

# Chapter 10

## **SMEs in the Thai Manufacturing Industry: Linking with MNES**

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## Chapter 10

# SMES IN THE THAI MANUFACTURING INDUSTRY: LINKING WITH MNES

*Chaiyuth Punyasavatsut<sup>1</sup>*

### Abstract

This paper examines recent policies and programs in Thailand governing small and medium-sized enterprises (SME). It also explores creations of Thai SMEs/MN (multinational enterprise) networks and their implications for technical development of SMEs in two selected industries: automobile and clothing. The nature and patterns of knowledge transfer are also explored in greater detail through case studies of both industries. Our findings support the idea that under the closer integration into global production network, subcontracting, and networking with MNEs can enable SMEs to upgrade their technological and managerial abilities under favorable circumstances.

A review of government support programs for capacity building suggests a new holistic approach to integrating all players, including supporting public policies, to enhance inter-firm linkages. The paper highlights an urgent need to strengthen the absorptive capabilities of Thai manufacturers and workforce to maximize the benefits of global integration, and to soften the impact of structural adjustments on the labor-intensive sector.

## INTRODUCTION

Thailand is a lower middle-income country and a reasonably open economy. In the 1980s and much of the 1990s, Thailand was one of the fastest growing economies in the world. During the 1987-1996, a boom period, real GDP grew by 9.5 percent. During the 1997-1998 financial crisis, real GDP growth fell to negative. Since then, Thailand had been growing at an average of 4.7 percent until 2006.

Exports and foreign direct investment (FDI) had been the main driving forces behind Thailand's industrialization. Manufacturing share in GDP gradually increased

from 26 percent in 1987 to 34.8 percent in 2006. Foreign direct investment stock in manufacturing GDP increased from merely 8.9 percent in 1985 to 37.7 percent in 2000. Most FDI was funneled to Thailand due to low wages, not for the availability of a skilled workforce and other knowledge-intensive factors, thus being confined to relatively knowledge-intensive sectors, such as automobile, electrical and electronics, machinery, and general machinery (Ramstetter et al. 2006).

The role of multinational enterprises (MNEs), as reflected in the amount of FDI inflow, has been prevalent in those sectors. Productivity and technological capabilities of foreign companies far exceed those of local companies. Thus, activities that are technologically complex are mostly performed by foreign companies. Because of these gaps, foreign companies are reluctant to link up with local suppliers and research institutions (Altenburg et al. 2004).

Numerous past studies viewed MNEs as potential agents of the development of small and medium-sized enterprises (SMEs).<sup>2</sup> They are sources of knowledge and technologies, some of which may be copied or transferred to domestic suppliers, thereby raising the standards and productivity of many domestic enterprises, including SMEs. The existence of many MNEs in Thai manufacturing also provides opportunities to reassess the MNE-SME linkage and their impact on SME development.

In 2006, SMEs in Thailand accounted for about 34 percent of the manufacturing GDP and 67 percent of the manufacturing workforce. Most Thai SMEs, as in other developing countries, are not yet modernized. Recognizing rapid changes in globalization and more intense competition from lowered labor cost countries, the Thai government's vision is to create dynamic and knowledge-based SMEs, as described in the current SME Promotion Plan. Activities to enhance business linkage and networking, as well as capacity building, are currently employed.

This chapter reviews recent Thai SME promotion policies and programs, and provides some assessments. It also cites instances of business networking between SMEs and MNEs/LEs and relevant government activities. In this study, two major industries, automobile and clothing, are selected as case studies. The Thai automobile industry is highly relevant as it has been under pressure to increase linkages with MNEs, being the biggest clusters of parts and materials for Japanese automakers in ASEAN. While the automobile sector provides a case study of producer-driven value chain,

clothing is an ideal industry for examining the impacts of the dynamics of marketing (buyer-driven) value chains on Thai SMEs. Interviews with companies were conducted in 2007 to support the analyses.

Much evidence from firm interviews indicates that linkages and spillovers between MNEs and local suppliers in automobile and part industry are significantly improved compared to the past. Networking among lower-tier local suppliers becomes more important under the current global production network. In the clothing industry, subcontracting with MNEs similarly helps local firms gain better access to technology, marketing information, and moving up quality ladder. In contrast to vertical linkages and networking, horizontal networking among lower-tiers SMEs are found to be weak in both industries. In short, our findings support the idea that networking and subcontracting with large enterprises/MNEs could provide a short cut to enhancing SME competitiveness, as proposed earlier by many previous studies.<sup>3</sup> This chapter is organized as follows. The next section begins with a discussion on the growing importance of SME in Thai industrial structure, followed by a series of reviews of recent SME policies and assessments of their effectiveness. The succeeding section cites evidences and rationales for establishing MNE-SME linkages in the automobile and clothing industries. The next one revolves around government activities to create linkages and spillovers and their impact on SME development. The last section concludes the chapter.

## **2. SIGNIFICANCE OF MANUFACTURING SMES**

Thai manufacturing SMEs are defined as firms with less than 200 employees and fixed capital of 200 million baht (equivalent to 5.6 million USD; see details in Table 1). In 2006, the number of registered establishments in manufacturing sector was 675,398, down from 691,926 in 2004. Manufacturing SMEs accounted for 29.6 percent of the total. In 2006, SMEs employed around 3.5 millions employees, or 66.9 percent of the manufacturing workforce, and generated 33.7 percent of manufacturing value-added (see Table 2 and 3). SME valued-added in manufacturing GDP rose 8 percent on average during 2002-2006.

**Table 1. Definition of Thai SMEs**

Manufacturing	Employment (persons)	Value of Fixed Assets
Small	50 or fewer	50 or less Million Baht (USD 1.4)
Medium	51-200	50-200 million Baht (USD 1.4-5.6)

*Source:* OSMEP

*Note:* Exchange rate at 36 Baht: 1 US dollar.

**Table 2. Manufacturing Value-Added and Shares of SMEs 2002-2006**

	2002	2003	2004	2005	2006
GDP (Million Baht)					
Whole Kingdom	5,450,643	5,917,368	6,489,847	7,087,660	7,816,474
Manufacturing	1,836,083	2,061,572	2,238,222	2,466,180	2,739,534
- SMEs	604,306	682,088	753,220	829,934	921,924
• Small Enterprises	255,892	289,446	304,924	335,980	373,220
• Medium Enterprises	348,414	392,642	448,296	493,954	548,705
- Large Enterprises	1,231,777	1,379,484	1,485,002	1,636,246	1,817,610
Manufacturing Share in GDP	33.7	34.8	34.5	34.8	35.0
Share in Manufacturing GDP ( percent)					
- SMEs	32.9	33.1	33.7	33.7	33.7
• Small Enterprises	13.9	14.0	13.6	13.6	13.6
• Medium Enterprises	19.0	19.0	20.0	20.0	20.0
- Large Enterprises	67.1	66.9	66.3	66.3	66.3

*Source:* OSMEP (2007). SME Situation Report 2006 and Outlook in 2007.

**Table 3. Manufacturing Employment and Shares of SMEs 2004- 2006**

	2004	2005	2006
Manufacturing employment	5,143,277	5,193,482	5,228,190
SMEs	3,431,553	3,459,096	3,496,202
Share	66.7	66.6	66.9

*Source:* OSMEP (2007). SME Situation Report 2006 and Outlook for 2007.

**Table 4 Value-Added and Shares of SMEs in Manufacturing in 2006, Classified by ISIC**

ISIC Industry	SMALL				Medium				SMEs				Large	
	Percent in Row industry	Value (M. Baht)	Percent in Total industry	Percent in Row industry	Value (M. Baht)	Percent in Total industry	Percent in Row industry	Value (M. Baht)	Percent in Total industry	Percent in Row industry	Value (M. Baht)	Percent in Total industry	Value (M. Baht)	Percent in Total
15 Food Products and Beverages	14.1	66709.8	17.9	19.1	90182.2	16.4	33.2	156892.0	17.0	66.8	315361.1	17.4		
34 Motor Vehicles and parts	0.9	2432.7	0.7	1.9	5299.1	1.0	2.7	7731.8	0.8	97.3	275550.7	15.2		
18 Wearing Apparel	12.5	26107.4	7.0	22.2	46492.5	8.5	34.6	72599.9	7.9	65.4	137078.1	7.5		
36 Furniture n.e.c	16.5	34480.2	9.2	40.7	85294.9	15.5	57.2	119775.1	13.0	42.8	89745.4	4.9		
24 Chemical and chemical products	12.7	21956.4	5.9	52.9	91330.2	16.6	65.6	113286.7	12.3	34.4	59436.4	3.3		
32 Television and communication	4.1	7084.7	1.9	7.2	12353.1	2.3	11.3	19437.8	2.1	88.7	153251.1	8.4		
17 Textiles	9.5	14166.2	3.8	21.7	32348.2	5.9	31.3	46514.4	5.0	68.7	102219.6	5.6		
30 Office	2.2	3101.6	0.8	3.6	5044.4	0.9	5.8	8146.0	0.9	94.2	131906.3	7.3		
29 Machinery and equipment, n.e.c.	31.6	39833.7	10.7	13.9	17551.6	3.2	45.6	57385.3	6.2	54.4	68541.4	3.8		
26 Non-metallic mineral products	15.2	18349.9	4.9	12.2	14743.4	2.7	27.3	33093.4	3.6	72.7	87930.3	4.8		
23 Petroleum and coal products	38.9	45300.7	12.1	4.2	4853.6	0.9	43.1	50154.3	5.4	56.9	66162.8	3.6		
25 Rubber and Plastics products	13.4	15457.5	4.1	31.0	35820.2	6.5	44.3	51277.6	5.6	55.7	64403.4	3.5		
19 Leather products	18.2	15780.6	4.2	29.5	25610.7	4.7	47.7	41391.3	4.5	52.3	45354.8	2.5		
28 Metal products	22.7	18561.0	5.0	22.0	17976.8	3.3	44.7	36537.8	4.0	55.3	45261.3	2.5		
21 Paper and paper products	11.5	5637.9	1.5	12.0	5899.5	1.1	23.5	11537.4	1.3	76.5	37632.4	2.1		

ISIC Industry	SMALL			Medium			SMEs			Large		
	Percent in Row industry	Value (M. Baht) in Total industry	Percent in Row industry	Value (M. Baht) in Total industry	Percent in Row industry	Value (M. Baht) in Total industry	Percent in Row industry	Value (M. Baht) in Total industry	Percent in Row industry	Value (M. Baht) in Total industry	Percent in Row industry	Value (M. Baht) in Total industry
16 Tobacco products	0.4	168.5	0.0	0.7	323.1	0.1	1.0	491.6	0.1	99.0	46896.9	2.6
31 Electrical machinery and apparatus n.e.c.	20.7	9641.7	2.6	35.4	16523.2	3.0	56.1	26164.9	2.8	43.9	20494.8	1.1
35 Transport equipments	12.1	5120.7	1.4	28.4	12024.8	2.2	40.5	17145.5	1.9	59.5	25172.7	1.4
27 Basic Metals	14.3	4797.8	1.3	45.3	15251.4	2.8	59.6	20049.2	2.2	40.4	13588.6	0.7
22 Publishing	53.5	11978.7	3.2	26.3	5888.0	1.1	79.9	17866.7	1.9	20.1	4503.6	0.2
33 Medical equipments	10.5	3081.7	0.8	9.2	2715.3	0.5	19.7	5797.0	0.6	80.3	23583.5	1.3
20 Wood and wood products	28.5	3470.9	0.9	42.5	5178.9	0.9	71.0	8649.8	0.9	29.0	3534.6	0.2
Total	13.6	373220.0	100	20.0	548704.5	100	33.7	921924.4	100	66.3	1817609.6	100

Source: OSMEP (2007). SME Situation Report 2006 and Outlook for 2007, Table 3.10

In terms of sectoral composition, sectors occupying the top three highest shares of SME value-added are food products and beverage (ISIC15)<sup>4</sup>, furniture (ISIC 36), and chemicals and chemical products (ISIC24). SME value-added shares in manufacturing in wearing apparel (ISIC18), and motor vehicles and parts (ISIC34) accounted for only 7.9 percent and 0.8 percent in 2006, respectively (Table 4).

In terms of exports, export value by SMEs was 38,173 million USD and increased by 16.5 percent in 2006 (Table 5). The share of SME exports to total exports was 29 percent, or 47.3 percent of the GDP generated by SMEs (Table 6).

**Table 5. Values and Growths of Exports and Imports by SMEs 2004-2006**

	2004	2005	2006
SMEs Export (million USD)	28,416.5	32,765.2	38,173.9
SMEs Import (million USD)	30,351.5	38,601.1	42,254.9
Balance (million USD)	-1,935.0	-5,835.9	-4,081.0
SMES Export Growth		15.30 %	16.5 %
SMES Import Growth		27.20 %	9.50 %
TOTAL EXPORT (million USD)	94,025.7	110,505.8	131,301.0
TOTAL IMPORT (million USD)	92,166.4	118,954.3	129,136.5
BALANCE (million USD)	1,859.3	-8,448.5	2,164.5
TOTAL EXPORT GROWTH		17.5 %	18.80 %
TOTAL IMPORT GROWTH		29.10 %	8.60 %
Exchange Rate (annual average) (Baht: 1 \$US)	40.07	40.07	37.73
Brent Oil Price (\$ US per barrel)	38.3	54.4	64.1

*Source:* Custom Department, quoted in OSMEP (2007) Table 4.2

**Table 6. Shares of Exports and Imports by SMEs 2004-2006**

	(%)		
	2004	2005	2006
Share of SMEs EXPORT to TOTAL EXPORT	30.2	29.7	29.1
Share of SMEs IMPORT to TOTAL IMPORT	32.9	32.4	32.7
Share of SMEs EXPORT to GDP SMEs	45.1	46.7	47.3
Share of TOTAL EXPORT to GDP	59.6	62.5	63.3

*Source:* Custom Department, quoted in OSMEP (2007) Table 4.3.

Recent studies on overall performance of Thai manufacturing SMEs were somewhat limited.<sup>5</sup> Many of these relied on the 1996 industrial census for TFP or labour productivity calculations. Total factor productivity (TFP) index of SMEs in many subsectors was found higher than that of LE. Ramstetter (2004) showed that MNEs tended to have higher average labour productivity and had lower average capital productivity than the local plants in most industries. Using their own firm survey data in five industries in 1997-98, Dollar et al. (1998) found that there was a clear tendency for productivity to increase with company size, but only up to a point. In addition, they found that a) foreign-invested firms have higher productivity and much lower dispersion of productivity levels; b) Thai firms that license technology are 100 percent more productive than those that do not. Higher productivity in Thai firms is associated with formal in-house training programs and with subcontracting for other producers.

Overall problems of Thai manufacturing SMEs are not different from those of other developing countries. Recent studies highlighted various common limitations of SME operations: lack of management capabilities, limited access to market information and promotional services by government agencies, shortage of working capital, inadequate skilled labor, and uncertainties in governmental support programs. However, different manufacturing subsectors face different sets and degrees of problems. Thus, sector-specific strategies for SMEs development may be more appropriated. For a comprehensive review of current Thai SMEs situations, see Tambunlertchai et al. (2007).

In Thailand, there is no country statistics on numbers of subcontractors. The annual industrial survey by the Ministry of Industry, however, reports amount of subcontract cost (including resale of finished goods) in business operation. At best, this figure could indirectly reflect value of manufacturing output sold by SMEs and micro enterprises to large firms. Subcontracting cost shares among the top-ten manufacturing sub sectors were around 18-49 percent of total production cost in 2006.

### **3. SMES SUPPORTING POLICIES: REVIEW**

Recent policy toward SME development in Thailand can be classified into three periods.

#### **3.1 Before 2000 and the 2000 SME Promotion Act**

Before 2000, Thailand did not have a basic law on SMEs, which could have provided coordinated and explicit guidelines for the promotion and long-term development of SMEs. Instead, SME-related policies and measures were articulated and embodied in the National Economic and Social Development Plan and cabinet solutions. Various ministries then translated these policies into action plans. Due to lack of coordinating agencies, which could supervise the direction of SME development plans, and discontinuing emphases of SME significance for economic growth in the national plan, government programs toward SME development in these periods were fragmented and weak.

When the financial crisis occurred in 1997, reviving SMEs was seen as a good resolution to stimulate the economy. Owing to the growing importance of SMEs as an economic and political force, appropriate policy formulation is called for<sup>6</sup>. In 2000, the first SME Promotion Act was declared. The Office of SMEs Promotion was set up in the same year as a coordinating body among government agencies for SME development. Following were the main responsibilities of the then new office:

- a. Formulating a SME promotion master plan and promotional policies.
- b. Preparing an action plan for the promotion of regional/sectoral SMEs as well as micro and community enterprises.
- c. Serving as the country's SME information center and the central organization for the conduct of research and studies on SME-related issues, including an early warning system.
- d. Developing information systems and networks to support the operation of SMEs.
- e. Administering the Venture Capital (VC) Fund for SMEs.

### **3.2 Under Thaksin's Regime 2001-2006 and the First SME Promotion Plan 2002-06**

When Thai Prime Minister Thaksin Shinawatra came to power in 2001, a “dual-track” policy was pursued to recover the Thai economy from the 1997 financial crisis aftermath. Besides an export-led growth policy, stimulating a domestic economy and, more importantly, recognizing the developmental roles of SMEs and grass root communities, was a salient feature of his policy. This policy has been very popular and had brought about some promising changes in the development of the country's small business sector. Several SME development-related measures have been introduced along with financial support schemes. Some of the popular supportive financial measures were the village funds, the People's Bank, and “One-TAMBON-One-Product” (OTOP). The OTOP project aims to support grassroots communities to use their local knowledge to develop their own products with some technical support from government agencies.

The First SME Promotion Plan (2002-2006) aimed to develop more entrepreneurs and enable SMEs to reach international standards. The plan specifically sought to enhance the efficiency and capacity of SME operators as well as other sectors to create a business environment where SMEs could thrive, to improve market efficiency and competitiveness, and to promote grassroots businesses so that they could play a more prominent role in income distribution and bring prosperity to the provinces.

Specifically, the objectives were a) a targeted growth in the SMEs business to a level of 50 percent of GDP by 2006; b) an increase in the workforce in the SME sector at an average of 181,700 persons annually; c) a boost of the export value of 6 percent per year or to about Bt 436.5 billion by 2006; d) an increase in the number of new entrepreneurs by 50,000 per year, and an increase in the number of people who can run a business by not less than 10 percent annually of which there will be a total of 6,300 groups by 2006. Moreover, some industry groups were also targeted to be promoted. For example, food processing and fashion industries, automotive parts, electrical and electronics components.

The plan incorporates seven strategies, namely, a) managerial and technological upgrading; b) human resource development; c) expanding market; e) strengthening financial capabilities; f) improving the business environment; (g) cultivating and micro

enterprises and grassroots communities business; and h) establishing comprehensive linkages of enterprises.

In all, the government's first SME promotion policy has three main planks: investment promotion, financial assistance, and technical and management consultancy. Investment promotion for SME and LE operates under the supervision of the Board of Investment (BOI) agency. The BOI was established in 1977 under the Investment Promotion Act as a tool to help promote foreign and domestic investment. In 2006, a total of 582 SME investment projects were approved by the BOI. Of these, 443 projects, or 76.1 percent of the total, were approved for small enterprises. In 2006 the value of SME investment projects promoted by the BOI was Bt 30,139 million. About 62.5 percent were investment projects by small enterprises.

In compliance with the SME Promotion Act, the Small and Medium Enterprise (or SME) Development Bank of Thailand was founded in 2002. The new bank was an upgraded version of the Small Industry Finance Corporation, a small 50:50 financial joint venture between the government and the private sector. The SME Bank assumed the role of assisting SMEs in securing sources of funds, preparing business plans and providing advice on business operations.

In addition, the government instructed other specialized-financial institutes and state banks, including Krung Thai Bank and Siam City Bank, to provide loan support to SMEs. In 2002, seven financial institutions<sup>7</sup> provided lending and credit guarantees to SMEs, which had a combined worth of Bt 52 billion, up 28 percent from the year before. In 2003, the SME Bank alone provided Bt 27 billion to 6,179 SMEs. Among the loan recipients, 23 percent were new firms, being first-time registered companies. The rapid growth in lending to SMEs by special-purpose and state banks had also attracted loans from private commercial banks that were previously reluctant to approve SMEs loans despite huge excess liquidity. At the end of 2003, the SME Bank expanded its customer base throughout the country using aggressive public relations and marketing campaigns.

Yet, some critics expressed their concerns about the effectiveness of SME financial support programs. They said forcing state banks to provide cheap and easy credit to many small businesses without a careful review was bound to promote misuse of resource allocation. Moreover, many popular programs were suspected of having some hidden political agenda. Finally, many programs were approved without sound

rationale and without paying sufficient attention to improving the quality and standard of production, marketing and accounting. In 2004, the SME Bank reported that its non-performing SME loans comprised around 22 percent of total credit outstanding, higher than the average of 16-17 percent for the financial sector as a whole. At the end of 2006, its NPL had risen to 43 percent, or Bt 20 billion, the highest among state-owned specialized financial institutions.

Another key SME development by the Thaksin government was the establishment in 2003 of a venture capital fund worth Bt 5 billion, aimed at creating joint ventures with SME projects. The fund was used in conjunction with an existing SME venture capital fund worth Bt 1 billion established by the Democrat-led government. The latter is now being managed by the One Asset Management Corporation. Poapongsakorn and Tangkitvanich (2004) argued that the Ministry of Finance's Venture Capital Fund was unlikely to succeed because returns to SMEs investment were unlikely to generate more returns than investments in larger companies. Moreover, embedded risk in the venture fund makes it less attractive to investors with no prior experience. So far, the total value of the existing funds is far below the target.

As for technical and management consultancy measures, the New Entrepreneurs Creation program (NEC) under the Ministry of Industry in 2002 was another initiative intended to encourage people to create their own businesses. Under the NEC program, the SME bank provided business counseling and training to resolve problems and further develop their businesses. Combining with other measures, which offers financial, production and marketing training as well as fund accessing advice, the plan had led to a gross increase of 226,757 new entrepreneurs, or on average 44,550 per year during the plan. Although impressive, the creation of new entrepreneurs was yet behind the plan target aiming at additional 50,000 entrepreneurs per annual. During the whole plan, SME employment increased by 3.8 million, well above the target.

Toward the completion of the first plan, SMEs GDP accounted for 39.8 percent of aggregate GDP, a bit below the target of 40 percent. In addition, growths of both SME value-added and exports were still below those of LE. Judging from these key performance indicators, we could evaluate overall SME policies with a moderate success. During this plan, government contributions to the Thai SME development

tended to focus in the areas of financial assistance, entrepreneurial activities, and information access.

Arguably, recently formulated Thai SME policies and measures have been more vivid and formulated as an integral component of industrial policy. It was the first time under the Thaksin government that the Ministry of Industry had come up with policy guidelines emphasizing the development of SMEs, as well as addressing targeted industries in the industrial restructuring master plan.<sup>8</sup> As a result, Thailand's industrial policy tends to adopt more interventionist approach as a basis for her SME policy.

### **3.3 The 2<sup>nd</sup> SME Promotion Plan 2007-2011**

In September 2006, the staging of a coup d'état in Thailand brought about a new military government. To some extent, the new interim government led by former bureaucrats helped to end the political impasses and improve fiscal transparency. By reviewing the previously off-budget schemes of the Thaksin government, the interim government suspended many of Thaksin's initiatives, especially popular policies for helping the poor and SMEs. The new interim government was accused to be weak and uncoordinated due to lacks of supports from local politics.<sup>9</sup> An unstable political environment and rising cost due to persistently high oil-price during 2006-2007 has seriously curbed down domestic demand, and shrunk investment confidence, as a result hurting many SMEs. The Thai economy grew 5 percent in 2006, and was expected to grow only 4.3 percent in 2007. In 2007, the SME Bank's non-performing loans (NPLs) had remained at the high level of more than 40 percent, translating to Bt19 million. According to the SME Bank's report, about 75 percent of these loans were to businesses suffering from genuine liquidity problems while the other 25 percent constitute strategic NPLs that have elected not to make payments.

The current SME policy guidelines are contained in the Second SME Promotion Plan 2007-2011. The plan's vision is to enable SMEs to grow with continuity, strength, and sustainability in terms of knowledge and skills. In line with the first plan, the second plan aims to achieve three economic targets: raise the share of SMEs in GDP to 42 percent; higher SMEs export shares than the total export growth; and an average 3 percent annual increase in the total factor productivity of SMEs, including a minimum of 5 percent labor productivity to growth per annum. The second plan remains targeted

at certain sectors such as auto and electronic parts, software, logistics, healthcare, education, tourism related industry, health foods, and rubber products.

Of the numerous measures employed in this plan, those related to manufacturing SMEs include a) product quality improvement; b) establishing business incubator centers in regional and local areas; c) trade fairs; d) setting up of exhibition centers for SME products throughout the country; e) improving logistics or distribution channels; f) creation of industrial clustering and networks.

#### **4. BUSINESS LINKAGE AND NETWORKS IN THAILAND : CASE STUDIES**

Business linkage and networking, including subcontracting, with MNEs or large enterprises, have attracted more attention following the Thai industrial (including SME) policy formulation recently. On the broad picture, a more liberalized trade and investment, as well as the rapid development and diffusion of information and communication technology (ICT), has fundamentally changed the global competitive environment in which MNEs operate. Subcontracting now covers high-value processing and manufacturing activities and more sophisticated technologies. These changes have widened the potential and avenues for SME involvement. Linkages with MNEs could provide a short cut for SMEs to overcome barriers and constraints (UNCTAD 2006, 2001, 2000; Wattanaputtipaisan 2002; Berry 1997). Subcontracting benefits to SMEs include enhanced skills, improved standards and capacity, access to technical support for product quality and upgrading, management support, financial support, and provision of large/stable orders. In addition, networking with MNEs and large enterprises can often be a valuable source of modern technologies as well as access to foreign markets, marketing and distribution channel information (Knorringa and Schmitz 2000).

The increased presence of MNEs and trade liberalization does not always benefit SMEs. The MNEs or its affiliates could out-compete local companies and crowd out investment. They do not necessarily choose local suppliers to provide them with products and services. Foreign affiliates could outsource from their own global supply

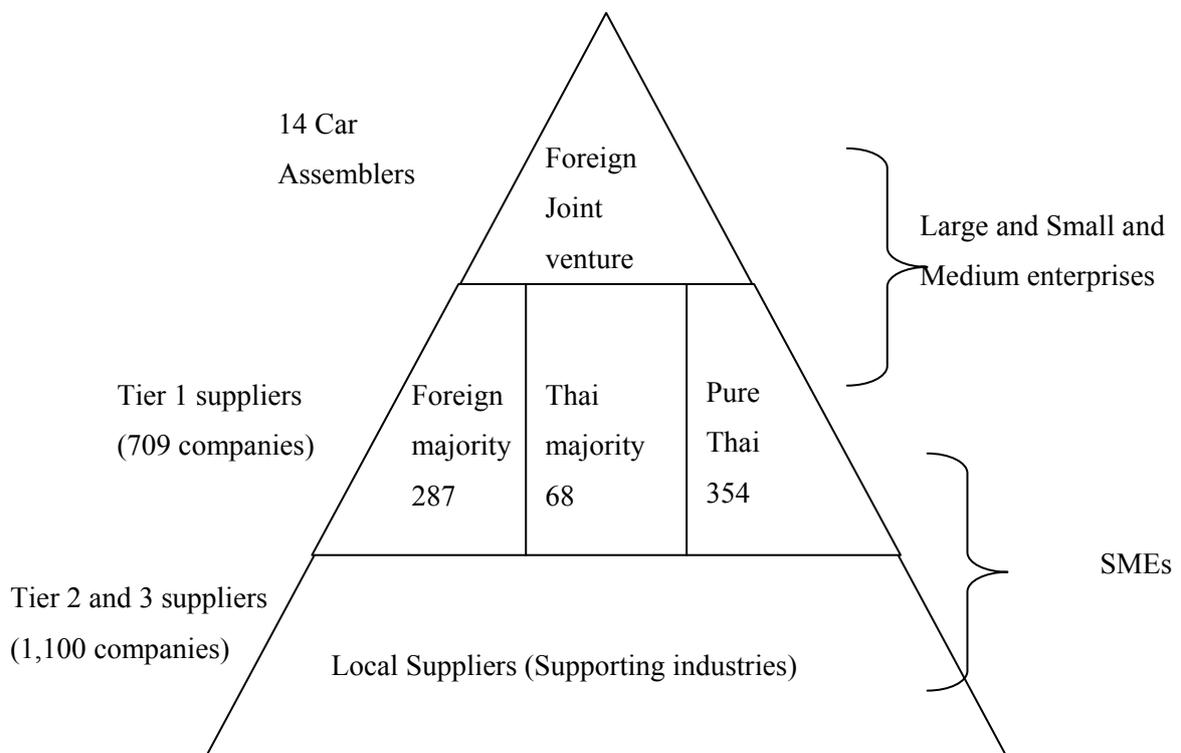
chains or other places, rather than sourcing domestically. SMEs are also faced with more intense competition internationally. In many sectors, competition has driven many SMEs out of business. Generally, SMEs are not well prepared for the new market condition and stronger competition in the export markets. Thus, only a few of them could benefit from globalization.

This section presents case studies of MNE-SME linkage in two manufacturing activities: automobile and clothing. Rationales for linkage formation and opportunities for technological upgrading are also discussed.

#### 4.1 Automobile industry

The recently developed structure of the Thai automobile part industry can be shown in Figure 1. In 2002, there were about 1,800 local suppliers in Thailand, consisting of 700 tier-1 suppliers and 1,100 tier-2 and lower subcontractor suppliers. Among the first-tier suppliers were around 354 Thai-owned OEM suppliers.<sup>10</sup>

**Figure 1. Structure of Thailand Auto Parts Suppliers in 2002**



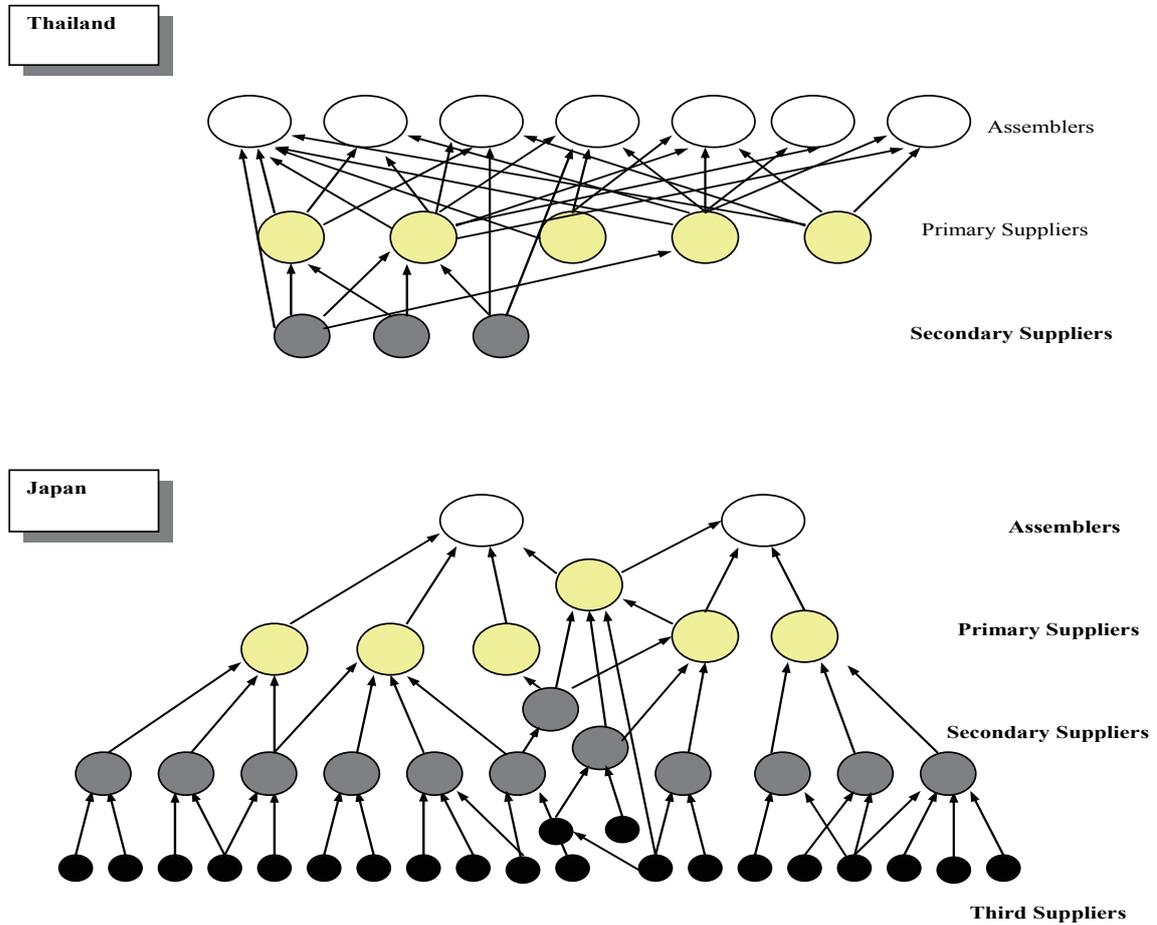
Source: Thai Automotive Industry Association (2003)

The 1978 local content policy was the critical factor behind the development of Thailand's components and parts industry. As far as numbers of firms were concerned, this policy did promote linkages between MNEs and local firms, which were mostly SMEs, through subcontracting arrangements. Even though the policy was seen to many as an obstacle to trade liberalization with the potential to create captive markets for components and parts producers, it generated opportunities for domestic firms and established supporting industries. The existence of dense networks of local suppliers in part helped attract automakers to Thailand in the 1990s. As a result of increased car production and large movements of Japanese component firms to Thailand, the local content gradually increased. As a result, stronger linkages between MNEs and local firms were established. The local content policy was abolished as planned in the beginning of 2000.

Since 2000 and following the liberalization of trade policy, the Thai automobile industry has expanded drastically. Many Japanese and U.S. automobile assemblers and auto parts manufacturers turn Thailand into a major export base for their global operations. In 2005, production volume of assembled vehicles exceeded 1 million units. Since 2004, the volume of export and import of vehicle and parts with ASEAN has increased significantly. The share of exports of vehicles from Thailand to ASEAN-10 rose from 11.9 percent in 2001 to 50.1 percent in 2005 (Kohpaiboon 2006b).

As a result of the local content policy, a part procurement system and networking in the automobile sector was developed. Networks between suppliers and assemblers are multipliers: a single supplier supplies parts to several assemblers (Maruhashi 1995). These cross-supplier networks are different from the *Keiretsu* system in Japan. Figure 2 compares the structures of supplier networks between the Thai and Japanese Automobile industry. The main reason for this type of networks is to allow part suppliers to achieve economies of scale (Higashi 1995). Such cross-supplier system has also generated spillover effects and extended beyond national boundaries (Fujita and Hill 1997).

**Figure 2. Comparisons of Structures of Supplier Networks Between the Thai and Japanese Automobile Industry**



Source: Thailand case from Maruhashi (1995) and Japan case from Smika (1991)

Before 2000, evidence of technological upgrading among parts suppliers was mixed (UNCTAD 2000). Kato (1992) concluded that the transfer of production capabilities was moderately successful, while the more advanced capabilities such as design were relatively limited. Foreign assemblers did provide technical assistance and training to their local suppliers to upgrade their production processes. Overall, technology deepening in parts suppliers was rather limited.

However, the recent networking of the supplier system may be changing due to changes in the export strategy of major Japanese car assemblers. For example, Toyota aimed to procure all parts and components locally at Toyota Motor Thailand (TMT) and

integrated Thailand into its global production network. Obviously, this integration created tremendous pressures on automobile part suppliers, particularly in the area of engineering capability. Since then, TMT has put exerted considerable efforts to enhance its local suppliers capabilities, thus fostering inter-firm networking.

To provide up-to-date illustrations of networking, 13 firms were purposively selected and interviewed in 2007 for this study. The choice of these firms was largely determined by accessibility and partly by its success in business. The interview samples cover Tier-1, Tier-2 and 3 suppliers in the industry.

#### *4.1.1 Networking Between MNE and First-tier Suppliers<sup>11</sup>*

After 2000, the Thai automobile industry became more liberalized. Many assemblers pursued the strategy of making Thailand their production and export base. Global sourcing and competitive bidding systems were adopted, and assemblers demanded their tier-1 suppliers in Thailand to provide a full component design and development capability, or at least to respond to engineering changes in the designs that might occur during the process prior to the mass production.

Evidence from firm interviews indicates that inter-firm technology transfer became more intensive than it had been in the past. The more active role of suppliers and their increased ability to take part in the product engineering process have become increasingly important. In other words, local suppliers must show their strong will to participate in such processes and possess sufficient engineering capability. Otherwise, they will not qualify as tier-1 suppliers and cannot benefit fully from inter-firm relationships. Given the rapid changes in the automobile industry, suppliers need to have a design capability.

Nevertheless, it takes time and resources to develop such capability. Suppliers are thus aware that there are other ways to meet the heightened technical requirements of automobile assemblers, especially those involving design and product development capabilities. Local suppliers may acquire technology from technology partners by, for instance, striking joint venture deals or technical assistance agreements to supply and assimilate the knowledge needed to retain their customer business. This will allow them to benefit from inter-firm technology transfer and provide them with the an opportunity to take part in the product-development stage with customers in the future.

There are a variety of instruments to promote networks between Japanese automakers and their suppliers in Thailand. Box 1 provides details of the Toyota Cooperation Club (TCC) operation showing MNEs' efforts to strengthen its local suppliers' capabilities. In addition, interviews with Toyota Motor Thailand (TMT) and domestic suppliers indicate that TMT has been actively promoting Toyota Production System (TPS) activity in recent years. Such activities help improve the managerial abilities of suppliers and facilitate knowledge sharing among TCC members.

Nevertheless, there are many difficulties to successfully implement the TPS activities. These include the a) lack of skilled labor and/or responsible organization of supplier company; b) lack of knowledge sharing within organizations; and (c) lack of efforts to maintain the system.

#### *4.1.2 Networking Between First-tier and Lower-tier Suppliers*

First-tier suppliers deal with a limited number of suppliers. Lower-tier suppliers supply simple components using non-sophisticated production techniques in stamping and casting processes. Technology transfer at this level occurs only at the production stage, including in-house production and plant management.

Since most intermediates and raw materials for parts are made to precise specifications, some form of cooperation to ensure quality is needed. Network relationships at this level come in the form of bilateral relationships. That is, technology is only transferred from first-tier suppliers to lower ones with no knowledge sharing among lower-tier suppliers involved. Therefore, under a bilateral relationship, the relationships among lower-tiers are weak, and only explicit knowledge is shared.<sup>12</sup>

Interviewed firms pointed out two key factors contributing to inter-firm technology transfer at this level: a) a more competitive environment and stringent requirements from part suppliers; and b) types of products, manufactured by lower-tier suppliers, that are used specially for automotive industry. Evidence was found of three channels through which technology transfers occurs at this level:

- a. Technical supports by training visits at lower-tier plants
- b. Organizing seminars at first-tier plant
- c. Providing manuals to lower-tier suppliers

Due to differences in technological abilities of lower-tier suppliers, sending technicians on training visits are considered a better way to transfer tacit knowledge that is otherwise difficult to be codified. In addition, it helps to mitigate differences in the learning abilities of employees of lower-tier firms.

Interviews also brought out three main barriers to technological transfer to lower-tier suppliers:

- a. Lack of motivation to join the supplier development program provided by the first-tier supplier
- b. Difference in technological capabilities of lower-tier suppliers
- c. Low absorptive capacity of employees of lower-tier firms

In sum, recent developments within the Thai automobile industry highlight the inter-firm networks that provide mutual benefits between MNEs and SMEs. With their reorientation toward global production network and having Thailand as a regional hub, MNE automakers need to modernize local part suppliers as well. In this process, Japanese carmakers induce their home-base suppliers to relocate to Thailand. As a result, many part supplier are foreign affiliated and joint-venture firms. At the same time, inefficient indigenous or wholly Thai-owned suppliers are being taken or crowded out. Yet, evidence from interviews also shows that first-tier suppliers do provide technical know-how and service to existing lower-tiers firms so they can meet their demands in terms of quality and management. The extent to which technological and managerial transfers occur is also related to lower-tier suppliers' absorptive capabilities and their willingness to undertake product upgrading besides corporate strategy of large enterprises.

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**Box 1. Linkages between MNE and Local suppliers: The Case of Toyota Cooperation Club<sup>13</sup>**

TMT has established an extensive domestic network of linkages with Tier-1 suppliers. In 2006, TMT had 144 Tier-1 parts suppliers and 525 suppliers of intermediated inputs, such as raw materials, and service providers. The TCC has been employed by TMT to strengthen its local suppliers capabilities.

After organizing the TCC, TMT established a training center in 1982, when there were only about 25 to 35 members. In 2007, the number of Tier-1 supplier members increased to 109 members. Due to the scattering of suppliers over dispersed geographical areas, TMT could not simply adopt *kanban* system, which requires a prompt delivery of parts at the assembly plants. With 144 suppliers trying to deliver parts at specified schedules, there was congestion at the assembly plants. Thus, TMT adopted the milk-run system for parts delivery. The Samrong plant, which is the pick-up truck assembly, can make 360 trips a day, while the Gateway passenger-car plant receives 275 trips per day. In 2006, the TMT plants were operated at almost its full production capacity.

TMT achieved increased productivity through its successful implementation of a new efficient production management system on its suppliers, called Toyota Production System (TPS). The TMT's production network facilitates knowledge sharing among suppliers within the network, similar to what they did in the U.S.<sup>14</sup> The TCC is responsible for sharing explicit knowledge. Only suppliers who have maintained long-term relationships with TMT will be admitted as TCC members.

After becoming TCC members, suppliers can receive consulting services on the TPS free of charge, provided they can show their commitment to learning and improving their production management capabilities. Then, TMT will send well-trained consultants to transfer tacit know-how regarding the TPS at the suppliers' plants. This consulting service also helps create a norm of reciprocal knowledge sharing, and a feeling of indebtedness and openness within the supplier network (Dyer and Nobeoka 2000). There are about a dozen consulting projects in 2007. Currently, Thai staffs conduct the TPS training for the parts companies in other ASEAN countries.

In addition, TMT carefully organizes small learning teams to enhance the suppliers' skills and share specific tacit knowledge with other members. This group activity is very effective in developing strong ties among team members through the formal "core group" activities and informal social networks. This practice is quite unique for the case of TMT. Other Japanese firms seem to have less active supplier development activities. The American (GM and Ford) and European (BMW) carmakers do not have similar institutional methods of knowledge sharing. They provide necessary technical support required by the new car models.<sup>15</sup> Based on this observation, it can be argued that the Japanese automakers tend to rely extensively on multi-tiered supplier networks and have established a long-term relationship based on trust and rent sharing.

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#### **4.2 Clothing industry**

The clothing industry has played a very important role in the industrialization process in Thailand. During the period 1988-1993, clothing was the top export item. Today, it remains a major Thai export. Promoting the clothing industry would generate a positive impact on economic development, especially employment and SME operations. In 2006, the clothing sector employed 548,068 employees, accounting for 13.2 percent of total manufacturing employment. Of these, 84 percent were employed by SMEs. By its nature of labor intensity as well as backward and forward linkages with other industries, its expansion would create significant employment generation.

Linking with MNEs in this industry is often described as the MNE buyer-driven channel (Gereffi and Memedovic 2003). Through this channel, large retailers, marketers, and branded manufacturers play important roles in creating production networks in various exporting countries. Large retailers and/or marketers supply the specifications for their goods. Tiered networks of contractors carry out production of finished goods. Thus, an MNE buyer channel can be classified as another specific form of subcontracting. These buyers have considerable influence on local suppliers or their subcontractors.

Previous studies argued that integrating into the global production networks of MNEs provides a short cut for export success in the clothing industry. The main

benefits of these networks are to lower the entry cost to foreign markets and to gain some export spillover. MNEs have better information on consumer tastes, distributing and marketing channels, and trade regulations. In addition, they undertake a large proportion of the world's total R&D and are principal bearers of technology across international borders. (Sjoholm 1997; Borensztein *et al.* 1998; Lipsey 2000; Vernon 2000). Local firms as subcontractors could possibly acquire knowledge about production technology and market information from the MNEs. Thus, relationships between local firms and MNE buyers can significantly contribute to international market penetration and product upgrading.

In the case of Thailand, knowledge about existing linkage between SME to MNE network in clothing industry is still limited.<sup>16</sup> To understand the implications of upgrading prospects (and other aspects including market expansion) from integration to the global chain, the study relied on primary information gathering from firm interviews. There are 10 samples covered in the interviews. They consist of seven clothing firms (two SMEs, five LEs), a fabric wholesaler for SMEs, an apparel agent, which sources local suppliers for several international brand owners, and the major companies making up the Thai Textile and Clothing industries. It covers some successful large firms that have an extensive export experience, which are relevant to other SMEs. Kohpaiboon (forthcoming) provides a background study of this section conclusion below.

#### *4.2.1 Networking with MNEs via Buyer-Driven Channel*

The pivotal role of MNEs in accommodating local firms to the global market in this industry is through a MNE buyer-driven channel. None of the firms interviewed mentioned the significant role of MNE affiliates. Unlike the producer-driven modes as in electronics industry, it is unlikely for MNEs to gain large benefits from establishing their affiliates abroad to employ cheap labor. Main profits come from combinations of high-value research, design, sales, marketing, and financial services that allow the MNEs to act as strategic brokers (Gereffi 1994). At the same time, local firms can easily access production technology. Thus entry barriers and profitability are also low. Evidence from firm interview supports this view. MNE involvement occurs either through the direct link with MNE buyers (based on the responses of half the samples) or the indirect link through the agent. Such a relationship resembles general arm's length

transaction where each other negotiates price, quantity, quality and delivery. Often, there is no explicit contract.

At the beginning, MNEs must look for potential suppliers in developing countries to manufacture tailor-made goods. Before placing orders, MNE buyers assess local suppliers' capability through their visits or from the product sample made by local suppliers. Chosen suppliers must show their potential to deliver the final goods at a given price. This requires them to possess a certain level of production skill and technological capability.

After finding potential local suppliers, the buyers provide technical information for improving existing facilities. One of the respondents to the study, a manager of a medium-sized exporting firm, revealed that his company's laser-cut machine was introduced by MNEs (through the agent) to enhance the firm's ability to manufacture more complicated orders. Without this advice, it would be far more costly for the company to acquire such information (trial and error process). This MNE involvement helps local suppliers to upgrade their production and becomes more efficient.

In addition, local enterprises must comply with all the requirements and apply the technical information. This becomes increasingly important in some export destinations in which consumers are concerned with how goods are manufactured (i.e., factory safety, labour standard, child labor, etc.). One firm stopped receiving orders from the MNEs buyer and eventually closed down owing to its inability to meet such requirements.

Linking up with MNEs also contributes to technological improvement among local suppliers. There are continuing pressures on local suppliers to constantly enhance their productivity. To ensure competitiveness and comply with regulations, MNEs require a factory audit (by some agencies) on a regular basis. Suppliers that perform better tend to get larger orders while those which under-perform receive less, prompting the latter to improve their productivity.

#### *4.2.2 Innovation and Quality*

MNEs play a crucial role in bringing in new types of clothing to their suppliers and help the latter gradually move to higher-quality products. Where international

marketing is concerned, MNEs are far more superior to their suppliers. Hence suppliers play a limited role in product innovation.

The types of apparel ordered by MNEs constantly change and become more and more complicated. This goes along with rising labour costs in Thailand. The survey found that MNEs must know their suppliers' competitiveness and place their orders accordingly. When their suppliers start losing competitiveness or are no longer competitive in one product category, MNEs will bring a new (more complicated) product category as well as provide guidance to ensure their suppliers can do them competitively.

Through their long-term relationships with MNEs, some Thai suppliers can undertake product development and cooperate with the former to develop products. To do so, local suppliers become large enterprises and the main supplier of MNEs. MNEs tend to adopt modular system and directly link with a limited first-tier supplier to cut their costs. First-tier local suppliers must acquire product design capability. Thus, R&D activities become more integrated.

#### *4.2.3 Market Expansion and Exports*

Regardless of firm size, when firms want to export successively (not one-off event), they must be integrated into the MNE network. The most crucial skill local suppliers lack is international marketing knowledge, including those dealing with designs, labeling, packaging, and distribution channels. Integration into the MNE network is regarded as a short cut for local firms to acquire such knowledge and successfully penetrate the global market.

It seems that exporting firms are unlikely to remain SMEs. Once they become part of the MNE global production network, they tend to expand their production capacity. Expansion of production capacity is a proposal of MNEs. One plausible explanation is that MNEs want to cut transaction costs (particularly monitoring costs) incurred as a consequence of dealing with suppliers.

In general, MNEs have full control over product marketing and their order is relatively large compared to suppliers' production capacity. One company said that orders from a given MNE could already account for more than 50 percent of the total production capacity of a large supplier. The proportion is even bigger among smaller

suppliers. Hence, once suppliers are integrated into their production network, they are unlikely to take orders from other buyers.

While involvement with MNEs implies greater production opportunity for SMEs, it also limits their flexibility in controlling their usual business operation. Interviews showed that this kind of situation is a disincentive for many SMEs in clothing industry to become MNE subcontractors. Many SMEs also think that working as a subcontractor for MNEs is not a sustainable path. Once labor cost rises, MNEs may shift their orders to other countries where wages are lower. As a result, most SMEs prefer to sell their products in the local markets.

Based on the foregoing, evidence from firm interviews shows mixed results about the benefits of MNE-SME linkages. There is a considerable degree of MNE involvement in clothing export. Regardless of firm size, involvement with MNEs seems necessary for exports. Large and medium-sized local suppliers that act subcontractors who can provide full-package services to international traders and marketers said there are considerable benefits from networking with MNEs. This type of networks generates substantial backward linkage in the local market because subcontractors are expected to develop reliable local sources of supplies. However, such opportunities for enhanced technological and managerial knowledge from MNEs are not available to small enterprises in the clothing industry. SMEs are not well aware of the potential benefits of globalization, and prefer independence to working as subcontractors. Surprisingly, horizontal networking among SMEs in the clothing industry is somewhat weak despite increased global competition in the post-MFA (Multi-Fiber Agreement) era.

## **5. MEASURES TO ENHANCE LINKAGES BETWEEN MNES AND LOCAL SMES**

Government policies and measures play an important role in enhancing linkages and spillovers. Policies to restrict FDI and to impose local content, technological licensing or equity requirements are considered counterproductive, as is the case of the Thai automobile industry. Yet, simply liberalizing investment policies and providing incentives to attract FDI are not enough to make the most out of potential networking

and linkages with MNEs. To enhance the benefits of linkages and spillovers between MNEs and local SMEs, specific policies aiming at fostering linkages with MNEs are very necessary.

In Thailand, improving performance of manufacturing SMEs or SMIs is part of the policies promoting supporting industries. Two major government units that play important roles in fostering business linkage and promoting supporting industries are the Bureau of Supporting Industries Development (BSID) under the Ministry of Industry, and the Board of Investment (BOI).

Beginning in 1994, the Bureau of Supporting Industries Development (BSID) under the Ministry of Industry has been strongly urged by the Japanese government to promote the supporting industries in Thailand. The supporting industries cover a wide range of production activities providing goods and services for other industries. Often, numerous firms among supporting industries are small in size and have subcontracting arrangements with buyers, who are mostly large companies or MNEs.

The BSID's main activities are a) providing technical assistance and training for the supporting industries, b) designing and developing prototype products, such as knockdown electronics for the heat treatment of steel, and c) promoting subcontracting systems, such as organizing the Buyer's Village. In promoting supporting industries, the BSID focuses mainly on the auto parts industry and the industry that makes parts for electrical and electronic appliances and machinery, particularly mold-and-die and casting products. For the development of mold industry, with the support of the Japanese government, the BSID has organized a "Tool and Mold Technology Development Project," which seeks to provide assistance in terms of data generation, marketing, technology, investment promotion, and coordination.

Another BSID research projects is "The Development of Easy Injection Molding Control Technology for Engineering Plastics." Recently, the Japan International Cooperation Agency agreed to provide equipment for the production of plastic molds for training and the services of Japanese experts to the BSID. The private sector, however, has yet to see the effectiveness of BSID programs, specifically those involving guidance services, testing and inspection,

The Board of Investment (BOI) is the government agency responsible for administering incentives and encouraging investment in priority areas. The BOI Unit for

Industrial Linkage Development (BUILD) is a market-oriented service initiated in 1992 by the BOI. This unit was created to encourage large companies to source local parts and components, as well as to help local suppliers to improve quality, production efficiency, and productivity. Linkages between local parts suppliers and large companies, especially transnational corporations, both those located in Thailand and those in other countries, are initiated. The schemes employed by BUILD provide investors with no tax privileges but instead service-oriented incentives.

At the initial stage of the program implementation, the BOI gathers information on existing supporting industries in Thailand. Then, it analyzes inputs needed to start production factory in Thailand, and helps to establish transactions between those parties involved in the process. One of the successful activities by BUILD is the Vendors Meet Customers Program (VMC). The VMC program was created to stimulate domestic subcontracting of parts and components. After the 1997 crisis, the BUILD organized meetings and factory tours for BUILD registered suppliers and assemblers to help them initiate new deals. In the automobile industry, the assemblers who participate in the said program are General Motors (Thailand), Toyota Motor (Thailand), Auto Alliance (Thailand), and Mitsubishi Motor (Thailand). In electrical and electronics industry, they are Fujitsu (Thailand) and Delta Electronics (Thailand). The number of participating suppliers in each meeting varies. The largest number so far has been 91, at the meeting with General Motors (Thailand), in January 1998. Since 1999, local suppliers who participate in this program have organized a “Subcontracting Promotion Club” (SPC). Its members consist of about 40 BUILD-registered suppliers, who are mainly Tier 2 and 3 suppliers for the electrical and electronics industry and the automobile industry. In 2003, this club became the Thai Subcontracting Promotion Association. At present, the association has around 250 members from four industries: metal parts (casting, stamping and pressing), plastic, polymer and rubber products, electrical and electronic parts, and packing, logistic, and others.

In addition, the BUILD is responsible for developing and disseminating the ASEAN Supporting Industry Database. This database helps to promote linkages between the ASEAN member countries and the global market. In August 2007, the number of listed companies in ASID is 20,198 firms. Among these companies, 13,534 companies are suppliers in Thailand. ASID classifies firms into five main industries,

automotive, electrical and electronics, mold and dies, petrochemical and plastic, among others. Thailand's supporting industries consist of 1,419 companies, which are suppliers for the automobile industry, and 1,393 companies for electrical and electronics industries, 2,141 in petrochemical and plastic industries, 616 in mold and dies, and 7,965 in other industries.

Another successful measure to promote business linkages between regional and worldwide final product manufacturers and local suppliers is organizing the first Subcontracting Exhibition, called "SUBCON Thailand." In 2007, the exhibition generated about 1,000 business deals valuing Bt 1,200 million. Since then there has been a plan to organize SUBCON Thailand every year. BUILD also encourages local suppliers to promote their products abroad by providing them with financial support.

Given these activities, BUILD has gained a good reputation and been seen as an effective organization by both the private and public sectors. It plays an important role as an intermediary, facilitator, and informant for interfirm linkages. Notwithstanding its success, the impact of the BUILD program is still limited because of the small size of its operational units and limited budget.

Aside from relevant government programs, industry associations and individual firms have launched supplier development programs. For example, the Thailand Automotive Institute (TAI) and the Electrical and Electronics Institute (EEI), established in July 1998 as an independent and non-profit institute under the Industrial Development Foundation of the Ministry of Industry, conducts tests on parts and raw materials, and offers information, consultation and training services to producers, especially domestic ones. In addition, they coordinate with related agencies in the government and private sector, and with both local and international agencies, for industrial development. Recently, TAI led a project to develop human resources in the automotive sector, or Automotive Human Resource Development Project (AHRDP).<sup>17</sup> This project is essentially a "training the trainer" program in which firms agree on specific skill certification standards and focuses on specific competencies. The AHRDP is expected to upgrade and strengthen the quality of supporting industries as a whole.

The Institute for SME Development objective seeks to disseminate knowledge and support services to SMEs nationwide so they can upgrade their personnel. It collaborates with the Department of Industrial Promotion and a number of foreign

organizations such as Japan External Trade Organization, Japan International Cooperation Agency, and Japan Sustainable Building Consortium), and provides training and advisory methods and tools to SMEs.

Several SMEs have decided to set up the Subcontracting Promotion Club (SPC) with the initial support of BUILD. This private sector initiative creates networks among Thai SMEs in the electronics, plastics, metal and polymer industries to enhance their capabilities to serve MNE demands. Activities in the club include directed to information sharing, resource pooling, and marketing and distribution improvements.

It is worth noting that linkages promotion programs, as seen in the case of Thailand, have highlighted the role played by many facilitating agencies in upgrading the potential of local suppliers or supporting industries. To create a concerted program, some intermediary entity must be addressed. In Thailand, the Office of SME Promotion (OSMEP) assumes these roles<sup>18</sup> and has been active in coordinating all parties involving in SMEs promotion. However, as far as business linkage creations are concerned, much work remains to be done.

Firstly, Thailand needs sustained support to develop the capability of SMEs or indigenous suppliers to upgrade their product quality. Altenburg et al. (2004) argued that BUILD's activities are mainly limited to awareness building and matching between SMEs and MNEs. To create more meaningful programs, joint programs with MNEs for assisting promising suppliers are urgently needed. The establishment of long-term relationships between MNE-SME calls for a strong commitment to increasing the competitiveness of potential suppliers. This is far beyond the introductory phase of matching and organizing suppliers. Programs with some incentives to induce large companies to support local partners may be necessary and worth doing. Spillover effects from MNEs activities could justify those program costs.

Secondly, because government resources are always limited, programs should also be increasingly geared toward creation of vertical linkages than horizontal linkages, as in the case of the OTOP program. That is, if technological upgrading is to be accorded the needed priority.

Thirdly. In addition to fostering business linkage through many institutions, Thailand need to strengthen absorptive capabilities of SMEs. This is especially important for Thailand. Recent capability-building programs provided by the Thai

government included funding for technology development, establishing skill development centers and producing enough skilled manpower in response to industry demand, giving financial assistances, as well as providing marketing and exporting information.

Examining the best practices and initiatives in areas of capability building for Thai SME is beyond the scope of this chapter and deserves a separate study. At this point, policies for strengthening business linkages and the absorptive capabilities of domestic SMEs will need to be exercised in a coordinated manner. The challenge to Thai policymakers is to understand the source of benefits from enhanced inter-firm networking and linkages, the contexts, which help facilitate it, and the right policy instruments to create it.

## **6. CONCLUSION**

This chapter highlights the need to incorporate large firms or MNEs as agents of change and as a key element of SME development strategies. Evidence from existing networks between MNE and local suppliers in the Thai automobile and clothing industries revealed greater benefits than what may have been obtained in the past. This is necessary because local suppliers operating within the network require higher technical and managerial skills demanded by large firms or MNEs. Local suppliers' willingness to meet the more stringent requirement is also of very important.

The Thai network case study of Toyota Motor Thailand is an example of an MNE initiative to bring in closer collaborative and technical ties with parts suppliers and local SME suppliers. While this restructuring helped lower the cost and enhance productive among large firms, it also opened up opportunities to SMEs for mutual benefits from technical collaboration. This example highlights the importance of MNEs involvement and long-term commitment to developing local SME suppliers.

The role of the government for network development of the reviewed industries varies across industries. In the case of the automobile industry, Thailand needs to strengthen the absorptive capabilities of SME manufacturers and to create matched workforce based on industry demand. The government must likewise take a proactive

role in supporting SMEs to upgrade their product quality. Greater MNE involvement in, and a holistic approach to integrate all players to promote, interfirm linkages are vital to designing a successful program.

In case of the clothing industry, horizontal networks among SMEs to disseminate information about marketing and products must be created. In addition, as Thailand international competitiveness is eroding in the labor-intensive sector, structural adjustment seems to be unavoidable in the near future. This is particularly important for numerous SMEs that cannot find their niche in the domestic or export markets. Raising awareness of intensified competition from globalization among SMEs and enabling them to adapt to the new rule of competition are policy challenges.

## NOTES

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<sup>2</sup> Among many, see UNCTAD(2006, 2001, 2000), Altenburg (2000).

<sup>3</sup> For example, see UNCTAD (2006, 2001, 2000), Dunning (1992) and Berry (1997).

<sup>4</sup> According to the Organization Economic Co-operation and Development, ISIC is the United Nations International Standard Industrial Classification of All Economic Activities. This classification is the international standard for the classification of productive economic activities. Its main purpose is to provide a standard set of economic activities so that entities can be classified according to the activity they carry out.

<sup>5</sup> The Office of SME Promotion officially reported labor productivity of SMEs only for some industries, but its coverage was quite small. Similar difficulties arise when using other source of manufacturing statistics to calculate productivity index by size. For example, the annual survey conducted by the Ministry of Industry, beginning in the year 2000, tends to be biased toward registered factories and do not represent a good coverage of the overall manufacturing industries. This indicates an urgent need for a more integrated database and comprehensive surveys on Thai SMEs.

<sup>6</sup> Sevilla and Soonthornthada (2000) provide a good historical background on SME policy formulation.

<sup>7</sup> They were the Government Savings Bank, Industrial Finance Corporation of Thailand, the Bank for Agriculture and Agricultural Co-operatives, the Export and Import Bank of Thailand, the Government Housing Bank, the Small Industry Credit Guarantee Corporation, and the SME Bank.

<sup>8</sup> Thirteen targeted industries in the industrial master plan are classified into four groups: (a) potential industry: electronics, automobile and parts, textile, rubber products, petrochemicals and plastic, processed foods; (b) improving Industry: electrical appliances, furniture, metal, pharmaceuticals; (c) survival industry: machinery, ship maintenance, and (d) New Wave industry: biofuels and bio-products. Industrial subsector development strategies are also documented in the plan.

<sup>9</sup> Many officials believe that policies became more integrated under Mr. Thaksin's watch. More importantly, decision making became faster and dialogue among concerned ministries was more effective under his term.

<sup>10</sup> Due to lack of more recent data, Techakanont and Terdudomtham (2004) speculated that numbers of Thai firms in Tier-1 suppliers would decline due to stronger competition posed by Japanese part suppliers. Kohpaiboon (2006b) argued that OEM suppliers had been dominated by affiliates of MNE part suppliers and the number of Thai-owned firms could be around 10.

<sup>11</sup> This part draws heavily from previous studies by Techakanont and Terdudomtham (2004) and Techakanont (2007a, 2007b), and Kohpaiboon (2006b)

<sup>12</sup> Explicit knowledge refers to information, market trends, and production policies. Tacit knowledge refers to know-how, production process, and management proprietary.

<sup>13</sup> This part is taken from Techakanont (2007).

<sup>14</sup> Dyer and Nobeoka (2000) identified three institutional innovations in the creation of the network and in facilitating inter-firm knowledge sharing, i.e., supplier association, knowledge transfer consultants and small-group learning teams (or *jishuken*). Toyota Thailand also adopted similar institutions.

<sup>15</sup> However, based on interviews with several Thai suppliers, AAT was more open and willing to provide technical support to independent Thai suppliers, who had no parent company to support, in the new model.

<sup>16</sup> Kohpaiboon (2006a) provides excellent studies of the role of MNEs in processed food industry in Thailand.

<sup>17</sup> AHRDP is a collaboration among three assemblers (Toyota, Honda, and Nissan) and one first-tier supplier (Denso), each will provide training in specific competency; Toyota on production and management technology (Toyota Production System), Denso on part development and manufacturing skills, Honda on mold and die manufacturing, and Nissan on skill certification.

<sup>18</sup> Business associations are also important but not discussed here due to lacks of information.

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