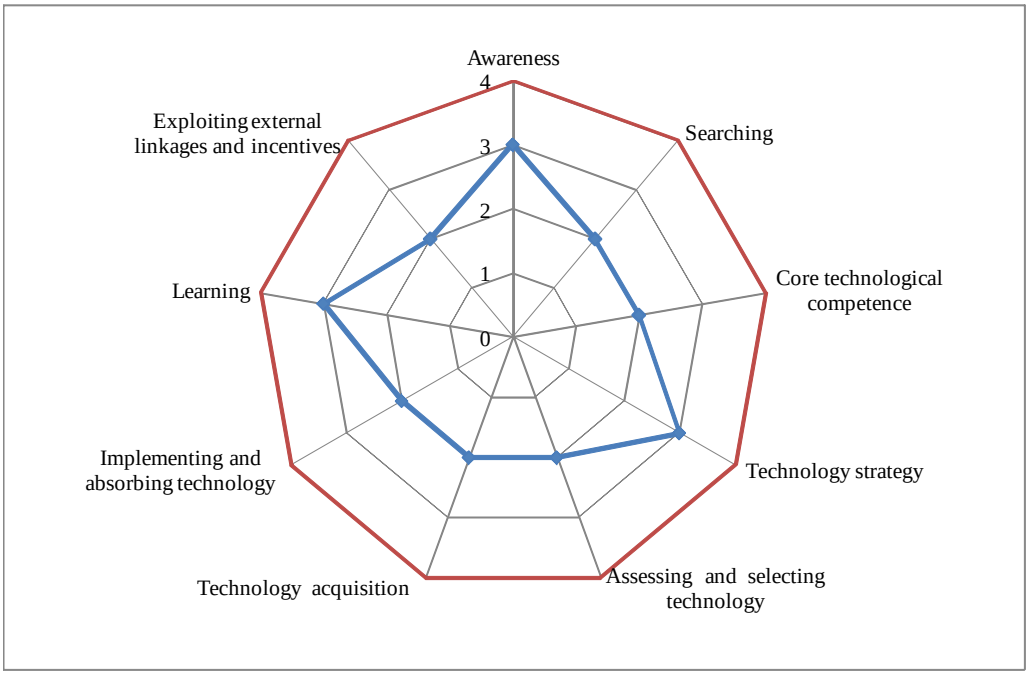


The situation of other private mechanical enterprises in Vietnam, such as Hoang Phat and Tan Hoa, is similar. These enterprises supply mechanical parts and components conforming to the standards of most Japanese and Taiwan motorbike assemblers, and they are now starting to supply simple mechanical parts and components to car assemblers such as F11 and F7.

(12) F12

F12 is a typical example of a successful cooperation with a foreign assembler by upgrading technology and machines. Ten years ago, the company started to produce plastic components for Honda Vietnam. With the support and also as a requirement of the buyer, the company uses the JIT (Just in Time) and Kaizen methods in production management. F12 created a pattern department using professional software to support a computer numerical control (CNC) processing center and modern CNC machine.

Figure 13: Technological Profile of F12



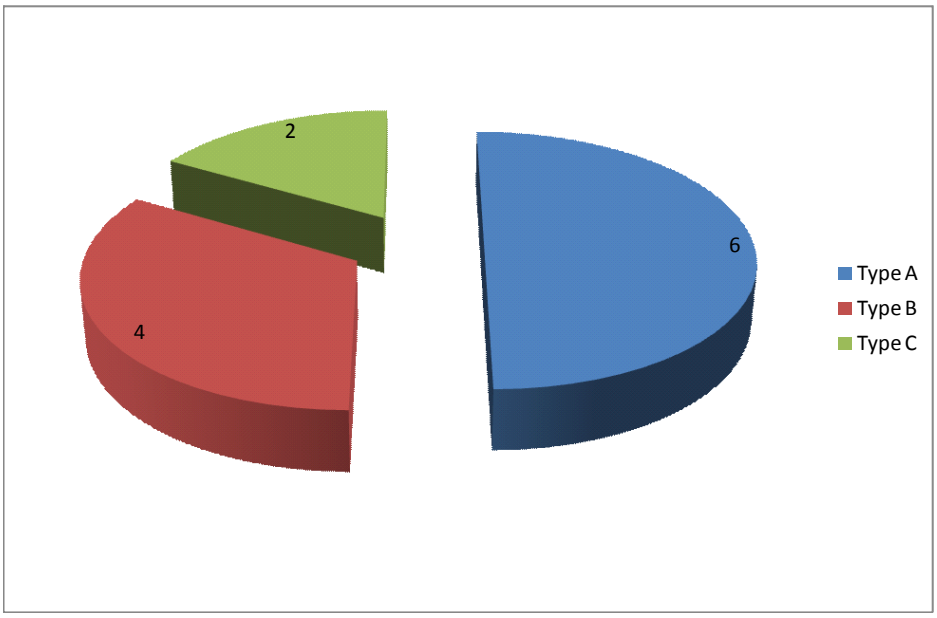
F12 continues to supply most Japanese motorbike brand names in Vietnam. It also supplies large-size plastic components that require a higher level of accuracy for washing machines and other ware in the home appliance industry. Most recently, with the investment in 1,500 ton plastic compressing machines, the company is focused on the production of large-size and higher-skill plastic components for Toyota Vietnam.

3.2. Findings

3.2.1. Overall Ranking

Figure 14 presents the results of the individual firm audits and groups divided according to their technological capability. The majority of the 12 firms are type A and type B (passive learners), with 10 firms. There are only two assembly firms in type C, one of them local. This result seems consistent with the general situation of the manufacturing industry in Vietnam.

Figure 14: Overall Technological Capabilities



3.2.2. Market Size, Technological Capability and Business Linkages

There are clear differences between the assessments of three groups of enterprises, especially in technology strategy. Many firms could invest more in R&D activities (especially for assemblers), but they do not intend to. Due to low vehicle demand, investment in technology for localization is much more expensive than importing from neighboring countries. For December 2010, the total sales volume of the members of the Vietnam Automobile Manufacturers' Association (VAMA) was 12,485 units, a decrease of 17% in comparison to December 2009. A summary of VAMA's sales in December 2010 is in following table.

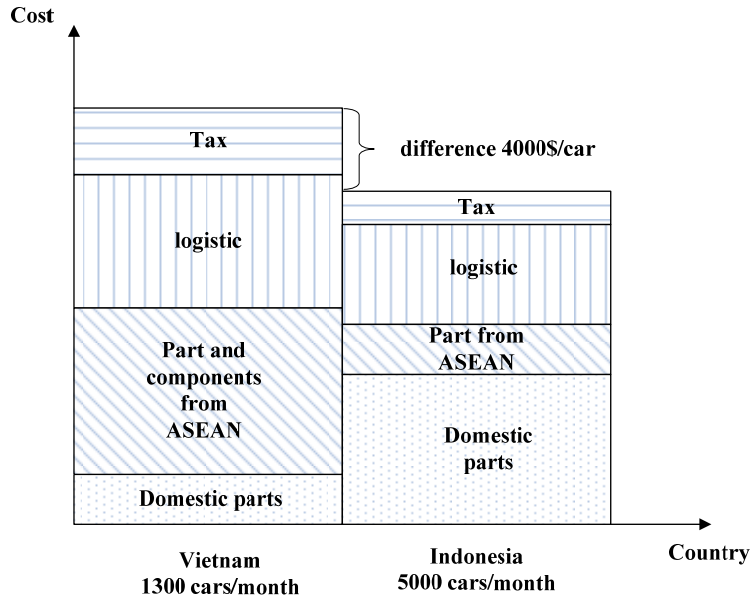
Table 3: VAMA Sales Volumes in December 2010

	North	**Central**	**South**	***Total***
PCs	2,336	488	1,249	***4,073***
Cross-overs	-	-	-	**-**
MPVs	468	150	700	***1,318***
SUVs	607	206	859	***1,672***
Minibus, Buses	394	79	344	***817***
Trucks, pick ups & Vans	1,913	670	2,022	***4,605***
Grand total	5,718	1,593	5,174	***12,485***
Bus chassis	7	-	108	***115***

Source: VAMA 2011.

Assemblers have complained a lot about inconsistent policies for the automobile industry in Vietnam. The government needs to take drastic measures to promote industrial development by identifying strategic vehicles to increase consumption, or it needs to provide special tax regimes for domestic parts and components. Vietnam does not have tax incentives for manufacturing supporting industries. An example is Toyota's "Innova." In 2008, with a capacity of 1,300 cars/month, compared with Indonesia's 5,000 cars/month, Toyota Vietnam could not invest in producing components, and it also faced difficulties in appealing to suppliers for investment. Compared to Toyota Indonesia, the cost difference is US$ 4,000 per car. This is because too few components are manufactured locally, thus logistics costs rise. In addition, the tax level in Vietnam is higher than in Indonesia. Many assemblers of automobile and home appliance products say they have no intention to find local suppliers or to produce in-house because import taxes on parts and components are too low; meanwhile, the government does not provide tax incentives for components produced domestically.

Figure 15: Production Cost of "Innova"



Source: F8

Local assemblers F7 and F11 are becoming sufficiently localized to implement the commitments of the ASEAN Free Trade Area by 2018 (automotive localization of 40%) and to survive in the market. Most suppliers are very well aware of technological upgrading. However, profit margins and low production hinder their investment. This is also related to the size of the car market in Vietnam. FDI providers in Vietnam are less likely to be more active in technology innovation strategies. More or less, they remain too dependent on parent companies and previous contracts.

Throughout interviews with assemblers, it can be seen that the concept of inter-firm linkages in the automotive sector in Vietnam is premature. Tier 1 (F1) and tier 2 (F5) suppliers of Toyota are emerging. However, most of these enterprises are already linked. They invested in Vietnam to follow Toyota Vietnam. Business linkages

between firms in the industry are very weak in Vietnam due to imported components. It is very difficult for assemblers to choose suppliers inside the country. The interview survey indicates that firms are hampered by the weak management capabilities of suppliers in Vietnam to build long-term relationships (Table 4).

In fact, the quality of products is not the biggest problem for local firms, since quality is mainly checked and ensured according to the buyers' requirements before shipping. On-time delivery is one real issue that Vietnamese enterprises usually violate. This is for several reasons out of their control: unexpected delays in the delivery of material from suppliers, unstable conditions in which to operate machines, like unplanned electricity outrages, traffic jams and a poor transport infrastructure. Also, product quality varies between different production lots. Leaders of Vietnamese enterprises are assessed as people who are not customer-oriented and with poor skills in business communication. A lack of foreign language skills is also an impediment for businesspeople to assess a foreign customer's needs.

In general, domestic firms are not involved in this production network in the automobile industry. A few supply directly to assemblers, but only with bulky, simple and low value added parts and components. Unlike the motorcycles industry, technology transfer from FDIs to domestic firms is rarely done in the automobile industry. Most relationships between suppliers and assemblers have been forged from the outset. Vietnamese enterprises do not highly appreciate how to access potential suppliers and customers, such as through associations, fairs and promotional activities (Table 5). The linkages between firms seem highly spontaneous, without active and effective participation in supporting organizations. Despite linkages, the spirit of monopoly and self-contained production is still heavy in Vietnam. These Vietnamese

enterprises invest and manufacture by themselves, including the production of components, with the desire to avoid risk associated with a dependence on other institutions. This thought not only exists in business, but also in many state agencies.

Table 4: Choosing Supplying Enterprises of Assemblers

Factors	Very important	Important	Not really necessary
Product quality	82%	18%	-
Homogeneous quality of batches of goods	70%	30%	-
Production capacity (size)	45%	35%	20%
Ability to self-design and innovate	20%	20%	60%
On-time delivery	92%	8%	-
Reasonable costs	75%	25%	-
Standards of managing production, environment	37%	33%	30%
Level of leaders	25%	55%	25%
Long-term cooperation relationship	20%	47%	33%

Source: IPSI 2009.

Table 5: Business Linkages between Assemblers and Suppliers

Manner	The best effective	Sometimes can find	Rarely
Via internet, telephone, directories, by themselves	14%	35%	51%
Via enterprises associations	10%	42%	48%
Fairs, exhibitions, promotion trades	10%	40%	50%
Introductions of other companies	35%	65%	10%
Existed relationships	86%	14%	0%
Enterprises find themselves	37%	42%	21%

Source: IPSI 2009.

3.2.3. Internal Factors for Technology Upgrading/Innovation

The relatively successful enterprises in technological upgrading, such as F3, F7 and F11, agree that a basic level of technology and the skill level of workers are the important factors in any upgrading/innovation process. Only when production reaches basic standards and technical workers have the needed knowledge, will investment in

new equipment or new technology be effective. Most local firms say they have difficulty in accessing and applying new technology and purchasing modern equipment. In fact, the implementation of basic techniques and applied technologies in daily production activities is still not clearly satisfactory. For example, workers of a firm in the mechanical industry do not understand how to choose a suitable knife for a certain kind of metal, though the regulations are clear in the transformation of metals. Thus, human resources are highly appreciated. Most innovative ideas of firms start from the leadership's strategy, but the implementation is at the level of middle management and workers. Thus, besides study, the enterprises also suggest adding "innovation active worker."

The most significant factor that helps a firm have innovative activities is the demand/requirements of the buyers. In the case of F3, F4 and F12, marketing campaigns over the past 10 years yielded many positive results. For example, F12, starting with Honda Vietnam, developed increasingly wide links with other motorcycle assemblers and also began to supply large-size or precision plastic parts for home appliances, such as washing machines and air-conditioners. Recently, it invested in a 1,500 ton injection machine to expand its automobile customer base even more.

In the starting phase of an investment, licensing (with KIA-trucks, cars and buses) is the most important element for the development of technological capabilities, as in the case of F7, the most successful of the local firms in the industry. Other activities included setting up quality control systems, upgrading automation machines, setting out a roadmap for the localization ratio, the establishment of a training center and then the F7 college to supply engineers and workers. These active internal factors allow the company to be successful. Being in very starting stage, the inter-linkage between

internal factors exists already in the industry in the country.

3.2.4. External Factor for Technology Upgrading/Innovation

With the exception of F11, the only local firm with a satisfactory linkage with Hanoi Technical University for upgrading existing machines, firms do not appreciate government support activities, especially for research and technology activities, from universities and institutes. There is a large distance from these technological support activities and the areas where local businesses need them. Meanwhile, the technical assistance activities of JICA and the Vietnam Chamber of Commerce and Industry (VCCI) are appreciated, especially training in management systems and quality standards. Some technology assisting programs seem to be relatively effective and highly appreciated by many Vietnamese enterprises, such as the support for quality management or control management (QM, QC, 5S) of TAC. However, only a few firms have participated in the programs. For foreign assemblers and suppliers, any linkage with a Vietnamese university is of little value.

4. Policy Implications

(1) Enhancing the market size for the automotive industry

Vietnam must start with the proper mindset toward the problems of the automotive industry. Currently, the interest, ownership and knowledge of industrial officials and private leaders with regards to automotive industries are very weak.

MOIT should continue to strongly recommend policies to increase the market size and identify strategic vehicles in the automobile industry

(2) Production network in automotive industry

Vietnam has received a large volume of manufacturing FDI which can serve as a base for further industrialization. It is most important to create the tiers for production networks in the automobile industry. But the country has not focused on FDI from multinational suppliers. While suppliers are usually small- and medium-sized enterprises that only need a small area for their workshop, central and local governments do not have any policies to attract investments for these entities. This is what the Association of Japanese SMEs has to face when it encourages its enterprises to invest in Vietnam. Small-sized foreign enterprises always face difficulties because the industrial zones of Vietnam only focus on big investors. Meanwhile, the production of supporting industries does not require large areas. In local clusters, firms face problems of infrastructure and long distances from customers who are usually assemblers in industrial zones near main roads, harbors and airports.

Further, Vietnam has not even started to seriously build industrial linkages, and this strategy should not be abandoned without trying. The government needs a special program for business linkages in the automotive industry. Apart from a “Master plan of supporting industries in Vietnam until 2010, vision of 2020” approved in 2007, Vietnam has not had any laws directly related to supporting industries. And the master plan has made many points unsuitable for the facts on the ground and the new context of Vietnam. Among them, the definition of “supporting industry (SI)” as well as the identification of priorities for the development of supporting industries is inadequate. The definition is too broad, including most of the value chain (from materials to production processes and even marketing and services). Meanwhile, the manner in which SI is defined means it is only implemented inside each industry, as an internal

matter. For instance, the list of products of supporting industries in the electric and electronic industries does not even include plastic parts and components.

MOIT is drafting a decree on developing supporting industries which basically responds to the master plan. Thus, it is necessary to adjust the contents of this before new legal documents are issued. Polices to promote supporting industries are fairly common across countries. They include strategic definitions, a strong legal base, master plans and action plans, high-quality university education, technical training for engineers and workers, management consultation, incentives, proper tax and tariff structures, finance, matching and linkages, full use of business associations, public-private partnership, international and regional cooperation, and constant organizational reform to revitalize and coordinate various policy elements. The industrial policies of Malaysia and Thailand cover all of these items, although each has its own way and emphasis.

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