

GERMAN DEVELOPMENT INSTITUTE

**Linkages and Spill-overs between  
Transnational Corporations and  
Small and Medium-Sized Enterprises  
in Developing Countries –  
Opportunities and Policies**

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## **Abbreviations**

ASEAN	Association of South East Asian Nations
CNC	Computer numerical controlled
DEG	German Finance Company for Investment in Developing Countries
FDI	Foreign Direct Investment
FIDE	Fundación para la Inversión y Desarrollo de Exportaciones
GATT	General Agreement on Tariffs and Trade
GDP	Gross Domestic Product
GMP	Good Manufacturing Practices
IFC	International Finance Corporation
ILO	International Labour Organisation
ISO	International Organization for Standardization
MNE	Multinational Enterprise
NAFTA	North American Free Trade Area
NIC	Newly Industrializing Country
OECD	Organisation for Economic Cooperation and Development
OEM	Original Equipment Manufacturing
PCB	Printed Circuit Board
R&D	Research and Development
SECOFI	Ministry of Trade and Industrial Promotion (Mexico)
SES	Subcontracting Exchange Schemes
SME	Small and Medium-sized Enterprises
TNC	Transnational Corporations
TRIMs	Trade-related Investment Measures
UNCTAD	United Nations Conference on Trade and Development
USAID	United States Agency for International Development



## Summary

### TNCs and SME development

Transnationalization of production is advancing rapidly, with trade and in particular foreign direct investment expanding much faster than production. Within this process, transnational corporations (TNCs) are becoming more important as potential agents of the development of small and medium-sized enterprises (SMEs). Especially foreign direct investment (FDI) flows to developing countries and economies in transition have grown dramatically, increasing sixfold from 1990 to 1998. Their share of global FDI inflows rose from 18 % in the mid-1980s to 42 % in 1998. Although FDI inflows are unevenly distributed among developing countries, with some NIC's accounting for the lion's share, the ratio of FDI to GDP is increasing even in the group of low-income countries.

FDI not only involves flows of capital but the transfer other important assets as well, such as management and organizational expertise, technology, entrepreneurship and access to markets. Products, production processes and management techniques of TNCs are usually close to international best practices and improving constantly; total factor productivity levels are higher compared to local firms in developing countries. The same applies to other performance criteria, such as product quality, the capability to generate technological innovations, etc. This performance gap has important implications for local SMEs. On the one hand, TNCs should be seen as sources of knowledge and technologies, some of which may be copied or otherwise transferred to SMEs; on the other hand, there is always a threat of TNCs out-competing local companies.

The present study discusses the development potential of different types of linkages and spillovers; it then presents case studies of successful TNC-SME linkages in three manufacturing activities; subsequently, the determinants of linkage formation and technological upgrading are discussed; and finally, the study presents policies to

develop and upgrade local SMEs by way of linking them to TNCs.

### Linkages and spillovers and their impact on SME development: An overview

The present report analyses five types of *linkages* (which means the provision of inputs or use of outputs within a production chain) and *spillovers* (comprising all other ways of influencing partners, competitors and neighboring firms):

**1. Backward linkages with suppliers.** Most TNCs need a broad range of competitive, high-quality inputs delivered on time. Since they cannot produce the full range of parts, components and services in-house, they need efficient external providers of such products. Therefore, outsourcing is increasing steadily. As a result, a well-balanced structure of enterprise sizes may emerge in which the economies of large-scale production are ideally combined with the flexibility of small enterprises. SMEs can profit from this situation in a number of ways. The large enterprises, being the customers, open up new markets for them, often facilitate a regular receipt of payment, and relieve them of development and marketing tasks. Moreover, SMEs may be given important impetuses for modernization and growth.

Yet not all supplier relations are equally beneficial to SME development. In most cooperative ventures it is the suppliers that depend on the customer to a high degree. This is the case especially if a TNC customer establishes the relationship with a supplier only to cut wage costs or to cushion fluctuations in demand. On the other hand, if the underlying rationale of the customer is to make use of the supplier's technological specialization, operational flexibility and/or economies of scale, the TNC cannot easily play one supplier off against another, which gives the SME partner a certain bargaining power.

TNC customers tend towards stable and specialization-based relations with a limited number of reliable medium-sized suppliers. Supplier relations which are only based on fluctuating demand

and lower factor costs are often not compatible with rising standards as regards quality and reliability. Good manufacturing practices are gaining in importance, which in turn presupposes a skilled and highly motivated workforce along the entire value chain. This implies increasing barriers to entry for potential SME candidates, but it helps to improve working conditions and creates opportunities for technological upgrading within a select group of SME suppliers.

**2. Forward linkages with customers.** TNCs may develop different types of linkages with customers. The most important link is with *marketing outlets*. In particular TNCs which outsource the distribution of brand name products often make considerable investments in the performance of their marketing outlets, e.g. automobile dealers, gas stations, restaurant chains and travel agencies. Outsourcing these activities implies considerable advantages for the brand-name companies, mainly that they may rapidly cover extensive markets while minimizing risks and investment in distribution channels. As TNCs are keen to maintain high and homogeneous standards in their downstream activities, they often provide comprehensive training for their distributors. The SME distributor thus benefits from the use of an established brand name, a proven business concept and the transfer of knowledge from the TNC. This greatly reduces the risk of failure. The most important and rapidly expanding mechanism for downstream relationships with local SMEs is franchising.

Another type of forward linkages is with *industrial buyers*. Many transnational producers of machinery, equipment or intermediate goods provide assistance to their customers, which may be SMEs in developing countries. Most commonly, they send specialized personnel to train the customers workforce on how to use the acquired machinery or equipment and provide repair services; but in many cases the transfer of knowledge goes much further, providing information on international quality standards and market trends, helping to match SMEs with potential customers, etc. Such advice pays off for the TNC because machinery and intermediate goods may only be sold if the customer in turn manages to improve his

own sales. Moreover, technical assistance helps to tie the customer to the provider of machinery.

**3. Linkages with competitors.** Competition is the main driving force for technological learning. TNCs entering a developing country's market may induce competing local companies to accelerate improvements. Empirical research has shown that there is a statistically relevant positive correlation between the technology imports of TNCs and the local competitor's investment and output growth. Foreign investors may set new standards and create a healthy competition that stimulates innovations throughout the whole industry. On the other hand, if the local competitors are lagging far behind TNC standards, FDI may drive these firms out of the market. This (as well as acquisition of local competitors) leads to oligopolistic market power and may hinder endogenous technological development.

**4. Linkages with technology partners.** Some TNCs initiate joint projects with indigenous SME partners. These projects may take various forms of equity or non-equity linkages, including joint ventures, licensing agreements and strategic alliances. Some host-countries require foreign investors to take on local partners in joint ventures or to license technology to local firms. In other cases, linkages with technology partners arise voluntarily, because both parties identify complementarities and anticipate benefits from partnership: From the point of view of SMEs such linkages are mainly seen as mechanisms to gain access to new fields of knowledge and technology, while TNCs may look for indigenous partners because they provide access to local politics, institutions, and markets. Yet the fact that both partners pursue different goals often leads to conflicts: Local partners will try to gain as much access as possible to specific knowledge and technology of their foreign counterparts, while their technologically more advanced partners will usually try to avoid any leakage of specific knowledge. Therefore the distribution of benefits requires complex and continuing bargaining.

**5. Other spillover effects.** TNCs sometimes transfer know-how to local SMEs which are not



directly linked to them as suppliers. Two indirect spillovers are especially important: *Demonstration effects* occur as TNCs introduce new, often more efficient ways of doing things, thus providing showcases for innovation. By observing and copying from TNC strategies, local entrepreneurs may imitate TNC products and management techniques, develop new ways of inter-firm division of labor or gain access to non-traditional markets. This may happen as a spontaneous, even unconscious process or as a planned and systematic benchmarking exercise.

*Human capital spillovers* occur whenever TNCs train personnel beyond their own needs. As TNCs usually have more advanced equipment, more up-to-date production processes and management techniques as well as higher quality standards than local companies, they place higher demands on their workforce and usually invest more in training. Even if TNC employees do not participate in training activities, they may acquire certain skills, attitudes and ideas just by working in a plant that conforms to international production standards. Moreover, experienced TNC personnel may quit their jobs in the company in order to use the acquired technical or management skills to set up independent local companies (spin-offs). Some TNCs are thus "invisible colleges" which make substantial contributions to skill formation in the host country.

### Case studies of successful TNC-SME linkages

Three case studies of different manufacturing activities are presented: the electronics hardware, automotive, and apparel industries.

The **electronics hardware industry** is one of the most dynamic manufacturing industries in developing countries and is supposed to be one of the most promising for spillovers. In many Southeast and East Asian countries, manufacturing of electronics is the leading industrial sector in terms of investment, industrial output, value added, exports and employment. The industry is largely dominated by TNCs. Recently, developing countries

outside Asia have been gaining importance as preferential investment sites for electronics TNCs, e.g. Mexico, Costa Rica and Hungary. In the early years, only simple assembly, testing and packaging operations had been transferred to developing countries. Yet today electronics TNCs increasingly concentrate on developing, designing and marketing their products, and thus often outsource the whole process of manufacturing. This opens important windows of opportunity for subcontractors, who become experts in assembling standardized products. Moreover, as automation increases, electronics TNCs demand more specialized tooling such as jigs and fixtures for automated assembly. This is another niche market for supporting SMEs.

The study analyzes three leading TNC-driven electronics production sites which represent different stages in the development from a mere factor-cost based agglomeration of assembly plants to a knowledge-based industrial cluster with a vibrant development of complementary SMEs. Guadalajara (Mexico) is the most recent agglomeration of TNCs, but up to now no supporting local companies have emerged; Penang (Malaysia) is a more mature production site with a considerable dynamics of local supplier and skills development, but still very limited innovative capabilities. Finally, Singapore has upgraded from a simple assembly site to a dynamic cluster spinning off innovative SMEs and developing world-class suppliers. The different performance of those clusters can be explained by four main factors: First, there is always a time-lag between the first TNC investments and the take-off of supplier development: In Singapore and Penang, vigorous supplier development started about 10-20 years after the first massive inflows of FDI in electronics; second, the industrial life-cycle: Singapore became involved in electronics manufacturing when this industry was quite young. Local suppliers thus did not face a well-established international competition; third, the efforts to upgrade the engineering and technical skill base; fourth, policies to develop and upgrade promising local companies.

In many large developing countries the **automobile industry** represents a significant portion of the overall manufacturing activity in terms of output and employment. In addition to this direct contribution, the industry is considered important to economic development because of its strong backward linkages and its large share in the consumption of selected inputs, such as iron and steel products, aluminum alloys, etc.

Until the mid-1990s, many developing countries, especially those with relatively large domestic markets, pursued protectionist policies to develop national automobile – or at least automobile *supplier* – industries. Most of these countries had introduced high tariffs for imported cars, thus inducing foreign carmakers to build local assembly plants in order to serve the respective domestic markets. In addition to high import tariffs, governments imposed local-content and other requirements on carmakers in order to build local supplier networks. Yet as import-substitution policies limited trade and competition, the emerging automobile (and supplier) industries were usually less efficient than world-market competitors. Although undoubtedly some technological learning took place, mostly concerning new organizational and management concepts and the mastery of standard techniques, little progress was made regarding the development of innovative capabilities.

Only recently has liberalization exposed transnational affiliates and local companies to international competition and forced the automobile industries of developing countries to modernize and restructure. Most governments have already relaxed their restrictions on foreign investment in the automobile industry. A growing number of countries now permit 100 % foreign equity. Moreover, local content, export and technology-licensing requirements are being phased out and import restrictions lifted.

Liberalization of automobile policies will have far-reaching consequences. Where countries pursued *National Car* projects, these will hardly be able to continue without selling a majority stake to one of the large foreign car companies. Where the

automobile industry is dominated by TNCs, as in most developing countries, these corporations will move away from multi-domestic production, where local assembly plants with suboptimal scales of production have assembled a broad range of models for the respective national market, rationalize production and start to integrate global or at least regional networks of specialized affiliates sharing parts and manufacturing processes.

With modernization of assembly plants and their reorientation towards a global or regional division of labor, TNCs need to modernize their supplier base as well. In many cases, carmakers induce their established home-base suppliers to follow them to the respective foreign markets. In this process, many inefficient local suppliers are being taken over or crowded out. As a result, liberalization in developing countries is leading to a specific form of clusters which are dominated by transnational carmakers and their leading foreign suppliers. To what extent local SMEs will be able to integrate into the auto-parts industry – at least into the lower tiers of the production pyramid – depends on the competitiveness of the national industry and the availability of support programmes.

**Apparel** is not only one of the most important industries during the early stages of industrial development, and one of the main sources of export revenues for developing countries, it is also an industry in which subcontracting arrangements between large and small firms are widespread. Moreover, barriers to entry for indigenous SMEs are low, especially in assembly operations.

Assembly is very difficult to automate and therefore highly labor-intensive. Due to this labor intensity, assembly accounts for about 80 % of value added in apparel production. Accordingly, there is a strong incentive to subcontract this process to low-cost producers, either within a given country or from high-wage to lower-wage countries. Subcontracting of apparel assembly is thus mainly motivated by labor-cost advantages. In some cases, customers contract out to other firms to cope with fluctuating demand. The apparel

chain is therefore quite different from the electronic-hardware and automobile industries, where subcontracting is largely due to the productivity gains of complementary specialization.

As entry barriers for new garment assembly plants are low, competition is fierce, and margins are usually low. In contrast, high rents may be obtained in apparel marketing. The profitability of apparel companies largely depends on two aspects: their ability to generate "brand-name rents" by building a positive product image, and their ability to manage the supply chain efficiently, i.e. by organizing quick and reliable delivery of high-quality apparel. Therefore many TNCs in the apparel business emphasize the need to build global brands and improve their retail logistics, while they outsource garment assembly to independent companies.

Traditionally, subcontractors received cut fabric and returned the assembled garment. Today, international retailers and marketers increasingly work with full-package suppliers. Full-package means that the supplier makes the garment according to a design specified by the customer, but he himself takes on the responsibility of sourcing the necessary inputs and delivering the finished product, including labeling, packaging etc. This trend implies considerable opportunities to upgrade local SME suppliers. It enhances the ability of local entrepreneurs to learn the preferences of foreign buyers, including international standards for price, quality, and delivery of export merchandise. It also generates substantial backward linkages in the domestic economy because contractors are expected to develop reliable local sources of supply.

While the opportunities for technological learning are considerable in the segment of full-package suppliers, this is usually not the case in simple second- and third-tier garment assembly. Yet there are some exceptional cases where first-tier suppliers or traders offer advice on shopfloor organization, quality standards, etc.

**Summing up the lessons of the case studies**, we observe that TNCs increasingly specialize in cer-

tain stages of the value-adding process while at the same time intensifying interactions with their partners upstream and downstream along the value chain. As inter-firm cooperation becomes more complex, spatial proximity to suppliers and customers becomes an important advantage. TNCs are therefore often interested in intensifying linkages with neighboring firms. As a result, new windows of opportunity for specialized SME partners are opening up, especially in non-tradable business services and niche products with limited economies of scale.

At the same time, as global competition increases, TNCs place higher demands on their partners. SME partners must come close to international standards concerning product quality, price, and terms of delivery. If local companies lack these conditions, TNCs often prefer to induce their proven international partners to follow them to the respective host country. As a result, transnational clusters may emerge which have very few links to the local economy.

### **Determinants of successful linkage formation and technological upgrading**

The intensity of TNC-SME linkages and the ability of countries and individual firms to exploit such linkages for technological upgrading varies greatly, depending on the interplay of three sets of factors:

1. the existence of SMEs which have the potential to meet high TNC standards;
2. the TNC corporate strategy;
3. the existence and efficiency of a set of supporting public policies.

**The competitiveness of local SMEs.** The main reason for the weakness of linkages and spillovers from TNCs to local SMEs is the lack of efficient SMEs able to seize new business opportunities related to foreign direct investment. Entry barriers for partnership with TNCs differ considerably, mainly according to

1. the envisaged type of partnership: Demands on suppliers are not the same as demands on distributors or joint venture partners;
2. the motives as to why TNCs seek partnership with local SMEs, e.g. to acquire new technologies, to exploit the advantages of specialization, to cut labor costs or to improve access to government bureaucracies. Moreover, partnership may be mandatory or voluntary;
3. characteristics of the industrial activity, e.g. technological complexity, capital and scale requirements.

As regards SMEs as *suppliers* to TNCs, barriers to entry may be quite low, especially in technologically simple and labor-intensive activities, such as assembly of apparel, shoes and toys. In these activities, lower wages and labor standards, the externalization of environmental costs or the readiness to accept unstable demand conditions may be sufficient to be accepted as a TNC supplier. Nevertheless, compliance with quality standards is becoming more and more important, especially where production is associated with a company or brand name. Even if supplier relations are cost-driven, most TNCs will not compromise on quality. One may therefore assume that the low wage-low standard-type of subcontracting will slowly disappear in global production chains. In technologically complex activities, such as electronics and automobiles, demands on suppliers are especially high. SME partners are increasingly required to invest in R&D on their own in order to constantly improve their products and participate in joint innovation projects with their customers.

As regards SMEs as *customers* of TNCs, especially as franchisees, barriers to entry are relatively low. One of the main advantages of franchising is that this scheme requires fewer entrepreneurial skills than an independent, non-franchised enterprise. Besides the basic management skills for running a business, entrepreneurs mainly have to adhere to certain quality standards and bear some capital costs related to investments in the the respective marketing outlet as well as a franchising fee.

Regarding SMEs as *partners in joint ventures*, we first have to distinguish between mandatory and voluntary joint ventures. If foreign investors have to take on a local partner for reasons of mandatory national equity, local candidates only have to compete with other domestic firms, and barriers to entry are therefore relatively low. Yet empirical evidence shows that joint ventures forced on an unwilling TNC are rarely successful, and they are often unsustainable once the equity requirements are withdrawn. If the partnership is voluntary, the local SME must be able to identify suitable counterparts partners for a sustainable win-win partnership and to negotiate favorable contracts. Moreover, they need to achieve minimum efficiency standards and contribute specific assets to the partnership. These may either be technological or based on familiarity with local politics and government regulations as well as knowledge of local markets.

**The TNC corporate strategy.** TNCs pursue different corporate strategies which may be more or less conducive to local SME development and technological learning. These strategies are usually closely related to the motive why the TNCs engage in the host country, i.e. whether the affiliate is seeking resources, markets, efficiency or strategic assets and capabilities. In the past, market-seeking investors often developed substantial supplier linkages because markets were less demanding and because host countries imposed domestic-content requirements. Resource-seeking and export-oriented investors, by comparison, created relatively few linkages, but these linkages with local suppliers were more competitive and sustainable.

Beside the motives for investing in a given developing country, many other aspects shape the TNC's willingness to develop linkages with local SMEs. These include the degree of technological sophistication and economies of scale, the length of time the TNC has been operating and gathering experience in the host country, the specific corporate culture, the geographic proximity and transaction costs between parent company and affiliates, the TNC's market position and the host country's trade policy.

### **Policies to enhance linkages and spillovers between TNCs and local SMEs**

Public policy has an important part in enhancing linkages and spillovers. Today there is considerable agreement that policies to restrict FDI and to impose local content, technological licensing or equity requirements are rarely effective, unless the respective government is endowed with special political and administrative capabilities. Yet liberalization of investment policies is not sufficient to exploit the opportunities of linkage formation and technological learning. In order to enhance linkages and spillovers between TNCs and local SMEs, policies should aim to:

- improve the general performance of SMEs,
- attract foreign direct investment and
- upgrade local SMEs linked to TNCs.

The study only gives a brief overview of the first two issues and places emphasis on *specific* policies for upgrading local SME related to TNCs.

**General policies to improve the performance of local SMEs.** In the process of industrial modernization, large companies tend to outcompete SMEs in scale-intensive activities, but at the same time these companies often create new markets for specialized SMEs – subcontractors, suppliers of parts and components, franchisers, after-sales services – and they always leave some niche markets to be exploited by local SMEs. As this structural change of industrial organization proceeds, SMEs inevitably have to assume new roles.

Industrial (and especially SME) policy should help to cope with this structural change and enable SMEs to adapt to the new rules of competition. Promotion should aim at developing an integrated production system where small companies specialize in activities which complement large-scale production and exploit niche markets (e.g. customized products and specialized business services). The challenge is to establish a core group of dynamic SMEs rather than providing indiscriminate assistance to SMEs and microenterprises in traditional activities where they do not possess competitive advantages vis-à-vis large

firms. This calls for selective policies, including innovation policies for SMEs, venture-capital funds for start-up companies, programs to foster university spin-offs, and, last but not least, policies to link SMEs up with large companies.

**Policies to attract foreign direct investment.** As the global economy becomes more open to international business transactions, countries increasingly have to compete for foreign investors, and restrictive FDI policies can effectively deter TNCs from investing in the respective country. In addition to liberalizing their FDI policies, three elements are crucial to successfully attracting FDI, especially if the focus is on "developmental" TNCs which are likely to generate considerable domestic linkage and spillover effects:

1. Formulating a vision and targeting FDI to this aim. Host countries should formulate strategic goals and try to identify windows of opportunity relating to foreign investment, i.e. define areas which are promising for national development. Policies to attract FDI should be selective and embedded in a comprehensive national development strategy.
2. Creating and promoting a positive image of the location. Promotion, especially sector-specific investment missions combined with firm-specific research and customized advertising, is cost-effective. Investment promotion agencies should be organized in a businesslike manner and develop a culture and attitude oriented towards the private sector. Some of their services may be transferred to private service providers.
3. Improving advanced and specialized factors in accordance with technological goals. Most developing countries seek to attract foreign direct investment focusing on a combination of low factor costs (especially for labor and natural resources) and subsidies. These factors are usually not sufficient to sustain long-term competitiveness. In order to achieve technological upgrading, advanced and specialized factors of production need to be developed, including specific human-capital formation,

R&D activities, specific infrastructure in fields such as information technology, etc.

### **Specific policies to upgrade local SMEs linked to TNCs**

Besides the improvement of the general policy framework which is necessary to improve the performance of SMEs and to attract FDI, specific policies to develop and upgrade TNC-SME linkages and to promote the transfer of know-how from TNCs between SMEs are recommended. These include supplier development, improvement of forward integration with customers, promotion of technology partnerships and support measures to enhance know-how transfer from TNCs to local SMEs which are not directly linked as suppliers, customers or technology partners.

**Supplier development.** Studies on programs to support the development of local suppliers to TNCs highlight four important "lessons learnt." Supplier policies should:

- focus on voluntary measures to support the local supplier base rather than to impose domestic-content requirements and market-reservation policies;
- be based upon a medium- or long-term vision concerning the envisaged intrafirm division of labor; targets and target groups should clearly be defined, and policy-makers should have an idea of what types of supplier relations are conducive to sustainable competitiveness;
- make sure from the beginning that large corporations are involved in and committed to supplier development programs;
- be coherent, well-coordinated and transparent. There should be one lead agency for supplier development working hand-in-hand with specialized agencies.

Among the policies for supplier development, events to inform SMEs about opportunities to supply goods and services as well as institutions to match SME supply with the demand of TNCs

are especially important. Matching institutions include subcontracting exchange schemes as well as supplier fairs and exhibitions. These instruments are helpful to set up first contacts between customers and suppliers. However, matching is usually not sufficient to establish lasting cooperation, because participating suppliers do not meet all the standards required by customers. The latter should be asked to cooperate with the organizers of the matching event in order to help them identify bottlenecks and promotion needs of potential suppliers. On this basis, tailor-made support measures including advice on manufacturing and logistics, training, financing and other services may be offered to promising SMEs. Matching institutions may thus be seen as first steps towards an integrated supplier promotion scheme.

Some countries offer economic incentives to intensify supplier relations and technology transfer. These incentives may either benefit customers or suppliers. Yet such incentives are costly and make sense only if potential customers are really interested in local suppliers, if the competitiveness of SME candidates does not lag too far behind and if supplier relations do not develop without these incentives.

**Forward integration with customers.** In most cases franchises develop at the initiative of the entrepreneurs and do not necessarily require government action or even donor interventions. In some countries, private-sector franchise associations exist which provide services to the national franchising community. Moreover, some consultancy firms have specialized in franchise operations. Nonetheless, some countries and international organizations have adopted programs to encourage franchising as an instrument for developing SMEs. Measures to support franchising include organizing events for awareness building, reviewing the existing legal requirements regulating the franchising business, the establishment of a one-stop franchising agency, facilitating contacts between international franchisers and potential local franchisees, encouraging and supporting the establishment of national franchising associations, providing consultancy and training for potential franchisees during the initial phases of

establishment of contacts, negotiation of contracts and setup of the new enterprise, helping to develop indigenous "SME-to-SME" franchises, and providing finance.

**Promotion of joint ventures.** Taking into account that the imposition of mandatory shared ownership has rarely led to the expected results, public policy should rather promote voluntary joint ventures. In this respect, information services for and coaching of (potential) joint venture partners is the most important field of support. Joint-venture partners, especially inexperienced SMEs from developing countries, often lack relevant information and the capability to foresee all the implications of a joint venture. Investment promotion agencies may enable local candidates to identify their own strengths and weaknesses, assess the contribution expected from the foreign partner and to negotiate favorable contracts. Coaching may be necessary in subsequent stages of joint-venture development in order to match different corporate cultures or to help renegotiate the terms of cooperation.

In addition, many countries set up databanks and organize journeys to match local and foreign companies, yet most practitioners feel that these activities rarely lead to the formation of new joint ventures. Likewise, some government agencies offer financial support for joint ventures, although for viable projects finance is rarely the relevant bottleneck. Instead of offering soft loans, public authorities should rather help interested SMEs to improve their joint-venture plans, leaving financial services to the private banking sector.

**Other policies to promote spillovers from TNCs to SMEs.** Although private-sector firms are usually very careful to avoid any leakage of particular information which is part of their core competences, this does not apply to know-how concerning universal principles of industrial organization. Most TNCs are clearly ahead of local companies in fields such as human resources management, quality management, statistical process control, plant layout and logistics. As this knowledge is often not considered part of the specific set of core competences, TNCs may be quite

willing to share this information. Disseminating this kind of information among the local business community may even benefit the TNC, since it helps to improve their image as good corporate citizens.

SME promotion agencies may help to organize such a voluntary transfer of know-how. They may identify suitable TNC subsidiaries, convince them to share their experience with local companies, organize factory visits, and document and disseminate the respective experience among local companies.





## Introduction

Transnationalization of production is advancing rapidly, with trade and in particular foreign direct investment expanding much faster than production. Within this process, transnational corporations (TNCs) are becoming more important. Both global output and global sales of foreign affiliates are growing faster than world GDP and world exports. Today, TNCs account for 25 % of global output.<sup>1</sup>

Especially foreign direct investment (FDI) flows to developing countries and economies in transition have grown dramatically, increasing sixfold from 1990 to 1998. Their share of global FDI inflows rose from 18 % in the mid-1980s to 42 % in 1998.<sup>2</sup> This boom is due to the fact that developing economies are growing faster on average than OECD economies. Moreover, since the mid-1980s most developing countries have switched from import substitution to open-door policies towards FDI. FDI has proven to be the most stable source of capital, proving relatively more resilient in face of the recent Asian and Brazilian financial crisis than other private capital flows (debt and portfolio equity flows).<sup>3</sup> Even if FDI inflows are unevenly distributed among developing countries, the importance of this source of capital – in terms of the ratio of FDI to GDP – is increasing in most developing countries. Even for the group of low-income countries, which are less attractive for foreign investors, this ratio increased from 0.5 % in 1990-91 to more than 1 % in 1995.<sup>4</sup>

FDI not only involves flows of capital but transfers other important assets as well. These include "management and organizational expertise, technology, entrepreneurship and access to markets across national boundaries."<sup>5</sup> Products, production processes and management techniques of TNCs

are usually close to international best practices and improving constantly; otherwise their competitiveness in international markets would not be sustainable. As a result, total factor productivity levels are higher compared to local firms in developing countries. The same applies to other performance criteria, such as product quality, the capability to generate technological innovations, etc.<sup>6</sup> This productivity gap has important implications for local SMEs. TNCs should be seen as sources of knowledge and technologies, some of which may be copied or otherwise transferred to SMEs; on the other hand, there is always a threat of TNCs outcompeting local companies.

Public policy may help to maximize the positive spillovers and to minimize detrimental effects of TNCs. Incentives and impositions aimed at guiding the behavior of TNCs have therefore long ranked high on the industrial policy agenda of developing countries. Yet the dominant policy approach of the last decades, mainly based upon restrictions imposed on TNCs, such as domestic-content and technology-licensing requirements, needs to be reconsidered: first, because these policies have in most cases shown disappointing results; second, because the framework conditions for FDI have changed, as have the prospects for exploiting TNC linkages and spillovers for SMEs in developing countries. Under the present conditions of increasing globalization, competition for FDI is fierce, and mandatory measures may easily discourage TNCs from investing at all. At the same time, the new rules of competition are leading to a reorientation of corporate strategies. Many TNCs are switching from multidomestic organization patterns to more complex forms of global networking among their affiliates. As a consequence, they urge some of their suppliers to become global players, thus raising the barriers to entry for local SMEs. On the other hand, TNCs tend to specialize in certain core capabilities and outsource the provision of non core products and services, thus creating new opportunities for ancillary (mostly small and medium-sized) companies.

1 Cf. UNCTAD (1999), pp. xviii - xix.

2 Cf. World Bank (1999), pp. 49 - 50.

3 Cf. UNCTAD (1998), pp. 14 - 15.

4 Cf. World Bank (1999), pp. 50 - 51.

5 Cf. Dunning (1992), p. 5.

6 Cf. UNCTAD (1999), pp. 198 ff.

To sum up, TNCs remain an important means for gaining access to up-to-date technologies and management know-how. The challenge of connecting up indigenous SMEs with foreign investors and speeding up technological upgrading and deepening of the local enterprise structure persists, but new policies to that end are needed. The present study focuses on the preconditions for linkages and spillovers between TNCs and SMEs in developing countries as well as policy experiences in this field.

The study consists of five chapters. The first chapter provides definitions of the basic concepts and clarifies the scope of the study. The second chapter analyses the opportunities and threats that different types of linkages and spillovers imply for SMEs in developing countries. The third part presents case studies of successful TNC-SME linkages in three industrial activities: the electronics hardware, automobile, and apparel industries. Chapter 4 analyses the underlying determinants of successful TNC-SME partnerships, placing emphasis on the characteristics that make SMEs ready for partnership with TNCs and enable them to exploit these partnerships for technological learning and upgrading. In addition, the role of the respective TNC's corporate strategy and supporting policies are discussed. Finally, Chapter 5 presents policies aimed at enhancing linkages and spillovers between TNCs and local SMEs. The chapter first gives a brief overview of general policies for enhancing local competition and attracting TNCs; it then focuses more extensively on specific policies to develop and upgrade local SMEs by linking them to TNCs.

The main addressees of the study are policy-makers, industrialists, administrators, scientists and intermediary institutions interested in advancing linkages and spillovers between TNCs and SMEs in developing countries. An earlier version of this paper was presented at the 10<sup>th</sup> UNCTAD Conference in Bangkok 2000. The author would like to thank UNCTAD for the permission to publish the study in the GDI Reports and Working Paper Series.

## 1 Definitions and scope of the study

The study discusses linkages and spillovers between transnational corporations and small and medium-sized enterprises in developing countries. In order to clarify which enterprises and which types of linkages and spillovers are being considered and to limit the scope of the study, the terms "transnational corporation," "linkage," "spillover" and "small and medium-sized enterprise" need to be defined.

"A **transnational corporation** is an enterprise that engages in foreign direct investment (FDI) and owns or controls value-adding activities in more than one country."<sup>7</sup> This general definition comprises a broad range of enterprises, which in turn may have very different relations with SMEs:

- TNCs are engaged in different activities ranging from production and processing of primary products to manufacturing and services;
- They may consist of a number of largely independent multidomestic foreign subsidiaries or they may be part of a globally integrated network of affiliates performing different but complementary tasks including R&D, production and marketing activities.
- TNCs may be more or less open to incorporating host country personnel, locating strategic decisions abroad, sourcing from host country suppliers, etc. This in turn depends on the corporate culture, on the degree of cultural and spatial proximity between home and host countries, on the availability of inputs, the competitive pressure in the home market and other factors.
- TNCs may be large global enterprises with many thousands of employees worldwide, though some TNCs may themselves be considered SMEs, at least in their home countries, and have only a limited number of production activities abroad.

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<sup>7</sup> Cf. Dunning (1992), p. 3.

- Most TNCs are based in OECD countries, but there is a clear trend towards transnationalization of companies from developing countries.
- TNCs have different reasons for going abroad. The literature usually distinguishes four main objectives of FDI: to seek resources, to seek markets, to seek efficiency or to seek strategic assets and capabilities.<sup>8</sup>

Given this heterogeneity it is obvious that the opportunities to link local SMEs to TNCs depend on characteristics of the latter, including their range of activities, globalization strategy, corporate culture, size, and motives for investing in developing countries. This study will focus on the typical large manufacturing TNCs with headquarters in OECD countries. TNCs engaged in the exploitation and primary processing of natural resources are excluded from the study, because they usually have few linkages with local SMEs, especially in the petrochemical and mining industries.<sup>9</sup> Some TNCs engaged in processing or exporting agricultural products to source their inputs from small local producers, but these linkages with agriculture are quite different from those in manufacturing and services and should therefore be treated separately.<sup>10</sup>

The terms "**linkage**" and "**spillover**" also need further specification. Some authors limit the range of linkages between TNCs and local companies to forward and backward linkages. According to Hirschman, forward linkages result from the utilization of output,

*"i.e., every activity that does not by its nature cater exclusively to final demands, will induce attempts to utilize its outputs as inputs in some new activities. (Conversely, backward linkages com-*

*prise the) attempts to supply through domestic production the inputs needed"*<sup>11</sup>

in a given activity. Such linkages may consist of arms-length transactions or different forms of (sometimes long-term) non market relations including strategic alliances between firms and different patterns of quasi-integration. They may be direct or through intermediaries, for example if a supplier sources inputs from other local firms (second-tier suppliers). In addition to these forward and backward linkages, there are several other relationships by which TNCs affect the performance of local SMEs: TNCs may participate in different kinds of cooperative agreements with local firms, including strategic alliances, joint ventures and licensing agreements; they may influence consumer preferences and thus change demand patterns; SMEs may benefit from technological spillovers such as new management techniques which trickle down from TNCs into the host economy; TNCs may introduce more aggressive marketing strategies and intensify local competition, forcing local competitors to reorganize. While this may enhance the competitiveness of local SMEs, the latter may also be outcompeted, especially if the performance gap between foreign and local firms is very large or if the TNC gains a monopolistic market position.

This study uses a broad definition of linkages and spillovers, including the whole range of direct and indirect relationships by which the presence of TNCs affects the development of other firms in the respective host country. Five main types of linkages and spillovers may be distinguished:<sup>12</sup>

- **Backward linkages with suppliers.** TNCs usually source some parts, components, indirect materials and services from suppliers in the host economy. The effect of such linkages on local SMEs depends, among others things, on the quantity and types of inputs supplied, the terms of procurement, and the willingness of TNCs to transfer knowledge and build a

8 See for example Dunning (1992), pp. 54 ff.

9 See for example Riveros / Vatter / Agosin (1996).

10 See for example the extensive body of literature on contract farming and outgrower schemes, e.g. Glover / Kusterer (1990).

11 Hirschman (1958), p. 100.

12 Cf. Dunning (1992), pp. 445 ff.

long-term relationship with local SMEs. Supplier linkages range from arms-length market transactions to very close, long-term inter-firm relations, and they may be direct or through intermediaries.

- **Forward linkages with customers.** TNCs mainly develop three types of linkages with customers. The first and most important is with *marketing outlets*. In particular TNCs which outsource the distribution of brand name products often make considerable investments in the performance of their marketing outlets, e.g. restaurant chains, automobile or petrol companies. The second type of forward linkage is with *industrial buyers*. TNCs producing machinery, equipment or other inputs sometimes offer after-sales services which go far beyond the usual advice on how to use and maintain the purchased good. The third type refers to linkages in which a TNC produces goods for *secondary processing*, mainly commodities, such as metal ores and agricultural raw materials. Commodity producers usually exert little influence on the performance of secondary producers. This type of linkage will therefore not be discussed in the present study.
- **Linkages with competitors.** TNC affiliates often face some competition from local firms, in some cases even from very small SMEs. As TNCs typically hold a strong market position vis-à-vis local rival firms, they may have a strong (positive or negative) impact on the performance of the latter. Foreign investors may set new standards and create a healthy competition that stimulates innovations throughout the whole industry, but they may also outcompete established local firms.
- **Linkages with technology partners.** Some TNCs initiate joint projects with indigenous SME partners. These projects may take various forms of equity or non-equity linkages, including joint ventures, licensing agreements and strategic alliances. As developing economies grow more rapidly on average than industrialized economies, all these forms of technology partnering with firms in developing countries are becoming more and more

common. Although inter-firm technological alliances are a typical phenomenon of OECD countries, which host most of the world's innovative companies, the number of inter-firm technology agreements involving partners from developing countries is clearly rising.<sup>13</sup> Some host-countries require foreign investors to take on local partners in joint ventures or to license technology to local firms. In other cases, linkages with technology partners arise voluntarily, because both parties identify complementarities and anticipate benefits from partnership. Such inter-firm linkages are often seen as important sources of technology.

- **Other spillover effects.** These include demonstration effects and human capital spillovers. *Demonstration effects* occur as TNCs introduce new, often more efficient ways of doing things, thus providing showcases for innovation. Local entrepreneurs may imitate TNC products and management techniques or gain access to non-traditional markets by observing and copying from TNC strategies. This may happen as a spontaneous, even unconscious process or as a planned and systematic benchmarking exercise. *Human capital spillovers* occur whenever TNCs train personnel beyond their own needs or if their experienced personnel moves to local firms or forms new spin-off companies.

Throughout the study, several chapters will come back to these different types of linkages and spillovers, but will not always go into detail.

- In *Chapter 2* I shall discuss, from the viewpoint of local SME development, opportunities and risks related to TNC-SME linkages and spillovers. Since all the above-mentioned relationships create some opportunities and some sort of risks for local SMEs, this chapter will treat all five types.

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13 According to the MERIT/UNCTAD database, 6.2 % of the 3,984 agreements recorded in the 1990s involved firms from developing countries, compared to 4.9 % in the 1980s; cf. UNCTAD (1998), p. 27.

- *Chapter 4.1* will deal with the requirements SMEs have to meet in order to become partners of TNCs and fully exploit the benefits of these relationships. This chapter will only treat direct (usually contractual) linkages with TNCs, taking into account that competing with TNCs or benefiting from some sort of other spillovers (i.e. by way of demonstration effects or human capital spillovers) does not involve any partnership with TNCs – and therefore no sort of barriers to entry for SMEs;
- In *Chapter 5.2* I shall come back to the different types of linkages and spillovers from a policy perspective. The focus of that chapter is on specific policies to promote linkages, including supplier development, promotion of customer relations (especially in the case of franchising), promotion of joint ventures and policies to support unspecific spillovers (especially to enhance demonstration effects). Linkages of TNCs with local competitors will not be treated in this chapter on policies, because competition policy, although undoubtedly very important, is a complex issue and not specific to the subject of this study.

Finally, we need to define **small and medium-sized enterprises**. The problem of defining SMEs is as old as the subject itself, and no generally accepted definition exists. First, different criteria may be applied, such as number of employees, paid-up capital, or turnover. Second, size categories such as "small," "medium" and "large" only make sense relative to a given size structure. Therefore, the threshold value of SMEs is quite low in least developed countries (e.g. 50 employees) and considerably higher in industrialized countries (500 employees). In some countries, very small firms with less than 5, 10, 15 or 20 employees are considered as an extra-category of "microenterprises" beneath the stratum of SMEs.

As the aim of the present study is to capture the whole range of possible linkages between TNCs and SMEs, we have opted for a broad definition comprising all firms with less than 500 employees, including microenterprises. Yet it should be clear that direct linkages with and spillovers from

TNCs mainly occur with a select number of modern, medium-sized firms and a few untypical small firms which possess state-of-the-art technology and a professional management. TNCs are usually keen to build up and maintain a positive brand image and a reputation for high product quality and responsiveness. They therefore place much emphasis on assuring that the entire value chain be organized according to corporate standards. Any cooperation with local low-cost suppliers that might cause quality problems or dissatisfaction among clients will be disregarded. Yet there are some cases in which even microenterprises are linked as low-cost first- or, more often, second-tier suppliers to TNCs (see Chapter 3). This is mainly the case in simple processes for low-end markets, such as assembling basic apparel products. In addition, as I have argued before, even if SMEs are not directly linked to TNCs the latter may have decisive influence on SME development through demonstration effects or the impact of competition. This study will consider such indirect impacts, but emphasis will be placed on the more direct relations.

## 2 Opportunities and risks related to different types of linkages and spillovers

The five types of linkages presented in Chapter 1 may have very different impacts on the development of the host country and its indigenous SMEs.

**Backward linkages with suppliers** have traditionally been seen as the main vehicle to promote technological spillovers from TNCs. Many developing countries have imposed domestic-content requirements on TNCs to intensify backward linkages and create local supplier industries. With increasing liberalization of investment rules and the ban on trade-related investment measures (TRIMs) under the GATT, such mandatory supplier relations are losing importance. The challenge today is to exploit the development potential of supplier relations without mandatory measures.

Supplier relations offer the chance that a well-balanced structure of enterprise sizes may emerge in which the economies of scale of large-scale production is ideally combined with the flexibility of small enterprises. SMEs can profit from this situation in a number of ways. The large enterprises, being the customers, open up new markets for them, often facilitate a regular receipt of payment, and relieve them of development and marketing tasks. Moreover, SMEs may be given important impetuses for modernization and growth. Most TNCs need a broad range of competitive, high-quality inputs delivered on time. Since it is unfeasible for them to produce too many parts, components and services in-house, they need efficient external providers of such products. Therefore, outsourcing is increasing steadily (see Box 1).

Moreover, it is preferable if these suppliers are close by, especially if just-in-time delivery is required. Some TNCs are therefore eager to invest in their local supply base by providing different forms of technical, managerial and organizational (and in some cases financial) assistance.<sup>14</sup> As Dunning states,

*"the findings of a large number of studies over the past 30 years are virtually unanimous that the presence of foreign-owned firms has helped raise the standards and productivity of many domestic suppliers, and that this has often had beneficial spillover effects on the rest of their operations."*<sup>15</sup>

Above all in developing countries characterized by polarized enterprise structures, technological heterogeneity and segmented goods and labor markets, a stronger integration of SMEs into modern supplier relations can make an important contribution towards improvement of the enterprise structure.

Yet not all supplier relations are equally beneficial for SME development. In most cooperative ventures it is the suppliers that depend on the customer to a high degree. It happens quite often that there is a great number of suppliers and only few customers and that suppliers can be replaced by others because they lack specific capabilities. In such a case, the bargaining position of suppliers is extremely weak, and the risk is high that suppliers will engage in ruinous competition. The customer is then in a position to appropriate the major share of all economies resulting from specialization, while the suppliers have to absorb costs and risks.

Depending on the advantages the supplier offers to the client, four main types of relations may be distinguished, each of them implying different opportunities for SME development. Clients may outsource products and services to suppliers because the latter offer:

- *Productivity gains.* These are the main motive for outsourcing if the supplier is able to produce – all factor costs being equal – better or cheaper products than his customer. If the underlying rationale of the customer is to make use of technological specialization and/or economies of scale, the supplier has a relatively high autonomy over product design and will be responsible for improvements. Since the supplier produces a specialized complementary input for the customer, the latter cannot easily play one supplier off against another. This gives the SME partner a certain bargaining power. The most privileged suppliers are those who achieve technological leadership in their field and are therefore able to negotiate high prices (innovation rents) for their products. In addition, the specialized supplier gains access to a reliable market, provided the customer remains viable. Intra-industry linkages based on mutual specialization usually go beyond arms-length transactions, including the coordination of delivery times, product standardization, joint research, and so on. These agreements guarantee a long-term commitment on the part of the customer. They sometimes include substantial transfers of product as well as process technologies, such as the implementation of total

14 See Halbach (1988), pp. 193 ff., Wong (1991).

15 Dunning (1992), p. 456.

**Box 1: Outsourcing of administrative and other business services**

As manufacturing companies increasingly concentrate on certain core-competencies, many administrative and other business services, which have formerly been provided in-house, are being transferred to independent providers. This applies to subcontracting assembly operations, logistics and transportation, courier services, maintenance and repair of equipment, legal and labor relations consulting, accounting, industrial location services, industrial construction, quality control and sorting, among others. Due to the non-tradable and highly customized character of such services, many of them are subcontracted locally. Moreover, barriers to entry for suppliers of such services are often not as high as they are for manufacturers of parts and components.

In 1996 the American Chamber of Commerce in Mexico asked its membership which operational and administrative services they were outsourcing and whether they had increased outsourcing in the last five years. The survey showed a remarkable increase in outsourcing. 57 % of manufacturers and 27 % of service firms had begun outsourcing some operational and administrative areas in the last five years. The following list shows the most important services outsourced by the companies surveyed:

Cleaning	56.7*	Public Relations/ Publicity	13.3
Systems	50.0	Health Services	13.3
Training	40.0	Payroll	10.0
Cafeteria	33.3	Marketing	10.0
Maintenance	30.0	Client Service or Relations	10.0
Accounting	26.7	Human Resources	10.0
Collections	16.7	Others	23.3

\* % of firms reporting to be outsourcing some service line

Source: Cohen (1996)

quality management, *kaizen* and eco-efficient production methods.

- *Factor-cost advantages*: In other cases, the supplier has access to cheaper basic factors, mostly lower labor costs, e.g. due to the informality of the workshop or a non-unionized workforce. If the TNC customer establishes a relationship with a supplier only to cut wage costs, the terms are usually far less beneficial for the supplier. In this case, the supplier can only survive if he achieves leadership on a cost basis. Given that the production process is standardized and the necessary technology is available to a great number of competitors, price competition is usually fierce, forcing firms to continuously cut costs. Except for some cases in which firms achieve extraordinary increases in productivity, suppliers are obliged to reduce profits, wages and labor standards.
- *"Passive" (numerical) flexibility*: Occasional subcontracting in the case of demand peaks with the aim of smoothening production usually does not provide a sound basis for SME development. The supplier has to accept

short-term contracts and cushion fluctuations in demand by way of numerical adaptation of working hours. As a result, there is little stability and security for the supplier, who can easily lose his investments if the customer does not receive orders in excess of his own capacity. Moreover, the customer often transfers the cost of inventory to the supplier. Due to the instability of the relationship neither the customer nor the supplier's management will show a long-term commitment to invest in machinery or workforce skills. Jobs in these firms will be extremely insecure and production capacities underutilized.

- *"Active" (functional) flexibility*: In some cases suppliers are able to respond to fluctuations in demand by way of functional rather than numerical flexibility. This means that they can rapidly switch production processes and flexibly modify the quantity of output without recourse to methods of "hire and fire." Preconditions for such an active flexibility are multi-skilled workers, programmable multi-purpose machines and a flexible shop-floor organization. Under such circumstances sub-

contracting may be highly beneficial for the supplier, even though demand is unstable.

TNC customers tend towards stable, long-term relations with a limited number of reliable medium-sized suppliers. Unstable supplier relations are usually not compatible with rising standards as regards quality and reliability. Good manufacturing practices, sometimes even certification according to ISO standards, are gaining in importance, which in turn presupposes a skilled and highly motivated workforce along the entire value chain. This implies increasing barriers to entry for potential SME candidates, though it on the other hand improves working conditions and opportunities for technological upgrading within a select group of SME suppliers.

Market-seeking foreign affiliates tend to have more intensive supplier relations in their host countries than export-oriented affiliates. This is mainly due to two facts: first, barriers to entry for suppliers are lower in domestic markets in developing countries, since these require fewer economies of scale and as a rule lower quality standards; second, host governments used to impose domestic-content requirements, forcing foreign investors to source locally. In the case of export-oriented activities, investors are usually free to choose their suppliers, since forcing them to source from less efficient local suppliers would erode their export performance. As a result, suppliers to export-oriented TNC affiliates are usually far fewer in number but considerably more efficient. Trade and investment liberalization and the TRIMs agreement tend to replace noncompetitive local suppliers by imports or follow investments of transnational suppliers.

**Forward linkages with customers:** Forward linkages between TNCs and SMEs may also create important opportunities for the development of local enterprises. First of all, local SMEs will always benefit if a good or service produced by a foreign investor lowers the price or improves the quality of an input that the respective SME uses further upstream in the production process. Below I shall discuss the issue of technology transfer from TNCs to their customers. In this sense, the

most important forward linkages are with marketing outlets and industrial buyers.

As regards *marketing outlets*, TNCs increasingly concentrate on their core capabilities in certain stages of the value chain. Core capabilities of many TNCs are in the area of design and development of a brand name, or in manufacturing. Concentrating on what the company masters best leads to outsourcing of many other, non-core, activities. Distributional and after-sales services are among the activities most frequently transferred to independent companies. Examples of independent marketing outlets linked to transnational brand-name corporations are automobile dealers, gas stations, restaurant chains, travel agencies, drugstores, and courier services. Outsourcing these activities implies considerable advantages for the brand-name company, mainly that it may rapidly cover extensive markets while minimizing risks and investment in distribution channels. On the other hand, TNCs are obviously keen to maintain high and homogeneous standards in their downstream activities, taking into account the fact that the distributors are active at the interface with the consumer and thus have a strong impact on the TNC's (brand-name) reputation. TNCs therefore often opt for outsourcing plus providing comprehensive training for their distributors. The SME distributor thus benefits from the use of an established brand name, a proven business concept and the transfer of knowledge from the TNC. This greatly reduces the risk of failure for the local SME. The main disadvantages of such linkages consist in the fact that the local marketing partner remains highly dependent on the TNC. In some cases, furthermore, the local SME is forced to pay substantial fees and royalties for using the partner's brand name and business concept.

The most important and rapidly expanding mechanism for downstream relationships with local SMEs is franchising. Franchising

*"is a way of doing business whereby the owner of a proven business system (the franchiser) grants the right by contract to an entrepreneur (the franchisee) to establish a similar business. In exchange*



*for franchise fees and the obligation to adhere to strict quality standards, the franchisee acquires the right to use the franchiser's trademark and receives marketing support, detailed manuals on how to operate the business, start-up assistance, staff training, equipment, raw material procurement, and regular visits by a representative of the franchiser."*<sup>16</sup>

This definition enumerates a multiplicity of ways by which the franchiser transfers knowledge and other benefits to the SME partner. Franchising is thus an attractive way of combining the advantages of small firms with those of a homogeneous brand-name presentation with guaranteed quality and support features. As economic liberalization advances in developing countries, local brands and traditional ways of doing business are increasingly coming under pressure from more competitive international (often even global) products and business concepts. In many activities – fast-food restaurants, drugstores and hotels, among others – local competitors find it increasingly difficult to compete with international chains. Under such circumstances franchising is often the only possibility to stay in business. Today franchising is rapidly expanding in both industrialized and developing countries. In the United States franchising represents more than 40 % of all retail sales, and this number is expected to grow to 50 % by the end of the century. The U.S. is the trend-setter in this business. While in the rest of the world franchising has not yet developed to the same degree, many countries display similar growth rates. In Brazil for example, the number of franchisees increased during the 1990s from 5,000 to 24,000.<sup>17</sup>

Box 2 illustrates the advantages and disadvantages of franchising for both partners.

Thanks to the use of proven business systems, the probability of failure is much lower in franchising than in independent start-up enterprises. Accord-

ing to the U.S. Department of Commerce, less than five percent of franchise outlets have failed or been discontinued per year since 1971. In comparison, almost two-thirds of all independent, non-franchised business start-ups are discontinued in the first five years.<sup>18</sup> A study conducted in Brazil revealed that in 1993 and 1994 the annual closing rate of franchise businesses was as low as 2.3 %.<sup>19</sup>

The franchise system does not only offer an opportunity to establish new SMEs as dependent franchisees. Local entrepreneurs may also copy the franchise system itself. They may imitate either the products or the way of doing business of successful transnational franchisers.

*"In Singapore, even the hawkers at public food centers and coffee shops have started to sell western fast foods, copying the products of these franchise businesses. (...) Some hawker entrepreneurs have even adopted the methods of these franchises by franchising their hawker stores."*<sup>20</sup>

In most large developing countries such indigenous franchises are gaining importance, especially in retail services. In Malaysia, for example, local franchises are spreading in activities as diverse as food products, automobile repair, jewelry, private computer academies, fitness studios, and drugstores. The Big Seven convenience store chain in Thailand and the Econ-Minimart chain in Singapore are examples of quite large indigenous franchises. Another important mechanism of downstream technology transfer from TNCs to SMEs is advice for *industrial buyers*. Many transnational producers of machinery, equipment or intermediate goods provide assistance to their customers, which may be SMEs in developing countries. Most commonly, they send specialized personnel to train the customers workforce on how to use the acquired machinery or equipment and provide repair services; but in many cases the transfer of

16 Henriques / Nelson (1997), p. 23.

17 Nachrichten für den Aussenhandel, 6.4.1999.

18 See <http://www.franchisedevelopers.com/facts.htm>.

19 Nachrichten für den Aussenhandel, 6.4.1999.

20 Chong / Goh (1997), p. 52.

<b>Box 2: Potential advantages and disadvantages of franchising</b>		
	<b>For the franchiser</b>	<b>For the franchisee</b>
Advantages	<ul style="list-style-type: none"> <li>– Rapid expansion of business.</li> <li>– Business growth facilitated through capital inputs from the franchisee.</li> <li>– Financial and manpower resources provided by the franchisee.</li> <li>– Few permanent staff required by franchiser.</li> <li>– Broader and more rapid market coverage by the franchise.</li> <li>– Bulk purchasing of inputs is greater because of financial inputs of franchisee.</li> <li>– Involvement in day-to-day operations of business outlets are limited to monitoring.</li> <li>– Capital risks are shifted to the franchisee.</li> </ul>	<ul style="list-style-type: none"> <li>– Use of a proven business system.</li> <li>– Business risks greatly reduced because franchise has proven track record.</li> <li>– New product development and quick response to competition by franchiser.</li> <li>– Can devote full attention to day-to-day operations.</li> <li>– Provision for staff training and continuous support from franchiser staff.</li> <li>– Requires less capital than an independent business.</li> <li>– Benefits from franchiser advertising, brand name, and promotions.</li> <li>– Bulk purchasing and negotiating power of franchiser.</li> <li>– Easier access to bank loans and start-up capital.</li> </ul>
Disadvantages	<ul style="list-style-type: none"> <li>– Constant monitoring of quality required to maintain franchise reputation, conformity and integrity.</li> <li>– The franchise is a complex business system to manage.</li> <li>– Long-term relations with franchisees may be difficult to maintain.</li> <li>– Fees based on franchise income may be misrepresented (understated).</li> </ul>	<ul style="list-style-type: none"> <li>– There is usually strict adherence to quality standards</li> <li>– Initial financial inputs and continuing royalty fee may be substantial.</li> <li>– Previous business success record of franchiser may be difficult to assess.</li> <li>– Detailed contractual arrangement may restrict creativeness of franchisee.</li> <li>– Sale or transfer of the franchise may be highly restricted.</li> <li>– Dependence on franchiser and franchise name.</li> <li>– Franchiser policies may adversely affect franchisee operations.</li> <li>– Franchise may have a limited product line.</li> <li>– Franchiser may lack initiative and flexibility in reacting to local market changes.</li> <li>– Franchisee position is usually weak relative to franchiser.</li> </ul>

Source: Henriques / Nelson (1997: 25)

knowledge goes much further, providing information on international quality standards and market trends, helping to match with potential customers, etc. For example, producers of knitwear machinery proved to be important sources of information about knitwear design and market trends in export markets.<sup>21</sup> Such advice pays off for the TNC be-

cause machinery and intermediate goods may only be sold if the customer in turn manages to improve his own sales. Moreover, technical assistance helps to tie the customer to the provider of machinery.

**Linkages with competitors:** Competition is the main driving force for technological learning. TNCs entering a developing country's market may induce competing local companies to accel-

<sup>21</sup> Cf. Vangstrup (1999).

erate improvements. On the other hand, if the local competitors are lagging far behind TNC standards, FDI may drive these firms out of the market. This (as well as acquisition of local competitors) leads to oligopolistic market power and may hinder endogenous technological development. In such a non-competitive environment TNCs can quite often secure their market position without making efforts to continuously improve their performance. Moreover, lack of competition may lead to adverse political-economy effects. Such adverse effects have been shown for TNCs especially during the era of import substitution in small countries. Conversely, if local companies are able to compete seriously with the TNC affiliates, the latter are forced to bring in new technologies to restore their advantages. Using the example of Mexico, Blomström, Kokko and Zejan<sup>22</sup> show that there is a statistically relevant positive correlation between the technology imports of TNCs and the local competitor's investment and output growth. The ability of potential local rivals to survive the competitive pressure of TNCs and respond with improved performance depends on several factors, such as the technological gap between TNCs and local firms, the entrepreneurial ethos of the latter, policy support available to them, size and structure of the local market, and the aggressiveness of TNCs, among other things.

**Linkages with technology partners:** In principle, linkages with technology partners, such as corporate joint ventures, technology licensing and other forms of inter-firm alliances, should offer advantages to all the firms involved. From the point of view of SMEs in developing countries they are mainly seen as mechanisms to gain access to new fields of knowledge and technology. Yet such alliances are always fraught with difficulties, especially in cases of very unequal partnerships, such as TNCs on the one side of the relationship and developing country SMEs on the other. Problems mainly arise from the fact that both partners pursue different and often conflicting goals, so that the distribution of benefits requires complex

and continuing bargaining. If information and bargaining power are unevenly distributed among the partners, the benefits of the weaker partner (usually the local SME) are likely to be limited, and the outcome of the alliance may even be negative.<sup>23</sup> This is clearly demonstrated by the fact that such alliances, especially joint ventures, have a reputation for instability.<sup>24</sup>

Table 1 lists the major contributions local and foreign companies make to joint ventures. It shows the different motives and benefits for both sides. From the above table we may infer that local partners mainly form joint ventures with foreign companies with an eye to gaining access to technological and management know-how as well as to taking advantage of the foreign partner's international reputation. Moreover, partnership may limit their financial exposure. The latter also holds true for the foreign partners, who are eager to share costs and financial risks especially in the first years of operation in a new, unfamiliar market, taking into account the fact that such markets often involve high (real or perceived) risks. Besides finance, the main advantages of taking up a local partner are related to familiarity with the local way of doing business, including the political and institutional dimensions (access to political decision-taking,<sup>25</sup> familiarity with regulations and customs) as well as knowledge of and access to markets.

These different expectations often lead to conflicts. Local partners will try to gain as much access as possible to specific knowledge and technology of their foreign counterparts, yet these assets are at the core of competitive advantages of any company, especially in case of rapidly developing, knowledge-intensive activities. Therefore it is clear that the technologically more advanced

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22 Cf. Blomström / Kokko / Zejan (1994).

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23 Cf. Barba Navaretti (1991), p. 26.

24 Cf. Miller et al. (1996).

25 In 1998 the author conducted a series of interviews with TNC affiliates in Malaysia. In these interviews, several managers stressed the importance of having a local partner for gaining access to public procurement and incentives.

Major local partner contributions		Major foreign partner contributions	
Knowledge of local politics	70 %	Process technology	74 %
Knowledge of government regulations	68 %	Product technology	72 %
Knowledge of local customs	68 %	International reputation	70 %
Knowledge of local markets	65 %	Provision of finance	65 %
Provision of financing	58 %	Management know-how	59 %
Local reputation	58 %		
Access to local market	54 %		

\*Percentage in JV sample where category was specified. Respondents could specify more than one category.

Source: Miller et al. (1996)

partners will try to avoid any leakage of specific knowledge which is relevant to their market position. Therefore joint ventures often receive less technological input from TNC parent companies than wholly owned subsidiaries.<sup>26</sup> On the other hand, TNCs need local partners if the latter provide access to local politics, institutions, and markets. Such advantages are usually easier to acquire than technological core competences. An IFC study accordingly concludes that

*"it is not sufficient for firms to depend on their intimate knowledge of government affairs or familiarity with local financial markets for continuing relevance in the JV, since these contributions are bound to erode. More substantive advantages are required: control of distribution channels, access to continuing sources of technology, control of export channels, etc."*<sup>27</sup>

As a matter of fact, Moran cites two studies which show how Japanese foreign investors sought joint ventures for local expertise and political cover while they were expanding into new markets, but took full control of their subsidiaries once they had settled in.<sup>28</sup>

To sum up, joint ventures as well as other technological partnering may be exploited for local SME development, but such alliances remain fragile and risky. The success of local partners is highly dependent on their ability

- to bargain before entering an alliance and continuously renegotiate the conditions throughout the ongoing cooperation; and
- to upgrade technologically and sustain advantages which make them irreplaceable for the foreign partner.

**Other spillover effects:** TNCs sometimes transfer know-how to local SMEs which are not directly linked to them as suppliers. This may happen as consciously planned efforts or in the form of unintended spillovers. Two indirect spillovers are especially important, namely demonstration effects and effects by way of turnover of skilled personnel.

*Demonstration effects* occur as TNCs introduce new market channels, technologies, management techniques and ways of inter-firm division of labor, and local companies observe these innovations in order to copy or adapt them to their own needs. Demonstration effects thus help the local business community

- *to gain access to new export markets.* TNCs often open up new export markets and thus prepare the field for local followers. The latter may benefit from the reputation the pioneering exporters have built up for local products and from established trade channels.

26 Cf. Reuber et al. (1973), pp. 185 ff.

27 Miller et al. (1996).

28 Cf. Moran (1999), p. 120.

Mexico is a good example. After the NAFTA agreement had been signed in 1994, several manufacturing branches radically reoriented their production from supplying the domestic market to an export strategy towards the US market. In the first few years exports were highly concentrated in a small number of companies, among them many TNCs. Yet in subsequent years the number of exporters increased rapidly, involving a growing number of local SMEs.<sup>29</sup> In Guatemala, apparel exports started with experienced Korean investors. Later on, some 90 local companies copied their way of doing business and are now independent exporters.<sup>30</sup> Rhee and Belot give additional examples from other low-income countries;<sup>31</sup>

- *to introduce new management techniques.* Since management techniques in many developing countries need substantial upgrading, the role of TNCs as showcases is especially relevant in this field. New concepts of industrial organization are often developed by TNCs which later become role models of business organization worldwide. Some of the dominant management paradigms of the last decades are even named after the pioneering TNCs (e.g. Fordism, Toyotism). Many important management concepts and tools, such as *kaizen* or Total Quality Management, also go back to TNCs and have subsequently been adapted to the needs of SMEs. In Central America, for example, foreign investors introduced improved techniques of plant layout and logistics which have subsequently been copied by their local subcontractors.<sup>32</sup> As we shall see in Chapter 5.4.4, TNCs are much more willing to transfer knowledge about management techniques than know-how about production technologies. This is so because management techniques are usually

not specific to a certain industrial activity and thus not considered core capabilities, while the leakage of specific production technologies may jeopardize the possibility to gain innovation rents;

- *to develop new ways of inter-firm division of labor.* As I mentioned earlier, modern industrial organization is characterized by concentration on core capabilities and increasing specialization among firms. Outsourcing of non-core capabilities and new forms of inter-firm alliances, such as research alliances, technology licensing and franchising, are rapidly gaining importance. Yet specialization in certain stages of the value chain and cooperation with complementary firms are still much less frequent in developing countries than in industrialized countries. Foreign investors in developing countries therefore often transmit new ways of inter-firm division of labor. As an example, American companies introduced the concept of franchising in Singapore, which was subsequently copied and/or adapted by local companies developing their own franchises.<sup>33</sup>

Although most of these transfers occur without active involvement of the TNC and rather through copying of ideas, the last years have witnessed more conscious and systematically organized processes aimed at exploiting demonstration effects, e.g. company visits and benchmarking programs.

*Spillover effects by way of turnover of skilled personnel* may provide indigenous SMEs with experienced workers, technicians and management personnel and lead to the formation of new spin-off companies. As TNCs usually have more advanced equipment, more up-to-date production processes and management techniques as well as higher quality standards than local companies, they place higher demands on their workforce and usually have to invest more in training. With new management techniques emphasizing total quality (including technical aspects – such as statistical

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29 Cf. INEGI database.

30 Cf. Altenburg (1999), p. 20.

31 Cf. Rhee / Belot (1990).

32 Based on a survey of 35 investors in Free Production Zones in Costa Rica conducted by the author in 1993.

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33 Chong / Goh (1997), p. 52.

process control, continuous improvement, traceability of batches – as well as the propagation of work ethics, quality awareness and corporate identity), and with increasing sophistication of many TNC operations in developing countries, human capital investment becomes more important. Most TNC affiliates in developing countries therefore offer regular training courses ranging from basic courses on motivation and prevention of accidents to more specialized training with respect to quality management, operation and maintenance of modern equipment, logistics, etc. Specialized workers sometimes are given training in the parent companies or other TNC affiliates abroad where they can apply new techniques, experience different business cultures and learn foreign languages. Even if TNC employees do not participate in training activities, they may acquire certain skills, attitudes and ideas just by working in a plant that conforms to international production standards, e.g. on compliance with quality standards, work organization and plant layout. Some TNCs are thus "invisible colleges" which make substantial contributions to skill formation in the host country.<sup>34</sup>

Moreover, experienced TNC personnel may quit their jobs in the company in order to use the acquired technical or management skills to set up independent local companies (spin-offs). According to the author's interviews in Malaysia, TNCs often keep up good relations with spin-off companies, although they rarely encourage experienced personnel to leave and set up independent firms. Many of the successful electronics suppliers and subcontractors in Penang, Malaysia, have been formed by experienced staff from TNCs (see Chapter 3.1).

### 3 Case studies of successful TNC-SME linkages

Below three case studies of different manufacturing activities are presented: the electronics hardware, automotive, and apparel industries. The first two sectors are among the most promising for supplier development and technological spillovers because they need a broad range of technologically more or less complex inputs. As producers of end-products move away from vertical integration, suppliers contribute an increasing share of value added. Moreover, both industries are characterized by high rates of innovation and are therefore continuously restructuring their patterns of industrial organization, including their relations with suppliers. The apparel industry is a traditional labor-intensive low-tech industry in which leading companies have long concentrated on design and marketing, while the labor-intensive process of assembling is outsourced.

#### 3.1 The electronics hardware industry

The electronics hardware industry is one of the most dynamic manufacturing industries in developing countries and is supposed to be one of the most promising for spillovers. In many Southeast and East Asian countries, manufacturing of electronics is the leading industrial sector in terms of investment, industrial output, value added, exports and employment. The industry is largely dominated by TNCs. Recently, developing countries outside Asia have been gaining importance as preferential investment sites for electronics TNCs, e.g. Mexico, Costa Rica and Hungary. The electronics hardware industry consists of three subsectors: consumer electronics, office automation equipment and industrial electronics, and electronic components. Each of these subsectors requires some simple assembly, testing and packaging operations which may be performed by an unskilled workforce. Traditionally, these simple processes were the main activities to be transferred to developing countries. Yet during the last years, electronics TNCs have increasingly concentrated on developing, designing and marketing their products. They therefore prefer to outsource

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34 E.g. Best (1999), p. 25 for the case of Malaysia.

manufacturing. This opened important windows of opportunity for subcontractors, who have become experts in assembling standardized products. Moreover, as automation increases, electronics TNCs demand more specialized tooling such as jigs and fixtures for automated assembly. This is another niche market for supporting SMEs.

Below three case studies of leading agglomerations of TNC-driven electronics production for global markets are presented. The three industrial cases represent different stages in the development from a mere factor-cost based agglomeration of assembly plants to a knowledge-based industrial cluster with a vibrant development of complementary SMEs. Guadalajara is the most recent agglomeration where up to now no supporting local companies have emerged; Penang is a more mature production site with a considerable dynamics of local supplier and skills development, but still very limited innovative capabilities. Finally, Singapore has upgraded from a simple assembly site to a dynamic cluster spinning off innovative SMEs and developing world-class suppliers.

**Guadalajara, Mexico.**<sup>35</sup> Guadalajara, Mexico's second largest city, is a rapidly growing agglomeration of export-oriented TNCs in the electronics industry. The cluster started with a large IBM investment in a computer assembly plant in 1985. As IBM performed well, several leading electronics TNCs followed IBM and set up their own assembly plants, among them Hewlett Packard, NEC, Compaq, Phillips, Motorola, Intel, Siemens and Ericsson. These companies are using the relatively cheap Mexican labor force for assembly and testing of electronic devices including PCs, laptops, printers, hard disks, floppy disks, telephones and cellular phones, beepers etc. Some of these operations are highly automated and require comparatively skilled labor. Yet R&D is carried out exclusively in the parent plant, and local innovations are limited to minimal incremental im-

provements concerning, for instance, human resource management or plant layout.

In the second half of the 1990s, the number of companies and volume of output had reached the critical mass where it made sense for some leading global suppliers of electronic components and specialized contract manufacturers to follow the assembling industry to Guadalajara. As a result, a new round of foreign investment started. Among the large ancillary industries to invest in Guadalajara were Solecron, SCI Systems, Flextronics, NatSteel Electronics, Universal Scientific Industrial Co., etc. Some of these companies produce inputs for the above mentioned TNCs, such as computer motherboards, disk drives and plastic casings, while others provide assembly services for brand-name corporations. At the end of 1997, electronics transnationals in Guadalajara employed some 30,000 persons directly and claimed to generate employment of 100,000 altogether. At that time, one new foreign investor was expected to arrive per month.

What is striking is the almost complete absence of local suppliers, although the local government and business associations have set up a Supplier Development Program with substantial financial contributions from TNCs. The only exceptions are some minority equity shares in joint ventures producing simple PCBs and injection plastic products, an assembly plant and a few SMEs providing packaging materials (plastic bags, cardboard boxes and rubber foam) and printed manuals. On the contrary, in some cases local companies have been replaced, for example a local producer of plastic casings. A large national company producing cables and harnesses for the electronics industry has been taken over by foreign investors.

**Penang, Malaysia.**<sup>36</sup> Penang's industrialization began in the early 1970s, when the first TNCs set up semiconductor assembly plants there. At that time, Penang's attractiveness resulted almost exclusively from the cheap, trainable and English-

35 Based on Hartmann (1998), Dussel (1999) and own interviews conducted in 1997.

36 Based on O'Connor (1993), Rasiyah (1994, 1998a,b), Best (1999) and own interviews conducted in 1998.

speaking labor force. As the first investors were successful, the number of foreign investors rose steadily. In 1996 the manufacturing workforce had nearly reached 200,000, the electronics industry with its roughly 90,000 persons being the most important employer. Today, most global players in the electronics hardware market are operating in Penang.

Until the mid-1980s, foreign investors did not develop substantial linkages with local SMEs. At that time, the industry experienced major changes. First, technological innovations made it possible to advance the automation of assembly and testing; second, project cycles shortened considerably, and the market demanded shorter product life-cycles, smaller batches, and more customized products. Under these conditions, electronics TNC's delegated more responsibilities to their foreign affiliates. Although usually basic innovations and pilot lines for serial production continued to be developed in the respective home countries, the parent plants often did not engage in high-volume manufacturing. As incremental innovations within the process of high-volume manufacturing became more important, there was more and more scope for developing expertise within the subsidiary plant. In addition, TNCs needed a quicker and more flexible supply. Accordingly, demand increased for a variety of specialized machine tools, plastic products and packaging materials. At the same time, the locational advantage of being close to the assembly plant gained importance. During the first years, TNCs tried to produce the necessary tools in-house or to induce foreign suppliers to set up production plants in Penang. Yet it proved more efficient to develop local suppliers. In four areas, the development of local SMEs has been extraordinary:

- Metal stamping and precision tooling, including jigs, fixtures, dies and moulds (e.g. for injecting epoxy resin). Some suppliers offer high-precision tooling and produce complex machines, such as automatic die-bonders. Among the most dynamic firms are Eng Teknologi, LKT Industrial Bhd. and Semiconductor Equipment Manufacturers. These leading suppliers in turn outsource some sim-

ple processes, such as metal stamping, to small local workshops;

- Contract manufacturing for assembly operations. Some local companies acquired expertise regarding logistics, plant layout, human resources management and other areas which are crucial for cost-effective assembly. TNCs therefore increasingly outsource standard assembly operations. Examples of successful contract manufacturers are Globetronics and Samatech;
- Production of plastic materials. These include direct inputs such as casings for PCs. Sanda Plastics is a leading local supplier;
- Packaging materials. Several local companies have specialized in cardboard boxes, foam packaging materials, plastics bags, etc.

Most of these SMEs emerged as spin-offs from U.S. transnationals. Electronics TNCs invested in modern in-house machine shops which became an important "school" for Malaysian engineers. Some of these engineers later set up local machine-tool companies with the aim of supplying their former employers. Rasiah has shown that Intel and National Semiconductor have been the seedbed for some of the most successful local machine-tool suppliers. A few suppliers grew from traditional backyard enterprises. In all cases, the TNC customers allowed their suppliers to grow step by step. Suppliers were initially given small contracts in order to test their capabilities and commitment. Upon successful completion of the initial contract, larger consecutive contracts followed. This enabled local firms to make incremental investments in the necessary CNC machines.

**Singapore.** Singapore's electronics industry started with simple assembly and testing operations similar to those in Guadalajara and Penang. Yet technological progress in the city-state's industry has gone much further than in the two other locations. While Guadalajara and Penang still rely on semi-skilled, labor-intensive operations, TNC operations in Singapore

*"focused increasingly on more engineering intensive activities, including auto-*



*mation, product redesign, design for manufacture, and logistics functions associated with regional procurement including complementary business, logistics, procurement and financial services. (...) The transformation did not stop with a re-division of activities within MNCs. (...) Singapore's electronics industry was strategically converted from a labor-intensive manufacturing operations platform for vertically integrated MNCs to a horizontally integrated manufacturing services cluster with ever increasing development of manufacturing-complementary service activities such as engineering-intensive product redesign and process automation and complementary business services associated with regional coordination, procurement, development, and integration activities"*<sup>37</sup>

As a result, the value added per person in the electronics industry is 63,000 US \$ in Singapore versus 12,000 in Penang.<sup>38</sup> Transnationalization of Singaporean electronics companies is another sign of increasing international competitiveness. More and more local suppliers and subcontractors are investing abroad. Component producer NatSteel Electronics for example, a spin-off from the government-controlled steel company NatSteel, has opened plants in Guadalajara and Penang as well as in Hungary, China, Indonesia, and Thailand. The Mexican plant alone employs 2,750 people. Another component company, JIT Holdings, is building factories in Guadalajara and Hungary, while a plastics company from Singapore will set up shop inside NatSteel's Mexican factory to make computer cases.<sup>39</sup>

The **three agglomerations** of electronics companies started as greenfield sites for assembly and testing of electronic products, and in the beginning, none of them had much more to offer than a

cheap and trainable workforce. Yet today the degree of local linkages and spillovers differs considerably. How can this difference be explained? Although there is no simple answer to this question, some important factors are obvious:

- *The period of time since the FDI reached a critical mass.* Local companies need some time to develop specific skills. Singapore was the first of the three electronics locations to develop. Investment in Penang began in the early 1970s, but the critical mass for vigorous supplier development was not reached until the early 1980s. Local supplier development took off about 1985, triggered by new sourcing strategies of the TNCs. Guadalajara's dynamic development as a TNC location for electronics only started in the mid 1990s. Thus far, local suppliers have therefore had little time to develop;
- *The historical situation in which the location was integrated into the international division of labor.* It may be assumed that the first movers in the electronics business (such as Singapore and Taiwan) had more opportunities for developing local suppliers than latecomers. Entry barriers were lower because production was technologically less sophisticated, less automated and required less capital and economies of scale;
- *The formation of engineering and technical skills.* As early as in the 1960s Singapore's educational system focused on engineering and technical skills. The training system was continuously upgraded in line with progress in the electronics industry. Singapore's "strategy was not R&D or design-led but based on upgrading manufacturing capabilities in synch with the engineering and technical skill base."<sup>40</sup> This provided a rich pool of engineering expertise for both technologically demanding TNCs and local SMEs in complementary activities. In Penang and Guadalajara highly skilled engineers are in short supply, although in Malaysia the Penang Skills Development Centre has recently been

37 Best (1999), p. 8.

38 Ibid, p. 9.

39 Cf. Far Eastern Economic Review, November 11, 1999.

40 Cf. Best (1999), p. 9.

making important contributions to overcome this bottleneck;<sup>41</sup>

- *Supplier development policy.* Singapore started quite early to pursue an active and targeted picking-the-winners strategy to foster promising local companies (Local Industry Upgrading Programme).<sup>42</sup> Supplier development is closely coordinated with TNC customers. In the other two locations, the strategic focus on developing and upgrading local suppliers is less visible.

### 3.2 The automobile industry

In many large developing countries the automobile industry represents a significant portion of the overall manufacturing activity in terms of output and employment. In addition to this direct contribution, the industry is considered important to economic development because of its strong backward linkages and its large share in the consumption of selected inputs, such as iron and steel products, aluminum alloys, etc.<sup>43</sup> The size of the automobile industry in developing countries is the result of several decades of protectionist policies, in most cases aimed at developing domestic SMEs into viable suppliers of transnational assembly plants. Today, economic liberalization and the ongoing consolidation of the global automobile industry are challenging the future development of carmakers and supplier industries in developing countries. In order to be able to assess their development prospects it is necessary to take a look at some global industry trends.

In the last decades, the global automobile industry has been undergoing profound structural change. The whole industry is consolidating through mergers, acquisitions and strategic alliances. Many of the smaller and medium-sized car manufacturers, such as Rover, Saab, Skoda and Seat, have already been taken over, and probably many

others, even of the size of Volvo and BMW, are likely to follow. Within a few years, the global market will be dominated by a small number of very large firms and alliances. What is driving this trend is the need to achieve economies of scale in research, manufacturing and advertising. Using standard platforms and sharing parts among different brands, large global consortia can lower unit production costs and still offer a considerable variety of models.

As part of this consolidation of the car industry, the structure of the supplier industries also needed a complete overhaul. The production of a vehicle involves a large number of independent firms producing parts and components or providing the principle carmaker with engineering and other services. The general trend is to outsource ever more processes to independent producers, thus reducing the principle carmaker's share in value added. Direct suppliers in turn generally buy from or subcontract processes to other companies, thus giving rise to a pyramid structure with up to five tiers of direct and indirect suppliers. The average Japanese carmaker's production system, for instance, is said to comprise 170 first-tier, 4,700 second-tier, and 31,600 lower-tier suppliers.<sup>44</sup> Since the 1980s, automobile companies have been reducing the number of direct suppliers, while at the same time assigning them more competences. Some of the most important suppliers in this way became *systems suppliers*, assuming the responsibility for the integral production of complex parts of the vehicle (e.g. the front-end), which requires coordination among numerous individual producers of parts and components. The systems suppliers in particular cooperate intensively with the automobile companies:

- In order to shorten product cycles, research and product development need to be closely coordinated between carmakers and systems suppliers (simultaneous engineering).
- As carmakers seek to reduce their cost of inventory, they try to achieve just-in-time delivery, i.e. they want their suppliers to pro-

41 Cf. Rasiah (1998b).

42 See Battat / Frank / Shen (1996), pp. 28 f.

43 [www.ifc.org/ifc/FIAS/pubs/fdinewsv1n1/index.html](http://www.ifc.org/ifc/FIAS/pubs/fdinewsv1n1/index.html).

44 Cf. Hill (1989), p. 466.

duce and deliver exactly the quantity of parts and components immediately needed in the production process. This requires a sophisticated and highly reliable procurement logistics.

- As quality standards rise, the entire supply chain has to perform according to ISO 9000 or QS 9000 standards. Suppliers are therefore obliged to become certified according to these standards.

This reorganization of the value chain calls for closer and more frequent interaction among firms. For many suppliers, especially systems suppliers, it is therefore crucial to be located in the vicinity of the assembly plant. Hence the car industry tends to create spatial clusters.

As liberalization of trade and investment rules advances, the car industry in **developing countries** has to cope with these global trends. Until the mid-1990s, many developing countries, especially those with relatively large domestic markets, pursued protectionist policies to develop national automobile – or at least automobile *supplier* – industries. Most of these countries had introduced high tariffs for imported cars, thus inducing foreign carmakers to build local assembly plants in order to serve the respective domestic markets. Some countries, following the example of Hyundai, tried to go beyond such a TNC-driven strategy and pursued *National Car* projects aimed at developing their own nationally owned automobile brands with a more or less complete local supplier base.

In addition to high import tariffs, governments imposed local-content and other requirements on carmakers in order to build local supplier networks. By the mid-1990s, these policies had led to the formation of about 500 auto-part suppliers in Mexico, about 25 % of whom employed more than 1,000 persons. In Brazil the number of suppliers was about 550 with a comparable size structure, and in Argentina 600, although suppliers were on average smaller in the latter country.<sup>45</sup>

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45 Ibid.

Most of these were joint ventures, some were 100 % local (usually smaller firms using technological licenses), and some (in most cases including the largest ones) were foreign affiliates. Yet as import-substitution policies limited trade and competition, the emerging automobile (and supplier) industries were usually less efficient than world-market competitors. Most models were outdated, productivity rates were low because of underinvestment and insufficient economies of scale, and consumer prices of automobiles were considerably above the world-market level. Although undoubtedly some technological learning took place, mostly concerning new organizational and management concepts and the mastery of standard techniques, little progress was made regarding the development of innovative capabilities. In the cases of joint ventures and local firms producing under licensing agreements, technology transfer remained modest because the foreign partners systematically sought to avoid any leakage of core competences. Also 100 % foreign affiliates remained completely dependent on R&D conducted in their parent companies.

Only recently has liberalization exposed transnational affiliates and local companies to international competition and forced the automobile industries of developing countries to modernize and restructure. Most governments have already relaxed their restrictions on foreign investment in the automobile industry. A growing number of countries now permit 100 % foreign equity.<sup>46</sup> Moreover, local content, export and technology-licensing requirements are being phased out and import restrictions lifted. Although some Asian countries which pursued highly protectionist automobile policies (e.g. Malaysia, Indonesia) are trying to slow down this process, they are also expected to liberalize their markets by 2003.<sup>47</sup>

Liberalization of automobile policies will have far-reaching consequences. Where countries pur-

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46 E.g. 1989 in Mexico and 1990 in Brazil.

47 Still in 1999 tariffs protecting Proton ranged from 42 % to 300 % but are due to come down to 5 % by 2003 (Far Eastern Economic Review, April 13, 2000).

sued *National Car* projects, such as the Proton brand in Malaysia and Astra in Indonesia, these will hardly be able to continue without selling a majority stake to one of the large foreign car companies and becoming part of the latter's global production networks. National markets are too small and technology levels too far behind the international frontier to compete in liberalized markets. Where the automobile industry is dominated by TNCs, as in most developing countries, TNCs will move away from multi-domestic production, where local assembly plants with suboptimal scales of production have assembled a broad range of models for the respective national market, and start to integrate global or at least regional (e.g. MERCOSUR and ASEAN) networks of specialized affiliates sharing parts and manufacturing processes. This means that TNCs will rationalize production, serve larger markets from a limited number of assembly plants and intensify intracorporate trade. Some plants may be closed, others will specialize in certain product lines and build economies of scale. For example, Ford shifted its entire Escort production to Mexico, Volkswagen its New Beetle to Mexico, Fiat its Uno and Panda to Brazil. These changes require modernizing the developing country's subsidiaries in order to prepare them for global competition. In fact, productivity and economies of scale of foreign affiliates have already improved dramatically.

With modernization of assembly plants and their reorientation towards a global or regional division of labor, TNCs need to modernize their supplier base as well. In many cases, carmakers induce their established home-base suppliers to follow them to the respective foreign markets. For example, Volkswagen was followed by about 60 of its suppliers in China<sup>48</sup> (see also Box 3). In this process, many inefficient local suppliers are being taken over or crowded out.<sup>49</sup> As a result, liberalization in developing countries is leading to a specific form of clusters which are dominated by

transnational carmakers and their leading foreign suppliers, generating relatively few linkages with indigenous firms. As we can see in the case of Mexico, four main aspects characterize these TNC clusters:<sup>50</sup>

- Relatively few companies are involved. Mexican automobile plants usually source from fewer than 200 suppliers located in Mexico. Many additional parts are either imported or produced in-house.
- The typical supplier pyramid is not fully developed. A typical Mexican assembly plant has about 30 – 50 first-tier suppliers producing in Mexico, most of them transnational firms and joint ventures. In contrast to developed supplier pyramids, moreover, there are only a small number of local part producers (on average about 150 per plant) below the first-tier level.
- Technological partnering between carmakers and auto-parts suppliers rarely takes place. In their respective home bases, automobile companies cooperate intensively with specialized suppliers in order to jointly improve existing and develop new technologies (e.g. simultaneous engineering). In Mexico, in contrast, the entire production system has not yet been oriented towards innovations, thus there is no need for inter-firm alliances.
- Almost all the firms in the Mexican clusters depend on foreign R&D. So far both the Mexican affiliates of foreign suppliers and the indigenous companies have concentrated on manufacturing without investing in R&D. Only a few large Mexican holdings have specialized personnel and laboratories to develop their own innovations.

Box 3 presents the example of Volkswagen's cluster of transnational suppliers in Puebla.

On the whole, globalization thus seems to undermine the possibilities for developing countries to

48 [www.ifc.org/ifc/FIAS/pubs/fdinevsv1n1/index.html](http://www.ifc.org/ifc/FIAS/pubs/fdinevsv1n1/index.html).

49 See case studies on Mexico, Brazil and India in Kilper / Pries (1999).

50 Cf. Altenburg et al. (1998), pp. 36 ff.; see also Humphrey (1998), p. 20 for Brazil.

**Box 3: Formation of a cluster of transnational suppliers: the case of Volkswagen in Puebla, Mexico**

Since the 1950s Puebla has been an important production site for Volkswagen. Until the mid 1990s the Puebla plant mainly produced outdated models for a highly protected Mexican market, mainly the famous Beetle, a car first developed in the 1950s in Germany. The local content of these cars was high, and a considerable share of this local content was produced by 100 % Mexican companies.

In the 1990s, due to economic liberalization and NAFTA, Puebla became a strategic location in Volkswagen's global strategy. The company invested heavily in the modernization of its Mexican plant. Labor productivity increased from 6.75 cars per employee per year in 1990 to 23 cars in 1998. In 1997 Volkswagen started production of the New Beetle in Mexico, a technology-intensive "fun car," mainly for export to OECD markets. This was the first time that an overseas plant became the principle production site for a new Volkswagen model, and also the first time that series production did not start in Germany. The management team appointed to prepare series production was composed of personnel from the German headquarters as well as the Mexican plant.

With the restructuring of the plant, outsourcing increased. Production of small stamped metal parts and wire harnesses as well as some simple services such as canteen management and cleaning services were transferred to independent firms. Nevertheless, the supplier pyramid for the new product lines is increasingly formed by European-based companies. 144 suppliers for the New Beetle are based in Europe, while only 26 are 100 % Mexican, most of the latter providing only simple items. In order to comply with the required NAFTA regional content and move towards a locally integrated supply network, Volkswagen is inducing its European suppliers to invest in industrial estates around Puebla. Today, roughly half of the 144 European-based suppliers already produce in the NAFTA area, while the other half still export from their home base. By 1998, a total of 75 automobile suppliers were located in the Puebla area, almost all of them producing mainly for Volkswagen. About two thirds of these are 100 % foreign, mostly German-based, companies. Most foreign suppliers have only recently (after 1995) moved to Puebla. Some of them, e.g. Hella, are systems suppliers, and an increasing number supply just-in-time.

Source: Pries (1999: 36 ff.)

build strong local supplier industries with autonomous technological capabilities.<sup>51</sup> Yet what I have described above is a snapshot of the first years of liberalization. In some important markets at least, such as China, India, Mexico and Brazil, the prospects might be brighter in the medium term because the mere size of the emerging automobile industry in these countries creates the economies of scale needed to develop and sustain a supplier industry locally – be they foreign or domestic; production in these countries no longer copies outdated production processes. Quality standards and technological complexity of local production are increasing, and companies are taking on the responsibility for specialized processes in the respective global corporate production system. Moreover, leading transnational systems suppliers are locating close to assembly plants in developing countries. Taking into account that incremental innovations continuously arise throughout the production process and that some production

processes are now *exclusively* undertaken in developing countries, there may be increasing scope for improving products and processes within these countries. We may thus assume that not only manufacturing but also R&D will be transferred to these production sites and that more complex technological partnerships between automobile companies and suppliers will develop.

Whether local supplier industries will be able to seize these opportunities depends on their ability to absorb state-of-the-art technologies and management systems. As the automobile TNCs modernize their plants in developing countries and make considerable efforts to restructure their procurement systems, they become important agents of change. Automobile manufacturers increasingly exert influence on their suppliers. This happens through a combination of pressure and support. On the one hand, carmakers demand considerable price cuts and impose more stringent quality standards and terms of delivery. On the other hand, they sometimes support their suppliers. Table 2 shows the kind of support carmakers in Mexico provided for their suppliers in 1997. Sup-

51 Based on a study of Brazil and India, Humphrey (1998) reaches this conclusion.

**Table 2: Customers' support for suppliers in the Mexican automobile industry, 1997**

	% of automobile assemblers support suppliers (n=4)	% of suppliers receive support from assemblers (n=19)
<b>Overall support</b>	<b>100.0</b>	<b>84.2</b>
Advice on quality assurance	100.0	68.4
Regular exchange of information at management level	75.0	57.9
Advice on production organization	100.0	52.6
Support for personnel training	100.0	31.6
Hiring out of capital goods	50.0	31.6
Ad hoc help for short-term problems	75.0	26.3
Help on maintenance and repair	50.0	15.8
Advice on investment projects	25.0	15.8
Research cooperation	25.0	10.5
Assistance in financing	25.0	10.5

Source: Altenburg et al. (1998: 41)

port focussed on quality assurance, especially in order to help first-tier suppliers to achieve ISO 9000 or QS 9000 certification. The other frequently mentioned kinds of support (information exchange at management level, advice on production organization, personnel training) are closely related to quality assurance. Support was largely confined to first-tier suppliers, which in most cases were joint ventures with foreign partners or even 100 % foreign affiliates. Indigenous SMEs at the lower tiers of the production pyramid did not receive substantial support, either from the car-makers themselves or from first-tier suppliers. This pattern enhances the tendency to form exclusive transnational clusters.

### 3.3 The apparel industry

Apparel is not only one of the most important industries during the early stages of industrial development, and one of the main sources of export revenues for developing countries, it is also an industry in which subcontracting arrangements between large and small firms are widespread. Moreover, barriers to entry for indigenous SMEs are low, especially in assembly operations.

Apparel production is part of the textile commodity chain which comprises raw materials, yarn and synthetic fibers, textile production, apparel production, and the distribution of apparel. Apparel production in turn may be subdivided into three phases: preassembly (including design, sample making, pattern cutting), assembly (sewing of cut fabric) and finishing (prewashing, packaging etc.). Assembly is very difficult to automate and therefore highly labor-intensive. Due to this labor intensity, assembly accounts for about 80 % of value added in apparel production. Accordingly, there is a strong incentive to subcontract this process to low-cost producers, either within a given country or from high-wage to lower-wage countries. Subcontracting of apparel assembly is thus mainly motivated by labor-cost advantages. In some cases, customers contract out to other firms to cope with fluctuating demand. The apparel chain is therefore quite different from the electronic-hardware and automobile industries, where subcontracting is largely due to the productivity gains of complementary specialization.

The apparel chain is buyer-driven in the sense that TNCs, mainly large retailers and brand name companies,

*"play the pivotal roles in setting up decentralized production networks in a variety of exporting countries, typically in the Third World. (...) Production is generally carried out by tiered networks of Third World contractors that make finished goods to the specifications of foreign buyers."*<sup>52</sup>

Entry barriers for new garment assembly plants are low. Therefore competition is fierce, and margins are usually low. In contrast, high rents may be obtained in apparel marketing. The profitability of apparel companies largely depends on two aspects: their ability to generate "brand-name rents" by building a positive product image and thus shaping consumption patterns; and their ability to manage the supply chain efficiently, i.e. by organizing quick and reliable delivery of high-quality apparel. Therefore many TNCs in the apparel business emphasize the need to build global brands and improve their retail logistics, while they outsource production to independent companies.<sup>53</sup> Traditionally, subcontractors usually received cut fabric and returned the assembled garment. Today, international retailers and marketers increasingly work with full-package suppliers. Full-package means that the supplier makes the garment according to a design specified by the customer, but he himself takes on the responsibility of sourcing the necessary fabric, yarn and buttons and delivering the finished product, including labeling, packaging etc. Full-package production is spreading rapidly. Even in Guatemala, a low-wage country with a relatively low level of industrial development, about 25 local companies have recently upgraded from mere garment assemblers to full-package operators.<sup>54</sup>

Full-package (or OEM, Original Equipment Manufacturing) production implies considerable opportunities to upgrade local SME suppliers.

*"It enhances the ability of local entrepreneurs to learn the preferences of foreign buyers, including international standards for price, quality, and delivery of export merchandise. It also generates substantial backward linkages in the domestic economy because OEM contractors are expected to develop reliable sources of supply for many inputs. Moreover, expertise in OEM production increases over time and it spreads across different types of activities. The OEM supplier learns much about the downstream and upstream segments of the apparel commodity chain from the buyer."*<sup>55</sup>

Full-package suppliers may be manufacturers or brokers who do not engage in manufacturing but rather coordinate a network of firms supplying textiles and other inputs, dyeing, assembling, washing and packing up the garments. The network of producers may involve large assembly plants with more than 1,000 employees, but it may also reach far down into the informal sector. Sometimes multi-layered supplier structures develop: Transnational retailers give an order to a broker in a developing country; the broker then splits this order between several medium-sized garment manufacturers, who in turn subcontract parts of these orders to a number of smaller workshops and outworkers. In many developing countries, entire towns and districts of big cities live on this kind of apparel subcontracting.<sup>56</sup> While the opportunities for technological learning are considerable in the segment of full-package suppliers, this is usually not the case in simple second- and third-tier garment assembly. Yet there are some exceptional cases where first-tier suppliers or brokers offer advice on shopfloor organization, quality standards, etc.<sup>57</sup> Box 4 gives an interesting example of SMEs benefiting from technology transfer.

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52 Gereffi (1999), pp. 41 - 42.

53 E.g. Sarah Lee Corporation, Phillips-Van Heusen, Levi Strauss & Co. (ibid., p. 48).

54 Cf. Altenburg (1999a), p. 20.

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55 Gereffi (1999), p. 55.

56 E.g. Hanson (1991), pp. 59 ff. and Altenburg et al. (1998), pp. 74 ff. for Mexico, Visser (1999) for Peru.

57 E.g. Altenburg et al. (1998), pp. 74 ff.

**Box 4: San Pedro Sacatepéquez – technological learning in a subcontracting firm in Guatemala**

A majority of the inhabitants of the small town San Pedro Sacatepéquez in the highlands of Guatemala earn their living in subcontracting firms in the clothing trade. The town has five medium-sized firms (with more than 100 sewing machines each) and ca. 250 small producers. In total, they offer about 4,000 jobs.

A particularly interesting firm is *Villa Exportadora* (VE). VE is a merger of several informal micro-manufacturers. Owing to long-term support by their customer, a transnational, it has become a medium-sized private limited company, which offers 239 safe full-time jobs. The production site of VE has 225 sewing machines and produces for the main customer in the U.S. In addition, the 12 partners, as individuals, possess another 500 sewing machines, with which they work in small shops, mostly located in their houses. The small shops serve a diversified range of customers, both on the local and export markets. The development of VE has gone through four phases:

1. In the 1970s all VE companies as well as all other firms in the town manufactured only small lot sizes for the domestic market, as a rule for boutiques and chain stores, which supplied pattern charts, cloth, and accessories and paid very low piece-work rates. Workshop organization corresponded to that of handicrafts, i.e. each garment was manufactured completely by one worker with one machine. Large customers were not interested in production in San Pedro, since the small firms were not in a position to manufacture large numbers of pieces and to guarantee product homogeneity. Moreover, labor productivity, as compared to Taylorist serial production, was extremely low. At that time the companies that later formed VE had only 10 – 15 sewing machines on average.
2. In 1988 the U.S. *Van Heusen Corp.* (VHC) faced a severe bottleneck in supply to the U.S. market. Since the VHC representative in Guatemala knew that San Pedro was a location of small subcontractors in the clothing trade, he decided to organize a group of small manufacturers as subcontractors for VHC. 22 small firms were chosen and received contracts, technical advice and credits at favorable interest rates to purchase special machines (for buttons, button holes, etc.). A VHC representative was permanently present in San Pedro during the initial phase so as to supply prefabricated products, ensure quality and look after the subcontractors. These contracts stimulated rapid growth of the subcontractors.
3. In 1993 the local subcontractors of VHC formed a private limited company and set up an office for their administrative affairs. Production first remained decentralized in the various production sites of the partners.
4. In the late 1990s VHC met with criticism in the U.S., because the international subcontractors employed minors and also violated other international labor standards. In response, VHC granted the subcontractor VE an interest-free credit for the purchase of real estate and the construction of a modern factory building. Production now takes place there on the basis of modern organization of work and the required standards of labor law. The economies of scale resulting from these measures gave a boost to labor productivity, which is now higher than in many other established large-scale apparel subcontracting firms in Guatemala.

Apart from VE, many other garment firms in the location also benefit from export-oriented subcontracting. Other large customers followed VHC's example and gave contracts to small firms in San Pedro. Although they do not support their subcontractors in the same way, they still contribute to job creation, higher incomes and learning processes in management. For instance, almost all small firms are working now according to the principles of Taylorist serial production, have modern machines at their disposal and are in a position to meet higher quality standards.

Source: Interviews with partners of VE, the former head of the VHC branch in Guatemala, and small firms in San Pedro Sacatepéquez, January 1999

### 3.4 Some general trends observed in the case studies

The case studies have shown:

- Firms increasingly specialize in certain stages of the value-adding process while at the same time intensifying interactions with their partners upstream and downstream along the

value chain. As the sophistication of production processes increases, inter-firm cooperation becomes ever more complex in terms of information flows and logistics. Under these circumstances, spatial proximity to suppliers and customers is an important advantage. TNCs are therefore often interested in intensifying linkages with neighboring firms, espe-



cially in standard low-tech items with high transportation costs.

- At the same time, as global competition increases and local markets open up, TNCs place higher demands on their partners. Suppliers of parts and components, providers of services, joint venture partners and other SMEs linked to the value chain must come close to international standards concerning product quality, price, and terms of delivery. This may require substantial scales of operation. If local companies lack these conditions, TNCs often prefer to induce their proven international partners to follow them to the respective host country. As a result, transnational clusters may emerge which have very few links to the local economy.
- On the other hand, new windows of opportunity for specialized SME partners are opening up. This is due to the deepening division of labor, the increasing specialization of firms and sophistication of manufacturing activities. New opportunities arise especially in non-tradable business services and niche products with limited economies of scale. In such areas the potential for technological upgrading is considerable. In some cases, relationships have been evolving from a one-way relationship of subcontracting or technology licensing to a more balanced two-way partnership where both partners – not only the foreign investor – contribute specific knowledge.
- Outcompeting and replacing of local companies also occurs. The integral modernization of value chains leads to the replacement of less efficient local companies. This may lead to a process of concentration among local SME partners, or crowding out of local suppliers by international follow investment, or replacement by imports. In Mexico, for example, economic liberalization led to the break-up of existing local supplier relations in many manufacturing activities.

#### **4 Explaining success stories: underlying determinants of linkage formation and technological upgrading**

The intensity of TNC-SME linkages and the ability of countries and individual firms to exploit such linkages for technological upgrading varies greatly, depending on the interplay of three sets of factors (Box 5):

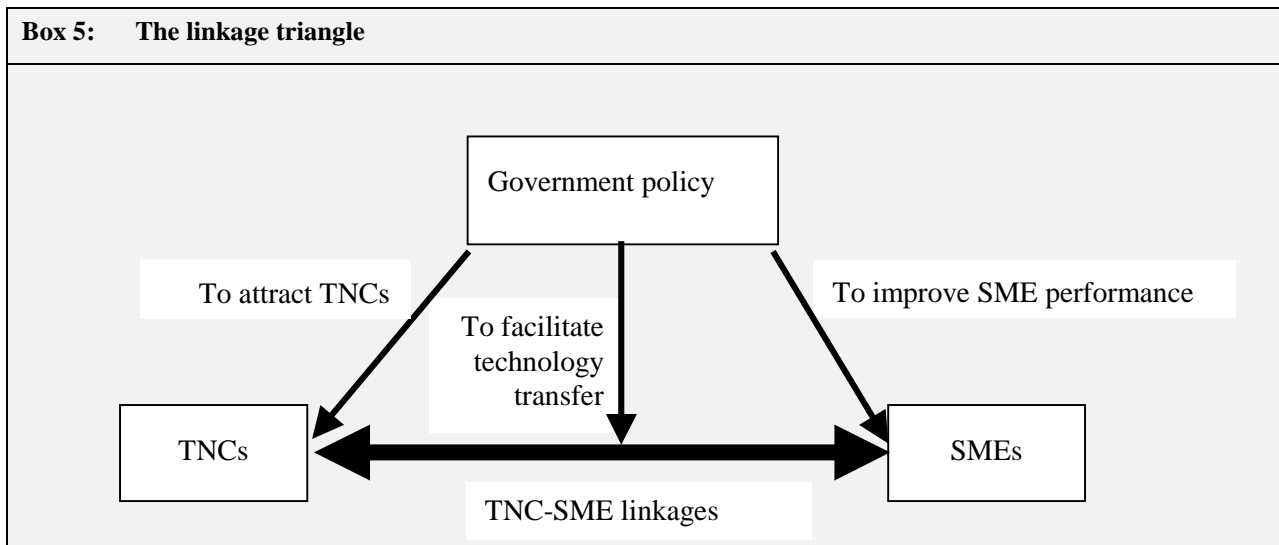
- the existence of SMEs which are able to meet high TNC standards, or at least have the potential to achieve such standards within a few months or years;
- the TNC corporate strategy, which may be more or less conducive to local SME development;
- the existence and efficiency of a set of supporting public policies in attracting foreign direct investment, facilitating technology transfer and improving SME performance.

This chapter deals with the first two factors of this linkage triangle, i.e. the competitiveness of indigenous SMEs (Chapter 4.1) and TNC corporate strategies (4.2). The supporting public policies will be treated in Chapter 5.

##### **4.1 The competitiveness of local SMEs**

The main reason for the weakness of linkages and spillovers from TNCs to local SMEs is the lack of efficient SMEs able to seize new business opportunities related to foreign direct investment. Below I shall explore what is necessary

- to prepare SMEs for partnership with TNCs and
- to enable them to exploit these partnerships for technological learning and upgrading.



Obviously, there is no general answer to these questions since requirements differ considerably, mainly according to

- the envisaged type of partnership: Demands on suppliers are not the same as demands on distributors or joint venture partners;
- the motives as to why TNCs seek partnership with local SMEs: Partnership may be mandatory because host country governments require TNCs to take on local partners, or they may be voluntary; moreover, TNCs pursue different objectives in adopting local partners, e.g. they may seek partners to acquire new technologies, to exploit the advantages of specialization, to cut labor costs or to improve access to government bureaucracies. Each of these objectives implies very different demands on the local partner;
- characteristics of the industrial activity: Barriers to entry for SMEs are much lower in technologically simple, labor-intensive industries without important opportunities for economies of scale (e.g. assembly of garments, shoes and toys) compared to knowledge-, capital- or scale-intensive activities, such as the manufacture of electronic components or auto parts.

The following analysis concentrates on the three most relevant categories of direct TNC linkages: backward linkages with suppliers; forward link-

ages with market outlets, especially by way of franchising; and technological partnering with special emphasis on joint ventures.

#### 4.1.1 SMEs as suppliers to TNCs

According to the capabilities of the SME suppliers and the motives of the TNC customers, three main types of supplier relations may be distinguished. Barriers to entry are lowest in the first and highest in the third case:

1. *Low-cost suppliers with limited organizational capabilities.* Such SMEs do not possess specific knowledge-based assets and are usually less efficient than their customers or other potential suppliers both in terms of production processes and product quality. Yet lower labor costs or their readiness to accept unstable demand conditions may outweigh these deficiencies, especially in technologically simple and labor-intensive activities, such as assembly of apparel, shoes and toys. Although most TNCs prefer to work with more or less formalized suppliers that meet basic social security standards, these suppliers may in turn employ second-tier subcontractors in the informal sector. Examples have been mentioned in Central American apparel production and Malaysian machine-tool manufacturing. One may assume that this kind of informal subcontractors will slowly disappear in global production

chains where economies of scale and quality standards (including the traceability of products) are gaining importance, while they may persist in the manufacturing process for local markets.<sup>58</sup>

2. *Low-cost suppliers mastering modern organizational principles.* Compliance with quality standards is becoming more and more important, especially where production is associated with a company or brand name. Even if supplier relations are cost-driven, most TNCs will not compromise on quality. Failure of a single supplier may threaten the customer's competitiveness and reputation. Therefore more and more TNCs expect their suppliers to accept

motivated by considerations of production costs, for example in order to avoid investments in costly specialized equipment for certain inputs (e.g. auto parts, machine tools). The supplier does not necessarily possess exclusive know-how and may in principle still be replaced by in-house production. Yet the more the supplier specializes in certain operations, and the more experience he gains, the more the relationship evolves from one-way subcontracting to a two-way partnership. Companies such as NatSteel from Singapore show how suppliers may grow big even if they specialize in the seemingly simple process of contract manufacturing. Yet barriers to entry in the form of technical expertise, capi-

**Box 6: Xerox – Requirement for SMEs to be accepted as suppliers**

SMEs willing to supply parts to Xerox` Mexican affiliate must

- accept Xerox guidelines concerning quality, cost and delivery;
- implement *just-in-time* delivery;
- accept that inventory belongs to the supplier;
- accept *pay after use*;
- take 100 % responsibility for parts and accept penalties for non-performance;
- develop a methodology of *continuous improvement*;
- accept a company survey conducted by Xerox personnel, analyzing (among other things) the internal organization, conditions and layout of plant, quality management, products, equipment, technical resources, input materials, sourcing strategy, production costs, secondary activities, clients, evaluation of performance by clients and trade union activities;
- promise to solve problems detected;
- establish electronic communication with the client;
- develop joint strategies and action with Xerox;
- apply the same principles to second-level suppliers.

Source: Extract from a Xerox document prepared for Mexican suppliers (Xerox 1997).

rigid guidelines concerning quality, cost and delivery (see Box 6). In many cases, suppliers are obliged to implement quality management strategies and to become certified by GMP or ISO standards. Outsourcing of this kind is still

tal costs, cost of certification etc. may be relatively high for this type of suppliers.

3. *Innovative specialist suppliers.* Especially in technologically complex activities, such as electronics and automobiles, suppliers are required to invest in R&D on their own in order to constantly improve their products and participate in joint innovation projects (e.g. simultaneous engineering) with their TNC customers. The suppliers thus build up specific expertise which the TNC cannot easily re-

58 Nadvi's case study on surgical instruments manufacturing in Pakistan presents an interesting case study of how international quality standards lead to a selection and concentration process among local suppliers; Nadvi (1999).

place with in-house resources. Barriers to entry in this segment of innovative suppliers are especially high. As very few SMEs in developing countries are capable of developing innovative technologies, the increasing degree of specialization between TNCs and suppliers sometimes leads to the formation of transnationalized enterprise clusters, with leading suppliers from OECD countries following their principal TNC clients to production sites in developing countries (see Chapter 3).<sup>59</sup>

As we have seen in Chapter 2, different types of supplier relations do not contribute equally to the development of a competitive SME sector. Some are based exclusively on low wages and labor standards or externalization of environmental costs. These linkages are not desirable from social and ecological points of view, and furthermore rarely create a basis for sustained competitiveness, since they do not foster technological learning and productivity growth. If firms want to embark on a "high-road" strategy of technological upgrading that allows them to move into activities with higher returns, it is necessary to assess the long-term development effects of different supplier relationships. Promotion should then be selectively targeted towards supplier relations which favor technology transfer and skill formation.

Coming back to the classification of supplier relations (see Chapter 2), Box 7 illustrates the guiding principle of selectively promoting technological upgrading from traditional, factor-cost based relations towards knowledge-based supplier relations. In this process, demands on suppliers, especially on their innovative capabilities, increase.

#### 4.1.2 SMEs as customers of TNCs, especially as franchisees

What is necessary to prepare SMEs for entering downstream relationships with TNCs, that is, for

becoming franchisees or other distribution and after-sales agents for TNCs? TNCs usually want to make sure that partners distributing their brand-name products or using their business concepts strictly adhere to certain quality standards. They will therefore more or less closely monitor the business practice and performance of their distributors. The latter must therefore be able to manage the business properly. On the other hand, the franchising scheme in particular requires fewer entrepreneurial skills than an independent, non-franchised enterprise. Most importantly, the franchisee does not need to develop an innovative and viable business concept of his own, and in this way opportunities are created for persons without any previous experience as entrepreneurs.

Besides the basic management skills for running a business, barriers to entry relate to certain capital costs. Would-be franchisees usually have to be able to afford

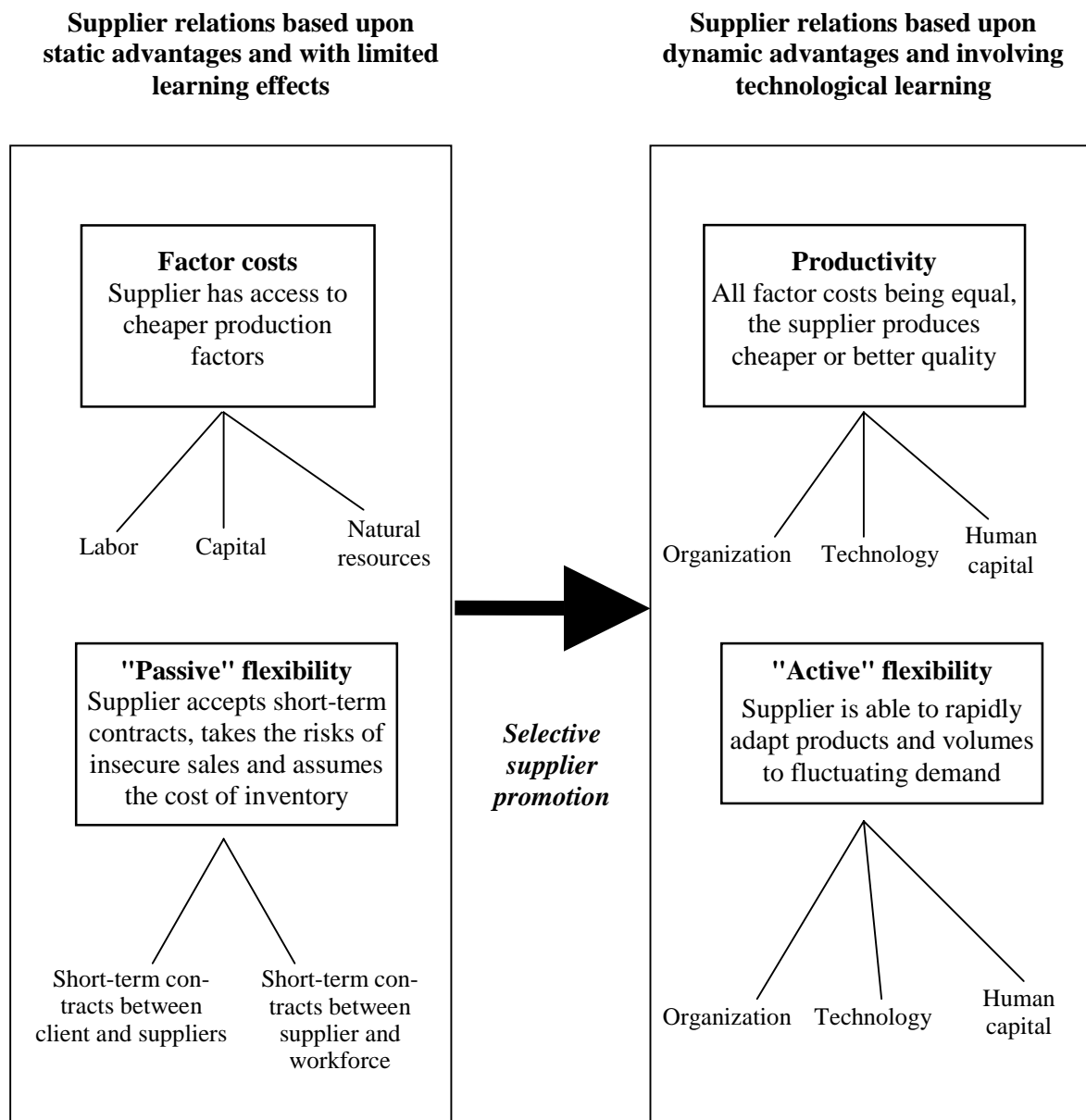
- investments in the respective marketing outlet. Depending on the activity, the requirements may range from a few hundred US \$ for renting an office to several million US \$ in the case of large franchise operations, e.g. in the hotel or airline business. According to the International Franchise Association, lenders usually expect a prospective franchisee to have a viable business plan and a third of the total capital needed for the venture;<sup>60</sup>
- a single payment for acquiring the right to use a franchise name, usually ranging from 1,000 to 50,000 US \$, i.e. according to the kind of business and the local price level;<sup>61</sup>

59 See Altenburg / Meyer-Stamer (1999), pp. 1703 ff. for this tendency to form clusters of transnational corporations.

60 Cf. International Herald Tribune, November 17, 1999.

61 In Germany, 17 % of the National Franchise Association's members paid entry fees up to 10,000 DM (ca. 5,300 US \$), while 93 % paid up to 50,000 DM (ca. 26,300 US \$). Cf. Eli / Vögtle (1997), p. 31.

**Box 7: Technological upgrading of supplier relations**



Source: Altenburg et al. (1998)

- a royalty which may be a percentage of the franchisees turnover or a fixed monthly payment.

Franchises may be very successful businesses, and learning to manage a franchise may in some industries imply considerable opportunities for individual learning. Yet the opportunities for business

growth and technological upgrading are quite limited. In most cases franchisees are confronted with more or less clear-cut ceilings to their growth, e.g. because franchise contracts often limit the geographical area to be served by the franchisee. In the same vein, although it may be possible to introduce some marginal improvements on the franchiser's business concept, there

is not much scope and hardly any incentive for the franchisee to engage in major innovations. This is one of the main disadvantages of the franchise business. Opportunities for growth and technological learning are greater if local SMEs develop their own business concepts and brand names and then use the principles of franchising to expand their own markets by developing franchisees elsewhere.

### 4.1.3 SMEs as partners in joint ventures

What prepares SMEs in developing countries for joint ventures with TNCs and enables them to exploit these partnerships for technological learning and upgrading? To give an answer to this question, we first have to distinguish between mandatory and voluntary joint ventures. If foreign investors have to take on a local partner for reasons of mandatory national equity, local candidates only have to compete with other domestic firms, and barriers to entry are therefore relatively low. Yet empirical evidence shows that joint ventures forced on an unwilling TNC are rarely successful, and they are often unsustainable once the equity requirements are withdrawn. Moran shows that mandatory shared ownership correlates negatively with both technology transfer and export performance.<sup>62</sup>

If the partnership is voluntary, the local SME must be able to meet the following criteria:<sup>63</sup>

- to achieve minimum efficiency standards and continuously improve these standards;
- to analyze their own strengths and weaknesses, set forth strategic areas in which an alliance may help to complement the assets of the SME and accordingly develop a business plan for a viable joint venture project;

- to identify suitable partners, i.e. where a sustainable win-win situation may be anticipated. The local candidate should look for "developmental firms" (see Chapter 4.2) that continuously generate new technologies and capabilities, thus creating new windows of opportunity for the local partner, and that see the local partner as a long-term ally which it should help to upgrade and cope with the changing environment;
- to carefully negotiate contracts which are favorable in the long run, taking into account the fact that framework conditions and partner relations usually change over time. Major points to be negotiated include the equity structure, valuation of existing assets, technology transfer, dividend policy, marketing and staffing issues, mechanisms of conflict resolution, and the degree of independence from parent interference;
- to be able and willing to overcome typical operational problems that arise during the life of a joint venture. The fact that products, market situations and technologies change over time may lead to a differential distribution of costs and benefits among the partners and thus necessitate renegotiations aimed at adapting the original contracts;
- to contribute specific assets to the partnership. As we have seen in Chapter 2, the main advantages for foreign investors in taking on local partners are related to the latter's familiarity with local politics and government regulations as well as knowledge of local markets. We have also noted that these contributions may erode as foreign partners learn to handle the local way of doing business. In order to remain important to their partners, local SMEs therefore need a strategy for developing new advantages.

## 4.2 The TNC corporate strategy

As we have seen, TNCs (as well as each of their affiliates in developing countries) pursue different corporate strategies which may be more or less

62 Cf. Moran (1999), pp. 121 ff.

63 The following criteria are based on Miller et al. (1996) and interviews with practitioners at the German Finance Company for Investment in Developing Countries (DEG).

conducive to local SME development and technological learning. These strategies are usually closely related to the motive why the TNCs engage in the host country, i.e. – coming back to the taxonomy presented above – whether the affiliate is seeking resources, markets, efficiency or strategic assets and capabilities. In the past, market-seeking investors operating in relatively closed domestic markets often developed substantial supplier linkages. This was so firstly because performance requirements were less rigid and economies of scale less relevant, so that barriers to entry for local suppliers were low; secondly, because host countries often imposed domestic-content requirements. Resource-seeking and export-oriented investors, by comparison, created relatively few linkages, but these linkages with local suppliers were more competitive and sustainable.<sup>64</sup>

Beside the motives for investing in a given developing country, many other aspects shape the corporate strategy and the TNC's willingness to develop linkages with local SMEs. These include:

- Degree of technological sophistication and economies of scale, because these factors determine the opportunities for developing local partners. Most TNCs limit their local purchasing and subcontracting to simple products and processes, such as indirect materials (cardboard boxes, plastic and foam-rubber packaging materials), metal-stamping, die-making and subcontracting of assembly operations. Moreover, economies of scale are decisive. O'Connor shows that local sourcing increased in Penang when electronics companies switched from scale-intensive mass production to more customized products.<sup>65</sup>
- Length of time the TNC has been operating in a host country. As TNCs gather experiences in a given country, they use to recruit more managers locally and they acquire more knowledge about local suppliers' capabilities

and local ways of doing business with other firms. This is quite clear in the case of Penang's electronics cluster, where local sourcing only took off about 15 years after the first TNCs had started operations. In the same way, the much lower degree of local sourcing in the comparable Guadalajara cluster may partly be explained by the fact that this cluster has only recently been established.

- Specific corporate culture (which again reflects cultural features of the respective home countries). For example, several studies have shown that U.S. and European electronics and computer companies have used their Southeast Asian affiliates for specialized production in a global division of labor, therefore beginning a process of systematically upgrading the technology, improving quality control and expanding managerial responsibilities of their subsidiaries. Japanese TNCs, on the other hand, have maintained higher value-added operations in Japan, while transferring only lower-end processes to their foreign affiliates.<sup>66</sup> In the automobile industry, managers of U.S. companies are free to expand exports even at the expense of their own parent company, while Japanese parent companies explicitly restrict exports of their foreign subsidiaries.<sup>67</sup> On the other hand, Japanese TNCs have demonstrated a greater propensity to form joint ventures.<sup>68</sup> But even if we look at TNCs from the same home country, differences in behavior towards complementary SMEs may be considerable. Some TNCs pursue comprehensive outsourcing strategies and tend to drastically reduce in-house production. This applies to "virtual" companies such as Dell Computers or Dual (a German consumer electronics manufacturer), while their respective competitors prefer to maintain considerable in-house capacities. Extensive outsourcing usually requires building up

64 Cf. Reuber et al. (1973), pp. 152 ff.; Dunning (1992), pp. 450 ff.

65 Cf. O'Connor (1993), p. 215.

66 Cf. Moran (1999), p. 75.

67 Cf. Moran (1999), p. 59.

68 Ibid, p. 120, based on Beamish / Delios (1997).

**Box 8: Characteristics of *developmental enterprises***

*Developmental enterprises* are those which, willingly or not, create new capabilities and business opportunities and induce technological learning in their environment. Their main characteristics are:

- Investment is driven by the search for strategic capabilities and assets rather than for cheap natural resources, low wages or protected local markets;
- As they invest in in-house education and training of workers and managers (sometimes in excess of their own immediate needs) and participate in public-private partnerships to improve the skill base of their host region, they expand the pool of technical and organizational knowledge available in their host country. Some of them spin off new innovative firms;
- Their corporate culture stimulates continuous innovation inside the company and in its environment;
- Their corporate culture favors the incorporation of local personnel in management and the adaptation of products and processes to local markets, norms and values;
- As they demand new inputs and services and create new capabilities, they generate new business opportunities in related (often but not always complementary) fields which they cannot exploit by themselves. This increases the technological diversity of the local economy, deepens the inter-firm division of labor and thus fosters productivity growth in the environment of the developmental firm;
- Their business models are based on networking and inter-firm cooperation. Developmental enterprises often pursue comprehensive outsourcing strategies and act as system integrators which initiate and coordinate production networks;
- Cooperation with other enterprises is based on a vision of synergetic long-term partnerships rather than short-term interests, e.g. exploitation of an oligopolistic market position or wage differentials;
- In the case of TNC affiliates, corporate decision-making is decentralized and local management authorized to source independently, develop new products etc. Affiliates are provided with R&D facilities;
- They are fast-growing, with growth based on productivity dynamics rather than use of additional factors of production. If firms are able to reap innovation rents and have a relatively secure market position, there is more scope for long-term strategic partnerships than in companies which are involved in a short-term, cut-throat competition which is common in price-sensitive markets;
- They are committed to the local business community and willing to share their experiences as long as this does not jeopardize the company's core competences.

Partly based on Best (1999)

long-term partnerships and investing in comprehensive supplier development schemes. Depending on their strategy, TNCs may form foreign enclaves with almost no local spillovers (e.g. many apparel companies in Free Production Zones), but they may also be *developmental enterprises* which create new productive capabilities and opportunities, increase technological diversity and induce technological learning in its business environment (Box 8). This developmental role is more common in industrialized countries where more innovative SMEs exist to fill in the many "interstices" created by dynamic TNCs. Yet some of these aspects may be observed in developing countries as well, e.g. the above-mentioned case of Intel in Penang:

- Geographic proximity and transaction costs between parent company and affiliates. Asian affiliates of American TNCs do more local sourcing than do Mexican affiliates of the same corporations, because a plant in Mexico can easily be served by established suppliers from the United States. The same goes for German TNCs, whose Asian affiliates source more locally than subsidiaries in East Europe do.<sup>69</sup>
- Market position. Corporations operating in price-sensitive markets are more dependent on factor-cost differentials than corporations enjoying high innovation rents. The former

<sup>69</sup> Author's interviews with TNCs in Malaysia and Singapore.



are therefore relatively footloose, preferring to relocate if other countries offer cheaper production factors. For obvious reasons, footloose investors are less willing to invest in local skills and supplier development. Disk-drive assembler Seagate, for example, closed operations in Ireland and Malaysia in order to relocate to cheaper countries. Disk drives are a technologically mature standard product exposed to very stiff price competition. In the Central American apparel industry, some Asian investors in particular relocated from higher-wage to lower-wage countries (e.g. from Costa Rica to El Salvador), while U.S. brand-name companies rarely relocate despite considerable intraregional wage differentials.

- Trade policy. Despite a general tendency towards the liberalization of trade and investment regimes, trade policy in some cases still influences the sourcing behavior of TNCs. A typical case is Mexico, where intraregional tariffs increase with the degree of value added from outside the NAFTA region. As a result, carmakers from outside the region (Volkswagen and Nissan) induce their global suppliers to follow them to Mexico to increase the *NAFTA regional content*, while assemblers from the U.S. (GM, Ford and Chrysler) may continue importing parts and components from their established suppliers in the U.S.<sup>70</sup> For the same reason Japanese and Korean producers of color TVs in Mexico reduce their imports by building up local supplier basis. As in the case of the carmakers, though, they mainly rely on followers from their home countries.<sup>71</sup>

## 5 Policies to enhance linkages and spillovers between TNCs and local SMEs

### 5.1 The role of policy and support measures

There is an ongoing debate about the adequacy of policy interventions to promote and guide the allocation of FDI and to enhance technological spillovers in the host economy. And there are strong theoretical arguments as well as empirical evidence for both proponents of *laissez-faire* and political guidance.

Under the neoclassical assumption of perfect competition, restriction of FDI and imposition of policy requirements on foreign investors will have negative impacts on economic development. Proponents of leaving FDI to market forces can in fact prove that market interventions have often restrained inflows of capital and technology without achieving any of the goals of technological spillover and deepening. Especially mandatory measures, such as local content, export, joint venture and technology-licensing requirements generally have a poor record.

Critics of the neoclassical approach point to the unrealistic assumption of perfect competition and stress the importance of market imperfections in information, labor and capital markets. Since competitiveness increasingly depends on the ability to learn and master technological development, and since these are cumulative processes which generate significant externalities, there is much scope for market failure. This provides a strong rationale for market interventions. Moreover, this theoretical approach is backed by empirical evidence of latecomer industrialization in Japan, Korea and Taiwan.<sup>72</sup>

On balance, it is clear that market failure may be relevant and that there is a case for policy interventions. Yet these interventions have to be moderate and carefully considered to minimize the

70 Cf. Altenburg et al. (1998), p. 37.

71 Cf. Carrillo / Mortimore (1998).

72 E.g. Amsden (1989 and 1994), Wade (1990).

risks of government failure. The relevant question is therefore not *whether* to support and guide FDI or not, but rather *to what extent* intervention is adequate under the specific circumstances of a given country. In this respect, we may distinguish four degrees of government intervention (Box 9): Today there is widespread agreement that

- FDI is an important means for gaining access to and keeping up with technological progress. FDI should therefore not generally be restricted. A nationally led *restrict-and-exploit* strategy presupposes very special political and economic preconditions and becomes less viable as globalization advances;
- investment policies should be quite liberal. Restrictions on foreign investors, such as local-content, joint-venture or technology-licensing requirements, should either be abolished outright or at least limited in time and linked to performance criteria for the local beneficiaries;
- liberalization of investment policies is necessary, but not sufficient to exploit the opportunities for technological learning. Market failure is especially relevant in technological progress, formation of skills and SME devel-

opment. Support measures in these areas are necessary;

- support should be demand-driven and implemented in close cooperation with leading private-sector firms and institutions.

Coming back to the categories presented in Box 9, the optimum level of intervention therefore lies somewhere between types 2 and 3, depending mainly on the development level of the host country, i.e. the competitiveness of local suppliers and competitors, the strength of its administration, the insulation of government from crony capitalism, etc. As countries try to upgrade their capabilities and enter more sophisticated levels of TNC linkages, more policy interventions and support measures are required. Yet moving towards a more active and interventionist role of government requires a high degree of administrative efficiency and implies considerable risks. Government must be in a position to assess externalities and pick winners and losers more effectively than the market does, but without being influenced by rent-seeking behavior of firms. Generally speaking, the optimum therefore probably lies near type 2 for the majority of low-income countries, while as the competitiveness of the local

<b>Box 9: Four approaches to FDI policy in developing countries</b>			
Passive open-door policy with limited and only horizontal interventions to improve supply conditions	Open-door policy with active and sometimes selective support measures to improve supply conditions	Strategic <i>target and guide</i> -policy with selective interventions to develop advanced factors	Strategic <i>restrict and exploit</i> -policy with strong selective interventions
No industrial policy targets defined, no restrictions to FDI Wholesale liberalization of trade and investment policies Few and only horizontal policies to improve national supply conditions FDI promotion focussing on given factor endowment rather than dynamic potential	Liberalization of trade and investment policies, no restrictions to FDI Some, mainly horizontal, measures to improve relevant infrastructure, manpower training, and to promote the location abroad	Strategic vision and targets formulated; Selective targeting of "developmental" FDI; Support measures to encourage and induce (rather than trying to impose) technological spillovers Selective support to foster innovations, develop skills for the future and help promising SMEs	Strategic vision and targets formulated; Import and FDI restrictions, mandatory technology licensing; Technological development driven by local firms: market reservation policies, export promotion, picking winners and selective subsidies for local companies
Adapted from Lall (1995), pp. 7 ff.			

private sector and the administrative capabilities develop, a more selective, targeted and guided FDI policy may produce better results. Policies to enhance linkages and spillovers between TNCs and local SMEs should always respect the principle of subsidiarity. This implies that support measures should, wherever possible, be offered by private non-profit or for-profit entities which operate at a decentralized level and are therefore close to the customer. Public-sector institutions should largely restrict themselves to improving the general framework for private-sector activities and stimulating the development of a market for service providers. Temporary public interventions are justified if they contribute to market development, but government agencies should avoid further distortions and withdraw as markets develop.

This chapter seeks to define promising fields for policy intervention and presents some cases of best-practice policies. As the linkage triangle in Box 5 has shown, there are three main areas for interventions aimed at enhancing linkages and spillovers between TNCs and local SMEs:

- general policies to improve the performance of local SMEs;
- policies to attract foreign direct investment;
- specific policies to upgrade local SMEs in the context of TNC linkages.

Concerning the general **policies to improve the performance of local SMEs** (Chapter 5.2) and **policies to attract FDI** (Chapter 5.3), the study will only give a brief overview, taking into account the great number of existing publications on these issues. Yet it should be clear that specific linkage policies will hardly be successful if they are not embedded in an adequate policy framework fostering competition, investment, technology, and SME development. Therefore it is necessary to outline some basic elements of this policy framework. Nonetheless, emphasis will be placed on **specific policies for upgrading local SME related to TNCs** (Chapter 5.4).

## 5.2 General policies to improve the performance of local SMEs

The mature production systems of industrialized countries are characterized by increasingly complex relationships between large and small companies. We are witnessing a profound change of industrial organization in which SMEs have no choice but to assume new roles in order to survive. The same process of structural change is taking place in developing countries, though with a certain delay. In the process of industrial modernization, large companies tend to outcompete SMEs in scale-intensive activities, as we will presently see in the Latin American shoe and apparel industries. Yet at the same time large corporations often create new markets for specialized SMEs – subcontractors, suppliers of parts and components, franchisers, after-sales services – and they always leave some niche markets to be exploited by local SMEs. Although the complementarities, linkages and spillovers between TNCs and SMEs are weak in most developing countries, this reflects not a lack of market opportunities but rather a lack of efficient SMEs that are able to seize these opportunities.

Industrial (and especially SME) policy should help to cope with this inevitable structural change and enable SMEs to adapt to the new rules of competition. Promotion should aim at developing an integrated production system where small companies specialize in activities which complement large-scale production and exploit niche markets (e.g. customized products and specialized business services). Support measures aimed at creating linkages are a main element in such a strategic approach towards integrated large- and small-scale production.

Many national and donor-driven SME programs, especially in Latin America and Africa provide indiscriminate assistance to SMEs and microenterprises in traditional activities where they do not possess competitive advantages vis-à-vis large firms. This may be justified on the grounds of poverty alleviation, but it does not help to build an integrated and competitive enterprise structure based upon the complementary specialization of

small and large firms.<sup>73</sup> There is clear empirical evidence that fast-growing SMEs in innovative areas rarely grow out of the existing stratum of micro- and small firms, since these usually face various internal barriers to growth (lack of managerial capabilities, technical expertise, skilled workforce, capital, growth orientation etc.).<sup>74</sup> Such SME programs may thus be of little help when it comes to coping with ongoing structural change.

The challenge is therefore to establish a core group of dynamic SMEs. This calls for selective policies, including innovation policies for SMEs, venture-capital funds for start-up companies, programs to foster university spin-offs,<sup>75</sup> and, last but not least, policies to link SMEs up with large companies. Since the 1980s, some Asian NICs have been focussing their SME promotion on the development of specialized SMEs as a complement to larger corporations in the national production system, e.g. as part suppliers, subcontractors and providers of knowledge-intensive services.<sup>76</sup> Singapore's *Promising Local Enterprises Programme* for example targets companies characterized by strong core-capabilities, clear vision and rapid growth.

### 5.3 Policies to attract foreign direct investment

As the global economy becomes more open to international business transactions, countries increasingly have to compete for foreign investors,

and restrictive FDI policies can effectively deter TNCs from investing in the respective country. In response to this situation, most countries are liberalizing their FDI framework. This is in most cases accompanied by other growth- and investment-oriented reforms, e.g. with respect to trade and privatization policies. In addition, many countries implement pro-active facilitation measures that go beyond policy liberalization:

*"During 1997, 151 changes in FDI regulatory regimes were made by 76 countries, 89 per cent of them in the direction of creating a more favorable environment for FDI. New liberalization measures were particularly evident in industries like telecommunications, broadcasting and energy that used to be closed to foreign investors. New promotional measures included streamlining approval procedures and developing special trade and investment zones (adding to the many zones already in existence). During 1997 alone, 36 countries introduced new investment incentives, or strengthened existing ones. The network of bilateral investment treaties (BITs) is expanding as well, totaling 1,513 at the end of 1997. The number of double taxation treaties also increased, numbering 1,794 at the end of 1997."<sup>77</sup>*

This paper argues that in addition to such efforts, three elements are crucial to successfully attracting FDI, especially if the focus is on *developmental* TNCs (as characterized in Box 8) which are likely to generate considerable domestic linkage and spillover effects.

1. **Formulating a vision of technological upgrading, and targeting FDI to this aim.** Host countries should formulate strategic goals and try to identify windows of opportunity relating to foreign investment, i.e. define areas which are promising for national development. Policies to attract FDI should not only be professional and aggressive but also

73 Cf. Cotter (1996), pp. 49 ff. rightly observes that many programs do not even make a clear distinction between the targets of developing competitive enterprises and alleviating poverty.

74 Cf. Hulme / Mosley (1996), Altenburg (1999b), pp. 27 ff.

75 E.g. Chabbal (1995).

76 Korea and Singapore are the most prominent examples, but Taiwan, Malaysia, Thailand and Indonesia also have a strong focus on growth-oriented SMEs in complementary fields. See Dae-Woo (1993), Asian Productivity Organization (1990); Meyanathan ed. (1994).

77 UNCTAD (1998), p. xix.

**Box 10: Korea's Highly Advanced National Project 1992-2001:  
Technological targeting based on participatory planning and informed decision-making**

In line with and as part of Korea's general approach to the preparation of the seventh five-year plan 1992 – 1997, which emphasized openness, transparency and consensus-building efforts by integrating views from different social strata, the process of identification of a select number of core technologies involved experts from government, public and private research institutes and the business community. It was based on a systematic survey of key technology areas at world level with a view to identifying those fields of generic technologies where Korea was seen to have a potential capacity to compete with the advanced countries based on Korea's existing industrial foundation. As a result, 11 core technologies were initially selected, which number was increased to 17 after a review at the beginning of the second phase of the HAN Project starting in 1995. The targets were relatively specific, including for example the development of "ASIC design technology for digital HDTV" or of an "electric car of 120 km/h speed." Within these 17 fields several hundred sub-projects are to be promoted.

Source: Altenburg / Hillebrand / Meyer-Stamer (1998:45 f.)

selective and embedded in a comprehensive national development strategy. As a first step it is necessary to create a consensus among national entrepreneurs, trade unions, policy-makers, and civil society in general about the necessity of technological upgrading. To this aim, public agencies as well as private non-profit entities may therefore promote a stakeholder dialogue and act as a moderator at different levels. Second, based on this dialogue, strategic goals should be set forth. Korea's Highly Advanced National Project 1992-2001 (Box 10) is an interesting example. Third, efforts should be made to identify which foreign investors and activities are especially suitable – and at the same time realistic – for achieving these strategic goals. This requires continuous monitoring of changes in the market and of the specific strengths and weaknesses of the location concerned in order to identify windows of opportunity.<sup>78</sup> Fourth, based on this assessment, promotion should be intensified in order to target specific developmental companies and branches.

2. **Creating and promoting a positive image of the location.** According to Moran, 116 nations are undertaking pro-active approaches to attract foreign investment, and this number is increasing steadily.<sup>79</sup> A study conducted by

Wells and Wint shows that promotion was highly cost-effective, especially sector-specific investment missions which were combined with firm-specific research and customized advertising. General advertising campaigns yielded fewer results.<sup>80</sup> In Central America, investment-promotion agencies such as FIDE in Honduras were highly successful in selling the image of Honduras abroad, which was especially difficult since the country's international reputation had severely suffered from civil war and frequent military coups. Yet within less than one decade, FIDE helped to attract about 100 foreign investors in the apparel industry. Investment promotion is usually done by public agencies or private non-profit organizations. These institutions should nevertheless be organized in a businesslike manner and develop a culture and attitude oriented towards the private sector. Some of their services may be transferred to private service providers. Investment promotion agencies should first of all offer reliable information about the location. Some international agencies (such as the Multilateral Investment Guarantee Agency of the World Bank Group) and private companies provide useful information on statistics, legislation and other host country aspects. Yet investment decisions are not only based on such "hard facts." Other factors which are difficult to measure, such as political stability, long-

78 For an overview of the most important aspects of a national "investor targeting strategy" see UNCTAD (1999), p. 253.

79 Cf. Moran (1999), p. 37.

80 Cf. Wells / Wint (1990).

**Box 11: Factors of production according to Porter**

Regarding factors of production, two important distinctions have to be made. The first is between basic and advanced factors:

- *Basic factors* are "inherited" by a nation and do not need to be developed through policy efforts. They include natural resources, location climate, unskilled and semi-skilled labor, and debt capital;
- *Advanced factors* must be created over time. They include modern digital data communications infrastructure, highly educated personnel such as engineers computer scientists, and university research institutes in sophisticated disciplines;

The second distinction is between generalized and specialized factors:

- *Generalized factors* can be deployed in a wide range of industries. They include the highway system, a supply of debt capital, or a pool of well-motivated employees with a college education;
- *Specialized factors* are specific to certain industries. Examples are a port specialized in handling bulk chemicals, a scientific institute with expertise in optics or a cadre of skilled model makers for automobiles

Source: Porter (1990: 77-78)

term development prospects, the business-friendliness of public administration, and general living conditions, are important factors influencing investment decisions. Therefore advertising and directly approaching and convincing potential investors may be decisive. According to Wells and Wint, personal contact between host country officials and company managers had more impact than impersonal advertising.<sup>81</sup> Often it is helpful to advertise success stories of pioneering investors. This is so because other would-be investors tend to observe the performance of these pioneers before making their own investment decisions, which is an efficient way to minimize risks (follow-the-leader effect).

### 3. Improving advanced and specialized factors in accordance with technological goals.

Developing countries seek to improve their factor endowment in order to attract foreign direct investment. Most countries, however, focus on a combination of low factor costs (especially for labor and natural resources), subsidies (which may take the form of grants, tax holidays, import preferences, preferential labor regulations or subsidized land) and general infrastructure (roads, ports). In Porter's terms, these are *basic* and *generalized* factors (Box 11), which are usually not sufficient to

sustain long-term competitiveness.<sup>82</sup> Subsidies draw off resources from other activities and may lead to a subsidy race among competing locations while they do not help to improve the underlying factors of competitiveness. In addition, technological advance leads to a sharp decline in demand for unskilled labor and certain natural resources. In order to achieve the envisaged goal of technological upgrading, advanced and specialized factors of production need to be developed. These include specific human-capital formation with a high percentage of engineering, science and business studies, R&D activities, specific infrastructure in fields such as information technology, etc. Developing countries may benefit from economies of specialization and agglomeration if they focus on certain activities and build up an experienced local pool of specialized labor as well as a tissue of cooperating firms in complementary fields.

Box 12 presents an example of how these three elements may skillfully be combined.

Costa Rica's government realized quite early that it was necessary to stop competition based on wages and to search for knowledge-based locational advantages. Owing to the good level of education (illiteracy rate below 5 %, comparatively good universities) conditions were favor-

81 Ibid.; see also Box 13.

82 Cf. Porter (1990), pp. 77 - 78.

**Box 12: Attracting INTEL to Costa Rica**

The example of Costa Rica shows how even a small country can attract high-tech investments. Besides favorable basic factor conditions (relatively low labor cost, proximity to the U.S.), Costa Rica's success is owed to a combination of three kinds of active public policy. The country was able to:

- develop a vision of technological upgrading,
- aggressively and selectively promote the country abroad, and
- improve advanced and specialized factors in accordance with its technological goals.

Costa Rica's government realized quite early that it was necessary to stop competition based on wages and to search for knowledge-based locational advantages. Owing to the good level of education (illiteracy rate below 5 %, comparatively good universities) conditions were favorable. As early as in 1987 Garnier, then vice-minister of economic policy and planning, expressed the vision of wanting to compete "not with other countries in the region, but with the Silicon Valley." The Figueres government in particular (1994-98) made efforts to build dynamic competitive advantages and to attract foreign investments in knowledge-based areas (above all information technology, but also biotechnology).

- A "National Strategy for Investment Promotion" focussing on technology policy has been formulated.
- The improvement of the telecommunication infrastructure received high priority. Ever since 1990 Costa Rica has had an international data connection via the Bitnet research net. In 1993 a powerful national network (CRNet) with numerous leased lines was set up, which meanwhile also gives several neighboring countries access to the Internet. Most public institutions are networked via optical fiber cables.
- Education has focused on information technologies. 2,000 persons graduate as engineers in information technology each year. President Figueres wanted to provide all pupils with an e-mail address by 1998. A pilot project on "virtual class rooms" has been started in cooperation with the U.S. firm Microsoft. Costa Rica ranks second, after Chile, as regards the number of Internet host computers per capita in Latin America.
- Figueres held regular meetings in order to discuss business experience with a dozen managers from foreign high-tech firms with branches in Costa Rica. Accompanied by a team of investment experts, he paid visits to firms like Microsoft, Hewlett Packard, and Boeing and invited them to make investments in Costa Rica.

In the early 1980s some small high-tech firms settled in Costa Rica's Free Production Zones. They manufactured, among other products, electronic components and dentures, or developed software.

The biggest success so far was INTEL's decision in 1997 to invest 500 million US \$ in a production site for the assembly and testing of Pentium-II processors. By the end of 1999 2,000 jobs, in part highly qualified ones, will be created and exports worth 3 billion US \$ be produced. The national value added will amount to as much as 15 %.

Intel had originally studied several possible sites for construction of its assembly plant, including Brazil, Chile, Mexico, the Philippines and Thailand. Costa Rica won the competition without offering major firm-specific concessions. Instead, what impressed Intel's management was the country's focus on an electronics strategy, its willingness to invest in training, and the strong commitment to the Intel project. Especially the facilitation work undertaken by Costa Rica's investment promotion agency CINDE and the President's personal support for the project were decisive.

The INTEL production site will trigger follow-up investments by suppliers and imitators. Optimistic sources assume that some 40 follow-up firms will invest another 500 million US \$. Up to now there are 15 projects in the planning stage or in progress, among them the supplier Photocircuits with investments of 40 million US \$ and 700 new jobs. Hewlett Packard has opened a regional service center for Latin America.

Sources: Inforpress Centroamericana, 20.2.98; Latinoamericano, 20.1.98; Caribbean & Central America Report, 24.1.98; International Herald Tribune 12.3.98; Handelsblatt, 8.12.98; Neue Zürcher Zeitung, 26./27.9.98; Miami Herald Edición Costa Rica, 21.1.98; Spar (1998); www.ifc.org/publicat/FDINEWS

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#### 5.4 Specific policies to upgrade local SMEs in the context of TNC linkages

After having given a brief overview of the general policy framework necessary to improve the performance of SMEs and to attract foreign direct investment, the following section will deal with specific policies and support measures to develop and upgrade local SMEs in the context of linkages with TNCs. These include supplier development, improvement of forward integration with customers, promotion of technology partnerships and support measures to enhance know-how transfer from TNCs to local SMEs which are not directly linked as suppliers, customers or technology partners.

##### 5.4.1 Supplier development

Studies on programs to support the development of local suppliers to TNCs highlight four important "lessons learnt." Supplier policies should:<sup>83</sup>

- focus on voluntary measures to support the local supplier base rather than to impose domestic-content requirements and market-reservation policies;

- be based upon a medium- or long-term vision concerning the envisaged intrafirm division of labor; targets and target groups should clearly be defined, and policy-makers should have an idea of what types of supplier relations are conducive to sustainable competitiveness;
- make sure from the beginning that large corporations are involved in and committed to supplier development programs. If the potential customers do not have ownership in such programs, it is likely that public support will not meet the customer's demand;
- be coherent, well-coordinated and transparent. In order to provide comprehensive support, there should be one lead agency for supplier development working hand-in-hand with specialized agencies. The lead agency should be able to identify the supplier's needs and know where and how to mobilize resources in order to solve specific problems.

Below I shall discuss the record of the most important measures for supplier support.

**Domestic-content requirements and market reservation.** Until recently, foreign investors in many developing countries were obliged to increase the domestic content of their products by using national inputs. This was by far the most frequently applied measure for establishing supplier relations in developing countries. Typical instruments were local-content rules prescribing a minimum amount of domestic value added and the reservation of certain supplier markets for national firms. These instruments are part of the trade-related investment measures (TRIMS) that were banned after the end of the GATT Uruguay Round and which will have to be dismantled during the next few years. Yet in practice there is still scope for more or less disguised domestic-content requirements and market reservations for supplier promotion at the national level. Examples of respective national policies are the National Car Project in Malaysia and the Foster Father Business-Partner Linkage Program in Indonesia (see Box 13). Moreover, rules of origin in free-trade

83 See Altenburg et al. (1998), Battat / Frank / Shen (1996) and Meyanathan (1994).



areas defining a regional content are still permitted.

These rules have effects similar to those of local-content rules, albeit at supranational level.<sup>84</sup> Large private companies in Indonesia are expected to take part in the so-called Foster Father Business Partner Linkage Program. The companies are thus expected to help to strengthen the management and technological capabilities of SMEs, give guarantees for credits to suppliers, and market final products of small companies via their own channels. While state-owned enterprises have to contribute 1 to 5 % of their net gains for SME promotion, this is not legally binding on private companies. However, there is also pressure on them to join the program. This is possible because decisions are often taken in a discretionary way so that companies depend on good relations with the government. Moreover, many foreign investors have such great interest in the Indonesian market that they readily accept disguised requirements. The pressure exerted by the Indonesian government resulted in a number of enforced partnerships which are of no or only little advantage to the contracting companies. In view of this situation, large companies usually are not sufficiently interested in becoming active in the development of strong supplier SMEs. Nevertheless, the largest private Indonesian companies committed themselves to promoting SMEs in the Bali Declaration of 1996, and in fact some have come forward with promotion programs. About 7 % of SMEs in the industrial sector profit from the Foster Father System.

Opinions on the usefulness of local-content requirements and market reservations are controversial, since such measures diminish the profitability of foreign investments and the attractiveness of the location, in particular when the suppliers in the country concerned are not competitive. The mandatory utilization of primary products which do not meet international standards in terms of price or quality burdens consumers and puts the international competitiveness of the final product

at risk. Most studies on domestic-content requirements conclude that these measures led to inefficiency and that there was little evidence of technological learning.<sup>85</sup>

Some authors, however, take a more differentiated view, arguing that domestic-content requirements and market reservations can under certain circumstances be useful instruments to create new opportunities for domestic firms and to foster technology transfer.<sup>86</sup> Some successful experience from Southeast Asia support this view. These include the development of a diversified supplier industry in South Korea in the 1980s, where the manufacturing of numerous parts, components and machines for large national firms (*chaebols*) was reserved for national SMEs.<sup>87</sup> Another example is the development of the national sewing-machine industry in Taiwan.<sup>88</sup> In any case domestic-content requirements and market reservations should not close the market permanently. What is needed are incentives that lead to a gradual adjustment to international efficiency standards.

Even though some success stories exist, on balance the results of mandatory measures for supplier development have been poor. Modern supplier development programs therefore have shifted their focus towards voluntary promotional measures aimed at strengthening potential local suppliers, better matching of supply and demand, and providing incentives for inter-firm cooperation, among other things. These measures are increasingly implemented by business associations and private non-profit agencies with a businesslike attitude.

**Coordination of and information on promotion measures.** Supplier promotion can achieve significant effects if the respective instruments are well coordinated and transparent to the potential

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84 Cf. Hauser / Schanz (1995), pp. 118 ff.

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85 Cf. Moran (1999), pp. 41 ff. reviews several studies leading to a decidedly negative assessment.

86 E.g. Balasubramanyan (1991).

87 Cf. Wong (1991), p. 53.

88 Cf. Dahlman / Sananikone (1990), pp. 38 ff.

**Box 13: The Foster Father Business-Partner Linkage Program in Indonesia**

Large private companies in Indonesia are expected to take part in the so-called Foster Father Business Partner Linkage Program. The companies are thus expected to help to strengthen the management and technological capabilities of SMEs, give guarantees for credits to suppliers, and market final products of small companies via their own channels. While state-owned enterprises have to contribute 1 to 5 % of their net gains for SME promotion, this is not legally binding on private companies. However, there is also pressure on them to join the program. This is possible because decisions are often taken in a discretionary way so that companies depend on good relations with the government. Moreover, many foreign investors have such great interest in the Indonesian market that they readily accept disguised requirements. The pressure exerted by the Indonesian government resulted in a number of enforced partnerships which are of no or only little advantage to the contracting companies. In view of this situation, large companies usually are not sufficiently interested in becoming active in the development of strong supplier SMEs. Nevertheless, the largest private Indonesian companies committed themselves to promoting SMEs in the Bali Declaration of 1996, and in fact some have come forward with promotion programs. About 7 % of SMEs in the industrial sector profit from the Foster Father System.

Source: Kian Wie (1994), pp. 106 - 107, Swisscontact (1996), pp. 10 - 11.

user. It is therefore recommendable to establish a coordination unit that

- works towards the coherence and packaging of existing instruments by seeking to integrate all relevant institutions into the formulation of a joint promotion strategy, and
- works as a one-stop agency providing information on promotion instruments and specific advisory services (e.g. via information booklets) and establishing contacts with appropriate institutions.

Such a coordination unit could be part of the public sector or business associations. What matters is that the unit gains the acceptance and participation of all relevant institutions and interested firms. Since firms usually have more confidence in chambers and associations than in public institutions,<sup>89</sup> the former are often better suited as coordinating bodies. However, they too should improve their service orientation. The coordination unit should cooperate closely with large firms that can help to identify bottlenecks and promotion needs of potential suppliers.

**Matching between potential customers and suppliers.** Lack of transparency of many markets hinders the exchange of information between potential customers and suppliers. This applies in

particular to SMEs whose information base is often restricted to the local level. Thus they often do not realize market opportunities. But large firms, also, usually do not have complete information on what potential national suppliers offer, so that they often fall back on imported inputs even if a similar domestic product is available. Three instruments can promote matching between potential customers and suppliers:

- subcontracting exchange schemes,
- supplier fairs and exhibitions,
- information and motivation events for suppliers.

These instruments can help to set up first contacts between customers and suppliers, which, however, are usually not enough to establish lasting cooperation. As a rule, potential suppliers have too many internal problems to be able to guarantee regular supply at favorable costs at once. The participation of potential customers in matching events and their branch-specific capabilities, however, can help to identify the bottlenecks of suppliers. It is on this basis that the coordination unit can find highly specific promotion instruments to overcome those bottlenecks. These instruments should include advice on manufacturing and logistics, basic and further training, financing, and other services. The matching instruments could thus be first steps towards an integrated promotion scheme.

89 For Mexico see, for example, Altenburg et al. (1998), p. 82.

- a) *Subcontracting exchange schemes (SES)* offer lists of potential suppliers to interested customers. To this end, the staff of the exchange office visit potential suppliers and evaluate their products and processes so as to give valid information to customers. Some SES, e.g. in Mexico City, aim at an integrated promotion scheme. They visit potential suppliers and – in part relying on know-how of potential customers – classify them in four categories: category "A" means that cooperation is possible; "B" – cooperation is possible, but advisory service is still necessary in some fields; firms in category "C" need comprehensive support in the form of integrated promotion measures; category "D" stands for "hopeless cases," i.e. supplier relations are out of the question in the short and medium term.<sup>90</sup>
- b) *Supplier fairs and exhibitions*, i.e. reverse fairs, give customers the opportunity to exhibit products they would like to source locally. In Mexico, supplier fairs are organized by the Ministry of Trade and Industrial Promotion (SECOFI) in cooperation with chambers and development banks. Firm interviews revealed that such fairs are not very successful in Mexico for the time being. Of course, contacts are established at such fairs, but supplier relations hardly ever evolve because the technology gap between customers and suppliers is too wide. To be more successful, these fairs should be more specialized and focus on less complex products and processes. At supplier fairs and exhibitions for the automobile industry, for example, it does not make much sense to exhibit complete systems or integrated components for local sourcing. Only at the level of simple parts do local SMEs have a chance to enter into subcontracting.
- c) *Information and motivation events* for suppliers are organized in some Mexican federal states. Their goal is to provide SMEs with information on advantages and potentials of

subcontracting for their respective firm and on possible government promotion schemes. In Aguascalientes SMEs may also visit potential customers that present their supplier strategies. The SMEs thus get an insight in the advantages and disadvantages of subcontracting. Establishing contacts in this way is particularly appropriate for micro- and small firms that often lack information on market chances and promotion schemes. At the same time such events stimulate first contacts between customers and suppliers and lower communication barriers.

**Economic incentives to intensify supplier relations and technology transfer.** In Southeast Asia there are a number of economic incentives encouraging firms to engage in subcontracting. These incentives are in part for customers, in part for suppliers (see Box 14). However, if there are such "expensive" incentives, short-term costs and the long-term benefit for the development of industrial structures must be weighed up carefully. Incentives make sense only

- a) if potential customers have an interest in local suppliers;
- b) if the competitiveness of potential suppliers with respect to prices, quality and terms of delivery does not lag too far behind alternative sources (e.g. imports) or vertical integration within the customer's own plant; and
- c) if such supplier relations do not develop without these incentives – otherwise there may be deadweight effects.

#### 5.4.2 Forward integration with customers, especially by way of franchising

In most cases franchises develop at the initiative of the entrepreneurs and do not necessarily require government action or even donor interventions. In some countries, private-sector franchise associations exist which provide services to the national franchising community. Moreover, some consultancy firms have specialized in franchise opera-

90 Interview with David Cervantes, Head of the supplier exchange in Mexico City, June 26, 1996.

**Box 14: Incentives to intensify supplier relations and technology transfer in Southeast Asia**

**Incentives for customers:** Large industrial firms in Malaysia receive tax relief of 5 % if they buy primary products from national SMEs. This incentive, though, has not yet been really successful since it presumably does not make up for the cost disadvantages of the suppliers.<sup>a</sup>

The Center-Satellite Factory System in Taiwan, in contrast, is considered to be quite successful. The System comprises a whole package of tax depreciation possibilities, subsidies and advisory services by public institutions. The underlying goal is to make supplier relations with SMEs more attractive for large firms.<sup>b</sup> Two reasons go to explain why this measure has had more success: first, greater competitiveness of Taiwanese SMEs, which thus become interesting business partners in the eyes of large firms and, second, the System combines incentives for customers with advisory services that strengthen the supply side.

The "Umbrella" Subcontracting Scheme in Malaysia intends to link up small suppliers with large marketing firms (umbrella companies). The latter have the expertise and funds necessary to support SME suppliers in the field of design, manufacturing, quality control, and marketing. In return, they are awarded public contracts without having to participate in bidding. The umbrella company receives a 5 % commission for its services.<sup>c</sup>

**Incentives for suppliers:** Suppliers in South Korea receive soft credit lines for process and product improvement as well as credit guarantees (linkage guarantee system). In addition, they are granted depreciation possibilities for investments in laboratories and control equipment, and they are exempt from stamp duties.<sup>d</sup>

Sources: a) Hoong (1992: 19); b) Dahlman / Sananikone (1990: 108-109); c) Meyanathan / Salleh (1994: 53); d) Meyanathan / Munter (1994: 11)

tions. Nonetheless, some countries and international organizations have adopted programs to encourage franchising as an instrument for developing SMEs. The government of Singapore, for instance, has formed a Franchise Development Centre and a Franchise Development Assistance Scheme. Malaysia's Ministry of Entrepreneur Development has created a Franchise / Vendor Division. In other countries multilateral (e.g. the ILO in Indonesia) and bilateral (e.g. USAID in South Africa and Russia) donors support the development of indigenous franchise systems. Measures to support franchising include

- organizing events for building awareness of the potential benefits of franchising and providing information about basic franchising principles, minimum requirements for entering a franchising contract, lessons learnt from existing franchising relations, etc.;
- reviewing the existing legal requirements regulating the franchising business. This includes national legislation on intellectual property rights and labor relations. To facilitate franchising operations the establishment of a one-stop franchising agency may be helpful;

- facilitating contacts between international franchisers and potential local franchisees, e.g. by way of organizing franchise fairs. In some countries such fairs are held annually,<sup>91</sup> providing an opportunity for will-be franchisees to compare different franchise systems and to receive information about financial and other support;
- encouraging and supporting the establishment of national franchising associations. Such associations exist in most large developing countries. Franchise associations may "provide a forum for the discussion of common problems, establish a code of ethics to protect the reputation of the franchise community, identify policy and regulatory concerns which can be raised with government agencies, distribute general information on basic franchise principles and franchise opportunities, and publicize successful franchise experiences;"<sup>92</sup>
- providing consultancy and training for potential franchisees during the initial phases of es-

91 The largest franchise fairs are taking place in the USA, France and Germany.

92 Henriques / Nelson (1997), p. 29.

tablishment of contacts, negotiation of contracts and setup of the new enterprise;

- helping to develop indigenous "SME-to-SME" franchises of the kind that have developed in some Asian countries (Chapter 2.1);
- providing finance for franchise operations. Due to the low failure rates of new firms using a proven franchise system, lending to such newcomers is less risky compared to other start-ups. In addition, the transaction costs of lending may be low if funds are channeled through large franchisers to a significant number of SMEs, taking into account that each franchiser will closely monitor the performance of his partners. In some countries development banks offer special credit lines to finance promising franchises (e.g. the Deutsche Ausgleichsbank in Germany) or guarantee a portion of private bank loans (e.g. the U.S. Small Business Association).

### 5.4.3 Promotion of Joint Ventures

As we have seen, the imposition of mandatory shared ownership has rarely led to the expected results. TNCs can be forced to take on local partners, but if the former are not really interested in a partnership, they will usually find ways to avoid the transfer (or, from their perspective, the leakage) of technologies and the dilution of control of their local operations. At the same time, the negative impact of legal requirements or other forms of host-country pressure may be considerable, since such measures may deter foreign companies from investing or at least induce them to cut back on the resources they commit to the local affiliate. Public policy and business associations should therefore rather promote voluntary joint ventures. In this respect, most countries offer support in three areas: information services for and coaching of (potential) joint venture partners; matching with foreign investors; and different forms of financial support.<sup>93</sup> Traditionally, promotion of

joint ventures has been a public-sector domain, especially in developing countries; yet it may be more efficient to leave implementation to business associations and private enterprises.

- *Information services and coaching* is the most important field of support. As we have seen, joint ventures are complicated partnerships. Different expectations and changing framework conditions often lead to conflicts between both parties, and many joint ventures fail. In order to minimize frictions and increase the success rate of joint ventures, a realistic assessment of benefits and risks is necessary at an early stage. Empirical evidence tells us that joint-venture partners, especially inexperienced SMEs from developing countries, often lack relevant information and the capability to foresee all the implications of a joint venture. Public agencies and private-sector associations may enable local candidates to identify their own strengths and weaknesses, assess the contribution expected from the foreign partner, and to negotiate favorable conditions. Even if negotiations have led to satisfactory agreements, it is often difficult to hold the joint venture together, because framework conditions and power relations constantly change. Coaching may therefore be necessary in subsequent stages of joint-venture development in order to match different corporate cultures or to help renegotiate the terms of cooperation.
- *Matching* of local and foreign companies is one of the traditional goals of investment-promotion agencies in both developing and industrialized countries, yet it does not seem to be a major problem. Many markets are sufficiently transparent so that foreign investors know quite well which local partners might complement them. Often the local counterpart had imported and distributed the foreign partner's products long before both parties decided to form a joint venture. Setting up databases and organizing journeys of potential foreign investors to allow them to meet inter-

93 The following part is based on interviews with practitioners of the Malaysian Industrial Development Authority

and the German Investment and Development Company and Hebigen (1999).

**Box 15: The *Comité de Empresas Trabajando en Calidad* in Toluca, Mexico**

The *Comité de Empresas Trabajando en Calidad* is a loose association of firms from the Mexican industrial town of Toluca, whose management and personnel directors meet once a month for an exchange of experience regarding the introduction of quality management and related measures. Meetings take place in turn in the firms involved. Management members report on their concrete experience with the implementation of new programs, which is illustrated during a tour of the firm. The focus is on problems and solutions in the fields of human resources and total quality management, e.g. new requirements to qualification and training measures, more responsibility for the workers, introduction of innovations like group work, suggestion schemes and statistical process control or the reorganization of wages and incentives.

The ILO initiated the first meeting. It helped to coordinate the meeting, work out a model scheme for the firms' presentations and took down minutes and comparative analyses. Since 1997 the meetings have been organized by the *Consejo Estatal de Productividad* in close cooperation with the firms.

The meeting, as a rule, is attended by 20 – 30 firms from differing branches of industry. These include SMEs, large Mexican firms and subsidiaries of transnationals. In most cases it is the large – foreign or national – firms that host the meeting and present their human resources and quality management concepts, while the majority of the other participants are representatives of local SMEs, who thus profit from an intense and free transfer of knowledge.

Source: author's observations and minutes of the ILO office in Mexico

ested local counterparts may be a helpful first step, but most practitioners feel that these matching activities rarely lead to the formation of new joint ventures.

- *Finance* may be a relevant problem where national capital markets are not sufficiently developed. Joint-venture projects often exceed the local SMEs' capital funds. Outside financing may be difficult to obtain because the rate of saving is usually low in developing countries, and venture capital is consequently scarce. Therefore newly established ventures are often undercapitalized, especially if the local partner insists on holding a majority share. Yet for viable projects, finance is rarely the relevant bottleneck. The problem of finance is therefore closely related to the ability to develop a convincing business plan. Instead of offering soft loans, public authorities should rather help interested SMEs to improve their joint-venture plans, leaving financial services to the private banking sector.

#### 5.4.4 Other policies to promote spillovers from TNCs to SMEs

Although private-sector firms are usually very careful to avoid any leakage of particular information which is part of their core competences, this does not apply to know-how concerning universal principles of industrial organization. Most TNCs are clearly ahead of local companies in fields such as human resources management, quality management, statistical process control, plant layout and logistics. As this knowledge is often not considered part of the specific set of (secret) core competences, TNCs may be quite willing to share this information, especially if they do not consider the local companies to be serious competitors in their field. Disseminating this kind of information among the local business community may even benefit the TNC, since it helps to improve their image as good corporate citizens.

Business associations, international donors or other intermediaries may promote and help to organize such a voluntary transfer of know-how. They may identify the TNC subsidiaries in their country or region that are leaders, and therefore interesting local showcases, in certain aspects of industrial organization, convince these firms to

share their experience with local companies, organize factory visits, and document and disseminate the respective experience among local companies.

Such a process is going on in Toluca, Mexico (Box 15). Organizing these events in a systematic manner and publishing the results in the local media may create an additional incentive for TNCs to participate, because their commitment to the local business community will thus become widely visible.

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