

WEBS

Chapter 13

Global webs – local learning?

Sanne Lehmann Jørgensen

1. The impact of globalisation on local industrial development

This case study is concerned with the impact of globalisation on industrial development in Thailand. More specifically, an analysis is given of the way increased economic liberalisation and global restructuring of transnational corporations (TNCs) influence the practices and development opportunities of domestic Thai firms, and whether these firms have been able to adapt themselves to the changed global environment.

As it is argued that the way relationships with global actors are structured is very different in different parts of the economy (Gereffi et al, 1994), this study analyses the impact of globalisation on two industries in order to obtain a multifaceted perspective of the impact of globalisation and as a foundation of dialog and discussion. In the next section, the development within the automotive and garment industries in Thailand is briefly discussed. Local firms within these industries are incorporated into the global economy to a large extent through their linkages with global lead firms. Thai firms within the garment chain are linked to global buyers through their role as exporters, while Thai firms within the automotive industry perform a role as suppliers of auto parts for assemblers located in Thailand.

The knowledge and learning literature has been chosen as the point of departure for the analysis as it is argued that the functional fragmentation of the activities of transnational corporations lead to an increased global diffusion of knowledge, which is open to be exploited by firms in developing countries for learning and upgrading (e.g. Maskell & Malmberg, 1999). Inspired by Nonaka and Takeuchi (1995), three mechanisms for knowledge creation are applied for the analysis of the way knowledge is created and practices changed in Thai firms through networks with global actors. These are: externalisation (knowledge has to be externalised from the

“knowers”), socialisation (knowledge has to be transferred through co-operative relationships) and internalisation (knowledge has to be adapted to the specific organisation in order to become “company knowledge”)¹⁰⁴. In brief, learning and the structural outcome in terms of (changed) actions, practices and strategies in Thai firms is regarded as being a result of the external pressures embedded within the structures of the particular industry, of the pre-existing structure of the organisation, and of the way relationships with other actors are structured (Lawson, 1999). These analytical dimensions also help to structure the case study into three main parts.

In order to learn from the knowledge embedded in the organisational practices of others, knowledge has to be released – or externalised from the organisations or individuals containing it. The global commodity chain perspective (Gerrefi et al, 1994; Gereffi, 1995) is regarded as being useful to understand how economic activities in developing countries are linked to the global production system. Furthermore, this approach incorporates an international dimension into the analysis, and emphasises the need to analyse the restructuring tendencies within specific industries on a global scale as a consequence of intensified competition and increased liberalisation in order to access the impact on different localities. Thus, the way local firms have inserted themselves into cross-national production networks through linkages with transnational corporations and the kind of rules, pressures and incentives that exist within such production networks regulating transactions and firm strategies is analysed in the third section using the perspective of Gereffi. The role performed and the development opportunity of local firms in developing countries is, however, determined by rather stereotype characteristics of global lead firms, and the relationship between globalisation and upgrading is not a clear one. In his later writings, Gereffi (1999) incorporates a note on the role of organisational learning as one of the critical mechanisms by which firms try to improve or consolidate their positions within the production chain, which is a process involving not only technical skill, but also social skills, which is claimed to be important in order to become engaged in relevant and effective networks. The tools to analyse how firms becomes engaged in developmental networks and the specific interaction between the actors implied that allegedly should result in learning and upgrading is, however, not given.

¹⁰⁴ Taking the international dimension into account the concepts of externalisation, socialisation and internalisation are not necessarily used consistently with the conception of Nonaka and Takeuchi, who focus entirely on firm-internal knowledge creation in highly innovative firms in Japan.

The global commodity chain approach is, consequently, supplemented with literature focusing more implicitly on the embeddedness of industrial activities and on the learning process through which new knowledge is created through dynamic social interaction between global and local actors (Dicken et al, 1994). The major issues to analyse is the extent to which TNCs do, or do not, participate in local economic and social networks and the strength of linkages to the local economy. This perspective provide the background for the fourth section, which analysis the knowledge which is actually exchanged as a product of the structure of specific relationships between global and local actors. For knowledge to be exchanged between individuals or organisations, the actors involved have to be engaged in a long-term process of interactive learning – or socialisation in order to create a common framework for exchange of complex knowledge (Grabher, 1993; Forsgren et al; 1995). The socialisation of knowledge demands that the actors possess the ability to form and maintain effective social relationships based on reciprocity, trust and shared expectations and routines, which mediates and moulds the ongoing co-operation and product exchange. In relation to the cross-cultural linkages implied, the process of socialisation becomes even more important.

Section five is concerned with the process of internalisation of outside knowledge into the development of a firm-specific knowledge base, which act as the competitive advantage of the firm. If knowledge obtained from external sources is successfully spread throughout the organisation and adapted to the knowledge base, the practices and routines followed will most likely be transformed. Transformation is, thus, the key indicator of learning. It is suggested that the absorptive capacity of a firm is largely a function of it's prior knowledge and of it's organisational structure (Nonaka et al, 2000; Cohen & Levinthal, 2000). However, it is difficult for an organisation to diverge from the course set by its previous experiences, and the organisational structure may act as a constrain for learning and future actions taken by the firm.

By way of concluding, the case study aims at answering how globalisation has influenced Thai firms under various governance structures. Have Thai firms succeeded in upgrading and adapted to global changes, or have pre-existing practices been acting as constraining factors for learning? In this regard, have linkages to foreign lead firms been an important factor in the process of learning and upgrading in Thai firms, and what kind of practices and strategies have lead to success or failure?

2. Developments within the automotive and garment industries in Thailand

Foreign *automotive* plants have a large potential to transfer knowledge to local suppliers given the large size of many assembly firms and their substantial potential for linkage creating to many supporting industries such as metal, plastic, rubber and electronics. Therefore, the Thai government has been very interested in promoting the establishment of an automotive industry in Thailand, and the automotive industry have in fact been one of the few Thai industries where specific goals and policies existed for industrial development (Lim & Fong, 1991). Generous promotional measures and an import substitution policy resulted in a large inflow of assemblers since 1962, and 12 assemblers were located in Thailand in 2000. The industry is totally dominated by seven Japanese assemblers, but the big three, GM, Ford and Chrysler, have also taken an interest in the region, making Thailand as the production hub (AutoAsia, May/June 1998). As a result, the industry reached a peak production of about 560.000 vehicles in 1996, which made Thailand the largest assembly and parts production base in Southeast Asia, leading some commentators to name Thailand 'the Detroit of Southeast Asia'.

In order to stimulate the localisation of parts and components, a mandatory local content requirement of 25 percent was introduced in 1974, and raised to 54 percent for passenger cars and 61 percent for pick-ups in 1988 (Doner, 1991). This policy has been a success, the localisation rate of the assemblers being quite high. Beside metal bending and assembling activities, which are largely done in-house, the manufacturing of parts is largely externalised, and about 70-80 percent of the parts (in terms of value) are procured in Thailand. Domestic Thai firms mostly produce relatively simple labour intensive products such as nuts/bolts, batteries, radiators or wire harness. But firms such as the Siam Cement Group, Union Plastic and the Somboon group have made progress in more complex items like brake drums, jigs and dies, and pressed body parts (Doner, 1992; BOI, 1995). The precise number of Thai owned firms in the automotive business is not certain, but many Thai firms have grown up in parallel with the car production in general, being protected by the local content requirement and ownership regulations. The financial crisis in 1997, however, affected domestic Thai firms in particular. As the assemblers cut down the production, the market for parts and components declined sharply. Many Thai firms were on this account taken over by Japanese interests¹⁰⁵ or the

¹⁰⁵ Because of the crisis, foreign investors were allowed to increase their shareholding up to 100 percent.

Thai groups chose to withdraw from the auto parts production to concentrate on their core activities. The remaining are struggling to survive the increased competition caused by cuts in import tariffs on imported cars and components in the early 1990s, and the abolishment of local content requirements in line with the WTO regulations in January 2000 (Bangkok Post, 1998).

The *Garment industry* in Thailand was up to a slow start as it remained a cottage industry up until the early 1960s, where the government began to encourage private sector industrialisation with protective measures in the form of high tariffs on import of textiles. In the 1970s, a group of Chinese investors in Hong Kong and Taiwan began to shift their production base to Thailand, and set up joint-ventures with local partners (Suehiro, 1983). The Thai textile and garment industry now consists of more than 20.000 units, of which the overwhelming part are small and medium size, labour-intensive companies with fewer than 200 employees (DEP, 1995). As most foreign firms pulled out during the oil shocks in the 1980s, the garment firms are largely owned by domestic Sino-Thai capital.

The garment industry aimed from the start at the export market motivated by a shift toward export promotion policy in 1972, devaluation of the Thai Baht in 1981 and in 1986, respectively and declined competitiveness of the garment industries in the NICs due to a rise in the wage level (Poapongsakorn & Thonguathai, 1998; Suphachalasai, 1994). The larger part of the garment manufacturers are, thus, linked to the global economy through subcontracting arrangements with foreign buyers, producing ready-made garment for export. The most important markets for Thai textile and garment products are Europe and US. As a consequence, the textile and garment industry grew to be the number one export earner in 1987, when the sector overtook rice as the most important export item, and only recently electronics has taken the lead in terms of export earnings. In 1995, Thai garment export reached a peak of 4,3 billion dollars, representing an increase from 0,3 billion dollars in 1980 (Thai Textile Institute, 1998). However, in the beginning of the 1990s, Thailand's competitiveness in labour-intensive exports began to decline in response to both internal and external changes. The main internal factors were a sharp increase in real wages from one percent annual rise between 1978 and 1986 to 5,4 percent between 1987 and 1991 (Phonpaichit & Baker, 1998). Furthermore, the textile and garment industries are not very well integrated, and domestic produced textiles are normally of a poor quality, which imply that the garment firms have to import most of the input. An important external development has been the shift of US sourcing of garment production from

Southeast- and East Asia to the Latin American countries. Additionally, the quota system, which to a certain extent has protected Thai garment industry, is currently being phased out, as the industry is being integrated into the WTO system in January 2005, which will make Thai garment manufactures subjects to open competition with countries with low labour costs such as Indonesia and China (Poapongsakorn & Thonguthai, 1998). The crisis has, however, given Thai garment export a short-term breathing space. Contrary to the automotive industry, the crisis was quite beneficial to Thai garment producers, as the devaluation of the Thai Baht has empowered the textile manufacturers to win back some export orders from Latin America (Anson & Simpson, 1998).

3. Externalisation of knowledge¹⁰⁶

The extent to which the transnational corporations do or do not participate in the local economic and social network and the way they co-ordinate such networks is especially important to the opportunity for transfer of knowledge. In this regard, the potential for transfer of knowledge seem to be quite high in the *automotive industry* due to the fact that the assemblers are embedded in the local environment to a very large extent and are able to develop very close linkages to their suppliers in Thailand. The assemblers are localised mainly to serve the domestic market, they employ many Thai middle managers and even top level managers, they have substantial co-operation with local institutions, and most importantly, they have externalised most of the parts and component production, which is subsequently procured mainly on the local market. However, the Japanese assemblers mainly concentrate on design and assembling functions, and increasingly leave the design and development of parts and components to capable suppliers. This 'hollowing out' of functions implies that the assemblers do not hold much knowledge regarding the development of parts, and the transfer of technological knowledge regarding product development is limited.

We do not support them in design, because we also do not have know-how for the design for the parts. We have some ideas and explain to them, but we also buy the parts from specialists. The know-how of the products comes from them. We give suppliers some details that are needed for the production, but we get such descriptions from Japan. Maybe we help the

¹⁰⁶ If nothing else mentioned, the data is based on personal interviews with the purchasing managers of seven assembling plants in the spring 2000.

suppliers with technical problems concerned to related products (personal interview with the purchasing manager of ISUZU).

Furthermore, the potential of knowledge transfer through the linkages with global lead firms depend to a large degree on the restructuring tendencies of these firms. The Japanese carmakers are in a process of restructuring their strategies in order to meet the competition on a more open and global market and there is a tendency to shift the focus from production nodes to design and assembling nodes. This also involves a shift in supplier strategies towards the use of global component or module suppliers capable of developing and design major parts themselves (see chapter four). In parallel with the increased liberalisation policy on the behalf of the Thai government, such restructuring tendencies imply that the Japanese assemblers increasingly make use of Japanese suppliers located in Thailand.

MMC has no option but to go for the best and cheapest parts regardless of country of origin. That may mean some long-standing relationships with ASEAN vendors are terminated. The key for our survival is global sourcing from the best suppliers in terms of quality, cost and delivery without being restricted by territorial barriers. ... We will use the new BGS policy – Best Global Sourcing (F. Yoshimi, leader of Mitsubishi's strategies in the ASEAN region. Cited in AutoAsia Sep/Oct 1998)

In contrast to the automotive industry, the global lead firms within the *garment industry* tend to apply a more 'arm-length' approach, and do not in general move their production facilities to Thailand. In fact, they very often do not have any production facilities at all. This implies that Thai producers are not integrated into the production structure of the foreign lead firms to whom they are linked through export. As the buyers are not motivated to transfer knowledge or technology, the potential of knowledge transfer is very limited. Thus, the main potential for learning seems to be in terms of marketing skills. As mentioned, the raising wage level in Thailand and the gradual integration of the garment industry in the WTO, imply that the global buyers are restructuring their sourcing strategies toward 'quick response', meaning that the suppliers have to fulfil the orders within days and weeks, rather than months. Being located far from the main market, Thailand is unable to fulfil such requirements and the buyers increasingly source from nearby countries, such as Mexico and The Caribbean. Thus, the

Thai garment manufacturers face serious challenges in terms of changing strategies and upgrading in order to survive the competition.

In summary, local *Thai firms in both industries* have managed quite well in the past three of four decades in terms of growth and have been integrated successfully – although very differently into production networks of global firms. The role of Thai firms in both industries is to supply foreign customers with products on an OEM basis. However, while the automotive industry developed largely as an import substitution industry with a large influx of foreign investment, the garment industry has been dominated by local capital and has from the outset focused on export of finished goods to overseas buyers mainly in North America and Europe. In the *automotive industry*, Japanese assemblers in particular have moved production facilities to Thailand and Japan has taken a large interest in the region as such as a ‘backyard’ for Japanese production. The specialisation strategy of the assemblers has led to externalisation of parts and components and also a lot of linkages to Thai firms, through which knowledge and information potentially can be transferred. In contrast, being exporters of ready made cloth, the *garment firms* are not directly integrated into the production structure of the lead firms, which imply that there is only limited learning potential connected with the linkages to global lead firms. The restructuring tendencies of the global lead firms *in both industries* have, however, led to a process of changing supplier strategies with the result that Thai firms will find it more difficult to link up with global actors in the future. The next section will take a closer look on the structure of specific relationships and the knowledge which is actually exchange as a product of socialisation between global and local actors.

3. Socialisation of knowledge¹⁰⁷

The Japanese *automotive assemblers* have largely applied the ‘lean production’ structure to their sourcing strategies in Thailand, which involves very close co-operation with the Thai suppliers. The suppliers have to live up to very strict requirements regarding for example the quality of the parts, the ability to produce on time and the cost structure in order to obtain a status as first tier supplier for Japanese carmakers. But when the relationship is established, the co-operation between Thai suppliers and the assemblers is normally long-termed and involve frequent exchange of goods and

¹⁰⁷ This section is based on interviews with the managers of Thai owned auto parts and garment firms in the spring 2001.

information and a fair deal of assistance, which is primarily transferred in relation to the launching of a new model. The development of new parts demand that the assemblers work very closely with the suppliers, and the parties meet frequently to exchange information and to discuss occurring problems. The assemblers also come to train the suppliers about the Kaizen quality system, stock control, or price reduction measures on the request of the suppliers, but such services are most often pay for by the suppliers themselves. The assemblers, furthermore, have an engineering team at the supplier's disposal or they might invite experts to come and teach the suppliers in practical skills. Thus, relationships with the assemblers is an important way to upgrade for many Thai auto part firms because they receive training and other means of upgrading incentives from the customers. One representative of an auto parts firms, who started producing cinema chairs and replacement parts, states that:

What made us go into OEM was that we would improve ourselves by learning the know-how from them – from the automobile companies. When we make some parts for them we have to try to improve the quality. They need good quality. We have got a lot of know-how from Isuzu. Sometimes they come to teach us and sometimes we visit Isuzu and learn. They don't mind teaching us or letting us know. They show the process, so that other companies can provide a lot for them.

As the assemblers normally do not possess product development capabilities because they only have limited production in-house, they generally do not assist the suppliers with technical knowledge about the product development or transfer machinery. In order to develop product development capabilities, the auto parts firms are normally engaged in very time-consuming and costly arrangements with providers of technical knowledge, which are usually Japanese suppliers or affiliates of the assemblers. The general philosophy of, especially Japanese, assemblers are on the one hand to transfer a great deal of knowledge and assistance, and on the other hand to demand that the suppliers constantly upgrade and improve. The supplier co-operation clubs of the Japanese assemblers, of which all first tier suppliers are normally members, works as a framework for the carrot and stick principle of the assemblers. The suppliers are given point in accordance with their performance in delivery, quality and improvements, which is announced to the whole group, and the worst performer risk to loose some orders. If the suppliers commit themselves to upgrading and constant improvements, they are not immediately sacked when problem occur in the production. The

supplier clubs also act as frameworks for exchange of information, seminars and training. The assemblers, for example, arrange theoretical seminars to inform the suppliers about new methods of for example productivity improvements. The suppliers, however, are in most cases left with the responsibility for the implementation themselves.

A considerable amount of trust is gradually built up between the Thai suppliers and the carmakers. The assemblers normally put the suppliers on trial with smaller orders, and when the suppliers have proved their worth, they are trusted with larger orders. Trust is also established through frequent personal communication. Formal meetings are held once a month, but the partners meet more often to discuss problems or exchange information etc. Further personal interaction is set within clearly defined social events arranged by the Japanese assemblers. The members of the supplier clubs meet officially twice a year to play golf or bowling, and such face-to-face interaction makes subsequent communication easier. But even if the partners have known each other for a long time, and a considerable level of trust is built into the relationship, both suppliers and assemblers emphasise that the relationship is a matter of strictly business and does not involve real friendships. Besides, many suppliers have certain reservations about the relationship with the customers due to cultural differences and the dominant position of the assemblers in relation to price negotiations. The suppliers in general trust their Japanese customers as the Japanese assemblers generally try to transfer all aspects of their supplier strategies to Thailand, involving long-termed co-operation, reciprocity and mutual respect. Supplier relationships with Ford and GM involve many of the above mentioned aspects, but the placing of orders are based more on arm-length market mechanisms, and because the Western assemblers have been operating on a short time basis in Thailand, the suppliers have not grown to trust these global firms and are not sure when the assemblers will shift to another supplier. Japanese assemblers are, however, moving in the direction of their Western counterparts, and have announced that they plan to abolish the supplier clubs and in the future rely much more on market forces rather than personal knowledge and trust in relation to the suppliers (see chapter two). The suppliers, thus, expect to be competing with suppliers inside as well as outside Thailand based much more on price criteria in the future.

As a result of the close personal contact and the complicated, technological learning process involved, quite a lot of knowledge is transferred to Thai auto parts firms, especially regarding process technology. Beside the

assistance, the Thai firms are being motivated to change and upgrade as the assemblers persistently demand the suppliers to improve and the auto part firms are very concerned about production and product development. Consequently, the production process itself is becoming rather capital intensive, and most companies invested heavily in new sophisticated machinery before the crisis in expectation of market expansion. For the auto part firms, the capability to produce appropriate quality is to a large extent embodied in the machines. Computer controlled laser machines, for example, are necessary to produce very precise and accurate products. Besides, the customers increasingly require the suppliers to implement quality measures in the work process. European and US carmakers are especially strict about authorised quality standards such as ISO or QS, and the Thai suppliers have to implement such systems in order to become suppliers for Western assemblers. Japanese assemblers are not in general concerned about such certificates as they operate with their own process standards, which focus on practically all aspects of production such as efficiency, productivity and quality control. Implementation of Japanese practices such as the Five S's or the Kaizen production system is a part of being supplier for Japanese assemblers. But in line with increased export to the US and European markets, the Japanese assemblers have also started to demand official ISO and QS certificates. Thus, ISO and QS certificates have become the most important aspiration for the auto part suppliers.

The technological level in the domestic auto part industry is, however, very differentiated as some firms stay in the low-value added market, while a few have become fully automated and implemented CNC machines and very sophisticated robots. Most of the auto part firms still rely completely on buying the product technology, and they have not realised the need to invest in research and development as they, so far, have received engineering drawings from the assemblers. This implies, that they have neglected the need to build up product development and design capabilities on their own. Some are able to develop replacement products for the aftermarket, but this is most often done by copying mature products. The Japanese assemblers, however, are beginning to change the way they usually co-operate with suppliers. Instead of providing engineering drawings and substantial assistance in relation to product development, they plan to provide specifications only. Such a step demands that the suppliers have to be able to develop the products, and the fact that they do not have such capabilities place them in an unfortunate position, as they have to pay an engineering company to do the design. Contrary to technical agreements, this does not imply any

transfer of knowledge to the suppliers, as the design companies works directly with the assemblers.

The *garment manufacturers* generally have about three or four big European or US well-known brand names and stores such as Nike and JC Penny as their customers. The contact between buyers and suppliers is normally mediated by an agency located in Bangkok, which have several manufactures on their vendor list. Thus, the relationships between the garment manufacturers and their customers are not as close and only contain very little transfer of knowledge and assistance in relation to the case of the automotive business. The relationships also differ from the automotive industry in the fact that orders are based on more formal contracts. It is, for example written down what kind of penalties the suppliers are subjected to if they are late in delivery or there are claims on the quality. The buying agencies occasionally visit the factory to check the quality and work facilities, but this does not involve any particular technological assistance regarding product and process development. However, the buying agency may be an important distributor of information and the technicians may suggest certain actions in connection with the visits of the so-called quality assurance teams who audit the work process, safety measures and quality in the Thai firms to assure that the requirements of the customers are fulfilled.

However, the supplier relationships are far from being strictly market-based as the garment firms co-operate with the same customers for a very long time. It is a two-way deal. If the agencies keep giving the suppliers new orders, when the suppliers will reserve the amount of quota the agency needs. Actually, a certain degree of trust seems to exist between the Thai suppliers and the buyers based on this mutual commitment, keeping of promises and frequent exchange of information about forecast orders and the market situation in general. The relationships are also overlaid with a certain social content. The daily communication and co-ordination rests primarily with the agencies, and in some cases the suppliers do not even know the end customers at all, and therefore depend on building a good personal relationship with the agencies. But most customers come to Thailand at every change in season, and at that occasion they normally have dinner with their suppliers, and over the years they get to know one another. The degree of trust also depend on the size and nationality of the customer. It is much more difficult to build a personal relationship with the American buyers, because they are larger and more professional and will negotiate the price until they reach their target. European customers are often smaller

entrepreneurs who have their own company, and come to close the deal themselves. They buy smaller amounts of garments, and are therefore willing to pay a higher price. They also have more hands-on experience with production methods, which imply that they occasionally train the suppliers in production and process techniques. Even if the relationships are generally long-termed and overlaid with a certain amount of trust, the price is still the most important criteria of the buyers for placing orders, and the customers constantly press the suppliers to lower the price, or even bluff by referring to a fictive price, they have been offered. As one manager from a garment firm remarks:

Before it was easy, easy. Nowadays, they come and will say "too expensive". And you have to follow them, though you do not have enough money. We have to fight against time, price - we have to find the way to work close to the target price... Now they have no relationship with anyone. Big buyers always compare. They never stick on anyone. Otherwise, they cannot sell [the goods] in the store. They run around. They say this year I want to buy it 25 percent or 10 percent cheaper. So many problems. Nowadays it is not like before. I see the future very dark... I got some very good friends I have done business with for a long time. But they say "friend is friend", "price is price" If they can buy it cheaper from others, buying cheaper is the priority. No favours. If you are good friends, it does not mean that you get your business. My friend from New York comes and has dinner with me. He asks me sometimes: "can you give me Bangladesh price"?

The motivation to change and upgrade, which originates from a close co-operation with the customers is veritably non-existing. The most important knowledge applied in the garment firms is the need to produce the products on the basis of product specifications obtained from the customers. Thus, the main concern is not how to make the garment as the production itself is technically rather simple, but to manage the process: how to produce to scale, how to set up the process, how to control and increase the productivity. The general way to obtain knowledge about the production process is gained from the experience of the manager by working in foreign firms, and this knowledge is later applied to the manufacturing process. Furthermore, knowledge is obtained in the form of knowledge embodied in machines. The level of technology is fairly high as most garment firms have

introduced computer aided pattern grading and marker making, while cutting is still done manually. Less technological innovations have been applied to the assembling of garment, which remain rather labour-intensive. The garment firms have so far neglected the need for employing technicians, engineers and educated designers, which imply that the firms only know how to operate the machines, but not how to upgrade and improve the process. The buyers are generally not concerned about quality standards, as the quality is not normally a problem due to the long experience of the workers. They are more concerned with safety measures and human rights, such as the use of child labour as a response to the increased interest of the end consumers for working conditions in Third World factories. Beside the initial knowledge obtained from working experience in foreign firms and application of machines, subsequent knowledge is created through experience in the day to day operations or - learning by doing. The manufacturers are therefore very dependent on the loyalty of the experienced workers if they are to produce more advanced and complicated items. Gereffi (1999) regards the opportunity to learn and upgrade related with the relationship between global buyers and local garment producer as being extensive. He argues that when the buyers do not know how to make the garment, the OEM suppliers autonomously have to learn how to do everything from the making of the garment to distribution, which is termed full-package production. This study agrees that learning-by-doing is the most pervasive form of learning in Thai garment firms. But this is not necessarily a very sophisticated learning process, as the organisational structure and everyday work routines in general are reproduced – and the most substantial upgrading stems from the implementation of new machines rather than from investment in human skills. Furthermore, the position as OEM producers act as a barrier to the development of product and marketing capabilities as the supplier rely on the specifications of the customers and the long-termed relationships with the customers imply that the Thai suppliers are not actively engaged in the dynamic search of new customers.

4. Internalisation of knowledge

The knowledge gained through externalisation and socialisation mechanisms is worth very little if it is not absorbed and adapted to the organisational structure and diffused among different levels and functions in the firms, which is the subject of this section¹⁰⁸. Thai firms are, generally, quite good

¹⁰⁸ The information for this section builds on interviews with the private entrepreneurs and on interviews with institutions that help implement workflow programmes in Thai firms, namely: Thai Automotive

in learning technical skills, for example how to operate a new machine. However, intra-firm organisational practices and traditional management structures often work as barriers to successful and proper implementation and adaptation of various programmes and systems. The top-down decision making structure, which exist in most firms, is especially emphasised by the respondents as a barrier. The main problem is that the owner generally takes all decisions regarding planning, marketing and production single-handedly. As a consequence, knowledge and information get stocked in the head of the top manager and is not diffused to other levels of employees. Thus, if the executive manager is not present, there will be no one around capable of making decisions and the decision-making process tend to be made in an ad hoc fashion. There are very few experiences in the firms with job rotation, multi-skilling and team organisation, which imply that proper communication between various levels of the firms is blocked. Some companies have regular meetings, but they are often cancelled if something important comes up or the participants are busy. Instead, the manager often just “walks the factory” to inform the workers, and they have very little experience in keeping a record or holding official staff meetings, indicating a low understanding of the role of regular meetings and communication for the diffusion of knowledge. Barriers for knowledge diffusion in relation to the top-down management structure is summarised by representatives of the Thai Garment Development Foundation.

If one person centralises everything information will not be disseminated to others at the lower levels. At many of the companies, the boss will be the one who knows everything, every information and all the customers. So when the boss is away, customers cannot contact any other persons in the organisation because it is only the boss who knows. Many companies are like that. The boss wants to do everything himself or herself. They want to participate in everything. They do not want to delegate responsibility and depend on employees. So the result of having such a boss is that employees in the companies are indecisive. They do not dare to make a decision. Because if they make a wrong, decision they have to bear high responsibility for that. So the easy way out is to throw everything to the boss and let him make judgements. And that kind of organisation is not a learning organisation.

Institute, Thai Garment Development Foundation, and the Department of Engineering at Kasetsart University. As a consequence of the more general character of the statements, the automotive and garment industries are by and large combined in this section.

Family ownership also often acts as a important barrier for the learning process, especially if the firm is allowed to grow without a proper adaptation of the organisational and employee structure to the needs of the firm. Family controlled firms often focus more on developing the skills of family members, instead of hiring professionals. Short time planning, centralisation of decision-making and troublesome communication is also often problems related to strong family control. If the firm is taken over by the second or third generation there is, however, a good change that the managers are more committed to the implementation of various changes. The younger generation is often more familiar with foreign methods since they have been educated abroad and they are also more technology oriented and keen to invest in new technology. Thus, many respondents regard the problems related to family control as being only a generation problem.

In order for successful implementation of new systems such as ISO or QS, the management team have to be powerful and demonstrate clear commitment, objectives and visions in relation to the project in order to motivate the employees to work for the implementation. However, motivation and commitment is one of the main barriers to learning and absorption of new programmes and ideas. There are many reasons why the managers do not commit themselves. Often they do not understand the details of the training programmes or they do not allow the workers proper time for training if they have a large order coming up. Implementation of new systems and programmes is, however, slower in garment firms than in auto part firms because of the inflexible organisational structure in *garment firms*. The application for quality assurance systems is more often a show-off for the customers, rather than a deeply felt need for change. Thus, quality assurance has become a decisive competitive factor to be displayed in company profiles etc., which imply that many companies aspire only to get the certificate, but do not really make an effort to implement the system. The organisation of the work process in most garment firms does not contribute to motivate the employees to learn or engage themselves in the company, as the work itself is very monotonous and inflexible being organised in a taylorist way with time measurement, motion studies, and the introducing of a piece rate systems. Thus, motivation is primarily linked to salaries and not incorporated into company culture, values and practices of the firm. The lack of motivation of the employees on the behave of the managers can be applied to both industries. If a corporate culture exists it is directed at the

customers emphasising price, delivery and quality rather than internal efficiency and communication.

In general, Thai entrepreneurs have a background in import and retails before moving into manufacturing (Suehiro, 1989). This pattern is confirmed in the *garment industry*, as the founders generally have an educational background in retail and commerce, which implies that they have limited production knowledge, as confirmed by a manger of a garment firm:

I am not an engineer but I have a bachelor degree and Master degree in business administration. I got the experience from training, but I do not know much about production. I know just the management.

Furthermore, the hiring of technical staff is often neglected in the garment firms. Contrary, the founders of the *auto part firms* have technical or engineerial backgrounds, and a few of the entrepreneurs actually established the business on the basis of their own product development. This prior technical knowledge have helped the auto part firms to learn complex knowledge later on and adapt it to their own organisational needs as stated by one manager:

We are in the top among Thai owned firms, because we are the leader, we are always number one. We have been the first company who has got ISO 9001. If you talk about all the industry, we have got this 6-7 years ago. My father himself is an engineering man. He likes to do something new, develop something new. If we take the truck or the car that nobody makes in Thailand, we are the first to make it... we are like the pioneer developing the new product, engineering things like that. Like you can see, my grandfather, my father my brother all of them are engineering men.

The general low skill level of the workers and the lack of engineers and higher level staff is, however, a problem regarding implementation of new programmes in both industries. In order to implement quality systems properly, the workers have to be able to do the quality inspection themselves and write reports about the result and problems. It is often difficult for the employees to understand quality standards, which are mainly phrased in legal terms, or formal language and they are often not allowed the necessary time for learning. Due to the shortage of engineers or neglect of the need for

employing skilled technicians in the garment firms, the supervisors or higher level staffs have difficulties in learning the English vocabulary used in the courses. Many firms find it hard to attract and keep educated and talented employees for various reasons ranging from salaries, better offers, outdated practices in the companies and the aspiration of employees to have a company of their own. Thus, many companies have very high turnover rate, which is a serious problem for two reasons. First, the companies are very reluctant to invest in upgrading the skills of the employees, if they are not confident that they will stay in the firm. Second, the people who have been assigned to learn how to operate and take care of a machine take the particular knowledge with them as they leave, because the knowledge they possess has not been widely diffused.

Learning entails a fundamental change of the organisation, which implies a change of the mind of people. Learning implies that new methods have to be embedded in the routines and practices of the firm. But it is often the case that the workers and managers fall back to the old practices and ways of working, if the new system is not implemented consistently and checked all the time. It is, however, widely agreed among both foreign and domestic respondents that the Thai culture is a very open culture. Thai people are very tolerant towards other people, who have different ideas, behaviour and religion. The firms are also very open and adaptive towards practices of foreign firms, but language and cultural differences act as barriers to transfer of knowledge, and it is difficult to change to a new system based on practices that originated from Japan or the US. However, since the *auto part firms* have been accustomed to Japanese practices, working closely with the Japanese assemblers for a long time, they find it easier to implement Japanese systems based on learning-by-doing, which they regard as being more suitable to the Thai culture and work procedure than Western systems, such as ISO and QS, based on scientific data and documents, implemented by use of manuals and written procedures. The auto part firms have implemented many Japanese practices such as Just-in-time and Kaizen. But some Japanese practices are found difficult and undesirable to apply, as the Japanese culture is regarded as being too military and disciplined. As a result, foreign systems are not completely copied, but adapted to the Thai organisational structure, and the result is always a mix of different practices. The organisational structure and authority based relationship between owner and employees, for example, still reflect Thai traditional ways of organising. A Thai auto part company might have implemented two systems: the Toyota production system and the Ford motor company system of quality checking

etc., resembling the requirement of various customers, while other practices still resemble traditional Thai organisation.

5. Concluding remarks

As local institutions and horizontal networks are weak as sources of technological upgrading, linkages to foreign firms are an extremely important factor in the process of learning and upgrading in Thai firms. Linkages to the global economy have been fundamental to obtain technical knowledge, to expand the production and to produce higher value-added products. But at the same time it has become more difficult for local firms to access the knowledge of global lead firms. Global restructuring such as increased competitiveness, liberalisation measures and changed WTO regulations implies that foreign lead firms put more pressure on their suppliers in terms of flexibility, lower prices and the ability to supply more sophisticated goods, and many local Thai firms have not been able to fulfil such requirement and create linkages with foreign customers.

Globalisation have influenced the practices in local Thai firms very differently in the auto parts and garment firms, because of the different way the firms have been integrated into global production structures, the different motivation to change practices, which is a part of these structures and the difference in the extent to which foreign firms have been embedded in local structures and their ability and willingness to transfer knowledge. The *auto part firms* have been more motivated to change practices related to both products and processes because of the close interaction and large degree of knowledge transfer in connection with relationships to customers. *Garment firms*, on the contrary, has not been directly involved in the production structure of their customers, and have not been impelled to replace outdated practices. As a result, the main growth pattern of the garment firms have been to expand the original organisational structure by means of experience and investment in new machinery, but efforts have not been given to make substantial changes in the production structure in terms of production and process development, marketing or labour market organisation.

The extent to which Thai firms succeed in upgrading and adaptation to global change also depend on pre-existing structures and the willingness to invest in the knowledge base of the firm. Even if Thai firms have been quick to install new technology, they have been very slow to invest in dynamic

development of their own technology requiring the development of human resources and investment in research and development activities, which enable the firms to learn and adapt new knowledge to their particular organisational knowledge base. The lack of visions and pursuit of opportunities certainly can be blamed on the existing structure of the firms, such as family control, the decision-making process and the labour market organisation, which has worked as barriers to the implementation of new practices. In general such structures imply that most Thai owned firms neglect the process of upgrading until a real threat to survival come into existence, such as new requirements of the customers, new forms of regulations or an economic crisis.

In the *automotive industry* a few domestic firms have reached the stage where they are able to produce engineering drawings and develop simple products, which are generally based on the development of fundamental engineering knowledge early on, and investment in research and development activities that have helped them to apply new know-how obtained from the technical agreement partners. But even if a few auto part firms have succeed, the Thai automotive industry is probably driving toward the future without much participation from domestic Thai manufacturers, considering the changed supplier strategies on the behalf of the assemblers and the challenges that most Thai auto part firms are struggling with in the aftermath of the crisis. The Thai *garment firms* has not been able to see the need for organisational upgrading and investment in human resource development as long as the production has relied on the specifications of the customers, low labour costs and protection behind the quota system. The competitive environment is, however, beginning to change as the buyers are free to place their orders with countries with lower labour cost and increasingly ask for “quick response”. Given the current organisational structure and the lack of production knowledge it is doubtful whether the Thai garment manufacturers are able to change and to survive the competition in the long run. The result may be that the producers find more lucrative businesses or move the production facilities to lower cost areas, making garment manufacturing in Thailand a sunset industry.

In response to the overall research questions in this book, it cannot be concluded that global production chains automatically provide firms in developing countries with the opportunity to learn and upgrade. The extent to which knowledge is transferred depends on the structure of the industry, and the functions which are transplanted. Most units of TNCs only contain

limited knowledge, especially regarding core competencies, which is very important to the product development capabilities of local firms. As a result of the relationships with foreign firms, the Thai suppliers are actually quick to invest in new technology. Technological upgrading, however, do not necessarily result in learning, as learning demands skilled workers with knowledge of the full production process, and channels to diffuse individual knowledge in order to develop the production further. In order to learn from global actors, local structures also have to be adjusted. Firms in developing countries have to introduce considerable changes in the firm-internal organisation to become more receptive for knowledge diffusion. Finally, the success of firms in developing countries to learn and adapt themselves to changes in the global economy also depend on the structure of horizontal linkages and the supportive role of government institutions, the latter point being the subject of the next chapter.

References:

Anson, R & Simpson, P.: *World Textile Trade and Production Trends*. Textile Outlook International, *January 1998*.

AutoAsia.: *US Giants reassess in Thailand*. May/June 1998.

Bangkok Post.: *1998 year-end economic Review*.

BOI.: *Investment Opportunity Study. Automotive and Autoparts Industries in Thailand*. Office of the Board of Investment, 1995.

Cohen W. M. & Levinthal, D. A.; Absorptive Capacity: A New Perspective on Learning and Innovation. In: Cross, R. & Israelit, S. (Eds.): *Strategic Learning in a Knowledge Economy. Individual, Collective, and Organisational Learning Process*. Butterworth-Heinemann, 2000.

DEP.: *Thailand and its textile industry: an overview*. Department of Industrial Promotion, 1995.

Dicken, P.; Forsgren, M. & Malmberg, A.: The Local Embeddedness of Transnational Corporations. In: Amin, N. & Thrift, N. (Eds.): *Globalization, Institutions, and Regional Development in Europe*. Oxford: Oxford University Press, 1994.

Doner, R.: *Driving a Bargain. Automobile Industrialization and Japanese Firms in Southeast Asia*. University of California Press, 1991.

Doner, R. F.: Politics and the Growth of Local Capital in Southeast Asia: Auto Industries in the Philippines and Thailand. In: McVey, R. (ed.): *Southeast Asian Capitalists*. Southeast Asia Program. Cornell University, 1992.

Gereffi, G., Korzeniewicz, M. & Korzeniewicz, R.: Introduction: Global Commodity Chains. In: *Gereffi, G. & Korzeniewicz, M. Commodity Chains and Global Capitalism*. Greenwood Press 1994.

Gereffi, G.: Global Production Systems and Third World Development. In: Stallings, B. (Ed.). *Global Change, Regional Response*. Cambridge University Press, 1995.

Gereffi, G.: *Industrial upgrading in the apparel commodity chain: What can Mexico learn from East Asia?* Paper presented at the International Conference on Business Transformation and Social Change in East Asia. Tunghai University Institute of East Asian Societies and Economies. Taichung, Taiwan, 1999.

Grabher, G.: Rediscovering the social in the economics of interfirm relations. In: Grabher, G. (Ed.) *The Embedded Firm. On the Socioeconomics of Industrial Networks*. Routledge, London and New York, 1993.

Hollingsworth, J. R. & Boyer, R.: Coordination of Economic Actors and Social Systems of Production. In: Hollingsworth, J. R. & Boyer, R. (Eds.) *The Embeddedness of Institutions*. Cambridge University Press, 1997.

JICA (Japan International Cooperation Agency): *The Study on Industrial sector development. Supporting Industries in the Kingdom of Thailand*. UNICO International Corporation, Tokyo, Japan, Japan International Cooperation Agency January 1995.

Lawson, C.: Towards a competence theory of the region. In: *Cambridge Journal of Economics*. No. 23, 1999.

Lim, Y. C & Fong, P. E.: Foreign Investment in the Automobile Industry. In: *Foreign Direct Investment and Industrialisation in Malaysia, Singapore, Taiwan and Thailand*. Development Centre Studies, OECD, 1991

Maskell, P. and Malmberg, A.: Localised learning and industrial competitiveness. In: *Cambridge Journal of Economics*, 23, 1999. Special issue.

Nonaka, I. & Takeuchi, H.: *The Knowledge Creating Company. How Japanese Companies Create the Dynamics of Innovation*. Oxford University Press, 1995.

Nonaka, I. Toyama, R. & Nagata, A.: A Firm as a Knowledge-creating Entity: a New Perspective on the Theory of the Firm. In: *Industrial and Corporate Change. Vol. 9, No. 1*. Cambridge University Press, 2000.

Phonpaichit, P. & Baker, C.: *Thailand's Boom and Bust*. Silkworm Books, 1998.

Poapongsakorn, N. & Thonguthai, P.: Technological capability building and the sustainability of export success in Thailand's textile and electronics industries. In: Ernst, D., Ganiatsos, T and Mytelka, L. (Eds.): *Technological Capabilities and export Success in Asia*. Routledge, 1998

Suehiro, A.: *Development and Structure of Textile Industry in Thailand 1946-1980*. Institute of Developing Economies, Tokyo. September 1983.

Suehiro; A. *Capital Accumulation in Thailand 1855-1985*. The Centre of East Asian Cultural Studies, Tokyo, 1989.

Suphachalasai, S.: Thailand's clothing and Textile export. In: *Occasional Paper No. 89*. Institute of Southeast Asian Studies, 1994

Thailand Textile Institute. Textile Industry Statistics, 1998.