

UNITED NATIONS CONFERENCE ON TRADE AND DEVELOPMENT

# Integrating Developing Countries' SMEs into Global Value Chains



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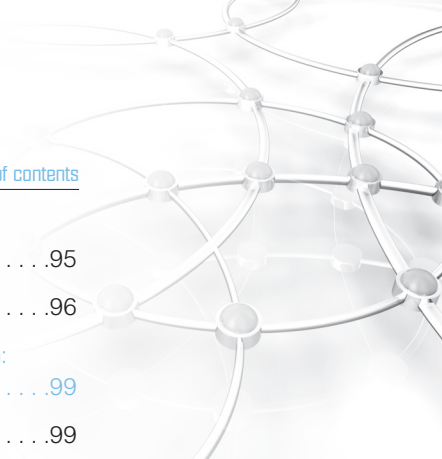




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# Preface

Entry into Global Value Chains allows small and medium-sized enterprises (SMEs) to participate in the global economy. Mapping Global Value Chains shows that these may vary in their structure and in their potential to benefit SMEs in developing countries. While some governments have formulated industrial policies and may promote certain economic sectors, they have been less supportive of SMEs, particularly in enhancing their role in the global economy. Nevertheless, there is growing awareness of the contribution of SMEs to income, employment and exports. A number of international organizations such as the Organization for Economic Cooperation and Development (OECD), the International Labour Organization (ILO), the United Nations Conference on Trade and Development (UNCTAD) and the United Nations Industrial Development Organization (UNIDO) have undertaken research and held expert meetings and ministerial conferences to highlight SME contributions and how governments can strengthen SME supply capacities.

This publication is a contribution to this effort. It focuses on what governments should do to facilitate the entry of SMEs into Global Value Chains and to ensure that they benefit from such participation. OECD and UNCTAD jointly undertook case studies of diverse Global Value Chains in the automotive, cinema, scientific and precision instruments, software and tourism sectors, in both developed and developing countries. In particular, UNCTAD developed six in depth case studies, contained in Part II of this publication, focusing on the automotive sector, the software sector and the cinema and audiovisuals sector. Despite wide differences in their structures, the influence of the lead firms, the degree of SME independence and their contribution to value-added, SMEs in these Global Value Chains unanimously agreed that there was a role for governments in two critical areas.

First, governments should do a better job in fostering skills development. Global value chains require that SMEs be both dynamic and innovative. This means they must be able to hire qualified workers with the right skills particularly, the right highly- specialized skills. Second, governments must enable SMEs to meet international standards. Here governments need to support the harmonization of diverse and burdensome product and process quality standards and also design financial measures and instruments to allow SMEs to invest in continuous innovation and technological upgrading.

I hope that this publication will raise governments' awareness of the need for effective policies and programmes that can maintain or increase SMEs' ability to enter and benefit from their integration in Global Value Chains.



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# Introduction

A value chain describes the full range of activities through which a good or a service passes from its conception to its distribution and beyond. This includes several activities such as design, production, marketing, distribution and support to the final consumer. All these activities can be contained within a single firm or divided among different enterprises; they can be contained within a single geographical location or spread over wider areas. A Global Value Chain (GVC) is a chain of activities which are divided among multiple firms in different geographical locations. GVCs cover a full range of interrelated production activities performed by firms in different geographic locations to bring out a product or a service from conception to complete production and delivery to final consumers (UNCTAD, 2006).

The acceleration of globalization, aided by the rapid development in information and communication technologies, improved transport facilities and tariff reductions, presents opportunities and challenges to small and medium-sized enterprises (SMEs). Participation in GVCs can give SMEs the opportunity to attain financial stability, increase productivity and expand their markets. Cooperation within a network of upstream and downstream partners can enhance a firm's status, information flows and learning possibilities; introduce new business practices and more advanced technology. On the other hand, SMEs' involvement in value chains demands greater managerial and financial resources, the ability to meet international standards and the protection of in-house intellectual property. To meet these challenges, even in developed countries SMEs need the support of their governments (OECD, 2007).

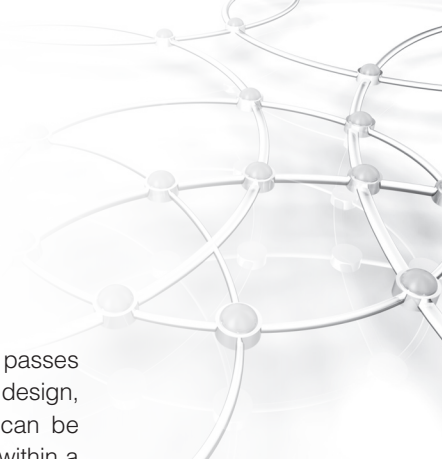
The Commission on Enterprise, Business Facilitation and Development requested UNCTAD to explore how developing country SMEs could be assisted to better integrate into Global Value Chains, thus enhancing their national productive capacities. Accordingly, a joint project, "Enhancing the Role of SMEs in Global Value Chains" was undertaken by UNCTAD in cooperation with the OECD Working Party on SMEs and Entrepreneurship and with Swiss partners at the University of Geneva and the University of Fribourg. The participants carried out a series of case studies which examined the role of SMEs in the GVCs of five different economic sectors and how this role could be enhanced. The findings were discussed by experts during the OECD Global Conference in Tokyo (2007) and at the UNCTAD's Expert Meeting on "Enhancing the Participation of Small- and Medium-Sized Enterprises in Global Value Chains" (2007). This publication presents the six case studies carried out by UNCTAD in developing countries in three of the economic sectors, namely automotive, cinema and software, and their findings, particularly the role governments can play.

The case studies were selected to cover different regions and sectors which were either emerging regions or a competitive sector in selected host countries. For the study, a questionnaire was used to capture information on the following issues:

- The awareness or understanding of the GVCs;
- Cooperation and types of linkages in GVCs;
- The relevance of technological skills, standards and intellectual property rights; and
- The role expected from governments.

The objectives of this publication are twofold. The first objective is to bring together in one place the findings relating to GVCs in six different developing countries and show their internal dynamics and how these dynamics influence the ultimate benefits to SME suppliers. The second objective is to present to governments a set of tested policy options to assist SMEs in developing countries to enter more easily and to reap greater benefits in the GVCs. Effective government initiatives require partnerships between the public and private sectors. It is therefore important for governments to open a dialogue with lead firms and the SMEs in the GVCs when formulating new policies.

Part I provides the analytical framework, including the characteristics of GVC, value mapping and the types of upgrading in value chains. It also summarizes the main findings from UNCTAD's case studies, and draws up conclusions and policy recommendations, pointing forward five important



issues which came up during all the presented case studies. Part II then presents the results of the case studies undertaken in the automotive components sector for Toyota in South Africa and Volkswagen in México. It analyzes the SMEs role in the GVC of the software industry through the case studies carried out for Microsoft in Egypt and for IBM in Viet Nam. Finally, it examines the role of SMEs in the global television value chain of Caracol in Colombia and in the global cinema production chain of Nu Metro in Nigeria.

## 2

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PART I

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# 1 / The analytical framework



## A. Characteristics of Global Value Chains

GVCs are an important unit of analysis for understanding enterprise competitiveness. The activities along GVCs may involve concept, design, production, marketing, distribution, retailing and R&D, and they might even include waste management and recycling. Depending on the industry needs, each link of the chain performs an activity, and different firms add value at each stage of the production or service process. New transportation, information and communication technologies have driven down the cost of accessing information and trading products and services and facilitate the spatial division of value chains. Accordingly, a certain production process can be located in a particular geographical area because of the location's competitive advantages. Among the economic determinants triggering the development of GVCs in developing countries, access to natural resources such as oil, mining and agriculture products is paramount. Additionally, several low-cost locations have integrated into GVCs in selected labour-intensive industries. In Asia, because of the possession of certain specialized skills and trained human resources, IT firms in India, and electronics firms in China, Taiwan Province of China, Malaysia and Singapore have successfully integrated into GVCs. Similarly, but to a lesser extent, in Latin America the existence of a cluster of competitive suppliers made it possible for domestic suppliers of automotive parts and components in Argentina and Brazil and electronics components in Mexico to become first-tier suppliers in GVCs.

Global value chains display different forms of coordination (or “governance structures”). The way in which the activities in the chain are coordinated varies considerably, not only between chains but also at different points in the same chain. A GVC can be “buyer driven” or “producer driven” (Gereffi, 1999). Buyers or producers coordinate or control the GVC process (box 1). Many TNCs have changed their role from being global producers to becoming global buyers and global coordinators, particularly in the buyer-driven chains (UNIDO, 2001, UNCTAD, WIR 2004, UNCTAD, 2006a).

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### Box 1. Buyer- and producer-driven value chains

*Producer-driven commodity chains are those in which large, usually transnational, manufacturers play the central role in coordinating production networks (including their backward and forward linkages). This is characteristic of capital- and technology-intensive industries such as automobiles, aircrafts, computers, semiconductors, and heavy machinery. Buyer-driven commodity chains refer to those industries in which large retailers, marketers, and branded manufacturers play the pivotal role in setting up decentralized production networks in a variety of exporting countries, typically located in the developing countries. This pattern of trade-led industrialization has become common in labour-intensive consumer goods industries such as garments, footwear, toys, housewares, consumer electronics, and a variety of handicrafts. Tiered networks of third world contractors that make finished goods for foreign buyers generally carry out production. The specifications are supplied by the large retailers or marketers that order the goods.*

Source: Gereffi, 1999.

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According to Humphrey (2003), “[...] large retail and branded companies such as Nike and Gap in clothing and footwear, and supermarkets within the food industry can exercise a decisive influence over GVCs without taking direct control of large parts of the production process and its associated logistics”. Due to the distribution of functions (R&D, production and marketing) or roles among different tiers of suppliers and distributors, SMEs from selected developing countries have managed to build up competitive advantages, which enable them to compete successfully in global markets. The challenge for SMEs is to determine how and where (in which niche markets) to position themselves so as to best reap the benefits of globalization. What they need in order to create competitive capabilities is the capacity to continuously upgrade their skills so as to increase their returns.

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In the past, comparative studies on the competitiveness of a given industry focused attention either on individual firms or on clusters, but it is now acknowledged that value chain relationships play a decisive role and that competitiveness does not concern only a single firm's performance but the entire chain's. Some firms increasingly lead their business partners upstream and downstream in the value chain. Their dominance arises from specific capabilities, mostly the capabilities to innovate, to create brands, or to coordinate the whole production process. This is evident in technologically rapidly changing industries such as IT and electronics, where there is a constant demand from transnational corporations (TNCs) – typically the lead firms – for SME suppliers to improve cost, quality, delivery and adaptation of production processes. On the other hand, there is also a pervasive pressure on TNCs to reduce the number of suppliers in the supply chain in order to increase effectiveness in coordination. Suppliers to GVCs, and particularly SMEs, can risk losing business if they are entirely dependent on one customer in the chain, or if a drastic fall in demand occurs in times of a crisis (box 2).

### Box 2. GVCs and SMEs during downturns

*For domestic SMEs, the participation in a GVC brings many potential advantages, such as transfer of know-how and technological upgrading, but it has also some downsides, mainly related to the economic dependence and power imbalance that may characterize GVCs. Downsides are aggravated during economic crisis, when big retailers and large producers stop or drastically lower their purchases, due to lack of demand, reduced access to finance, gloomy prospects and higher risk aversion. There are dramatic drawbacks for SME suppliers that risk losing their business if they are dependent only on one TNC customer. Thus, in a GVC, a crisis may lead to a domino effect: when the main enterprise is facing difficulties, its first tier suppliers are strongly affected too, while the second and third tier suppliers end up suffering from serious financial difficulties, threatening their survival.*

*Evidence shows that the 2008-2009 financial and economic crisis has hit the hardest those developing countries that are most dependent on external markets. This dependence can be measured by the export-to-gross domestic product (GDP) ratio, which for all developing countries, nearly doubled from 26per cent in 1995 to 51per cent in 2007, while for least developed countries (LDCs) it increased from 17per cent to 45per cent over the same period (UNCTAD, 2009). This has made it essential for both developing and least developed countries to develop stimulus packages to help boost the demand for domestic products, as well as to design strategies to reduce the vulnerability of the economies to external shocks. In general, the anti-crisis packages governments promoted are meant to address three main aspects: (i) stimulation of demand (ii) credit enhancement measures and (iii) labour-market measures.*

*Additionally, some governments have introduced ad hoc measures to help the domestic SME sector overcome the particularly difficult conditions brought about by the crisis. For example, the Mexican Government initiated a public purchases programme, according to which at least 20 per cent of the total of annual purchases of the Federal Government and its dependences will be bought from domestic SMEs. It also put in place a Productive Chains Programme, to prevent Mexican enterprises being dropped from GVCs because of their financial weakness. The South African Government, on the other hand, introduced targeted measures to expedite payments related to all outstanding incentive claims and to all public procurements involving small domestic suppliers. State- owned development finance institutions are also considering supporting SMEs through the following measures: (i) distressed lending, (ii) subsidized lending, (iii) pre-and-post non- financial support (OECD, 2009).*

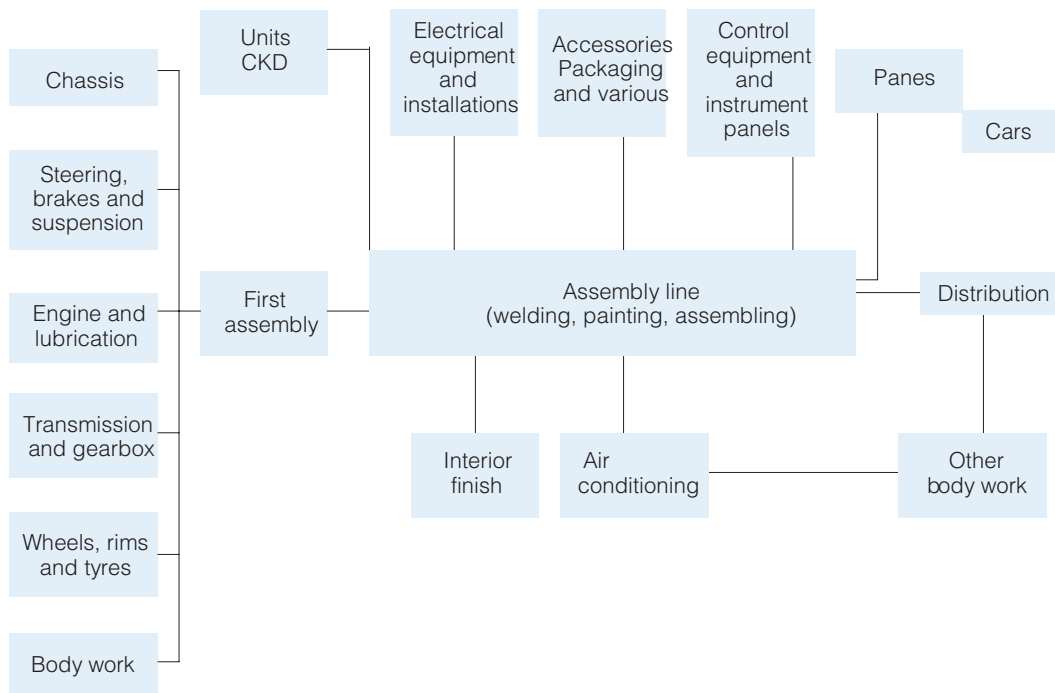
*Overall, governments should balance specific measures responding to the pressures of the present economic crisis with longer term plans for economic development and business support. UNCTAD's research highlighted for example that TNCs often take active steps to improve the capabilities of their suppliers, but they seldom progress beyond the first tier, neglecting SME suppliers in most developing countries. Therefore, in developing countries policies for suppliers' upgrading and TNC-SME linkages creation should focus on the integration of lower-tier suppliers in GVCs (UNCTAD, 2007).*

Source: UNCTAD, 2007; UNCTAD, 2009; OECD, 2009.

## B. Value mapping

Specialists conduct the analysis of value chains by drawing a map which provides an illustration of the flows of goods and services within the chain. Mapping can also illustrate the relationships between different value chains. Depending upon the nature of the analysis the focus of value mapping may comprise different aspects of the chain such as firm size, value added, or geographical distribution. In addition, mapping is very useful in order to highlight the relevant governance structure for a specific value chain. Mapping a value chain is usually divided into stages. Three examples below provide an illustration of different stages of value chain mapping in selected industries showing their diversity and complexity.

Figure 1. Colombia – supply chain for the automotive industry



Source: Departamento Nacional de Planeación, 2005.

First, it is necessary to draw an initial map of the supply chain including all activities and production processes carried out locally. Figure 1 shows the value chain of the Colombian automobile industry and gives some initial indication of the local suppliers' size and importance. The map groups activities into different chain links, consisting of relatively homogenous products in terms of their technical characteristics of production such as common raw materials, intermediate products or products sharing similar production technologies. The map and related tables based on a detailed survey provide information on each segment's contribution to value added, employment and exports.

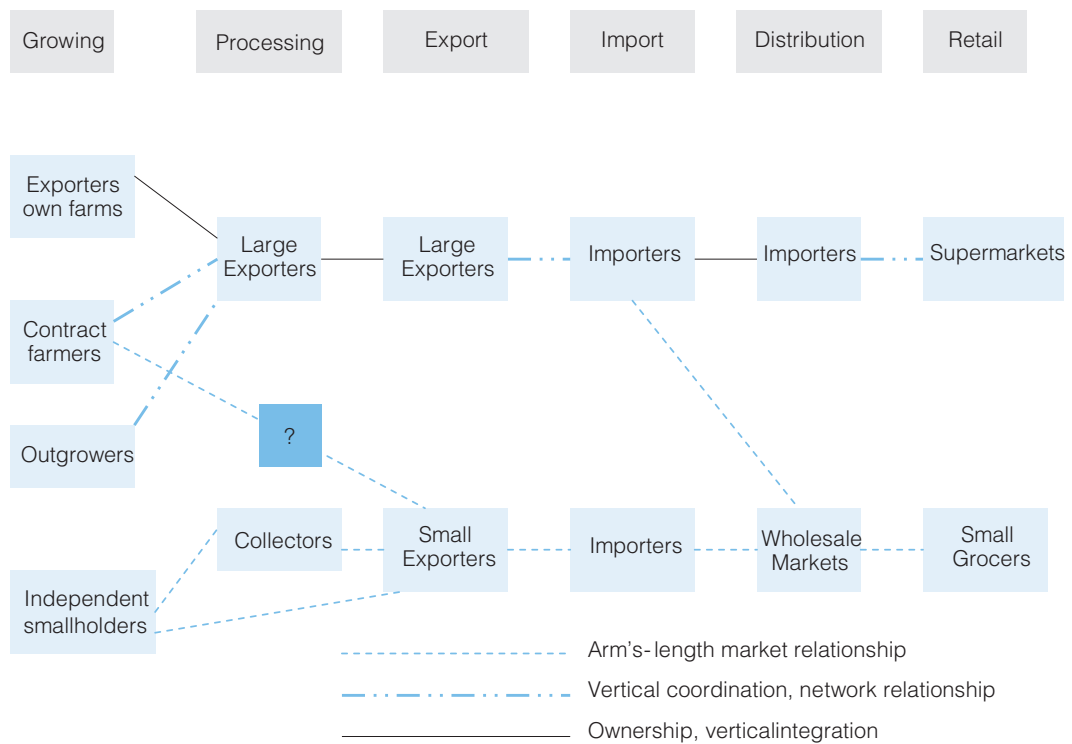
According to the survey, in Colombia the most important chain elements of the automotive industry with respect to job creation are breaks, engines and electrical equipment. The largest value-added contribution to the chain originates from car assembly, which generates about 61 per cent of the total output value. The largest contributor to exports comes from tires and transmissions (Departamento Nacional de Planeación, 2005). The supply chain map, however, does not provide information on the connection of local suppliers to global producers. According to a recent analysis of the global automotive industry, there is a targeted restructuring aimed at a consolidation of critical technology expertise, production capabilities and capital access provided by global suppliers (Centre for Automotive Research, 2006). A small number of global suppliers develop local networks of second- and third-tier subcontractors, leading to supply chain improvements and upgrading. They act as anchor companies and systems integrators, playing an important role between individual vehicle manufacturers and a whole network of suppliers. For example, there may be anchor companies that pull together transmissions and drive trains and others that pull together engine components,

fuel injection pumps, engine electronics, and exhaust and emission controls. It is therefore important to complete the information gathered locally, mapping the connections between local Colombian subcontractors and global suppliers.

The second stage of value mapping draws the local supply chain connections to activities elsewhere and their connection to final markets. Figure 2 shows, for example, the structure of the fresh vegetable trade between Kenya and the United Kingdom. Until the mid-1980's, trade in this sector was handled through a series of arm's-length market relationships and there was little vertical integration. However, the shift in the business strategies of supermarkets based in the United Kingdom transformed the supply chain into a vertically-integrated structure. The changes were driven by market demand for fresh vegetables, quality standards (including also safety, environmental and labour standards) and the provision of a year-around supply. All these developments required tight coordination and control of the value chain (Gereffi et al., 2003).

United Kingdom supermarkets developed closer relationships with United Kingdom importers and African exporters and strengthened their overall control over the value chain by regular monitoring (figure 2). More rigorous incorporation requirements and standards for suppliers in the product chain led to a reduction of the number of suppliers and upgrading of the selected partners. As a direct result, the stake of smallholders that traditionally represented the backbone of the Kenya export horticulture trade had decreased significantly by the late 1990s.

Figure 2. Kenya-United Kingdom fresh vegetable value chain

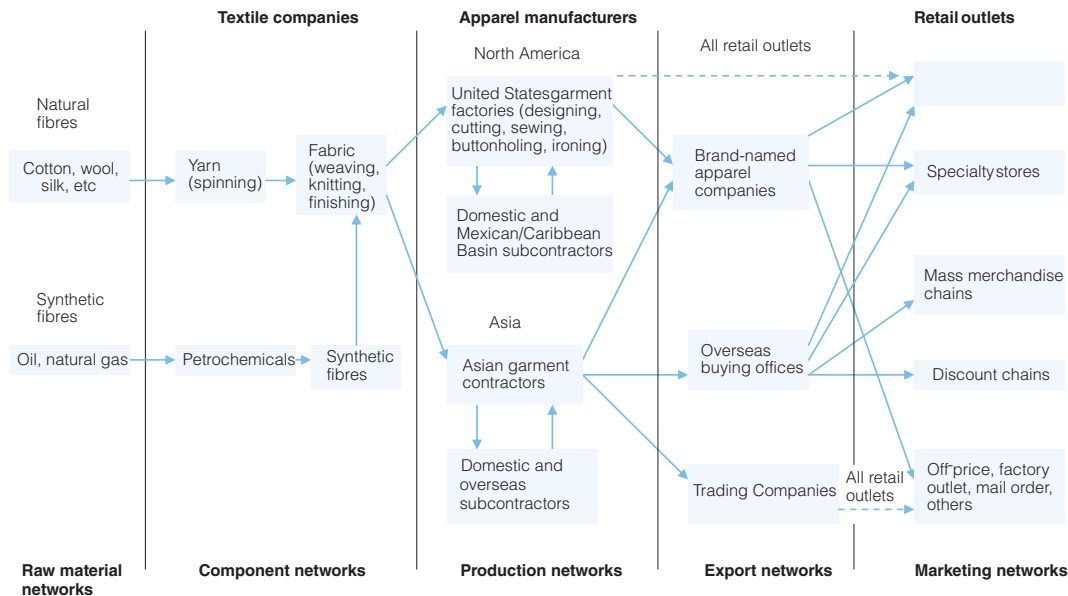


Source: Humphrey, 2003.

The third stage typically includes the mapping of a GVC including the location, type of activities, and buyers' and producers' relationships. Apparel is a good example to illustrate the dynamics of a buyer-driven value chain (figure 3). Large companies like Nike, Gap or Limited Inc. coordinate and may control a decentralized production network, typically located in developing countries. In the apparel industry, the physical production of goods is usually separated from the design and marketing, and distribution. The apparel value chain can be divided into five main parts: raw material supply, including natural and synthetic fibres; provision of components, such as the yarns and fabrics manufactured by textile companies; production networks made up of garment factories, including their domestic and overseas subcontractors; export channels established by trade intermediaries; and marketing networks at the retail level. Some chains in the textile and garments sector are truly global, with activities taking place in many countries in different locations. In the case of garments,

this may mean that design takes place in London, Milan, Paris, New York or Tokyo, fabric is sourced from China, trim and other inputs may be made in India, and assembly may take place in Mauritius or other low-cost locations. Globally dispersed production requires very careful planning and management. Some chains can be vertically integrated. For instance, a study of the silk sub-sector in Thailand revealed that the modern Thai silk chain consisted of a single vertically integrated firm that was involved in all activities from silk worm research to retailing the final product (Humphrey, 2003).

Figure 3. Global value chain for textile and apparel



Source: Gereffi and Memedovic, 2003.

### C. Types of upgrading in value chains

The performance improvement of all the firms participating in a GVC requires changes in the nature and mix of activities carried out in each link in the chain and the relationships among firms. These changes cover process, product, functional and chain upgrading.

**Process upgrading** aims at increasing the efficiency of internal processes. It includes both processes within individual links in the chain (e.g. increased inventory turnover, lower scrap) and between the links in the chain (e.g. more frequent, smaller and on-time deliveries). Empirical evidence shows a variety of relevant learning processes among suppliers in GVCs (UNCTAD, 2001). For example, the dissemination of business concepts and standards such as ISO 9000, ISO 14000, “good manufacturing practice” (GMP) and “good agricultural practice” (GAP) among firms serving GVCs has largely been triggered by a combination of pressure and support from the lead firms. Successful adoption of such standards is an important means of industrial upgrading, one that in part protects firms from lower-cost competitors who are not able to comply with these standards. For example, Nestlé has helped local suppliers in developing countries to meet better standards in agricultural produce, offering training and technical assistance in field care, post-harvest practices, storage and transportation.

**Product upgrading** includes the ability to produce components or retail new or more competitive products developed by lead firms. Distributional and after-sales services are among the activities most frequently transferred within GVCs (e.g. automobile dealers, gas stations, restaurant chains, travel agencies, drug stores, and courier services). Outsourcing these activities implies considerable advantages for downstream partners, mainly because they can rapidly cover extensive markets while minimizing risks and investment in distribution channels. The local distributor thus benefits from the use of an established brand name, a proven business concept and the transfer of knowledge from the brand owner. This greatly reduces the risk of failure for the local firms, particularly SMEs. However,

the local partners remain highly dependent on the brand owners. In some cases, the local SME is forced to pay substantial fees and royalties for using the partner's brand name and business concept. Product standards are also more and more often enforced through value chain relations, given that the final producer or distributor of the product is held accountable for compliance and thus takes a strong interest in assuring compliance at previous stages of the value-adding process.

**Functional upgrading** seeks to increase the value added by changing the mix of activities conducted within the firm (e.g. taking responsibility for outsourcing accounting, logistics and quality functions) or moving the locus of activities to different links in the value chain (e.g. from manufacturing to design). Original brand manufacturers in the area of IT and electronics in a number of developing countries have been able to perform complex functions in GVCs because of the critical mass of skilled enterprises and human resources in these countries. For instance, General Motors, HP-Compaq, Nortel, and Sony have outsourced IT services to Wipro in India; Eli Lilly and GSK Pharma outsourced pharmaceutical functions to Shashun Chemicals, India; and Bharat Forge, India has been performing engineering for Caterpillar, FAW (China), Ford, Meritor, and Toyota (IBEF, 2007). Some SMEs became global suppliers or even TNCs in their own right through functional upgrading in a GVC (box 3).

**Chain upgrading** creates opportunities for suppliers that have developed competencies and skills to move to a new value chain. For example, firms in Taiwan Province of China gradually moved from the manufacture of transistor radios to calculators, to TVs, to computer monitors, to laptops and now to WAP phones.

## 8

### PART I

#### Box 3. ENGTEK Malaysia: From a backyard business to a global supplier

*Eng Technology Holdings Bhd. (ENGTEK), which started as a Malaysian SME in 1974, is today a global supplier for the computer hard disk drive and the semiconductor industries. The firm has grown from a no-name SME to a high-precision manufacturer that supplies competitive, quality value-added products and services to several large TNCs in the electronics industry. The company grew up in a policy environment conducive to enterprise development. Under Malaysia's Vendor Development Programme, TNCs were encouraged to assist local suppliers to become competitive at the global level. Thanks to this programme, ENGTEK has engaged in closely knit partnerships with TNCs. For example, Intel provided financial as well as technical assistance needed for the company to produce semi-automated wire bonders in 1981. With partners such as Advanced Micro Devices, Bosch, Fujitsu, Hewlett Packard, Maxtor, Readrite and Seagate, ENGTEK has been involved in designing products, bringing in its specific experience in product development and gaining a competitive edge vis-à-vis potential competitors. As a first-tier supplier, ENGTEK has been able to link up to the global production systems of its TNC clients, moving up the value chain over time. The company later diversified its portfolio of partners and products to reduce risks. It widened its range of products, for example from precision tools to the manufacturing of disk-drive components. It developed its own technology for original equipment manufacturing and achieved original design manufacturing capabilities, which further reduced its dependency on any particular foreign affiliate. It has also invested abroad to improve its competitiveness.*

Source: World Investment Report, 2001, pp. 129-130, and [www.engtek.com](http://www.engtek.com).



## 2 / The UNCTAD-OECD-University of Fribourg Research Project on GVCs



### A. The context

Although several aspects of GVCs are now better understood by policymakers, notably the key drivers and governance structure, the impact on SMEs in both developed and developing countries has not yet been thoroughly researched. To shed light on these issues, a joint research project was conducted by the OECD Working Party on SMEs and Entrepreneurship, UNCTAD and the University of Fribourg, entitled “Enhancing the participation of SMEs into Global Value Chains”.<sup>1</sup>

The project’s key objective was to present a set of policy options to assist both developed and developing countries in better integrating their SMEs into the global market. The policy recommendations provided in the following chapter are drawn from the Tokyo Action Statement endorsed by OECD member countries at the Global Conference on Enhancing the Role of SMEs in GVCs, Tokyo, in May 2007. They are also drawn from a series of case studies carried out by UNCTAD between 2005 and 2007, analysing the opportunities and constraints facing the local suppliers of TNCs operating in selected industries in developing countries.

The findings of the case studies are industry specific as they are influenced by the industry structure, the stages of industrial development and the procurement strategies of the lead firms in the industry. Therefore, they cannot be generalized. However, they provide useful information about suppliers to transnational corporations (TNCs) in developing countries and indications of their needs, and may thus help identify key policies for enhancing SMEs’ role in GVCs.

### B. Research outputs and methodology

The outputs of the joint research project consisted in the definition of a theoretical framework, the creation of a case study template, the field research on the role of SMEs in the GVCs of five different economic sectors (namely software, automobile, creative industries, scientific precision instruments and tourism) and how this role could be enhanced, and a final synthesis report (OECD, 2007a). Within the project, UNCTAD specifically developed six in depth enterprise case studies, contained in Part II of this publication, focusing on the automotive sector (i.e. Toyota in South Africa, Volkswagen in Mexico and Tata Motors in India), the software sector (i.e. Microsoft in Egypt and IBM in Viet Nam) and the cinema and audiovisuals sector (i.e. Caracol in Colombia and NuMetro in Nigeria).

Overall, the project undertook seventeen country/industry case studies and six in-depth enterprise case studies: the companies and sectors were selected to cover different regions and on the basis that they were either an emerging or competitive sector in selected host countries.

To shed light in the selected sectors, data were gathered from two main sources: structured interviews with a limited number of large enterprises and their upstream and downstream partners for each selected industry; and country studies conducted through in-depth interviews based on a questionnaire with a representative group of SMEs in the selected industries that explicitly or implicitly act as suppliers and/or distributors in Global Value Chains.

For the enterprise case studies, the questionnaire prepared was used to capture information on the following core issues: (a) the awareness or understanding of GVCs; (b) cooperation and types of linkages in GVCs; (c) the relevance of technological skills, standards and intellectual property rights; and (d) the role expected from governments. These issues were covered through in-depth interviews

<sup>1</sup> The Government of Switzerland through the Geneva International Academic Network (GIAN/RUIG) funded the research.

with 10 to 15 suppliers in each selected TNC. The case studies were carried out by researchers from different types of institutions, namely ministries, universities, and research institutes. Their findings are summarized in the following sections.

## C. Analysis of UNCTAD's case studies

### 1. The automotive components sector

The automotive components sector is shaped by the development of GVCs. Several TNC car manufacturers use SMEs in developing countries as sources for automotive components. As TNC car manufacturers gain access to new markets, existing SME suppliers in developing countries will need to adapt to the demands of the international large manufacturers. The overall trend in automotive manufacturing is one of consolidation. TNC car manufacturers have significantly reduced the number of suppliers in order to improve their competitiveness. They increasingly rely on a limited number of first-tier suppliers who are able to provide auto components on a global scale at "original equipment manufacturing" (OEM) standards (UNCTAD, 2001). As this sourcing trend continues, first-tier suppliers increase in scale and become TNCs in their own right (Jürgens, 2003). This change has created a new dynamic in the industry and smaller local suppliers are forced to adapt.

The following section summarizes the highlights of the case studies for Toyota in South Africa and Volkswagen in Mexico.

#### **South Africa**

Toyota has been South Africa's largest vehicle producer for some time, enjoying preferential access to local consumers thanks to the existence of high import tariffs. After South Africa's trade liberalization programme, which accelerated in 1994, a more open policy environment sought to encourage exports. However, Toyota South Africa (TSA) only recently began to explore export opportunities and joined Toyota Manufacturing Corporation's global sourcing system. This shift has allowed TSA to substantially increase its production. TSA established a plant to manufacture two models, Hilux and Corolla.

A key aspect of the restructuring process has involved increasing local value added. As the plant has shifted from producing seven different models, at relatively low volumes, to essentially two models at high volumes, it has managed, in some areas of the supply chain, to secure greater value added due to the high-volume component orders. All firms attested to growing levels of competition, in some cases facilitated by TSA seeking new suppliers that could meet more stringent technology, investment and quality standards. Most firms identified the most substantial competitive threats coming from either imported alternatives or from relocating transnational suppliers or their affiliates that owned original product or production technology. Even the two transnational-owned firms reported that it was not uncommon for operations within the same group, but located in different places, to compete for supply contracts. In this context, previous technology agreements have lost relevance.

SMEs felt that government should pay more attention to skills development, immigration policy, investment incentives, technology development and labour law reforms. The bulk of the firms interviewed also believed that the Government should support interfirm collaboration. In particular mechanisms such as the Benchmarking Club, put in place to reinforce the Durban Auto Cluster (DAC), could be replicated.

#### **Mexico**

Volkswagen represents the second-largest car manufacturer in Mexico, following Nissan. Among the local suppliers interviewed, no local SME has been able to leverage its link to GVCs as a springboard for its own internationalization. In fact, these SMEs do not possess any specific competitive advantage in terms of technology. In addition, their ability to finance the internationalization process is very limited, as they barely manage to undertake the necessary upgrading in order to keep pace with the higher demands of their customers. Almost all the businesses interviewed confirmed

that in Mexico the competition is high due to the decentralized operation schemes of TNCs. Large firms declared that in most cases they import inputs from abroad and add little value to their products locally. However, a few of them, namely FTE Mexicana and Johnson Controls, argued that they help their suppliers to increase the value added of local inputs.

In addition, some TNCs mentioned that in order to help SMEs increase their participation in GVCs, support measures have been added including research facilities, support for certification, credit financing and training for export development. Finally, TNC managers expressed appreciation for the creation of a new industrial park in the vicinity of the Volkswagen Puebla plant, as well as three other parks established in the nearby state of Tlaxcala, where a large number of domestic suppliers are located. Volkswagen's network of suppliers in Tlaxcala encompasses 56 second- and third-tier suppliers, of which more than half are SMEs, employing almost 15,000 workers.

### ■ Findings from the case studies

The case studies reveal that many independent local suppliers have not managed to either link with global sourcing partners or upgrade their own capabilities to reach OEM standards. While this inability has left some local SMEs behind, opportunities to become local suppliers in second-tier sourcing have emerged. To seize these opportunities, local suppliers need to respond to the expectations of TNCs and their OEM partners in terms of quality, supply and delivery times. As a whole, SMEs in the automotive components industry need to continue to upgrade their operations to maintain competitiveness both domestically and internationally.

The lead firms examined in the case studies, Toyota and Volkswagen, work closely with their first-tier suppliers with the consequence that these end up being overly specialized and dependent on the lead firms. Volkswagen represents the second-largest car manufacturer in Mexico while Toyota has been South Africa's largest vehicle producer for some time, enjoying preferential access to local consumers thanks to the existence of high import tariffs. While both lead firms have a "hands-on-policy" or demand a commitment to the "Toyota way", auto components constitute a small part of the final sales price and the contribution of suppliers is marginal. Nevertheless, in the words of one supplier: "they want the design and engineering brains on tap, not just world-class components". Thus, the first-tier suppliers must become "total solution providers". This stiff requirement could explain the displacement of the domestic firms from the first-tier by global suppliers.

The "hands-on-policy" extends only to the first-tier suppliers and the second- and third-tier remain out of the loop in terms of information and transfer of technology. In Mexico, for instance, among the local suppliers interviewed no local SME in the second- and third-tiers has been able to leverage its link to GVCs as a springboard for its own internationalization.

Suppliers in both countries complained that their role in GVCs was further limited by three factors: lack of appropriately skilled labour, lack of infrastructure, particularly roads and electricity, and lack of finance to upgrade operations to meet international standards. In fact, these SMEs do not possess any specific competitive advantage in terms of technology. In addition, their ability to finance the internationalization process is very limited, as they barely manage to undertake the necessary upgrading to keep pace with the higher demands of their customers. Almost all the businesses interviewed in Mexico confirmed that the competition is high due to the decentralized operation schemes of TNCs that declared that in most cases they import inputs from abroad, adding little value to their products locally.

## 2. The software sector

Software encompasses a vast array of products and applications. Many software products have a very low weight-to-value ratio, which allows the relatively easy global relocation of segments of the production chain in different locations. In addition, control over technical standards is a critical factor that drives the development of GVCs. Leading firms can set standards which can lock in customers to their product lines. Software is also closely linked with telecommunication services, particularly with mobile phones and wireless. The software sector is made up of many SMEs with a few big

players. These SMEs, particularly start-ups, typically employ less than 50 workers. The key factors for attracting foreign direct investment (FDI) in the software sector are the size of the domestic market, the availability and scalability of the pool of skilled workers, and the types of existing software clusters.

The following section summarizes the highlights of the case studies for Microsoft in Egypt and IBM in Viet Nam.

### **Egypt**

In Egypt, the software industry has specialized in two areas: (a) firms that translate standard software products of leading brands into Arabic, including adapting the user interface; and (b) firms that offer a comprehensive support package to users of standard software in the region. This includes not only introducing and maintaining new software generations but also running call centres that support users of standard software, in particular the Microsoft product range. Egypt has many advantages as an offshore destination. The country is in the same time zone as Europe and boasts fibre-optic telecommunications with easy access to a very large telecommunications bandwidth that is needed for outsourcing. Skills are available and labour costs are competitive. In addition, the software development market in the Middle East is growing very fast. The market is large enough to warrant custom applications and Arabic versions of major international software packages for users in Egypt and most of the Middle East.

Egypt dominates the regional market. More than 80 per cent of software development in the Middle East is performed by Egyptians either from Egypt or based in the Gulf. Competition among local companies is strong and drives a constant upgrading process, which has ultimately allowed some companies to attain the highest level of Microsoft's system accreditation. The case study shows that Egyptian partners have benefited from their association with Microsoft and they have leveraged that partnership to enter the Gulf market. Egyptian support partners are also serving Microsoft globally. However, many Egyptian firms lack the maturity to compete globally. Continued progress in software technology has also raised complex public policy issues such as access to information, national sovereignty and security, law enforcement and protection of the private sphere. In addition, the interviews highlighted the need to:

- a. Establish a strong education system accompanied by ongoing vocational training in the private sector;
- b. Initiate the build-up of clusters through science and technology parks with competitive tax and financial benefits for all firms, large and small alike; and
- c. Create strong, formal linkages between national innovation and education systems within the country and with "best practice" international institutions.

### **Viet Nam**

In 2006 the Viet Nameese software industry had 720 enterprises with 25,000 workers. Foreign hardware producers usually have a limited ability to understand or solve local user problems. Viet Nam was in an excellent position to remedy this deficiency. As a result the software sector is growing rapidly with government support. Viet Nam's telecommunication sector has experienced the fastest rate of growth in the world. The average annual growth rate of cell phones between 2000 and 2005 was 62.7 per cent. Infrastructure is reasonably well-developed. Satellites and fiber optic cables allow fast connections but high prices and lack of public awareness limits their use. In the Networked Readiness Index, developed by the World Economic Forum, Viet Nam ranked 75th out of 115.<sup>2</sup>

As evidence of the Government's commitment to IT development, it is using it extensively. Viet Nam was ranked 105th out of 191 in terms of the E-Government Index.<sup>3</sup> Viet Nam is also a major site for the manufacture of hardware. The hardware market is much larger than its software market; the two combined were valued at \$1,400 million in 2005 (Trade point Hanoi Report, p. 21). Intel

<sup>2</sup> The Index measures a country's readiness to join in and benefit from the development of ICT.

<sup>3</sup> The Index measures the competence and readiness of each country in building e-commerce based on the development of ICT

invested \$1 billion in a factory to assembly and test E-chips (ATM). Other TNCs also have invested in operations in Viet Nam such as Samsung, HP, Acer, Cowon and IBM.

### ■ Findings from the case studies

Global software firms are the fastest growing in the world and often the most dynamic in terms of product and process innovation. They also provide the impetus for the growth of other sectors. Among developing countries, the main exporters of high technology and information products and services are Brazil, China, India and Mexico. Egypt and Viet Nam have the potential to join these ranks. The situation of ICT suppliers was similar in both countries examined in the case studies. Egypt and Viet Nam have thousands of software suppliers, some of which are partners with either Microsoft or IBM.

Transnational hardware producers and computer systems producers have been outsourcing software development to developing countries with highly qualified labour forces and proximity to emerging markets. Both IBM and Microsoft have very structured supplier development programmes which confer many benefits. These programmes are much more intense than the “hands-on-policy” seen in the automotive sector. Partners receive training and transfers of technology. They also have the opportunity to become global suppliers or at least regional ones. The case study shows that Egyptian partners have benefited from their association with Microsoft and they have leveraged that partnership to enter the Gulf market. Egyptian support partners are also serving Microsoft globally. In Viet Nam, a number of SMEs have become part of IBM’s GVC. As part of its GVC they help launch and distribute products and provide follow up services. In order to integrate its suppliers into its GVC, IBM has developed a programme called “PartnerWorld”. It has three different levels. At the highest level, “Premier” partners can access data, create proposals, engage in product development, obtain certifications, participate in training and network with other business partners. The Viet Nameese partners provide their clients with IBM software services and solutions; these include banks, enterprises and the Government. Other partners distribute hardware including servers.

Participating in the TNC’s GVC enhances the prestige and credibility of the SMEs making it easier for them to expand. It also makes continuous upgrading easier as they have access to the TNC’s technical staff and training. Thus, transfers of technology are more likely. However, since they are selling or adapting established products and services, genuine innovation is still in its infancy. Competition among local companies in the software sector is strong and drives a constant upgrading process, which has ultimately allowed some companies in Egypt to attain the highest level of Microsoft’s system accreditation.

The Governments of Egypt and Viet Nam have been very supportive of this sector in terms of having explicit IT policies and investing in IT parks. SMEs have also benefited from the expansion of the fiber optic cable system. However, many firms lack the maturity to compete globally. SMEs complained about the lack of appropriately skilled labour and the need to help SMEs to become “partnership ready” in terms of improved management and technical capabilities if they were to enhance their role in GVCs.

## 3. The cinema and audiovisual sector

The major studios in the creative industry simultaneously engage in four distinct business functions: financing, producing, distributing, and marketing and advertising of their film and television assets. Despite the dominant position of major Hollywood filmmaking studios, many SMEs are essential to the industry’s operation, occupying important niches in the filmmaking and distribution process. From top to bottom, the process is contract driven. These contracts allow large and small enterprises to interact, usually on a project-by-project basis, and to opt out *ex ante* under normally well-defined stages and conditions.

The following section summarizes the highlights of the case studies for Caracol in Colombia and NuMetro in Nigeria.

## **Colombia**

Colombia is one of the important suppliers of “telenovelas”, a television series format that has become popular in many countries, not only in Latin America. The popularity of these soap operas has contributed to the emergence of an audiovisual production industry in Colombia that generates what has been defined as a “highly sophisticated demand” (Porter, 1990). Companies interviewed in Colombia indicated that demand conditions from foreign customers are more stringent than local ones, and that there is a strong rivalry among local providers. The presence of a sophisticated demand is an important driver in the upgrading process of Colombia’s value chain in audiovisual production.

3-D animation producers in Colombia act as first- or second-tier suppliers in the value chain. They are first-tier suppliers in the case of advertising agencies and national television channels, and second-tier suppliers in the case of post-production firms and national film producers. 3D-animation firms are fully independent regarding their choice of their own suppliers and production processes. Only in one case, a major United States-based television channel recommended the use of a supplier based in Brazil, but it was a recommendation rather than an obligation.

The level of interaction between clients and 3-D animation producers varies according to the type of client. Cluster development is occurring based on inter-firm cooperation and on geographical proximity. Among the key policy issues identified by firms interviewed are:

- a. Promotion of local talent (most training for 3-D animation is provided by private universities and institutions, a major restriction for talented people who cannot afford high tuition);
- b. Tax reductions or credit facilitation for the acquisition of technology (hardware and software), since their end products are exported;
- c. Lessening of visa restrictions imposed because of security issues, which hamper managers’ business travel; and
- d. Facilitating employment of temporary foreign workers to benefit from their specialized skills.

## **Nigeria**

SMEs are important players in the Nigerian film production and distribution industries. The country is the third-largest film producer after the United States and India, and the sector is dominated by SMEs. The diffusion of digital and communication technologies in the 1990s has accounted for its fast growth. Approximately 30 new titles are diffused every week and an average film sells around 50,000 copies. A hit movie may sell several hundred thousand copies, at an average price of \$2 each, which is affordable for most Nigerians and allows producers to make a good return on investment. Currently, around 300 producers release between 1,000 and 1,500 movies per year. Nigerian directors are known to adopt new technologies as soon as they become available at an affordable price.

The case study investigates the Nigerian branch of a South African media company and the emergence of a Nigerian movie cluster called “Nollywood”, which draws on a number of native Nigerian movie stars. The Nigerian movie industry caters primarily to the local market, since movies are shot in different local languages, but English-speaking films are becoming increasingly popular. Movie content includes some of the usual types, such as romance, but also some more idiosyncratic, such as voodoo. The main distribution channels are videocassettes and video CDs. More recently, a South African media corporation, which holds the local monopoly for Hollywood movies, has entered the market. It runs the Hollywood movies on a small number of screens in shopping malls and distributes them on DVDs. The Nigerian Government encourages this corporation to support local movie producers. The company interviews revealed that the following bottlenecks are hindering SMEs: (a) lack of funding; (b) lack of organized industry and business associations; (c) inadequate skills and lack of professionalism; (d) lack of infrastructure; and (e) a weak distribution system.

Piracy is also a concern. The Government of Nigeria has committed to institutional strengthening of intellectual property protection. Key initiatives include increased funding for organizations such as the Nigerian Copyright Commission, the National Film and Video Censors Board, the National Broadcasting Commission and the Nigerian Film Corporation. The Minister of Information and National Orientation has created a fund for non-commercial films. However, these relatively recent initiatives will take time to develop positive results.

### ■ Findings from the case studies

The television industry has undergone profound changes on the distribution side since the 1980s with the advent of satellite and cable television, which facilitated the proliferation of channels. This has spawned numerous local providers that distribute the media products. More recently, an important change was the move from analogue to digital formats in terrestrial satellite and cable distribution. For television providers, this is both a blessing and a curse. While it offers economic advantages, it also leads to an integration of “traditional” television distribution channels with more recent channels such as the Internet.

New technologies have also allowed the production of “realistic” animated movies, opening new options for production and post-production of conventional movies, for instance through the combination of human actors and animated scenery. This has changed the structure of the value chain in cinema and TV, and created opportunities for new, specialized entrants.

The GVCs in this sector are labour intensive as compared to either the automotive or software sectors. Upstream participants are extremely independent. However, with the changes in technology described above, downstream activities such as distribution are seeing many new entrants. Trust among the participants is important in a sector where short term contracts are the rule. Such contracts also facilitate fierce price competition. While some Governments such as Nigeria have started film villages, basic infrastructure including electricity is still a big problem. In Colombia the sector, as the entire economy, suffers from the political instability. Suppliers in both Colombia and Nigeria cited the lack of skilled labour as a limiting factor.





# 3 / Conclusions and policy recommendations



## A. Findings of the research project

The joint UNCTAD-OECD-University of Fribourg research project provided useful insights in identifying priority areas for government intervention. There are obstacles that affect SMEs' ability to enter GVCs both in developed and developing countries. These include: (a) the need to upgrade technology and innovation capacity; (b) the lack of adequate finance and human capital for this process; (c) the inability to meet standards and certification requirements; (d) the necessity to better manage intellectual assets, including the protection of intellectual property rights (IPRs) when appropriate; (e) the difficult bargaining position SMEs face with large contractors; and (f) the need for diversification to reduce dependence on one or a few customers (OECD, 2007a). The table below highlights the policy issues which emerged from the case studies carried out by UNCTAD, summarized in the previous section.

**Table 1. Survey results: key issues and main areas for policy intervention**

Key issues	Main areas for policy intervention	Specific examples from case studies
Lack of adequate skills for SMEs	Skills and human resource development	<b>Microsoft- Egypt</b> SMEs have underlined the need for a larger pool of qualified human resources, requiring a focused effort by the Government in higher education.
		<b>Caracol-Colombia</b> SMEs would like to have greater promotion of local talents and to receive support in the promotion of English language skills to facilitate companies' linkages with international television channels and networks.
Low compliance with international standards	Technological upgrading	<b>IBM-Viet Nam</b> SMEs are concerned with the slow implementation of the information and communication technology (ICT) development plan.
		<b>Toyota-South Africa</b> SMEs are concerned about their ability to upgrade and to deliver products and production systems that are in line with Toyota expectations in terms of quality, supply standards and delivery times.
Lack of quality assurance	Certification standards	<b>Volkswagen-Mexico</b> Volkswagen is imposing increasingly stringent quality requirements. Local SME suppliers (especially second and third tier) need support to meet global quality standards.
		<b>IBM-Viet Nam</b> Local companies need to be certified to become first tier suppliers. Government support is needed to help second tier suppliers enter the group of first tier.
Scarce integration of domestic suppliers into GVCs	TNC- SME linkages	<b>Volkswagen-Mexico</b> SMEs would like to be represented in the bargain.
		<b>Nu Metro-Nigeria</b> SMEs suffer from lack of basic infrastructure, which has led to high costs of doing business. Promotion of FDI, local investments and tax breaks would improve these financing difficulties.

Key issues	Main areas for policy intervention	Specific examples from case studies
Few local economic development benefits	Clusters and territorial development	<p><b>Toyota-South Africa</b> South Africa shows that successful results can be obtained by acting locally and thinking globally, by developing local clusters such as the Durban Automobile Cluster and implementing benchmarking exercises.</p> <p><b>Volkswagen-Mexico</b> Local suppliers in Mexico could better face the pressure of competition when located in or in the neighborhood of sectorally specialized technology parks.</p> <p><b>IBM-Egypt</b> The general business environment could be improved by better delivery of Government services and ensuring the enforcement of IPRs.</p>
Insufficient IPR protection	IPR protection systems	<p><b>Nu Metro-Nigeria</b> SMEs would like to see greater efforts to improve the regulatory environment, in particular by more effective implementation of the laws protecting intellectual property.</p>

Overall, the research project showed that an enabling business environment is a necessary condition for promoting SMEs to integrate into the global market (OECD, 2007a). A favourable business environment depends on stable macroeconomic policies and well-designed complementary policies in areas such as competition, international trade and investment, finance, labour and education, including human resources capacity-building for internationalization. The research also highlighted the need for a coordinated approach by the different institutions directly involved in building the enabling environment favourable to the integration of SMEs in GVCs. For policymakers, GVCs create a variety of challenges, and due to their nature and configuration, no single ministry can take charge of facilitating the integration of SMEs into GVCs. Formulating and implementing support programmes necessarily involve coordination between different ministries, and a close collaboration with the private sector and civil society.

The transparent and equitable application of laws and regulations together with streamlined and stable administrative procedures also represent an important pillar, encompassing bankruptcy laws, property rights, the tax system, the licence and permit system, standard compliance certification procedures and efficient dispute settlement procedures (OECD, 2007a). However, there is also a need for governments, the business community and international organizations to play a role in designing and implementing targeted assistance programmes to build capacity in SMEs, so that they can overcome the challenges of entering or upgrading their position in the GVCs. The following sections illustrate the main areas of policy intervention that may apply to GVC development initiatives. The following sections review the main components of supplier development programmes and policy measures that Governments can take to help SMEs better integrate into GVCs.

## B. Policy recommendations

### 1. Skills development

One important issue which dominates most of the case studies is the lack of adequate skills in the workforce of the SMEs in the GVCs. For a sector such as 3-D animation in Colombia this is not surprising, since the sector and underlying technology are only emerging. What is mentioned in most of the case studies, however, is the delayed and inadequate response of public training institutions to new skills requirements and in some cases even to basic skills needs. The policy implications of the case studies in terms of skills development are not clear cut, as they depend on the status of the suppliers as well as the industry in which they are operating. In this respect, four different GVC scenarios can occur, as table 2 illustrates, which correspond to four different priorities in terms of the policy measures to be put in place.

**Table 2. Skills upgrading in four different GVCs scenarios**

GVC-integrated companies			
Mature + declining industry	(1) Supporting companies under pressure	(3) Facilitating emerging industries	Emerging + growing industry
	(2) Upgrading low-cost suppliers in mature industries	(4) Creating advanced and specialized factors	
Companies that are not connected to GVCs			

Source: Adapted from Meyer-Stamer (2007).

The case study of car parts' suppliers in South Africa illustrates the need for **supporting companies under constant pressure**, in a mature globalized industry, to continuously upgrade while at the same time reducing their final prices. In this context, companies face the challenge of either meeting the substantial costs and risks of the internationalization process or being relegated to the role of second- or third-tier suppliers. To support SMEs that face such challenges, governments should ensure that adequate training facilities exist. Skill development centres that are flexible and responsive to the changing needs require support to provide SME employees the additional skills to serve the global market. In this respect, the South African approach is an example of best practice in responding to the needs of SMEs that constantly need to upgrade their workers' skills (box 4).

**Box 4. The creation of sectoral training authorities in South Africa**

*In 2004 the South African Government re-launched the Sectoral Training Authorities (SETAs), a system meant to accredit training providers and their curricula, thus guaranteeing an adequate quality level. Each employer has to contribute to a sectoral training fund and can draw on this fund to pay for training courses. SETA represents an effort to create a skills development system that in principle is market-friendly and meant to respond to constantly evolving needs. Since the system depends neither exclusively or primarily on public sector training institutions, nor on government funding for training expenses, it has proven relatively robust against fluctuations in government budget allocations. However, companies revealed that it is a system that so far is not yet quite as agile and responsive as the business sector would like it to be.*

Source: Meyer-Stamer (2007).

The case study on car parts suppliers in Mexico points to the need for **upgrading low-cost suppliers in mature industries**, when an industry moves from the growth stage to the maturity stage and suppliers in the established locations start to suffer from a variety of cost disadvantages. Since buyers start to look for suppliers with a more favourable cost structure, an upgrading effort that aims at keeping domestic SMEs on the radar screen of global buyers must be based on the expectations and demands of buyers, as well as on the price structures of the SMEs' competitors. The main challenge is to put in place on-the-job training programmes for unskilled workers in special industrial zones such as the maquilas and provide a pool of sufficiently skilled workers who are willing to work at competitive wages.

In view of **facilitating emerging industries**, policy makers should interact closely with lead companies and local entrepreneurs to create an enabling environment for start-ups and new economic activities. The demands on policy makers in terms of flexibility, agility and responsiveness are substantial. For example, the software sector in Egypt is connected to a GVC, though primarily at the downstream level, adapting existing software packages for the regional market. The challenge for Egyptian companies is to enter other segments of the software value chain, where, as the Indian experience shows, a much bigger potential for job creation and export earnings exists. For the Egyptian Government, an opportunity exists to further improve the education system in terms of agility and responsiveness, to tackle the serious skills shortages affecting the industry.

During the evolution of a new sector, virtuous circles are generated, such as in the Colombian 3-D animation case, where private trainers are starting to provide specialized and sophisticated training products. Governments are critical in **creating advanced and specialized skills** also through demonstration effects, but they must be careful not to distort the market and damage the

internal dynamism of the private sector. For example, the National University of Colombia recently offered the first postgraduate programme in animation in the country, and since then a trend towards an increased offer of 3-D animation private training courses took place. Indeed, in Colombia a clear opportunity exists to boost the growth of an emerging sector, thus further leveraging its strong position in the Spanish-speaking audiovisual market. In this respect, many firms see Proexport – the national trade and investment promotion agency – as the key institution to promote and position the Colombian 3-D animation business in international markets, through trade-fair participation and the organization of industry-specific events to promote local talent.

## 2. Technological upgrading

All the case studies confirmed that to enter and remain in a GVC it is necessary to engage in continuous technological upgrading in order to meet company and international standards. Ultimately, the main trigger of innovation in SMEs is the foreign buyer or the lead firm in the GVC, which demands constant innovation from suppliers that want to remain in the GVC. Moreover, the lead firm will also indicate the overall direction of the innovation effort, both in process and product innovation. The most important action a government can take to support SMEs to meet these requirements is the granting of financial incentives so that SMEs can invest in appropriate technology. Strengthening of the national innovation systems at a local, regional and sectoral level can help SMEs to develop their R&D capacity. The active role played by the Egyptian Government in the country's rapid ICT growth is an interesting case (box 5).

### Box 5. Government initiatives to support the ICT sector in Egypt

*The Ministry of Communication and Information Technology (MCIT) has actively supported the ICT industry through various initiatives:*

- (a) *High Tech Business Parks (The Smart Village) have been established to provide enterprises with world class infrastructures at a very reasonable cost.*
- (b) *Subsidies up to \$68 million are currently available to support training, marketing and technological development.*
- (c) *Partnerships have been made with major ICT firms such as Siemens, Alcatel and Cisco to train ICT engineering graduates.*
- (d) *Specific initiatives to make PCs available at a reasonable cost were undertaken (a PC for every student, household and teacher, etc.).*
- (e) *The "Free Internet" initiative to offer Egyptian users dial-up services to the Internet at the same cost as a local phone call (through a revenue-sharing agreement between Egyptian Internet Service Providers and Telecom Egypt).*

*Source:* UNCTAD case study by Assad (2007).

The Tokyo Action Statement (OECD, 2007b) provides some practical measures to promote the capacity for innovation by local SMEs. These include:

- Establishing logistic technology centres as demonstration and testing facilities to accelerate the rollout of supply-chain management technologies and processes, including the use of electronic tags for creating a seamless distribution network;
- Facilitating the technological upgrading of products and processes through providing access to information on world best technologies and processes, and various financial support measures; and
- Promoting partnerships between SMEs and organizations overseas that can develop or transfer world-leading technology, products, processes or management practices.

### 3. Quality and standards

Another issue that is highly relevant in the context of GVCs is compliance with international standards. This is closely linked to and depends upon the SMEs ability to upgrade its technology. Compliance includes both product and process quality standards. Compliance with product standards can be verified by testing the product, while compliance with process standards requires regular audits of the production facility and is usually linked to process certification (e.g. ISO 9000).

Some years ago, there was an expectation that generic standards such as ISO 9000 might be sufficient to guarantee consistent quality, but this proved not to be the case. Lead firms have also been using a number of diverse proprietary process standards or industry-specific standards. For SMEs, the cost of complying with many different standards, in particular regarding preparation for certification, can be substantial and sometimes unaffordable and a barrier to the entry into a GVC.

In advanced industrialized countries, elaborate systems of quality assurance, certification and accreditation have existed for a long time, and the cost related to this is relatively minor. Certification is an issue which is usually left to technical specialists and the process is rarely perceived as a strategic variable. For instance, calibration of common measurement devices is conducted by specialized providers that operate in a competitive market where prices are low, often less than \$100 for an annual calibration. Likewise, numerous providers compete in the market for certification of quality management systems, and the cost of certification is limited to a few thousand dollars in the case of ISO 9000.

In many developing countries, the situation is quite different. Multi-layered certification, accreditation and calibration systems are only emerging. These specialized services are offered by monopoly providers at high cost. As a consequence, some developing countries have launched efforts to develop their national systems for certification, accreditation and calibration.

What is alarming, though, is that many countries have not yet implemented a policy regarding standards, metrology and certification. This leaves companies in developing countries no option but to rely on costly experts and certification institutes based in industrialized countries (box 6).

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#### Box 6. Reaching quality standards through international bodies in Mexico

*The case of Volkswagen in Mexico shows that TNCs may be a key driver of technological development and quality upgrading. For example, in Puebla, Volkswagen imposed higher environmental standards and asked all its suppliers to become certified as clean plants by SGS European Quality Certification Institute. This has allowed the development of new standards for the Mexican industry, which then started to serve the United States market. Quality improvement also had positive side effects on overall exports, since the number of defects in production was reduced thanks to quality certifications (ISO 9000, 2000, ISO/TS 16949, 2002). Volkswagen was able to produce more sophisticated export models in Mexico.*

Source: UNCTAD case study, by Ruiz Duran (2006).

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In this context, governments should focus on creating a regulatory framework that encourages the emergence of commercial providers who operate in competitive markets and thus drive down the price of certification services. The Tokyo Action Statement (OECD, 2007b) proposed that governments should assist local suppliers to meet international quality standards by:

- providing information and professional training to implement product quality standards required for exports;
  - encouraging SME participation in the standard-setting process through the provision of information on standardization and accreditation activities;
  - promoting the adoption of harmonized standards by TNCs in procurement procedures and the diffusion of that information to SMEs; and
-

- ensuring that national certification systems do not impose excessive burdens on SMEs for compliance procedures and that group certification for small firms in local regions is promoted to lower costs while ensuring that there is trust in the control mechanisms as well as promoting labelling initiatives to give added, low-cost assurance.

#### 4. TNC–SME linkages

The establishment of sustainable linkages between SMEs and TNCs is one of the most efficient ways to integrate domestic suppliers into GVCs. Specific promotion measures could target foreign direct investors who would strengthen the local supply capacity (UNCTAD, 2006) as recommended in the São Paulo Consensus that recognized the importance for developing countries and economies in transition to “build stronger supply capabilities responsive to market demands, promote technology development and transfer, encourage enterprise networking, increase productivity and improve the competitiveness of their enterprises”.

In two of the case studies, Microsoft Egypt and IBM Viet Nam, the TNCs operated supplier development programmes which established strong linkages with their SMEs partners. Not all developing countries, however, have been successful in attracting foreign firms that invest in the local economy by establishing such linkages. In Mexico, TNC-SME linkages have benefited not only first-tier suppliers, but also second-tier suppliers, which have been assisted in meeting Volkswagen quality requirements by first tier suppliers (box 7).

##### **Box 7. Linkages between first- and second-tier suppliers of Volkswagen in Mexico**

*In Mexico, firms that are first-tier suppliers of Volkswagen, such as FTE Mexicana and Johnson Controls, have helped second-tier suppliers to improve quality through certification ISO/TS 16949, which is the reference standard for quality management system in the automotive sector, based on ISO 9001. For the second-tier suppliers, it was problematic to meet quality requirements that were more demanding than local standards. Most first-tier suppliers in Mexico confirmed that their role in the global supply chain has expanded and deepened as they started developing second-tier suppliers. They became responsible in setting product specifications and providing advice to the Volkswagen plants on product management.*

*Source:* UNCTAD case study, by Ruiz Duran (2006).

Governments can facilitate business linkages by improving the investment climate and by targeting TNCs which are known to establish linkages with local firms. At the same time the government has to promote business development services that can make their SMEs more “partnership” ready.

From a technical assistance perspective, a variety of initiatives to promote linkages exists, from purely donor-driven and government-driven programmes, to public–private sector partnerships. For example, UNCTAD’s business linkage promotion programme promotes the creation of durable and mutually beneficial partnerships between TNCs’ affiliates and large local companies on the one hand and SMEs on the other, so as to enhance the productive capacity, efficiency, competitiveness and sustainability of their relationships. The programme is being implemented by a Business Development Services Centre as lead facilitator, typically UNCTAD’s EMPRETEC Centre, in collaboration with the local Investment Promotion Agency, selected TNCs and donors. There are also purely private sector-driven programmes, such as supplier development programmes carried out independently by TNCs in their own self-interest, and sometimes within their corporate social responsibility programmes. SMEs in Egypt and Viet Nam benefited from such supplier development programmes. A well-developed entrepreneurship culture helps to build good quality local firms that can benefit from the presence of foreign firms. Appropriate technology and skills development also facilitate linkages.

## 5. Clusters and territorial development

Business promotion activities and related policies are not only pursued by national governments, but also increasingly by local institutions. In a growing number of countries, local governments and other actors develop economic initiatives, including cluster promotion. Such entities should take into account the structure and evolution of GVCs to support the local suppliers. The survey shows that, for global buyers, clusters are easier to spot than an individual producer. Clustered companies may also generate collective efficiencies that make them attractive for global producers (Meyer-Stamer, 2007). Egypt and Viet Nam have invested in software parks and smart villages and Nigeria has set up film villages.

For national governments, it is important to encourage and support local economic development activities. Local actors are well placed to formulate and implement location- and cluster-specific promotion activities. For local actors, however, it is also important to operate globally, for example by sending out missions to investigate the demands of global buyers and by benchmarking their locations against comparable clusters elsewhere in the world. The Durban Auto Cluster in South Africa shows that successful results can be obtained by acting locally and thinking globally (box 8). Towards this goal, national governments can, for instance, allocate funds to local development initiatives on a competitive basis, or offer capacity-building activities to local stakeholders (Meyer-Stamer, 2003).

### Box 8. Stimulating cooperation in the Durban auto cluster in South Africa

*Toyota suppliers in South Africa identified the Durban Auto Cluster (DAC), and in some cases the Benchmarking Club (operating in parallel to the DAC), as appropriate vehicles to facilitate inter-firm collaboration. Firms pointed to the considerable benefits they had gained from joint action. However, firms also felt there was a need to think about longer-term strategic interventions around which firms could collaborate. Such initiatives included specialist skills development in engineering and production management, as well as in product development. Apart from membership of the DAC, most of the firms belonged to at least another industry association. Among these, the National Association of Automotive Component and Allied Manufacturers (NAACAM) and the Steel and Engineering Industry Federation of South Africa (SEIFSA) have the largest number of subscribers. Firms saw these institutions as lobby groups, for example, in relation to negotiations or in relation to presenting industry views before various Government forums. Whilst the associations did allow for some networking, they did not necessarily organize active inter-firm collaboration around matters related to meeting customer demands. However, it was the DAC and the Benchmarking Club that received the greatest endorsement from firms for their ability to add value. Some affirmed that if it had not been for the Benchmarking Club and the DAC, their company would not be able to survive or grow.*

Source: UNCTAD case study by Robbins (2006).

For governments, a main challenge is to establish close communication with companies and clusters in growing industries that are already internationally connected. Such companies often do not entirely seek contact with governments, which they sometimes perceive as an obstacle rather than a facilitator. There is little reason for them to lobby the government for protection or support. Governments need to make an effort to build credibility within the private sector, to approach stakeholders in a constructive way, and to identify practical ways of providing support.

The OECD Tokyo Action Statement (OECD, 2007b) made specific recommendations for governments to increase SME participation in GVCs through collective action and cooperation by:

- Supporting the establishment and development of industry groupings;
- Promoting clusters and networks by fostering links among universities, research institutions, laboratories and SMEs;
- Targeting support for clusters in selected technologies; and

- Promoting business linkages between TNCs and SMEs and facilitating their supplier development programmes where SMEs are coached and mentored in key areas such as design and production engineering.

## 6. IPR protection

The inability to enforce IPRs in the creative industries of cinema and software, where the SMEs make significant contributions to value added, was felt to be a major obstacle to SME growth and ability to benefit from GVCs. In more mature industries, the issue was not considered to be particularly relevant by local SMEs. However, some complaints emerged in the car parts sector, whereby local supplier felt that some OEMs did not have an ethical problem with handing blueprints of a component that has been developed by one supplier to another. The survey confirms that even though IPR protection is not a “silver bullet” for all development problems, the fact that a government is starting to enforce copyright and anti-piracy laws may stimulate new economic activities, especially in emerging sectors. It also confirms that the majority of SMEs in developing countries lack the necessary awareness, ability and finance to fully protect and exploit their intellectual assets.

For SMEs in advanced economies, the link between innovation, intellectual property rights and funding is crucial. These SMEs not only need to protect their cutting-edge innovations from being copied, but also are dependent on IPRs to attract investment and commercialize their innovation (Jensen, 2005). The Tokyo Action Statement considers IPR reforms as essential and recommends governments enhance SMEs' value obtained from intellectual assets and intellectual property by:

- Raising awareness about IP rights among SMEs;
- Promoting systems to value and manage IP assets;
- Creating online marketplaces where SMEs can offer their IP assets;
- Facilitating the filing of patents by SMEs;
- Preparing guidelines for TNCs on the fair treatment of SMEs' IP; and
- Helping SMEs to legally acquire IP assets from universities and research centres.

From a development perspective, evidence shows that strengthening IPR protection may have a positive impact on the attraction of FDI and technology transfer to developing countries (Lippoldt, 2005). However, the extent to which IP protection exists in a given country is not the only criterion for the question of whether foreign technologies are transferred and effectively absorbed in the receiving country. While IP protection plays an important role for investment decisions in areas involving research and development (R&D)-intensive, complex and easily imitated technologies, foreign investors attach relatively little weight to IP protection in areas of old, standardized and labour-intensive technologies that require little R&D (UNCTAD, 2003, Maskus, 2005).

In the area of films and music, stronger protection and enforcement of IPRs such as copyright may provide important benefits to local SMEs. Competition law and policy should be in place to prevent prices that are unaffordable for consumers. At the same time, creativity in the cultural industries and in software development is cumulative in nature, thus open access to existing content and the possibility to carry out follow-on improvements among software specialists become decisive factors for the promotion of creativity.<sup>4</sup> Here, non-exclusive forms of protection, such as open source and creative and technological commons may complement traditional IP instruments. The box below illustrates the role played by the Nigerian Copyright Commission in reducing the high level of IPR violations in the cinema industry (box 9).

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<sup>4</sup> The cumulative nature of innovation, in particular in the area of information and communication technologies, and the need to adapt the IP system accordingly, has recently been emphasized by the European Patent Office (EPO), see EPO, “Scenarios for the Future. How might IP regimes evolve by 2025? What global legitimacy might such regimes have?”, Munich, April 2007, p. 88 et seq.



**Box 9. Protecting IPRs in the cinema industry: the Nigerian case**

The case study on the cinema industry in Nigeria revealed a strong need to reduce a high level of IPR infringements and violations. It is estimated that over 35,000 video clubs in the country rent out local and foreign movies without authorization. Piracy, especially counterfeiting, suffered a setback in recent years because of the aggressive strategies of the Nigerian Copyright Commission. Major efforts aimed at strengthening the regulatory environment include:

- a. The approval of the Optical Disc Regulation, under the Nigerian Copyright Commission;
- b. The establishment of the Motion Picture Council of Nigeria;
- c. The “Nigeria in the Movies” initiative launched by the National Film and Video Censors Board;
- d. The Strategic Action Against Piracy (STRAP) initiative launched by the Nigerian Copyright Commission, under which vigorous anti-piracy raids have taken place and pirated goods worth billions of dollars have been seized and destroyed; and
- e. The revamp of the Video Rental Regulation by the Nigerian Copyright Commission to ensure all persons engaged in the business of rental, hiring, leasing and loaning comply with the guidelines and ensure that copyright owners receive due compensation for the use of their works.

Source: UNCTAD case study by Ola (2007).

**C. Conclusions**

Although it is difficult to establish common trends in the diversified universe of SMEs and across sectors and regions, the case studies provided new insights on increasing the participation and improving the performance of SMEs in GVCs. One result that stands out from the research is that successful participation in GVCs may bring stability: small firms that are able to remain in value chain(s) despite keen global competition, or SMEs that succeed in “jumping on board”, are likely to witness an expansion of their business. This is more often accompanied by upgrading of technological and human capital, as a result of a greater exposure and access to information, business practices and technologies. Cooperation within the chain is a key success factor that brings substantial benefits in terms of status, information flows and learning possibilities.

The case studies also suggest that the awareness of being part of a GVC is a function of the production activity in a given sector and/or the position of a firm in the chain. SMEs in the software sector, for example, are more apt to understand the structure of the value chain to which they operate than the average SME in other sectors, for which the concept of GVCs is not always easy to grasp. This is likely related to the complexity of the configuration of the value chain (as in the cinema sector), or to the fact that SMEs occupy lower positions in the chain, and therefore they have limited knowledge beyond the surrounding environment (SME suppliers in the automotive sector). Building awareness is an essential starting point of any government intervention to increase the participation of local suppliers in GVCs.

Overall, the large body of literature available on GVCs shows that in a globalized economy, competitive advantages can be created in any sector. Some developing countries have developed highly successful export sectors even in traditional commodities. Exports of horticulture or fresh fruits thrive because of their close ties with global buyers. Elsewhere, such as in Nigeria and in Colombia, audio-visual industries offer new interesting export opportunities. Thus, policymakers need to understand opportunities both in mature and emerging sectors in their economy that offer SMEs the potential to integrate into GVCs. It is important for developing country governments to review their existing SME promotion and export promotion activities and to adapt them to the new reality and requirements of global markets.

Finally, developing countries need to place the development of productive capacities at the heart of national policies. The development of domestic industry or service networks, which would be able to link effectively with international production networks, also requires the promotion of entrepreneurship and enhancing competitiveness at firm level through technology and business linkages. Domestic



suppliers need to constantly upgrade and innovate to maintain their competitiveness when operating within GVCs. Governments which aim at increasing SME competitiveness need to develop long-term rather than short-term measures. Policy support could be provided for technological upgrading and for increasing domestic value added to achieve, maintain and upgrade international competitiveness in increasingly sophisticated products and services.

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# 4 / Case studies in the automotive components sector



## A. Perspective on SMEs and Global Value Chains – experiences from firms in KwaZulu-Natal Province, South Africa<sup>5</sup>

### 1. Introduction

South Africa's automotive industry has been through a turbulent decade of wide-ranging domestic policy adjustments that have witnessed a shift away from import substitution towards openness and export orientation. These adjustments have taken place in a global environment of considerable change, characterised not only by a degree of instability, but also by ongoing changes in the nature of trading and production relationships between countries and between firms. Of particular importance has been the emergence, in this period, of what Gereffi et al (2003) and others have referred to as Global Value Chains (GVCs). Essentially, the term implies that production, supply and service value chains (routes whereby goods or forms of knowledge are transformed for the market) often straddle multiple locations – increasingly on a global scale.

This paper provides insights from a number of interviews in the automotive component sector in the Province of KwaZulu-Natal, South Africa, especially in and around the Durban area. The paper takes into account the main sections of a questionnaire developed by the research project team. It begins with a brief overview of the automotive sector in South Africa and is followed by some information on the participating firms. It then provides an analysis of the responses of the firms to the range of questions posed in the interviews. Some conclusions are drawn in the final section.

### 2. The South African automotive sector

South Africa's automotive sector developed during the last century under a framework of protection and of direct and indirect subsidies with the aim of serving the local market. The country was characterised by a number of assembly and production operations producing a considerable range of vehicles at relatively low volumes. In 1987 the seven automotive plants in the country produced 22 models, increasing to 34 by 1993 with total car sales in the region of 250 000 (Barnes and Kaplinsky, 2000). The sector was said to be characterised by low levels of productivity, high production costs and low levels of innovation. However, post-1994 trade liberalisation saw a dramatic reduction in tariff barriers, including a reduction in previously high import tariffs on the importation of both vehicles and automotive components. As explained by Lorentzen et al (1994): "Duty levels on completely built up vehicles (CBUs) fell from 115 percent in 1995 to 40 percent in 2002 and are scheduled to reach 25 percent by 2012." Earlier subsidy measures that had affected a range of industrial sectors were also dismantled as the Government sought to introduce an export-oriented industrial policy framework, compliant, to a large degree, with the country's obligations under the Uruguay Round of GATT (Generalised Agreement on Tariffs and Trade).

However, despite the commitment to trade liberalization by the Department of Trade and Industry (DTI), there was also a commitment to avoid potential pitfalls of deindustrialisation from rapid tariff adjustments and so a programme known as the **Motor Industry Development Plan (MIDP)** was formulated together with key industry players. The MIDP sought to encourage consolidation of domestic production around the output of a reduced range of vehicles (for each Original Equipment Manufacturer or OEM), allowing for export scale production of these vehicles to be gradually built up. Such policy adjustments were so favourable to the OEMs, that they began, to systematically integrate

<sup>5</sup> This paper was contributed by Professor Mike Morris and Glen Robbins, School of Development Studies, University of KwaZulu-Natal, Durban, South Africa.

South Africa into their global operations, while previously South African production activities had either been under license operations or been viewed as somewhat marginal to core global operations. The MIDP provided four key incentives:

- i. A tariff reduction plan for Completely Built-up Units (CBUs) shifting nominal rates down to 40 percent and to 30 percent for Complete Knocked Down (CKD);
- ii. A duty free allowance for assemblers of 27 percent of the wholesale value of the vehicle;
- iii. A small vehicle incentive in the form of an effective subsidy for the production of a more affordable vehicle based on a duty drawback related to the value of the motor vehicle;
- iv. The removal of previous minimum content provisions for OEMs and their replacement with an import-export complementation scheme allowing for both automotive and component manufacturers to gain export credits which could in turn be used to offset import duties on imports of cars, components or materials and could also be sold on the open market.

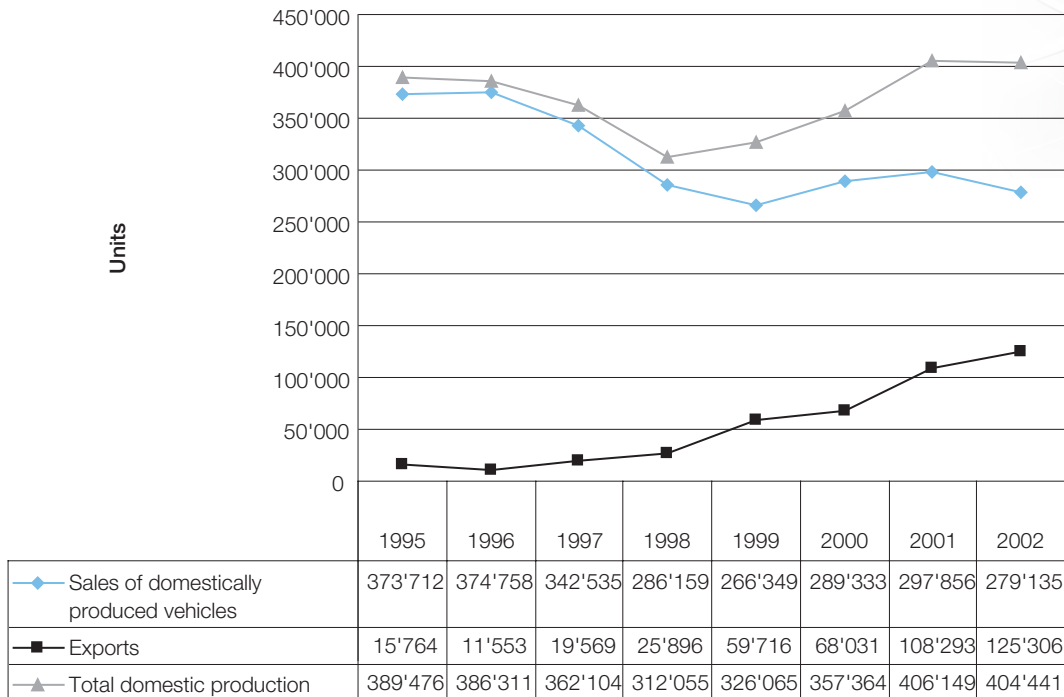
In recent years the MIDP has been reviewed and adjusted and tariffs continue to be reduced. It is expected that the MIDP will not continue beyond 2012 due to concerns related to World Trade Organization (WTO) compliance (Barnes and Morris, 2000).

The impact of these national policy adjustments secured very substantial foreign direct investment (FDI) flows. Initially it was the German OEMs that moved to comprehensively reposition the production of BMW, Volkswagen (VW) and Daimler. More recently United States and Japanese-based OEMs have begun to follow suit. During these nationally driven processes the DTI did make a number of attempts to initiate a country-wide cluster process in order to bring in components producers more effectively into the dialogue and related policy processes. However, these were not sustained and the DTI subsequently agreed to make some resources available to spatially defined processes in the automotive sector, initially in the Eastern Cape and subsequently in Gauteng and KwaZulu-Natal (KZN). Incipient cluster facilitation processes were accompanied by support measures by the DTI, for example to undertake base-line studies of prospective participant firms.

Lorentzen et al (2004) outline how, "The MIDP, together with the depreciation of the rand from the mid-1990s, turned South Africa into a relatively competitive producer of both components and completed vehicles. The contribution of the auto sector to total manufacturing sales grew from 9.7 percent in 1994 to 12.8 percent in 2003." The figures below illustrate the growth in exports and output as the MIDP began to take root in South Africa.

However, for components firms the picture was not universally positive. A depressed domestic market combined with often weak relationships with the headquarters of OEMs based in South Africa left them somewhat exposed. The entry of OEMs with local operations into global supply chains also meant global sourcing and many local producers operating under licence were placed under considerable pressure. At the same time, the devaluation of the rand and the necessity for OEMs producing for export markets to cultivate some proximate suppliers did open up new opportunities. In some instances this entailed large global component players entering the domestic production scene through acquisitions or other forms of partnership. In other cases OEMs and component producers worked in partnership to meet local content requirements of the MIDP and to use this production as a platform to enter into OEM parent company global sourcing arrangements.

Figure 1. Domestic OEM sales and exports by volume: 1995 to 2002



Source: Barnes, J. and Johnson, J. (2004) "Sectoral overview of the automotive industry in the eThekweni Municipality and broader KZN province", unpublished research note produced for eThekweni Municipality by B&M Analysts, p.6 ([www.bmanalysts.com](http://www.bmanalysts.com)).

### The case of KwaZulu-Natal joining the Global Value Chain

For example, in KwaZulu-Natal, SMEs made up the greater proportion of the components firms located in the region. The changing environment presented a number of challenges to them. In many instances these firms were significant suppliers to the Toyota plant in Durban. Despite the fact that the Toyota manufacturing operation was the largest in the country by some margin, protracted processes to shift from an operation under licence to a subsidiary integrated into Toyota's global operations resulted in somewhat delayed positive impacts related to the MIDP for many of the fifty or so regional components firms.<sup>6</sup>

However, the fact that many of these firms were also suppliers to other OEMs or to the after-market enabled many to adjust to new conditions. In a number of cases, component TNCs such as Federal Mogul and foreign direct investors such as those behind the Aunde Car Trim enterprise made local acquisitions as they saw prospects to supply to both domestic and global markets from South Africa. The prospects of Toyota significantly scaling up production and entering Toyota's global supply chain also saw a handful of small and medium foreign direct investments in new plants such as the partially-owned Toyota catalytic converter manufacturing subsidiary, Cataler.<sup>7</sup> Taken together with the experiences of the other OEMs and their suppliers in the country, the impact of the MIDP, in terms of improved FDI attractiveness in the country and in terms of prospects for suppliers has been significant.<sup>8</sup>

Overall, the changes outlined above brought massive pressure on many KwaZulu-Natal-based components firms and in particular on those that were not first-tier global quality operations. In having to supply OEM plants manufacturing for export these firms had to rapidly adjust to increasing quality

<sup>6</sup> License conditions for the then Toyota South Africa (TSA) from Toyota Manufacturing Corporation Japan stipulated the SA plant could only export a limited range of models to a handful of small African markets resulting in severe limitations being applied initially to TSA's prospects to take advantage of the export-driven benefits of the MIDP. This is in contrast to German OEMs such as VW and BMW where the local operations were 100 percent subsidiaries of their German parent companies and had no license restrictions in place on exporting.

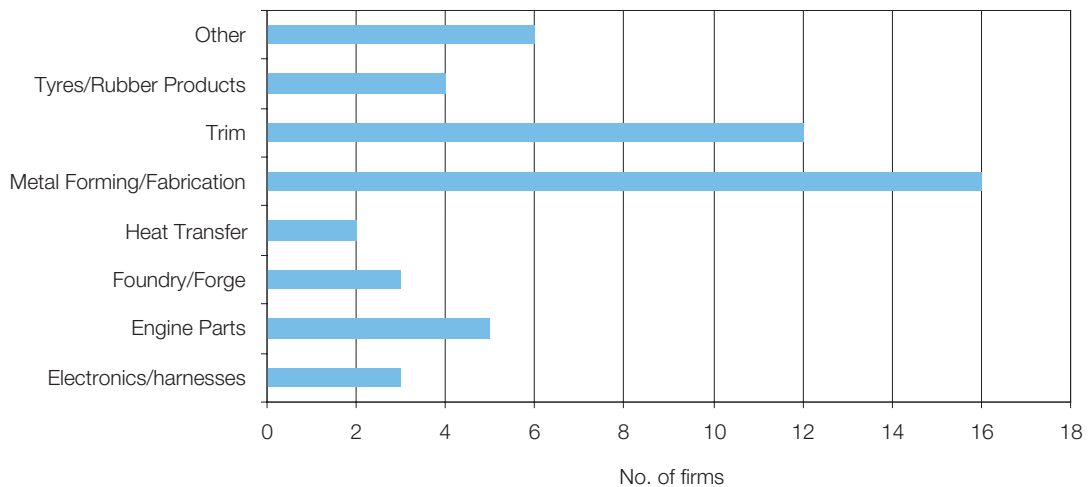
<sup>7</sup> Many of the OEMs have encouraged catalytic converter manufacture in South Africa as the fact that South Africa is a dominant global producer of platinum and palladium metals used in the product with their relatively high value makes them an attractive component to include in production to meet domestic content requirements in the MIDP.

<sup>8</sup> While the MIDP is celebrated in South Africa, a number of other countries, including Australia have raised some WTO-related concerns about the degree to which the programme might infringe on certain of South Africa's WTO commitments.

requirements that come with the motor industries rigorous certification procedures, increased scale of production and flexibility. Whilst those that had been, or became, part of international operations could draw on a measure of global expertise, many firms in the second and third-tier supply categories needed to demonstrate a rapid turn-around capability or face closure. Some breathing space was created by local content requirements of the MIDP where Toyota and other OEMs had little choice but to work in partnership with local suppliers to upgrade their capabilities. Toyota also made the case that this approach was not only one of obligation, but also formed a key element of good practice in running a large, internationally competitive export business. However, the reality was that with a considerable reduction in models produced domestically and a move to common component platforms between models, some firms that had survived off small lot production for low-volume manufactured models either had to diversify out of automotive components supplies or had to meet the escalating requirements of new manufacturing regimes.

According to Barnes and Johnston (2004) ten firms in KwaZulu-Natal are first-tier suppliers, 20 are second and third-tier, and ten supply the aftermarket while a range of others supply into a variety of industries. Figure 2 shows the product profile of these firms. Barnes and Johnston point out that some second and third-tier suppliers are not exclusive auto components firms and produce goods for other sectors but would have the auto sector as a significant, if not the most significant customer.

Figure 2. Profile of KZN component producers by product type



Source: Barnes, J. and Johnson, J. (2004) "Sectoral overview of the automotive industry in the eThekweni Municipality and broader KZN province", unpublished research note produced for eThekweni Municipality by B&M Analysts, p.16 ([www.bmanalysts.com](http://www.bmanalysts.com)).

### 3. Fieldwork methodology and overview of participating firms

This paper is based on material gathered through analysis of secondary material and the reporting on primary research in the form of notes from questionnaires conducted in a South African-based transnational OEM, Toyota South Africa, a number of South African-based components firms and an automotive sector service company. The sample was constructed through discussions with key informants. Firm selection was dependent, for the most part, on those that met basic criteria in terms of the following:

- They were supplying TSA;
- They were employing under 200 people (in their automotive components divisions)<sup>9</sup>;
- They were located in or in close proximity to Durban; and
- They were also willing to make a senior manager available for an interview.

The interviews were guided by a semi-structured questionnaire conducted in person and supplemented, where necessary, by some further discussions via email and telephone. At the request

<sup>9</sup> One firm with over 200 employees was interviewed and included in the sample as it offered insights into some of the key issues.



of the components firms their names and identities have not been used in the paper. The table below presents a summary of some of the descriptive traits of the participating components firms.

**Table 1. Participating components firms**

Firm #	# employees	Turnover (\$million)*	Major stakeholders	Products categories	Estimated proportions of total cost of production going to production, marketing, R&D and support**	Estimated labour and capital proportions total production costs**
1	102	3	100% family owned (South African)	Cold formed steel products (e.g. springs, seat frames, seating tracks) to SA based OEMs	Estimate 66% to production and 33% to support	Labour 33% Capital 33%
2	14	0.3	100% family owned (South African)	Plastic seat and wheel covers Battery separators	75% costs to production process, the rest not distinguished as support, marketing and R&D handled by only 2 people	Labour 20% Capital 40%
3	125	0.7	100% family owned (South African)	Truck components and OEM approved and installed accessories	R&D 16% Support and marketing 30% Production 54%	Labour 14%
4	173	12.9	Privately SA owned since 1945	Low volume niche products for domestic OEM production – specialised injection and blow moulded plastic products	Highly variable depending on product, but production dominant followed by support and R&D	Highly variable depending on product but capital dominant in both and increasingly so
5	30-35	1 - 5	Privately owned by a consortium of local families	Textile-related products for seat and trim	Production process absorbs around 60% of costs followed by support activities and marketing (almost no R&D)	Labour make up around 15% of cost structure
6	302	11 - 40	Transnationally owned subsidiary	Injection moulded plastics and painting	Production costs absorb in excess of 60% of total costs followed by marketing and support. Limited local R&D	Injection moulding dominated by capital and raw material cost with more labour required in painting, but raw material and capital also significant
7	29	1 - 5	Transnationally owned subsidiary since 2000	Vacuum forming and hot pressing of plastic components	No information provided (expected to be similar to firm 6 above)	In excess of 50% of cost to raw material purchase

\* Based on exchange rate of ZAR 7 to \$1.

\*\* Firms were only willing to provide broad estimates and made the point that definitions would differentiate substantially from enterprise to enterprise.

In total, the firms selected for participation in the research project included one automotive OEM, seven automotive components firms that had some level of supply relationship with the selected OEM and one automotive service sector company. The service sector company was of interest in that it had provided, for a number of years, the management services to automotive benchmarking

clubs around the country. It had also been the initiator, together with the KZN Benchmarking Club and Government funders, of the Durban Auto Cluster (DAC) of KwaZulu-Natal located OEMs and automotive components firms.

The OEM interviewed, for the purposes of this study, was Toyota South Africa (TSA). TSA is majority owned by Toyota Manufacturing Corporation (TMC) of Japan. TSA employs about 8690<sup>10</sup> people at its Durban plant and produces in excess of 123,000 vehicles for local consumption and export. As part of Toyota's global sourcing strategy and their International Motor Vehicle (IMV) programme the car plant is increasingly focused on the production of two models with the intention that the greater proportion of these be exported to the European Union. Toyota South Africa production volumes were expected to exceed 200,000 vehicles by 2009 placing it well within the top twenty of Toyota's 53 manufacturing plants around the world in terms of volume.

#### 4. Awareness and understanding of the Global Value Chain

Unsurprisingly, both TSA and the automotive service firm were able to talk extensively and knowledgeably about Global Value Chains. They were generally familiar with the term and its associated concepts and correctly identified the bulk of the key issues that have been raised in contemporary debates. TSA acknowledged that the competitive environment in which it operates its South African plant has become tougher and tougher. This has been the result of declining import tariffs leading to an environment where its productivity and its cost competitiveness as well as the productivity and cost competitiveness of its suppliers have been, and continue to be, severely tested.

##### *The perspective of Toyota SA*

Today, TSA competes domestically with a number of other OEMs and imported vehicles from a range of other international OEMs located elsewhere in the globe. Internationally, the TSA plant needs to continuously prove that, despite its distance from major world markets, it can compete on cost and quality of supply in the very demanding European markets to which its exports are directed. In particular, interviews revealed that the TSA plant in Durban must be competitive not only in relation to other Toyota plants in Europe but also with the plants of other OEMs all over the world. Part of Toyota's global strategy has been to increase its share of the European market and the restructuring of the South African plant has given the company such capacity for two of its key models (box 1).

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#### **Box 1. TSA's competitive strategies in the last decade**

*Toyota South Africa has pursued major strategic changes in the last decade. While it has been South Africa's dominant vehicle producer for some time, it operated, for most of its existence, as a licensed operation with South African ownership producing almost exclusively for the domestic market (as per its license conditions). This production took place behind substantial trade protection affording the company and its suppliers' preferential access to local consumers. South Africa's trade liberalisation programme began with the Uruguay Round and accelerated after the first democratic elections in 1994. The industrial policy environment that characterised this period sought to encourage previously protected industrial sectors to shift towards exports through a series of supply-side measures. Toyota's strong position in the local market and the relatively slow plan to reduce tariffs on imported vehicles allowed the company to be cautious. During the mid 1990s a decision was taken by the Wessel Family to gradually sell their controlling interest in TSA to Toyota Manufacturing Corporation (TMC) of Japan. However, it was not until the late 1990s that TSA began to make clear its intentions to restructure its operations to take advantage of export opportunities and the resultant benefits and thus become a plant active within TMC's global sourcing system. This has allowed TSA to substantially increase its production output, create a plant specialised in the full manufacturing of two models (Hilux and Corolla) and retain its dominance of the local market through utilising the export credits gained in order to import a wider range of vehicles to compete with other brands in the domestic market.*

*Source:* UNCTAD's interviews, 2006-2007.

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<sup>10</sup> It is noteworthy that this is the largest plant in employment terms in the Toyota global group.

The restructuring process at TSA was designed to take advantage of the South African industrial policy and trade systems, as well as European-related trade systems. In response to this need, a key aspect of the restructuring has involved increasing local value-added. As the plant has shifted from producing seven different models, at relatively low volumes, to essentially two platforms at high volumes, and it has managed in some areas of the supply chain to secure greater value added on the back of high volume component orders. Furthermore, Toyota's International Manufacturing Vehicle (IMV) programme also sought to create more substantial manufacturing platforms in key global supply plants so as to spread risk but also to enable scaled-up production of regionally modified models off a common chassis platform.

### *The perspective of the automotive components firms*

The automotive components firms interviewed provided a mixed set of perspectives on the matter of GVCs. This mix of views reflected in part the considerable differences in the character and size of the firms. Firms with a higher turnover, a transnational ownership structure, a track record of supplying to OEMs and/or transnational automotive components firms, and with a dominant automotive components product profile tended to be more attuned to the concepts related to GVCs than the lower turnover firms. However, even those firms that expressed some confidence around the GVC concepts admitted to having experienced a very steep learning curve.

Whilst TSA had historically used many of TMC's production systems, the scale and the intensity of the relationship had changed markedly over the past five years and were bound to change even more in the next two-to-three years, according to the firms interviewed. The two transnational subsidiaries pointed out that their parent companies had experience in the global operations of supply to OEMs. Therefore, when their operations were acquired (having originally been locally owned operations) the firms received investment and management support to move towards global supply standards that were common in other operations of their parent companies. On the contrary, in terms of smaller suppliers, interviewed firms revealed that:

- The components firms generally had only one or perhaps two raw materials suppliers that made up the bulk of their incoming suppliers;
- Only three of the firms had suppliers that also considered themselves part of the automotive industry;
- All seven of the components firms interviewed indicated that suppliers into first-tier Toyota suppliers or TSA itself were the only line of business where they considered themselves part of a meaningful global sourcing system;
- All firms attested to growing levels of competition, in some cases facilitated by TSA seeking new suppliers that could meet more stringent technology, investment and quality standards (box 2).<sup>11</sup>

### **Box 2. Competition levels in the GVC**

*The levels of competition encountered by the firms differed substantially from firm to firm and in some cases within the firms by product. Most firms identified the most substantial competitive threats coming from either imported alternatives or from relocating TNC suppliers or their subsidiaries that owned original product or production technology. Even the two TNC-owned firms reported that it was not uncommon for operations within the same group, but located in different places, to compete for supply contracts. This level of competition had increased of late due to the combination of the attractive production conditions under the MIDP and the substantial growth in the scale of production volumes which made it more attractive for TNCs to open up local operations. This was certainly the motivation behind the investment of the TNC subsidiaries.*

*In this context, some of the firms reported that TNC components firms, which had previously been prepared to license technology to South African operators that were domestically focused, were now increasingly interested in seeking a more active role in the South African part of the value*

<sup>11</sup> One of the firms said they were struggling to maintain their margins, even with the prospect of higher volume orders, in a context where they had to invest heavily in knowledge and systems to maintain their status as a supplier. The firm pointed out that they could not recoup this investment on domestic market sales of other product lines (often non-auto) as the local market in these product lines was not as sophisticated.

chain rather than maintaining an arm's length relationship, and were increasingly reluctant to provide affordable access to technology agreements that two of the seven local firms had previously used.

Source: UNCTAD's interviews, 2006-2007.

## 5. Cooperation within the Global Value Chain

A series of questions were posed to establish the respondents' perspectives on how the GVC operated and factors affecting the firms' relationship with others in the value chain – including aspects related to geographic location. From TSA's perspective, the integrity of its entire production system and its global design rested very heavily on cooperation between all the participants.

### *The relation of TSA with Toyota Manufacturing Corporation (TMC)*

Toyota's head office in Japan is seen by TSA as the driving force in ensuring integration and in the design of the framework which governs interaction between the various players. The TSA official interviewed emphasised that the scale and scope of coordination processes had increased substantially for the TSA plant as it became more integrated into Toyota's global production processes. This could be seen in terms of TMC setting protocols for coordination processes which all plants around the world were expected to comply with, which in turn has had major ramifications for how TSA saw its role in coordinating its local supplier base. The Durban plant is seen by TMC as forming part of Toyota's European production system which is coordinated, in line with the International Motor Vehicle programme, out of the Belgium-located Toyota Motor Europe R&D/Manufacturing (TME-RDM) facility. Toyota headquarters in Japan has actively worked to facilitate this integration of TSA with the TME-RDM centre and in line with the IMV model seeks greater coordination and efficiencies through centralising purchasing, R&D and supply chain management functions in this facility.

The TSA plant stands out as a bit of an anachronism in the Toyota global system due to the legacy of apartheid isolation and protection which resulted in the company not following the pattern of restructuring followed by many other Toyota plants during the 1980s and 1990s.<sup>12</sup> However, the past decade has seen a shift at the plant towards greater outsourcing and the development of alliances with key Toyota global sourcing partners. The outsourcing has generally been characterised by taking in-house processes such as seat assembly and introducing firms already supplying other Toyota operations as first-tier suppliers.

It is a requirement that these outsourced plants are operated by companies which have a "technology offering" and a track record of product and process research and design undertaken in close cooperation with one of Toyota's global production coordination centres. This requirement ensures that Toyota can take advantage of specialised innovation within the outsourced entities that can, in turn, improve the quality, market competitiveness and profitability of the product they offer. In practise this would see Toyota design headquarters in Japan finding partners to develop core aspects of the vehicle such as the chassis and the regional production centres in Belgium finding technology partners to develop products to customise vehicles for their particular market.

### *The cooperation between TSA and its local suppliers*

In the context described above, TSA has very little scope to choose its products and markets. It is expected that as its integration into the European production network matures the local plant will lose much of its existing scope to choose suppliers. Nevertheless, TSA describes its relationships with its local suppliers and global sourcing partners as the critical factor in its production system. TSA claims to place considerable levels of effort into working with suppliers – a fact confirmed by suppliers who claimed TSA played a much greater hands on role than other South African-based OEMs to whom they supplied components.<sup>13</sup>

<sup>12</sup> It is notable for instance that the plant is one of the largest centres in employment terms in the Toyota profile of 53 production facilities around the world.

<sup>13</sup> Four of the seven components firms interviewed made the point that of the 3-4 OEMs they supplied to in South Africa, TSA stood out as the one most sincerely interested in working with its suppliers.

In this regard TSA identified the building of trust with suppliers as a key focus of its activities. TSA outlined that it had worked with local suppliers for a number of years to link them with technology and investment partners to enable them to retain a supply relationship in the context of the rapid changes taking place at TSA in terms of its global alignment and export agendas. This was, according to the TSA official, driven by Toyota's "way of doing things" but also by an imperative for Toyota to cultivate the local supply base in order to continue taking advantage of the MIDP programme incentives for local content. In particular, cultivating the participation of the local components supplier's plants in its global sourcing system is essential to TSA for a number of reasons:

- Firstly, it allows for the reduction of risk both for the local plant and for Toyota on a more global level in that it provided global sourcing partners able to supply at global standards should production problems arise at any production point elsewhere;
- Secondly, it allows for production and logistics efficiencies that might not have been possible without a certain level of sourcing from suppliers in geographic proximity;
- Thirdly, it allows for a measure of "localisation" of products where necessary;
- Fourthly, it draws suppliers into a network of relationships which would cement a level of interdependence arising from business arrangements which increasingly require co-ordinated investments, shared planning and aligned systems and procedures (box 3).

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### Box 3. Relationship and contractual issues within the GVC

*The kinds of relationships arising from the inclusion of the network of local suppliers into the GVC can also be seen in terms of contractual issues. The norm for TSA today is to enter into supply agreements in relation to a particular model. The supply agreement specifies conditions of supply in terms of price, quality and other factors and provides an "opt-out" clause should TSA feel supply is substandard. However, should the standard of supply be maintained at a high level then it is likely that the supplier will remain a supplier for the duration of the production of the model.*

*As Toyota's production works on a demand-driven basis only, estimates of production schedules are discussed at the outset of the supply arrangements and in regular coordination meetings. Day-to-day or hour-to-hour production depends on what is needed by the TSA plant at any one time in line with its kanban system. Toyota indicated that, while out of necessity it did handle some short-term contracts, it was more interested in building longer-term supply and technology development relationships with suppliers. Building trust and personal interaction was important in this regard as was a clear and unambiguous statement of preparedness by the potential or existing supplier to commit to Toyota's vision of how things should be done.*

Source: UNCTAD's interviews, 2006-2007.

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### *The restructuring of Toyota's supplier base*

It is worth noting that most of purchasing which handles supplier relationships has been relocated from the Durban plant to Belgium. According to the Toyota official this would, in all likelihood, necessitate that firms, seeking to retain a supplier relationship, have a presence in proximity to this facility (or to the headquarters in Japan) to participate in product development processes and to be available and accessible to resolve problems regardless of where production processes were actually taking place. The result of this would be that a number of suppliers that presently supply directly to TSA in terms of agreements would in future probably have to form supply relationships with intermediary first-tier transnational components firms – something that TSA had already been working to facilitate with its existing base of local suppliers.

The components firms' perspectives of cooperation within the GVC differ to varying degrees with those of TSA. All agreed that mere proximity to the local plant, an ability to produce a component to a supplier specification and a history of relationships did not necessarily guarantee an ongoing relationship with Toyota. What is critical – and all the firms indicated Toyota had communicated this approach to them – is that the firms can meet specifications in international standards and systems and provide their own technology offering or that of a strategic partner in meeting future production demand (box 4).

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**Box 4. TSA restructuring and its impact on the supplier base**

*Changes in Toyota's supplier base have taken place since the early 2000s, and this has implications for the discussion of the suppliers which follows. In the late 1990s TSA produced 80 000 units over seven models or platforms for the South African market. The plant had 154 suppliers. By 2007, the plant will have raised production to over 200 000 (mainly Corolla and Hilux) of which 65 percent will be for export to Europe. The firm will have 78 suppliers, 82 percent of which will be what TSA refers to as global sourcing partners in that they are linked into global supply arrangements for the models produced in other regions, especially Europe. In the late 90s, 28 percent of suppliers to TSA could be characterised as global sourcing partners. It is expected that the number of suppliers will be reduced further in the next six years to around 62. The Toyota official made the point that global sourcing had seen costs for the production of the Corolla reduced by 32 percent in the past five years. While the number of suppliers was to be reduced, the value of supplies in the local market was expected to continue to increase as volumes increased.*

*The value of local purchasing has already increased in this period from R2.3 billion to R5.4 billion. Today 70 percent of the Hilux is sourced locally up from 60 percent five years ago. Between 2003 and 2006 the proportion of supply into TSA from suppliers not party to global sourcing arrangements dropped from 41 percent of total sourcing to 18 percent.*

*Source:* UNCTAD's interviews, 2006-2007.

The recent introduction of a range of new first-tier intermediaries in South Africa, either as new investments or in joint ventures and buy outs, has also necessitated that firms supplying these companies rapidly build a framework of coordination and cooperation. In some cases it was reported that the superior knowledge bases and technological foundations of these new global sourcing partners meant that the local knowledge and technology offerings from local suppliers were supplanted. This in turn was likely to have an impact on value added and firms now find they are lower down in the hierarchy of automotive supply.

*The point of view of local suppliers*

Supply via an intermediary to Toyota was seen by all the firms as potentially reducing the possible gains from engagement in the Toyota global sourcing system, although most recognised this was a likely scenario as changes to global automotive production intensified over the next few years. Where suppliers are now dealing with a new first-tier buyer they are also dealing less directly with TSA although they are still expected to maintain the systems and procedures of the Toyota supply system. The bulk of suppliers felt that many of the standard requirements were very onerous in that they were costly, complex and absorbed much administrative time but did not necessarily provide a basis for obtaining a premium in prices within the automotive value chain.<sup>14</sup> It was a generally held view that TNCs would be able to extract most of the benefits from meeting all the standards and system requirements as they were in a better position to leverage these benefits to expansions or other activities.

The bulk of firms indicated that they still managed to retain their independence through operations to supply other industry sectors or through the nature of their shareholding. However, they did admit that should they wish to retain their position as suppliers they would need to find global business partners, scale up automotive related investment and focus the bulk of their production activities on meeting Toyota's needs. One of the firms indicated that it had made a choice to place itself at the margins of the Toyota global sourcing system by producing vehicle accessories that had less onerous requirements than full production components. Yet this firm had still actively pursued various forms of accreditation and had built up its own design and technological capability to remain in line with the overall approach of TSA. In light of this, the firm joined the others in giving considerable weight to generating an internal understanding of the GVC and its dynamics in order to understand their customer needs.

<sup>14</sup> Firms indicated that this was aggravated to some degree by having to meet different standards for different OEMs resulting in further costs being incurred. Furthermore, the fact that these standards were often seen as overly elaborate in other value chains meant that the investment could not necessarily be recovered through price premiums on other products that firms were supplying to other industry sectors.

Most of the suppliers indicated that should they wish to expand the scope of their production to export to other Toyota plants they would have no choice but to seek international partners and work within the GVC framework. The two other suppliers, as transnational subsidiaries, were already part of a global first-tier enterprise. The suppliers also made the point that the requirement to operate a networked production process with other suppliers or even competitors was difficult to maintain effectively where there had not been a history of trust. One supplier explained at length how their firm had been asked to source from a specified materials supplier by Toyota and claimed this had compromised their ability to provide an optimal service in that the Toyota preferred supplier was not interested in the intermediary's success (as it felt displaced from its previous position as direct supplier) and did little to assist the intermediary firm in meeting Toyota's exacting delivery standards.

With regard to contractual relationships the firms had been operating for some time with supply agreements in which production would only progress on the basis of orders coming to the TSA plant. These were underpinned by increasingly complex agreements. A particular concern raised by the suppliers was the need to provide warranty insurance on whatever products were being supplied. For low-value products that did not have a high wear-'n-tear problem or did not play a critical safety role (e.g. brake pads) this insurance was very costly. Furthermore, the likelihood was that if Toyota wanted to deflect warranty claims of any scale, the firms would struggle to meet the obligations – especially where it was often very difficult to tell which component might have resulted in a warranty claim.

Firms also indicated that trust statements by Toyota were sometimes overstated in that the supply agreements presented so many parameters with which firms had to comply that it would be relatively simple for TSA to claim non-performance. It was to TSA's credit, according to one respondent, that the company rarely took this route but it was also argued that increasingly complex legal agreements suggested less emphasis on trust. However, in exchange for these highly complex agreements was the potential for a longer-term relationship.

## 6. Dynamics of the cooperation, intellectual property, assets and competencies

### *The perspective of TSA*

TSA clearly sees itself as taking a lead role in facilitating cooperation and in increasing the capabilities of its suppliers and generating partnerships around matters of intellectual property. However, it was also noted in discussions with the firm, that it is increasingly seeking to form longer-term relationships with a series of specialist suppliers that generate their own process and product knowledge to enhance the Toyota product. In this regard Toyota indicated that it would like to see its key suppliers have a track record of innovation and the capacity to sustain this in order for such suppliers to enhance the Toyota product without having to depend on Toyota innovation systems. For example, Toyota did not see itself as driving innovation in producing more efficient heat-transfer systems but it would send out the signal to its suppliers that its product would be enhanced by innovation in this regard.

TSA made the point that it would make sense for firms to network actively on a global scale and to be exposed to centres of considerable innovation capability. The development by Toyota of a number of global innovation and sourcing hubs was seen to make Toyota more open and accessible to innovation partnerships than perhaps it had been in the past when much product innovation and component innovation was centred at the Japanese headquarters. However, of interest to the Durban context, the point was also made that the Durban plant of Toyota saw a role for collaboration between local firms to facilitate improved performance and to encourage various forms of knowledge sharing and collaboration. It was argued that over time, together with increasing global exposure, some component firms might be able to play a role in key innovation networks.

### The point of view of local component firms

Six of the seven components firms characterised themselves as belonging to a **geographic cluster**, although their impressions of the scale and intensity of interaction and the results of such interaction did reveal some differences. In particular:

- Firms tended to view the existence of a cluster as a geographic or locational fact further supported by the existence of an organisation to which they all belonged in the form of the Durban Auto Cluster (DAC);<sup>15</sup>
- All the firms felt that inter-firm collaboration could be improved;
- Firms identified the DAC, and in some cases the Benchmarking Club (operating in parallel to the DAC), as one of the most appropriate vehicle to facilitate such processes. Firms pointed to the considerable benefits they had gained from collaborative sharing of challenges and strategies to date;
- Firms also felt that there was a need to think about longer-term strategic interventions around which firms could collaborate. Such initiatives included specialist skills development in engineering and production management as well as product development.

These issues mirrored the TSA official's view of some of the major shortcomings in local suppliers which seemed could only be solved, in the short term, by joint ventures with foreign partners that had these capabilities or acquisitions of local firms by such foreign partners. The two transnational subsidiaries suggested that they would generally look to their parent companies for insights and upgrading support in the first instance.

Apart from membership of the DAC, most of the firms belonged to at least one other industry association. The most common were the National Association of Automotive Component and Allied Manufacturers (NAACAM) and the Steel and Engineering Industry Federation of South Africa (SEIFSA). Firms saw these structures as serving a more representative purpose, for instance, in relation to industrial bargaining or in relation to presenting industry views in various government forums and processes. Whilst the associations did allow for some networking, they did not necessarily organize active inter-firm collaboration around matters related to meeting customer demands or other factors. However, it was the DAC and the Benchmarking Club that received the greatest endorsement from firms for their ability to add value. Two of the firms lamented that they simply did not have enough time and enough technical staff to benefit fully, but one of these firms went on to say, "If it was not for the Benchmarking Club and the DAC our company would not be here today" (auto component firm interview).

#### Box 5. The relationship between Toyota and the auto component firms

*All the components firms identified Toyota as their most important partner. Some did indicate that they expected this to change to some degree as transnational suppliers became the key intermediaries between themselves and Toyota. The components firms did identify their suppliers as important but as they were largely sourcing materials that had been subject to basic processing their demands on the suppliers were not too complex. It was notable that none of the firms placed much emphasis on examining product innovation prospects with their suppliers. The components firms also recognised the value of learning from other suppliers to OEMs. Two of the firms identified logistics partners as being important in ensuring they secured inputs from suppliers and delivered to Toyota as required. The TSA official identified the firm's relationship with TMC Japan and TME-RDM in Belgium as being the most critical partnership. Toyota also placed considerable emphasis on relationships with key suppliers and its distribution agents.*

*Source:* UNCTAD's interviews, 2006-2007.

The component firms identified a range of strengths and weaknesses in relation to their participation in the GVC. Being a firm with a history of supplying quality materials and being located in

<sup>15</sup> The Durban Auto Cluster was established on the foundations of the KwaZulu-Natal Benchmarking Club which consisted of a number of components firms in the Province of KwaZulu-Natal. Today it has a membership in excess of 40 firms and undertakes a series of collaborative programmes aimed at assisting in the upgrading of firms' capabilities. Further information can be obtained at [www.dbnautocluster.org.za](http://www.dbnautocluster.org.za)



relative proximity to the Durban plant was seen by most of the firms as an advantage for them – in that they had the track record and could draw on some level of trust established over time. Additionally:

- Three of the components firms outlined their size in terms of employment, capital invested and scope to handle higher volumes as being an impediment to their GVC participation in that they would struggle if alone to meet TSA supply requirements;
- Two of the firms believed that their small size enabled them to be flexible in responding to requests but they recognised that without access to their own sources of technology and innovation this fact would not necessarily help them secure long-term supply relationships;
- One of the firms outlined how it had specifically worked to build up specialist engineering and design capabilities to enable it to continue to compete and, critically for it, to be able to provide a measure of value added that could in the longer run differentiate it from other competing suppliers;

All the suppliers either had or were working to obtain various forms of international standard certifications ranging from ISO 9002 and ISO 14 000 through to TS standards that TSA was increasingly making non-negotiable in terms of supply agreements. Three of the firms felt that the attainment of some of these standards was an overly elaborate requirement for small firms supplying relatively low-value components, but did recognise that their position in the GVC, such as it was, would be further weakened if they did not acquire the appropriate certification for their plants and processes. The components firms saw themselves as relatively competitive in the pricing of their products and, with the exception of one firm, their quality ratings were at a level which TSA considered acceptable. The service company working with the firms was seen by the components firms as offering a globally competitive quality service product at very reasonable prices.

A key challenge that TSA and three of the firms mentioned was that of achieving certification related to International Materials Data System (IMDS) listings of approved materials for supply of vehicles and components into Europe. Firms indicated that it was difficult, and in some cases expensive, to replace unapproved materials in the production process and that this had necessitated complex interactions with a host of suppliers. The TSA official's view of the supplier firms' strengths and weaknesses was that the key problem for the local suppliers was their lack of ownership of their own technology, their disconnection from Toyota's global innovation and product development systems and a lack of their own innovation offerings. The TSA official did acknowledge that some of their suppliers had invested in such capability, but most had found it necessary to establish linkages of a more substantial nature with global automotive components businesses.

## 7. Support needed to enhance the role of SMEs in the Global Value Chain

Firms were largely pessimistic about prospects of the South African Government to intervene effectively to enhance their positions in the GVC. While almost all agreed that there was scope for the Government to act, a perception existed that the Government did not necessarily have the capacity to respond in sophisticated and flexible ways to changing dynamics. Not only there was a time lag involved in that the Government tended to be very slow to act, but also the quality of its interventions when compared to Government interventions in other countries (e.g. Malaysia and Hungary) tended to have shortcomings.

All acknowledged the importance of the MIDP and finding a way to extend it, but felt that without attention being given to skills development, immigration policy, investment incentives, technology development and reforming labour laws, problems would arise. One of the firms interviewed felt that the Government could be far more proactive in ensuring the benefits of the MIDP for OEMs also benefited small firms and in particular black-owned suppliers.

Six of the component firms interviewed had gained access to at least one Government programme in addition to the MIDP. Forms of support obtained ranged from new investment grants, upgrading grants through the competitiveness fund, export opportunities, research and participation in some aspects of the DAC programmes which had been funded through grants from either national (sectoral partnership fund), local or provincial Governments. The firms indicated that these were

welcome and useful forms of support, but they have not met the major challenges arising from the processes of globalisation in the automotive sector.

Most of the firms interviewed made the following recommendations:

- The Government should be more forthcoming in its support for processes of inter-firm collaboration such as those under the DAC;
- Where funds were made available, the Government should be less prescriptive about how the funds were allocated as this tended to ensure the resulting programmes reflected the public sector agenda more than they did the day-to-day needs and concerns of firms;
- The Government should focus more on improving its existing offerings, ensuring consistency and predictability and utilise partnership ventures such as the DAC to enable firms to work together to drive a collective agenda of their own making;
- The Government should use its influence over the OEMs to encourage them to be more explicit about their longer-term plans, to support local suppliers and to work in partnership to build local capabilities around key areas such as design, engineering and production engineering.

The point was also made by firms that some of the key factors which influenced South Africa's relative competitiveness as a production destination needed attention. These included labour market flexibility, supply of skills, safety and security, costs of labour, investment in infrastructure. A number of comparisons were provided by firms of similar activities in other countries where not only productivity was higher, but also costs of labour were, in unit terms, lower. It was suggested that the Government could give more meaningful leadership on these issues. The Toyota official indicated that certainty around the future of the MIDP was required and expressed the hope that the Government would offer more substantial forms of supply-side support to firms in the sector to enable them to improve their competitiveness and their capabilities in terms of quality and innovation.

## 8. Conclusions

The environment confronting firms in the automotive sector today is one of relentless pressure and change. These pressures and the resultant changes reflect changing strategies from OEMs in the context of a number of market shifts. These would include ongoing changes in consumer markets, changes in technology, upheaval in global networks of production systems, and changes in regulations. These changes have seen the globalisation of value chains in the automotive sector creating new opportunities and new challenges for stakeholders participating in various automotive-production related activities. South Africa has not been immune to these changes and its automotive sector has been through some considerable upheaval.

The past decade has experienced the re-entry or new entry of global automotive brand-holders in relation to re-establishing their authority over domestic OEM operations. The past five years have seen the consolidation of the changes and local-based OEMs ramping up export-related activity. As the domestic OEM plants have been introduced to the processes within GVCs, so too have their suppliers. The experience of local supplier firms appears, from the results of this study, to be a mixed one in relation to their engagement with the GVC.

To a large degree, independent local suppliers that have not managed to either link with global sourcing partners of Toyota, or build their own capabilities and resources to make a claim to be something proximate to a global sourcing partner, have found the distance between themselves and Toyota growing. Increasingly such SMEs have to work with global sourcing intermediaries that fulfil the first-tier supply position with Toyota. These firms still need to upgrade and respond to the dynamics of supplying to the GVC by delivering products and production systems that are in line with expectations of Toyota in terms of quality standards, supply standards, delivery times and the like. The degree to which the firms' relationships with the large, often transnational sourcing partners, can be sustained over time is not particularly clear as the changes are so recent that they have not necessarily translated into meaningful trends. However, the present commitment of TSA to source

locally, at times through global sourcing partners, does offer ongoing scope for other firms to link to the TSA global sourcing system via these first-tier companies.

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## B. Assessing the participation of domestic SMEs in the international production chain: the case of Volkswagen in Mexico <sup>16</sup>

### 1. Introduction

In 2005 the auto production of Volkswagen (VW) was 300,656 units, the second largest in the country just after Nissan, but was below its peak production of the year 2000, when 425,703 units were produced. VW has been in production in Mexico for 47 years. In the post-war years VW imported some cars into Mexico for the exhibition "Germany and its industry", and all cars were sold. The company decided to begin assembling cars in the country and in 1962 the Xalostoc factory was opened.

In the 1960s, under the stimulus of the domestic market and the import substitution industrial policy adopted by the Mexican Government, VW opened its Puebla factory and focused mainly on the Beetle sedan. Later new brands came into the production line (Combi in 1971). In the 1980s as the domestic market expanded, VW opened its motor plant in Puebla with a capacity of 1,600 motors per day, and new models were brought on line such as the Golf and Jetta (4th generation).

Table 1. VW production and market segment

	Total production		Domestic Market		Exports	
	Units	%	Units	%	Units	%
1994	256.317	100%	157.445	61%	98.872	39%
1995	191.438	100%	36.307	19%	155.973	81%
1996	231.078	100%	53.105	23%	177.973	77%
1997	257.366	100%	69.230	27%	188.136	73%
1998	338.959	100%	91.360	27%	247.599	73%
1999	410.308	100%	69.002	17%	341.306	83%
2000	425.703	100%	85.649	20%	340.054	80%
2001	380.690	100%	85.090	22%	295.600	78%
2002	332.876	100%	70.452	21%	262.424	79%
2003	287.253	100%	53.704	19%	233.549	81%
2004	225.342	100%	61.636	27%	163.706	73%
2005	300.386	100%	57.890	19%	242.496	81%

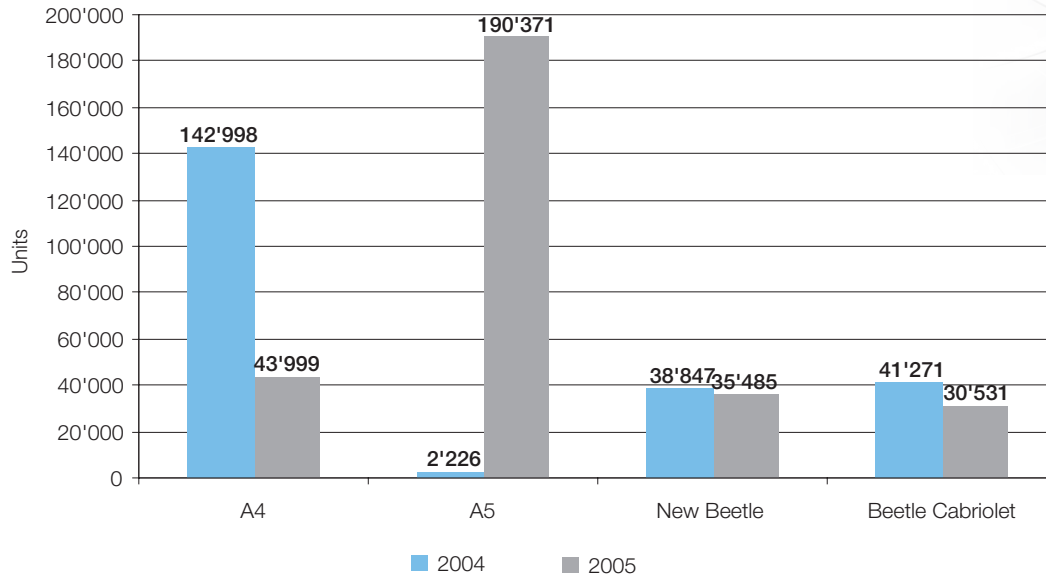
Source: AMIA web page April 2006.

In the 1980s, the Mexican debt crisis and the new industrial policy guidelines forced VW Mexico to shift its production from the domestic market to exports, mainly to North America. In the 1990s new product shifts and the globalization of production imposed new technical standards on the Puebla plant such as ISO 9002:94, ISO 9001:2000; together with these, some other quality standards related to the automotive and vehicle industry, such as the German VDA 6.1, the KBA (EWG 70/156) as well as a "Clean Plant" were required. At the end of the 1990s the maximum production level was 425,000 cars, and the Puebla plant became the largest auto producer in Mexico.

At the turn of the century as global competition increased, a new production mix was chosen for the Puebla complex. A new truck plant was opened in 2004 and a new car platform was introduced - the A5/A6 to produce the Bora (Jetta for Europe), keeping the old A4 platform to produce the Jetta and new Beetle models, while Golf production was relocated to Brazil and China. Such restructuring led to a drop in production. In 2005 it was 30 percent of that in 2000, the year with the highest level of capacity utilization (73 percent). It is expected that as new models make their way through crowded markets, capacity utilization would be optimized. VW is betting that A5/6 platform will be the success story of the decade, but it accepts that it could be difficult to achieve mainly in the United States and the European Union markets, due to the large variety of choices.

<sup>16</sup> This paper was contributed by Professor Clemente Ruiz Duran, Universidad Nacional Autónoma de México.

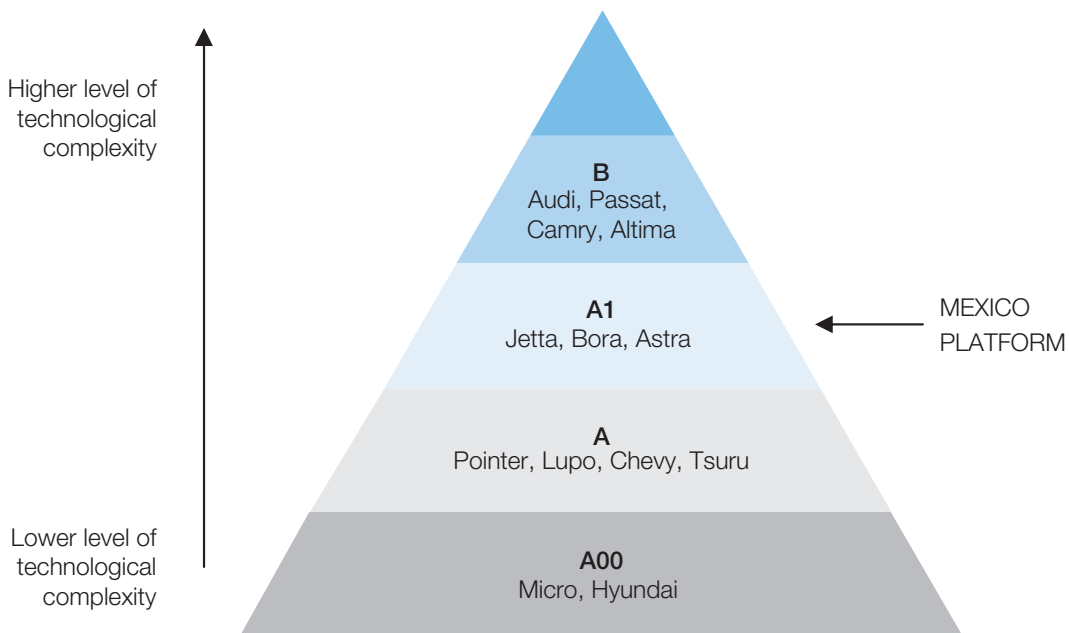
Figure 1. Production of VW per models



Source: Statistics of Volkswagen (www.vw.com.mx).

Although the local market has declined since its high in 1994, due to the decrease in the purchasing power, competition from other local producers and the large influx of imports since the opening of the economy, it is expected that growth will resume in the future. Meanwhile VW Latin America has been forced to develop a regional strategy in accordance with the level of technology of each plant, the size of the market and the export restrictions that each country faces. For VW Puebla is easier to export to the United States thanks to the North America Free Trade Agreement (NAFTA), than it is for the Brazilian plants. That has allowed the development of different technological platforms in both countries. Mexico has focused on with the Jetta, the Beetle and the Bora for the United States market, while the Brazilian plant has focused on massive production with a lower level of technology (Polo, Lupo and Golf), as is shown in Figure 2.

Figure 2. Technological Complexity



## 2. Developing a supplier network for the auto industry

The development of auto industry suppliers has been one of the most challenging tasks for Mexico. It has taken time to develop the present semi-integrated auto industry. In the 1950s Mexico enacted an industrial policy based on import substitution to promote the assembly of final goods in the country. Assembly plants were immediately established and foreign companies such as Chrysler, Ford, General Motors, and in a second round, Nissan, Renault and VW, entered Mexico. While the first stage was relatively successful, the second stage of the plan, which consisted of the creation of local suppliers for the assembly plants, took a long time to be realized. Public agencies never elaborated value chain integration guidelines, based on the assumption that businesses would develop backward linkages in their own self-interest, and with that a learning process would commence.

To speed up the process, in the late 1970s the Government developed what was called the “foreign exchange budget for auto producers”. The main goal of this measure was to ensure that the foreign exchange budget was balanced, in that producers would have to earn the foreign exchange they needed for importing intermediate goods for production from their exports. There were two ways to ensure a balanced budget. The first was to develop local producers that could substitute imports; the second was to develop an export platform that could generate the foreign exchange earnings that could match the import requirements. Auto producers were pushed to develop an export platform and at the same time develop local suppliers. This was not an easy task, as local producers did not meet the required technical standards. To solve the problem, auto producers linked up with their home country suppliers. This meant also a change in strategy for TNCs. They were trying to optimize their operations based on multiple locations, each one profitable by itself but not linked to a GVC. The new strategy for auto producers in the eighties became that of developing global network interactions to make corporations more profitable. At the same time, the auto producers were facing Japanese competition, where just-in-time (JIT), total quality control, just-in-sequence (JIS), and zero inventory were the new standards for production. This was possible only by relying on efficient suppliers on a global scale.

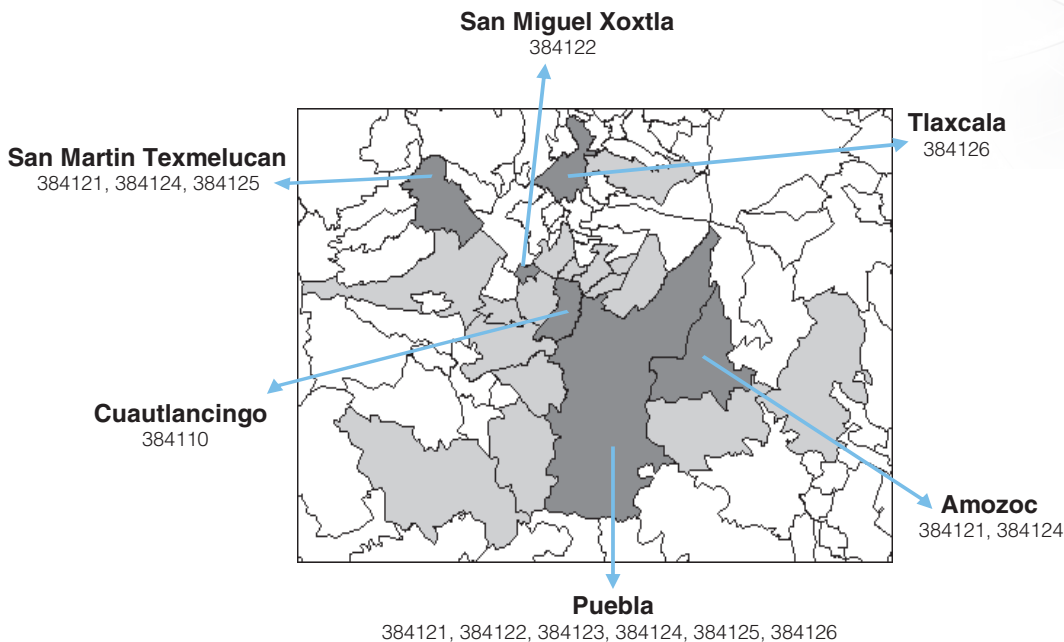
More recently, new industrial policy guidelines helped to develop local suppliers in Mexico. Under the NAFTA, Canada, Mexico and the United States set up rules for regional content. In the Rules of Origin Chapter, it was specified that at least 62.5 percent of production must originate in the NAFTA region. This has given an incentive to develop suppliers in Mexico. To support this process many local Governments at the regional level have promoted industrial parks. In the vicinity of VW Puebla, for example, eight parks were opened, where auto parts was the core business. The local government promotion policy has been quite successful. In 2006 VW had 280 first-tier suppliers, with transactions reaching \$2 billion (out of \$59 billion for global VW procurement operations). Second and third subcontracting layers have developed all over the country, especially in Tlaxcala (table 3).

**Table 3. Industrial Parks where VW suppliers are located**

Name	Number of businesses	SMEs	Employment	Number of VW suppliers
<b>Puebla</b>				
1 FINSA	17	10	6.850	17
2 PUEBLA 2000	72	45	23.200	6
3 5 DE MAYO	21	16	2.300	4
4 CUAUTLACINGO	56	51	21.900	11
5 SAN MIGUEL	8	7	2.200	2
6 RESURRECCION	24	18	5.000	2
7 BRALEMEX	4	2	1.800	4
8 CAMAFRA	10	10	620	3
<b>Tlaxcala</b>				
9 XICOTENCATL I	35	20	5044	8
10 XICOTENCATL II	8	5	4292	2
11 IXTACUIXTLA	13	4	4735	1
<b>TOTAL</b>	<b>268</b>	<b>188</b>	<b>77941</b>	<b>60</b>

Source: Sistema Mexicano de Promoción de Parques Industriales.

Map 1. VW and the auto parts industry in Puebla and Tlaxcala.



384110: Automobile and truck manufacturing and assembly

384121: Manufacturing and Assembly of automobile and truck bodies and trailers

384122: Manufacture of motors and their parts for automobiles and trucks

384123: Automobiles and trucks transmission system parts manufacturing

384124: Automobiles and trucks suspension system parts and accessories manufacturing

384125: Automobiles and trucks brake system parts and accessories manufacturing

384126: Manufacturing of other parts and accessories for automobiles and trucks

Once suppliers meet VW standards, they are accepted into the suppliers' data base of VW (box 1). This enables them to receive information regarding new outsourcing demands from VW on an on-going basis. New demands are posted on the webpage of VW for members of the database. There are different sorts of demands: some go directly to the first- tier registered suppliers; other are posted for those second or third- tier suppliers that will provide strategic inputs to the first-tier suppliers. After the call, an electronic evaluation is made and the final decision is communicated to all those involved in the process.

### Box 1. VW standardized suppliers' procedures

*Procedures to join the VW supply group are standard for all local and international suppliers. The company has developed a B2B platform that is supported by regional purchasing teams (also called LPT = Local Purchasing Team). To facilitate B2B, VW restructured and opened a new administrative office, and at management level a supplier development area was created together with a training institute, Instituto para Formación y Desarrollo, A.C..*

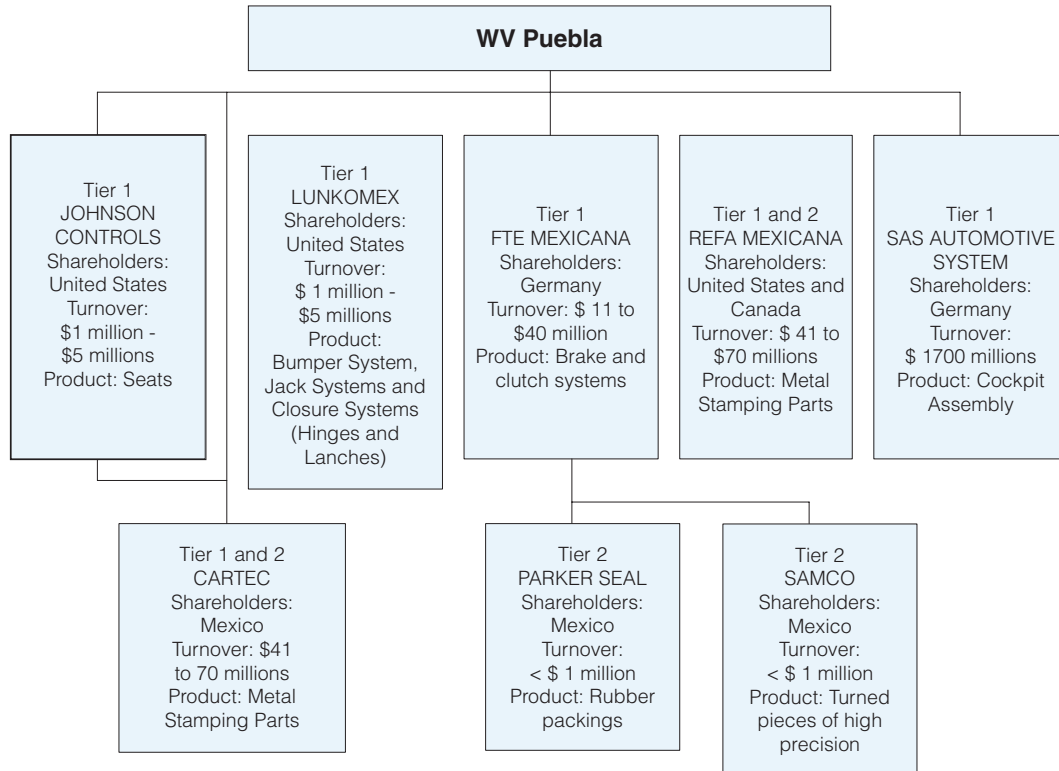
*VW procedures are transparent and open to all those willing to become suppliers. After an application has been filled out, an on-site evaluation takes place, taking into account the following criteria: exterior quality; engineering; installed capacity (the installed capacity has to have at least 15 percent flexible capacity to respond to changing demand). Those not accepted get recommendations how to reach VW standards. To comply with them they can attend courses at the Institute, such as ISO 9000 – 2000; audit for internal leaders; process auditing; supply in parts in series; statistical control of processes; quality costs; quality function; quality planning; experimental designs; failure possibilities.*

*Source: UNCTAD's interviews, 2006-7*

### 3. Fieldwork methodology and overview of participating firms

Between 2005 and 2006 a series of interviews were held with VW suppliers. In the first round five companies were interviewed, while in the second round seven interviews were held with the questionnaire designed by the project team. Most of them were first-tier suppliers and only two were second-tier suppliers, as shown in Figure 2.

Figure 2. First- and second-tier suppliers, Volkswagen, Puebla



The basic profile of the companies is summarized as follows:

- SAS Automotive Company is owned by German shareholders and specializes in cockpit modules. These include the instrument panel with instrument cluster, airbags, air conditioning, wiring harness, steering column, brake booster and pedals to the electronic controls and the human-machine interface;
- Johnson Controls is a United States company that delivers products for vehicle interiors, such as seating systems, instrument panels and cockpits, door systems, overhead systems, automotive electronics and electronic energy management systems. Johnson Controls is also the world's leading manufacturer of automotive batteries for both the replacement and original equipment markets. In Mexico it has four factories, one of which is specialized in VW components and located in Bralemex Industrial Park;
- FTE Mexicana SA has its headquarters in Ebern, Germany and is a leading international manufacturer of hydraulic brake and clutch systems for passenger cars and commercial vehicles, as well as of ABS solutions designed for motorcycles and scooters. FTE Mexicana SA is located close to Puebla. In order to serve both the Mexican and the NAFTA market, it has developed a supplier's network that includes Parker Seal and SAMCO;
- Lunkomex is a United States company that manufactures motor vehicle parts, gasoline engines and engine parts, electrical and electronic equipment, motor vehicle steering and suspension components;



- Refa Mexicana is a metal-stamping plant started four years ago by the Canada-based entrepreneur Klaus Reithofer with a \$4 million investment. Today Refa employs 980 people, working three shifts and generating \$57 million in annual sales from VW and others;
- Cartec SA is a Mexican company established in Puebla. It specializes in metallic assemblies, components, stamping and metal tube forming for Ford, General Motors, Mercedes Benz and VW. It has more than fifteen years experience as a supplier to the auto industry;
- Parker Seal is a United States company that opened its first plant in México in 1966. It designs and manufactures engineered seals and sealing systems for transmissions, engines and power generation components of automotive and heavy-duty equipment. Today it has more than 3,000 employees; its main plant is in Toluca, México. The Tlanepantla plant is the one that supplies VW in Puebla;
- SAMCO is a Mexican company based in Iztacalco, Distrito Federal. It specializes in high-tech turned pieces for brake systems. It has more than 28 years of experience as supplier to the auto industry, and was established by an engineer from Switzerland;

Table 4. VW Suppliers Location

Supplier	Location	Country	Years in Mexico	Supplier Development Program
<b>Tier 1</b>				
FTE Mexicana	Amozco, Puebla	Germany	8	YES
Johnson Controls	Bralemex industrial park, Puebla	United States	30	NO
Lunkomex	Puebla, Puebla	Germany	24	YES
SAS Systems	Finsa industrial park, Puebla	Germany	3	YES
<b>Tier 1 and 2</b>				
Refa Mexicana	Finsa industrial park, Puebla	United States-Canada	24	YES
Cartec	San Felipe Chachapa industrial park	Mexico	15	NO
<b>Tier 2</b>				
Parker Seal	Tlanepantla, Edo. De Mexico	United States-Mexico	2	NO
Samco	Iztacalco, Distrito Federal	Mexico	28	NO

Based on the level of employment, Refa Mexicana (with 980 employees) and Johnson Controls (with 920 employees) can be classified as large businesses, while Lunkomex (with 480 employees), SAS Automotive Systems (with 232 employees), FTE Mexicana (with 232 employees) and Parker Seal (with 200 employees) can be classified as medium size businesses and Samco (with 80 employees) as a small business. However, based on the sales, Refa Mexicana, SA (with \$41 million–\$70 million in sales), SAS Automotive Systems (with \$41 million–\$70 million in sales) and FTE (with \$11 million–\$40 million in sales) are large businesses, while Johnson Controls and Lunkomex (with \$1 million–\$5 million in sales) could be considered medium size and SAMCO and Parker Seal (with less than \$1 million in sales) as small businesses.

Table 5. VW Suppliers Profiles

Supplier	Product	Employees	Turnover
<b>Tier 1</b>			
FTE Mexicana	Clutch systems and brake components	232	\$11 to \$40 millions
Johnson Controls	Seats	920	\$1 million - \$5 millions
Lunkomex	Auto bodywork and special systems	480	\$1 million - \$5 millions
SAS Systems	Cockpit assembly	300	\$41 to \$70 millions
<b>Tier 1 and 2</b>			
Refa Mexicana	Stamping	980	\$41 to \$70 millions
Cartec	Metal stamping parts	260	\$11 to \$40 millions
<b>Tier 2</b>			
Parker Seal	Rubber packings	200	< \$ 1 million
Samco	Turned pieces of high precision	80	< \$ 1 million

The cost structure of the businesses shows that 60-80 percent of costs are for production followed by marketing (1-30 percent), R&D (0-29 percent), and the lowest is support activities (0-5 percent). It seems that this is a common structure, with the exception of Samco, where the entrepreneur designs and develops his own products. Samco can be considered as one of the few cases of an innovative firm that has been able to enter the VW global sourcing system, while the rest of the businesses get most of their technology from abroad.

The cost structure by factor of production shows that the low labour cost paradigm does not always hold as labour costs exceeded 50 percent for two companies, and in all other cases they were below 40 percent. Capital costs sometimes reached 70 percent of the total. Other costs were as high as 40 percent. Managers explained that other costs are related to inputs costs since VW demands high standards for the purchased raw materials.

Table 6. VW Suppliers Costs

Supplier	Percentage of costs by activity				Percentage of costs		
	Production/Service	Marketing	Support Activities	R&D	Labour	Capital/Investment	Other
<b>Tier 1</b>							
FTE Mexicana	0.70	0.20	0.00	0.10	-	-	-
Johnson Controls	0.60	0.10	0.10	0.20	40%	50%	10%
Lunkomex	0.80	0.00	0.10	0.10	8%	70%	22%
SAS Systems	0.80	0.15	0.05	0.00	60%	40%	0%
<b>Tier 1 and 2</b>							
Refa Mexicana	0.60	0.30	0.10	0.00	40%	60%	0%
Cartec	0.70	0.20	0.10	0.00	60%	10%	30%
<b>Tier 2</b>							
Parker Seal	0.80	0.10	0.00	0.10	30%	30%	40%
Samco	0.70	0.01	0.00	0.29	40%	30%	30%

#### 4. Awareness and understanding of the Global Value Chain

This part of the questionnaire explored the firm's position in the GVC. Each step of the chain adds value to the final product. This includes activities such as design, production, marketing, distribution and support to the final consumer. The network of firms extends from suppliers (upstream) to the main producers (lead firms) to the final goods/services market (downstream).

In the area of competitiveness, five out of seven of the interviewed firms argued that they were quite competitive in crowded markets. Five mentioned that they were quite competitive at the world level as they are part of a global network. Refa considered itself as not very competitive, due to the high cost of the inputs in Mexico (steel) that lowers its competitive edge. SAS Automotive Systems considered itself as a medium-size competitive firm that has benefited from the alliance between Faurecia and Siemens.

One of the problems of first-tier suppliers is that they have become excessively specialized, producing only one product. This diminishes their competitive edge, as they rely excessively on one product, with little value added, as is the case of SAS and FTE Mexicana. Second-tier firms seem to have a broader competitive edge as they produce different types of products. This allows them to compete in different areas. Almost all those interviewed confirmed that in Mexico the competition is high due to the decentralized operation schemes of TNCs. The competitors are in most cases other TNCs. Most TNCs declared that they usually import inputs from abroad and add little value to their products locally. However, Johnson Controls, Parker and Samco argued that they produce locally high value-added products.

**Table 7. Understanding Global Value Chain**

Supplier	The degree of competition of the firm	Size and types of competitors	Strongest competitors location	Value added by your firm
<b>Tier 1</b>				
FTE Mexicana	High	Large competitors	National level	Low
Johnson Controls	High	Large competitors	International level	High
Lunkomex	High	Multinationals	National level	Medium
SAS Systems	Medium	Multinationals	International level	Low
<b>Tier 1 and 2</b>				
Refa Mexicana	Small	Multinationals	State wide	Medium
Cartec	Medium	Large competitors	State wide	Medium
<b>Tier 2</b>				
Parker Seal	High	Medium competitors	Regional Level	High
Samco	High	Medium competitors	International level	High

For most of the auto suppliers the final market is a large auto firm. It is a closed production network, where the demand is a function of auto sales. In most cases, the interviewed companies had as a reference the North American auto market. FTE Mexicana, Johnson Controls, Lunkomex and SAS Systems are quite dependent on VW. They declared that as there is strong competition in the North American market, the situation is quite unstable, especially after VW reduced its production mix and depends mostly on one single model (Bora). Other firms interviewed, such as Refa Mexicana, have more diversified production and have been able to develop links with other industries. For example, the electric and electronics appliance industries constitute a source of more stable and stronger demand. Regarding their impact on VW's final price, they argued that their impact is quite low and does not even reach one percent of total price. The only exception was SAS Systems which stated that its inputs accounted for 12 percent of VW's final price.

Table 8. Final market for goods/services

Supplier	Destination of the product/ services	Behaviour of the final market for products	Market located	Final price contribution
<b>Tier 1</b>				
FTE Mexicana	100% automotive industry (which 50% for VW, 20% for GM and 30% others)	growing, but the sales are unstable	50% National (VW) and 50% export	-
Johnson Controls	VW	declining	North America	3%
Lunkomex	VW, Nissan and GM	declining	North America	5%
SAS Systems	VW	growing	North America	12%
<b>Tier 1 and 2</b>				
Refa Mexicana	98% to GM, Ford and VW and 2% for electric and electro domestic's apparatuses.	growing	United States, France, Germany and China	5%
Cartec	60% VW and 40% Johnson, Karma, Ford, Mercedes Benz, and others	Not growing	90% Puebla and 2% export	< 5%
<b>Tier 2</b>				
Parker Seal	40% automotive industry and 60% for oil industry and household-appliances	growing	National Market	< 1%
Samco	Household-appliances, autos and clocks	Not growing	National and International	< 1%

## 5. Cooperation within the Global Value Chain

This section examines the internal functioning of the VW GVC - its tensions, power relations, and their resulting importance to the firms. It also looks at the relevance of geographic location for the company with regard to the GVC. According to the interviews, cooperation with suppliers is mainly focused on production and little cooperation takes place in product improvement within this GVC. However, in the cases of Parker Seal, FTE and SAMCO both a cost reduction programme and a product improvement programme have been put in place.

Interviews revealed that most first-tier suppliers are specialized in the auto industry and have strong linkages with VW Puebla, so that they have little independence in the local market. Most of them are located near the plant and their production is determined by VW demand. Second-tier suppliers have greater independence as their production is not directly dependent on VW. They have other clients and they usually have good relations with their suppliers. Samco even has a permanent information exchange with its competitors to improve production costs and other areas of its business.

Table 9. Cooperation within the Global Value Chain (1)

Supplier	Level of:			Level of independence of the firm	The nature of the relationship with:	
	Coordination	Outsourcing	Alliances		Suppliers	Competitors
<b>Tier 1</b>						
FTE Mexicana	More or less	None	No	Medium-low	High confidence, the company shares all the information	None
Johnson Controls	High	Sometimes	No	Low	Provides raw materials	No exchange of information
Lunkomex	High	No	No	Low	Confidence and transparency in prices and costs	No exchange of information
SAS Systems	Good	Yes	No	Low	Constant exchange of information	No exchange of information
<b>Tier 1 and 2</b>						
Refa Mexicana	Good	Yes, with VW	No	Average low	High confidence	No exchange of information
Cartec	Interchange of engineering specifications	Yes	No	Very low	High confidence	don't exist
<b>Tier 2</b>						
Parker Seal	Programme for reduction of costs and development of products	None	None	Medium-high	Information on specifications of the product	None
Samco	Two projects with FTE	None	None	Medium-high	Not good	Information exchange about costs

In general, first-tier suppliers do not share information with their competitors, but they exchange information with their own suppliers. FTE Mexicana and Johnson Controls have helped their suppliers to improve quality through certifications such as ISO TS and ISO 9001, etc. – so they could get into the VW global sourcing system. SAS Automotive Systems has a good relationship with its suppliers but has had problems to put in place a supplier development program due to the very high quality requirements.

All firms argued that they are a key factor for VW and in general for the competitiveness of the auto industry in Puebla, especially in terms of cost reduction. Their presence has become essential for VW to follow just-in-time procedures, as inputs' procurement is based on a maximum delivery time of 30 minutes. First-tier suppliers such as FTE Mexicana and Johnson Controls consider that their role in the GVC has increased as they have been developing second-tier suppliers, have become involved in setting product specifications and provided advice to the VW plant for product management. Firms considered that being involved in the GVC was quite advantageous, as they can reduce marketing costs as their sales are guaranteed by VW, and they receive the benefits of global expansions in demand. They argued that firms become more efficient when they develop cooperative strategies for information exchange in order to reduce costs within the GVC as they get the best prices for quality inputs. Samco argued that a company in the auto parts industry that is not included in a GVC would have a very small market and no chance to succeed.

Table 10. Cooperation within the Global Value Chain (2)

Supplier	Importance of the firm in the GVC	Participation of the firm in Global Value	Difference between being a part of a GVC	
			Quantitative	Qualitative
<b>Tier 1</b>				
FTE Mexicana	Low costs strategies	Fulfilled the specifications of Mexican clients	Being part of the GVC has created much pressure to lower costs permanently	
Johnson Controls	Very important, because they make improvements to the process	Innovations	The production benefits from a more important and certain market and no planning needed	
Lunkomex	Very important, because the autos depends on their product	Development of suppliers, innovation and improvements	Sales	
SAS Systems	Very important, they have developed improvements that have helped VW to become more competitive	Specification provided and R&D in Germany	GVC has helped them achieve dynamic growth	
<b>Tier 1 and 2</b>				
Refa Mexicana	Very important	Specification provided	Outside the GVC, manufacturing depends directly on product demand	
Cartec	Very important, interchange of learning	Specification provided	Outside the GVC, the manufacturing depends directly on the demand	Within the GVC the manufacture increases and is more constant
<b>Tier 2</b>				
Parker Seal	Important, because they have improved the product	Contribution to original equipment	Not within the chain	
Samco	In Mexico, we are important, but not in the GVC	Fulfilled VW specifications, product innovations	Difficult to be outside the GVC, because the GVC is the only way for growth	

Most of the firms interviewed have contracts related to a specific VW platform. Most contracts last for 5 to 8 years, but in some cases firms get open contracts, as is the case of FTE. Open contracts can be modified by both parties, taking into consideration market conditions. Firms consider that contract bargaining is quite convenient as both parties can set specific rules at the beginning, especially to have clear and transparent cost and price information. Johnson Controls, however, argued that most of the contract text is fixed, so there is no room for bargaining. Lunkomex and Flex gate argued that there is no available space in the cluster and new highways and infrastructure were needed to allow the expansion of firms to nearby locations.

Table 11. Contracts of suppliers and VW

Supplier	Duration of the contract	Type of negotiation for the contract
<b>Tier 1</b>		
FTE Mexicana	contracts are opened and reviewed weekly	weekly visits to VW or telephone calls
Johnson Controls	8 years	not competitive
Lunkomex	5 and 8 years	structure is highly competitive
SAS Systems	8 years	structure is highly competitive
<b>Tier 1 and 2</b>		
Refa Mexicana	5 years	reach important agreements, due to the confidence developed
Cartec	5 and 8 years	not possible to negotiate, because VW sets the target
<b>Tier 2</b>		
Parker Seal	open contracts	no negotiation possible
Samco	don't sign contracts	-

One of the main targets for the local Government in Puebla has been to develop a multi-tier supplier cluster, based on a radial type of organization, with 8 industrial parks located in the region. As the VW plant is located in Puebla, just a few miles from the border with Tlaxcala, the cluster runs across both states, with a total of 60 firms that are the core suppliers of VW (table 3). During the interviews, the first-tier supplier firms argued that being located in the neighbourhood of VW allowed them to follow just in time supply procedures, and therefore allowed them to grow. However, there are no plans for further investment in local development. Investment could eventually take place in the long term if the auto parts cluster could take advantage of the national market and its subsequent economies of scale.

Second-tier suppliers felt that the first-tier suppliers and VW's demand is too low to allow them to grow and that one factor that hinders cluster growth is the lack of skilled labour in the region. The firms confirmed that there is low interaction among the suppliers in the different tiers. It seems that while the first-tier get an immediate response from VW, this does not spill over to the second-tier. Additionally, subcontracting policies differs among firms, and this does not allow a homogenous growth of the cluster in all its parts.

Table 12. Scope for cluster development

Supplier	Type of the cluster	Scope for the development of cluster	Industrial association to which the firm belongs
<b>Tier 1</b>			
FTE Mexicana	Geographic	Vicinity allows just in time supply	CANACINTRA, CANACO and others
Johnson Controls	Geographic	Opportunities for growth	CANACINTRA and AMERICAN CHAMBERS
Lunkomex	Geographic	No programs for further local investments	CANACINTRA and COPARMEX
SAS Systems	Geographic	Stability	None
<b>Tier 1 and 2</b>			
Refa Mexicana	Geographic	Growth is expected in the long term	CANACINTRA and COPARMEX
Cartec	Geographic	Cluster can grow, taking advantage of economies of scale, selling to other regions in the country	CANACINTRA
<b>Tier 2</b>			
Parker Seal	Geographic	No, due to low demand from the auto cluster	CAINHU and Tlalnepantla Industrialists
Samco	Geographic	Lack of skilled labour to develop the cluster	CANACINTRA

## 6. Dynamics of the cooperation, intellectual property, assets and competencies

This section looks at the network of cooperation in VW's GVC. It also looks at the key assets and competencies for, and threats to, the position of the firm in the GVC. FTE Mexicana, Refa Mexicana, SAS Systems and Samco argued that the most important cooperation strategy is to help develop a good supplier relation upstream and horizontally. Johnson Controls, Lunkomex and Parker Seal argued that the most important aspect was that the GVC that gives firms strengths and weakness. The identified strengths were innovation, quality, price, services, location and technology. The identified weaknesses were strong dependence on VW, high degree of specialization, high labour costs, and lack of domestic inputs and raw materials.

Additionally, on the positive side, it was mentioned that some contracts were usually long-term (5 to 8 years), giving confidence to suppliers, allowing long-term relations. On the negative side, the low quality of the workforce, the lack of infrastructure, and lack of certifications (ISO TS y ISO 9001) were mentioned. Samco pointed out that the development of clones is a threat for its participation in the GVC. In general, though, most firms declared to be satisfied about their integration in VW's GVC.

Sharing international standards allowed them to improve their competitiveness and to find out what is required to grow faster through product improvement. It also allowed them to take advantage of NAFTA by establishing alliances with other firms.

**Table 13. Dynamics of the co-operation, intellectual property and competences**

Supplier	Most important partners of the firm (upstream, downstream, horizontal, diagonal)	Strengths and weaknesses of the firm within the GVC	Key assets - or lack of competitors -that make the firm's position in the GVC	The biggest threats to the firm's position in the GVC	Is the company satisfied with its role in the GVC	Willingness to increase its participation in the GVC
<b>Tier 1</b>						
FTE Mexicana	Horizontal, upstream	Strengths: technology, innovation, quality, service Weaknesses: dependency on Europe and lack of local suppliers	Third company in this market, has a long-term project	–	Managed to position itself in several lines of products	No, wants to take advantage of the NAFTA
Johnson Controls	Downstream	Strengths: quality, price, innovation and capital Weaknesses: specialized in a single product	Market is high-tech and they have to keep pace with it	Does not exist	Yes	No
Lunkomex	Downstream	Strengths: price and quality Weaknesses: cost of the manual labour	Presence at world-wide level and long-term contracts	High cost of wages and salaries	In Puebla, there is not much space to grow	Only at world-wide level, locally no
SAS Systems	Horizontal, upstream	Strengths: firm always tries to be efficient; participation with VW has developed quickly	Technical level is the key	Only the costs	Yes	No
<b>Tier 1 and 2</b>						
Refa Mexicana	Horizontal, upstream	Little competition, good price, good quality, good location and good costs	–	Prices of raw material	Wants to have bigger participation in the GVC	If, developing new products
Cartec	Downstream and upstream	Strengths: variety of products, location Weaknesses: high cost of manual labour and lack of innovation within the company	They followed in the step with the high technology market. High value added in manufacture	Biggest threat is that sales diminish; and therefore the production has to be reduced	Yes	Yes, at the moment they have projects to be GM suppliers
<b>Tier 2</b>						
Parker Seal	Upstream	Strengths: speed to respond and high quality Weaknesses: price of the product	Competitors have lower quality; market suffers the competition	Threat is that clients prefer raw material of low quality	Yes, if the company contributes much to the development of the industry	Around 10% in sales and 15% in utilities
Samco	Downstream	Strengths: fulfilled all the specifications of our clients Weaknesses: necessary manual labour is scarce	The market grows slowly, need to make a plan of production to avoid problems with suppliers	Products can be cloned in the Chinese market	Yes, if the installed plant works 100%	Generate alliances



## 7. Support needed to enhance the role of SMEs in the Global Value Chain

The firms mentioned that in order to help SMEs increase their participation in VW's global sourcing system, public policy measures should be implemented. The Government should set up research facilities, and help businesses to improve or maintain their product and process quality standards and become internationally certified. They considered that the Government should provide financing and subsidies for exports and training. Additionally, they argued that local Governments should improve infrastructure, so that the firms can assure timely deliveries. Finally, they pointed out that local Governments should learn how to bargain with TNCs to establish and improve their supplier development programmes as they are a key factor for growth.

**Table 14. The role of small and medium size enterprises in GVC**

Supplier	Should public policy assist SMEs	Support on the part of Government	Suggestion of supports on the part of the Government
<b>Tier 1</b>			
FTE Mexicana	Yes	No	–
Johnson Controls	Yes	No	Create research laboratories and support technological innovation
Lunkomex	Yes	Qualification of staff	Infrastructure, subsidies and mass media
SAS Systems	Yes	No	–
<b>Tier 1 and 2</b>			
Refa Mexicana	Yes	No	Financing, subsidies, support of exports
Cartec	The Government must help to standardize the operations and systems of quality in production	Yes, quality courses and operation of systems courses	–
<b>Tier 2</b>			
Parker Seal	Policies must help small companies to have more clients.	No	–
Samco	Policies should help to increase the quality and skills of workers	No	The Government must learn to negotiate with TNCs

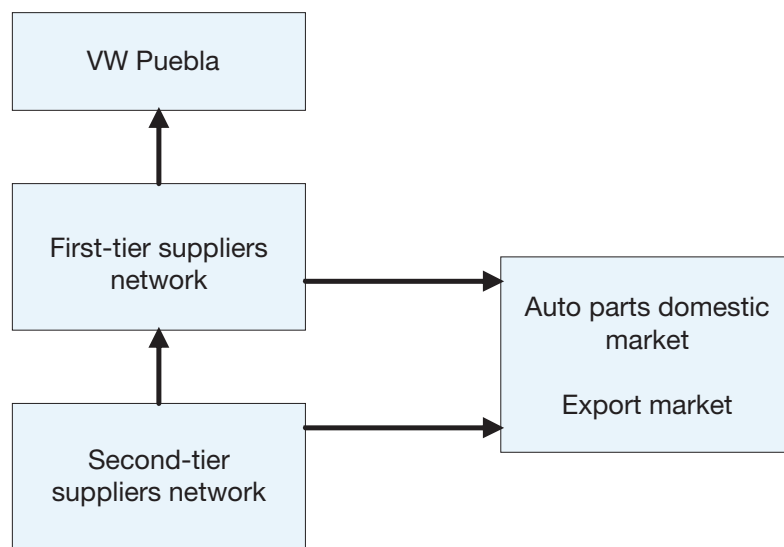
## 8. Conclusions

During the last thirty years, local outsourcing in the auto industry in Mexico has become an established practice. VW has done pioneer work, and has been rapidly followed by its competitors: Nissan (in Aguascalientes), Ford (in Hermosillo) and Chrysler (in Saltillo). Subcontracting in the auto industry is advancing, but it seems that companies continue to behave “as in the old days,” relying on low costs rather than on long-term relations. The questionnaire's responses yielded a number of insights:

- The VW suppliers' network in Puebla is a multi-layer system controlled by medium-sized enterprises. A significant size gap exists between the first- and second-tier suppliers, the latter being typically represented by small local firms. UNDP estimates that the network involves more than 1,500 firms of different sizes, but 55 are international core auto parts suppliers;
- Clustering has helped to consolidate the auto parts industry in Mexico. Training is carried out inside the cluster, using formal and informal methods. VW has established an independent training centre (Instituto para Formación y Desarrollo, A.C), where courses are taught to improve supplier management and operational skills;

- Subcontracting by VW first-tier suppliers is limited, and this affects the development of second-tier suppliers. First-tier suppliers (most of them TNCs) get the benefits of information exchange with VW, so technology transfer happens at this level. Second-tier suppliers are isolated and little or no technology transfer takes place;
- Among the positive side effects, there has been a push for local producers to upgrade through increased investment and higher quality standards to become VW suppliers. Attainment of higher standards has also allowed producers to become suppliers to the domestic auto parts market, creating economies of scale;
- The most successful suppliers have been able to export, a key factor has been the certifications such as ISO 9000 – 2000, ISO/TS 16949 2002 which allowed firms to get into the VW global supply chain and export to China and Saudi Arabia.

Figure 3. Side effects of the VW subcontracting network



- A key improvement for the whole industry in the region has been that VW has pushed for higher environmental standards, allowing firms to be certified as “clean plants”, creating an awareness of environmentally friendly practices. All this has allowed the development of new standards for the industry. Clean plant certification was done by SGS European Quality Certification Institute, ESV International Certification Services;
- All first-tier firms have enjoyed a more stable demand, and this has stimulated larger investments in the region. The key factor has been the establishment of medium and long-term contracts, which insure a stable and predictable income flow;
- The interviews identified the main factors that hinder supplier development in the Mexican auto parts industry, namely:
  - a. First-tier firms prefer to import components, instead of sourcing them within the Puebla supplier network, so first-tier companies are mainly assembly plants, with high percentage of imported inputs;
  - b. There are no support institutions for the second-tier industries; business associations are biased toward the support of larger firms; SMEs are not represented in the bargaining process with VW;
  - c. First-tier firms do not have R&D departments in Mexico. Most R&D is realized abroad and none of the VW suppliers have been able to participate in the activities of the GM Delphi Automotive R&D Centre in Ciudad Juárez;
  - d. The Mexican Government has not developed a subcontracting law that could preserve the rights of the subcontracted businesses.

In summary, the VW case in Mexico shows that TNCs may be a key driver of technological development and quality upgrading. For example, in Puebla VW has imposed higher environmental standards and requested all its suppliers to become certified as “clean plants” by SGS European Quality Certification Institute. This has allowed the development of new standards for the industry, which allowed them to then serve the United States market. Quality improvements also had positive side effects on the economy, since the number of defects in production was reduced thanks to international certifications (ISO 9000 – 2000, ISO/TS 16949 2002) and VW started to produce in Mexico more sophisticated export models. In this sense, Governments should support local suppliers to undertake the learning process which allows them to meet international quality standards.

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# 5 / Case studies in the software sector

## A. global software player: the case of Microsoft in Egypt<sup>17</sup>

### 1. Introduction

This chapter examines the participation of Egyptian IT companies in the global sourcing system of Microsoft, the world's largest software company. It focuses on small and medium-sized enterprises (SMEs) providing services that complement Microsoft's products as well as enterprises that serve Microsoft directly (usually as support functions). Services, as opposed to packaged software and hardware, are by far the largest contribution of SMEs and are therefore the focus of this report. These services can be classified into traditional IT Services (ITS), such as software installation and testing, and IT Enabled Services (ITES), such as call centers.

The findings of the report are based on both primary and secondary research. A number of interviews were conducted with Microsoft and its Egyptian partners. In addition, research documents from local and international consulting firms, industry associations, academic institutions and others were consulted. Although there are several IT transnational corporations (TNCs) operating in Egypt, and the vast majority of them use Egyptian companies in their GVC model, Microsoft was chosen because it is the most active company in using partners both to complete the value delivered to the end user and also to support its own internal activities.

#### *Microsoft and the global IT industry*

Worldwide spending on Information and Technology Services (ITS) and Information and Technology Enabled Services (ITES) grew by nearly 7 percent in 2005 according to NASSCOM, on the back of healthier spending across key markets of the United States and Western Europe, with strong growth in emerging markets. In addition to the growth in scale, the portfolio of globally sourced services continued to expand into higher value and more complex activities, further reinforcing the increasing maturity of the global delivery model.

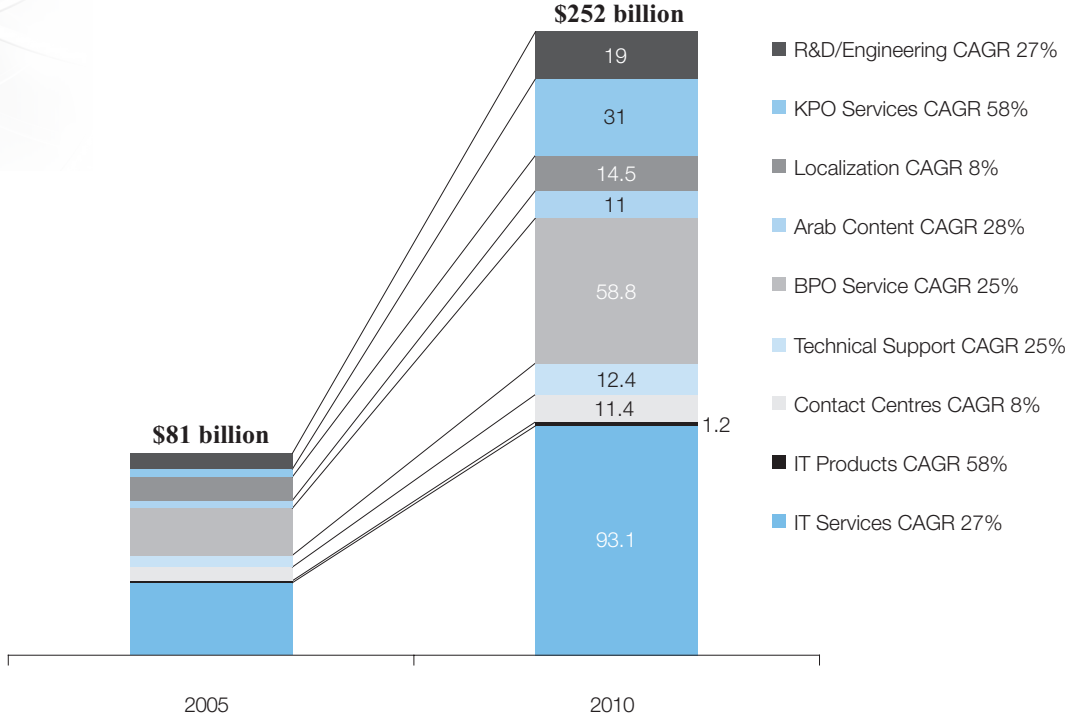
Essentially, the term Global Value Chain (GVC) implies that production, supply and service value chains (routes whereby goods or forms of knowledge are transformed for the market) span multiple locations at a global scale. The IT industry has benefited greatly from the dramatic reduction in telecommunication costs over the past years to develop truly global delivery models. A majority of IT Services, such as software development and software testing, and IT Enabled Services, such as call centre services and data entry, can be delivered from a remote location without the need for on-site physical presence. As will be seen in this paper, quite a number of companies in Egypt deal directly with Microsoft in Ireland. It is therefore necessary to comprehend that the analysis is of Microsoft from a global perspective and not restricted to Microsoft Egypt. Since IT skills and capabilities can be easily standardized across different countries, and since developing countries regularly produce large numbers of qualified human resources, large companies seeking to optimize their GVC are now adopting a sourcing strategy where "geography doesn't matter". The company, or for that matter the employee, that can deliver the most compelling value proposition will be selected as the supplier of choice in the GVC regardless of where it is located.

Before the global recession, the outlook for corporate spending on ITS- ITES was positive. Offshore IT spending was forecast to grow significantly, from \$81 billion in 2005 to \$252 billion in 2010, as companies continued to invest in low- cost locations and broaden the range of activities they sent offshore.<sup>18</sup>

<sup>17</sup> This paper was contributed by Tarek Assad, General Manager, CID Consulting, Egypt.

<sup>18</sup> NASSCOM Strategy Report, 2006

Figure 1. Projected global offshore services market 2005-2010 in \$billions



Source: AT Kearney Report, 2006.

Outsourcing and global delivery of ITS-ITES was expected to continue to evolve rapidly, expanding in scale, scope of activities, and geographic reach. As global delivery matures, most sourcing destinations, including countries such as Egypt, will tap this potential and grow in size. Low cost countries compete to participate in this global trend and to establish themselves as global offshore destinations for ITS and ITES. For example, India, the world leader in offshore ITS-ITES, fully expected the sector would generate substantial export revenues and employ two million people. As global sourcing matures and demand for multi-country delivery capabilities increases, newer destinations are being explored such as Egypt.

## 2. The IT sector in Egypt and in Microsoft's global supply chain

It is believed that the IT sector in Egypt is poised for rapid growth. There were 1666 registered Egyptian IT companies in October 2006, compared to just 447 at the end of 2000. The growth of the industry comes from both increased local demand and expansion into other countries through offshore services.

Compared to developed countries, developing countries, Egypt included, have seen a boom in the growth of technology use and penetration. Over the past five years, Egyptian Internet usage has almost doubled reaching 5.4 million in 2006, so has the number of fixed line subscribers. The number of mobile telephone users has risen more than 200 percent. The Egyptian information technology service sector is regarded as one of the fastest growing in the Egyptian economy. The overall IT market is projected to grow at CAGR of 9.6 percent over the next five years according to the following projections:

**Table 1. Egyptian IT industry market size in \$millions**

	2005	2006	2007	2008	2009*	2010*	CAGR
Hardware total	\$573.06	\$664.82	\$725.44	\$771.52	\$831.30	\$896.57	9.40%
PC's	\$219.19	\$268.80	\$306.52	\$324.69	\$362.58	\$400.81	12.8%
Packaged software	\$131.95	\$151.31	\$171.80	\$191.33	\$210.45	\$231.68	11.9%
Services total	\$103.22	\$111.69	\$124.08	\$130.27	\$140.19	\$150.99	7.90%
Total IT	\$808.23	\$927.81	\$1,021.32	\$1,093.11	\$1,181.94	\$1,279.24	6.60%

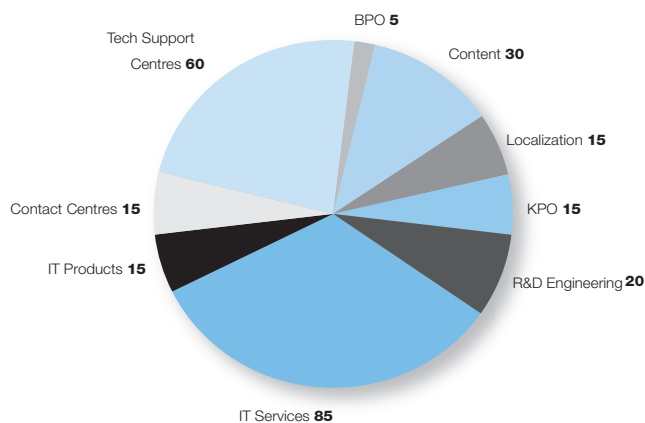
Source: NASSCOM Strategy Report, 2006 (\*estimations).

Egypt has many advantages as an offshore destination. Geographically, Egypt consists of a 386,660 sq. mile area and is located in a central region that could be considered as a near-shore destination to Europe as Cairo is a 3-4 hour flight from most European cities. The country is within the same time zone as Europe (GMT +2). Egypt has always been a very attractive destination for European tourists and over the first half of the past century many European communities were established around the country especially in Cairo and Alexandria. These cities became very cosmopolitan. Moreover, fiber optic submarine telecommunications cables linking South East Asia to Europe and the United States go through the Suez Canal and have points of presence in the country. This gives Egypt easy access to a very large telecommunications bandwidth that is needed for the ITES outsourcing.

As such, many TNCs have started to use Egypt as an offshore destination and Egyptian outsourcers have started to serve international companies. In the past few years, Egypt has developed a promising contact centre industry that serves technology TNCs and that continues to grow at a rapid pace. A 2004 Datamonitor report, highlighting Egypt's attractiveness as a contact centre destination, projected that the industry will have 965 agent positions by 2006. The industry has grown faster than expected and numbers have now exceeded 3,000.<sup>19</sup>

AT Kearney has ranked Egypt 12th in their Global Services Location Index in 2005. It was ranked as first in the Middle East. AT Kearney's projected global offshore services market show that Egypt is in a prime position for growth with an excellent financial score, indicating that the cost of doing business in Egypt is low compared to many other countries. AT Kearney agreed with Egypt's projections of strong growth in ITS and ITES exports over the next five years and highlighted Egypt's potential in a report that was issued in 2006.

The Egyptian Ministry of Communication and Information Technology (MCIT) estimated that Egypt's 2005 exports (from local companies as well as TNCs) were \$250 million. This included different types of services spanning ITS and ITES.

**Figure 2. Egypt's estimated revenues from offshore services in 2005 in \$millions**

<sup>19</sup> www.datamonitor.com

Microsoft was founded in 1975 and is today the world's largest software company with global annual revenues of \$44.28 billion, a market capitalization of \$283 billion and a workforce of 76,000 employees in 102 countries. Created in 1993, Microsoft Egypt is a wholly-owned subsidiary of Microsoft Corporation. Microsoft Egypt has been very successful in growing business in Egypt especially in the past decade. It now employs over 100 professionals and occupies a large building in the Smart Village, Egypt's premier IT Park. Microsoft Egypt was awarded the best Microsoft subsidiary in Europe, Africa and the Middle East in 2004. Bill Gates presented the award in person to the Microsoft team in Cairo in July 2004. In order to deliver the final product to the end user, Microsoft has to ensure that the following six consecutive phases of the value chain are completed:

Figure 4. Microsoft's global supply chain



Value Chain Phase	Description
Research	Investigating and creating new technologies that have practical implications for the needs of Microsoft's target customers
Development	Creating products (based on existing technologies) that address a certain need in the market
Marketing	Educating target customers on Microsoft's products and their capabilities
Sales	Licensing Microsoft's software products to customers
Implementation	Installing Microsoft's products at the customer's site and customizing them to fit the particular needs and environment of the customer
Support and training	Providing support for answering questions and solving problems related to Microsoft's products and training users on the use and administration of Microsoft's products

Microsoft has a standard Partner Programme for local companies. Microsoft Egypt follows the global model with its local partners. A local company's level of expertise and level of engagement are what determines the level at which it joins the Partner Programme. A company advances in such a programme by earning Partner Points, which it accumulates through upgraded capabilities and an established track record.

The Partner Programme is divided into three membership levels:

**Microsoft Registered Members (Level 3):**

This level is for organizations with any level of expertise in Microsoft technologies. It is for those who want to align themselves closely to Microsoft. Such a membership allows partners to access several resources that can help their businesses stay up-to-date with the latest Microsoft technologies to be able to better serve their clients and to grow their market potential.

**Microsoft Certified Partners (Level 2):**

This level is for organizations that have a high level of expertise in Microsoft technologies. Such a membership allows partners to participate in several events, have access to resources, tools, software and first-class benefits in order to expand their business.

**Microsoft Gold Certified Partners (Level 1):**

This level is for organizations that have the highest level of expertise in Microsoft technologies. Such a membership allows partners to establish the closest working relationship with Microsoft and receive the programme's top benefits.

Microsoft Egypt offers quite a few training programmes to its partners:

- Website: Microsoft has a website through which partners can request and register for training;



- Partner Academy: the Microsoft Partner Academy offers training every year in which soft skills and technical tracks are provided;
- Online Web Courses: Microsoft Egypt also provides online readiness using webcasts and online courses;
- IT Pro: additionally, Microsoft Egypt also offers IT Pro seminars quite often in its subsidiary where partners are invited to attend sessions;
- Training on New Products: Microsoft Egypt provides in-depth training on the launch and after care as well.

Microsoft offers a wide array of products in Egypt which could be classified into:

- Operating systems such as Windows NT, Windows Vista;
- Software development tools and database products such as SQL server;
- Office automation tools such as the Office 2007; and
- Business applications (mainly ERP Applications) such as Dynamics previously known as Axapta and Great Planes.

Microsoft Egypt does not sell its products directly to the customers, preferring instead to reach end customers through various partners. These can be classified as follows:

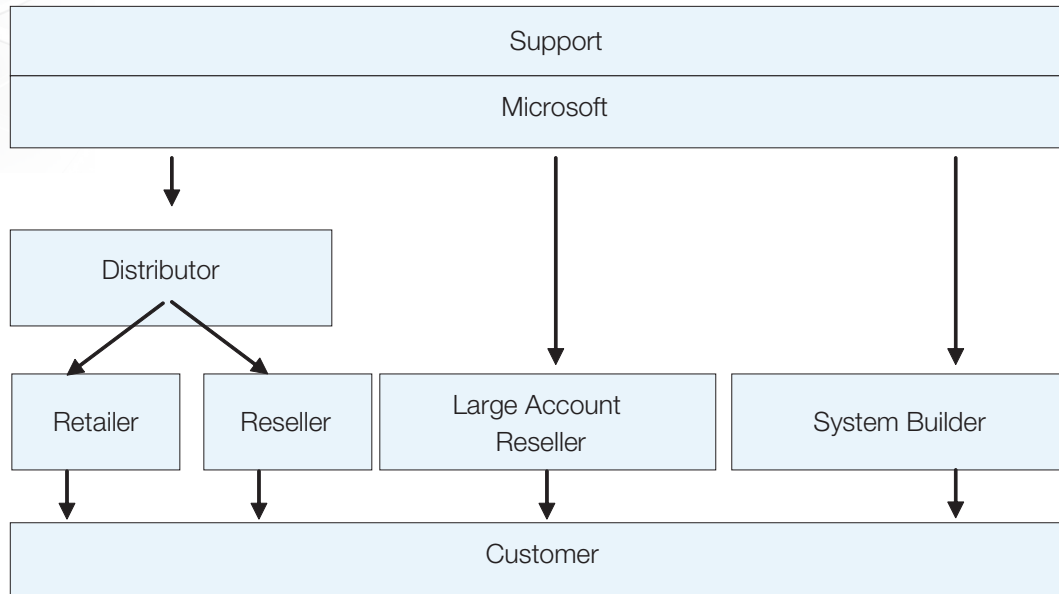
**Original Equipment Manufacturer (OEM):** Under this model, a producer provides a product to its customers, who proceed to modify or bundle it before distributing it to their customers. This is typical for operating systems. There are a limited number of hardware manufacturers in Egypt, since many PCs are imported from other countries. However, Microsoft has OEM agreements with the hardware manufacturers who operate in Egypt (such as Centra) to bundle Windows with their PCs.

**Distributors:** Another way of allowing its products to reach customers is by giving them to distributors that may include either retail stores or medium-sized retailers, who in turn sell it as an “Off the Shelf Package” or “Shrink Wrapped Package” (boxes with manuals CD’s etc.) to the customers. In Egypt, Microsoft does not rely on retail stores due to the relatively high piracy rate in the country. Although the software piracy rate has significantly decreased over the past years it is estimated to be 64 percent.

**Direct Sales:** Under this model, Microsoft, in cooperation with large distributors, makes direct sales to large corporate accounts for licensing their products over a period of three years. The agreements would not only include the software licensing but also a maintenance and support service that guarantees the customers technical support and free software upgrades for new releases. Microsoft would provide the marketing effort (seminars, product demos etc.) and the distributor would provide the sales effort (negotiation and closing of deals, follow-up of customers, etc). Microsoft has about 500 to 1000 enterprise agreements under this model where partners provide little value beyond the distribution function and are therefore not highly differentiated.

**System Integrators:** Another way of reaching the market is through business solution providers, a model where partners can add real value. This channel mainly applies to business applications that require a relatively high degree of tailoring and customization. ERP applications fall under this category and require good knowledge of accounting, finance, business practices, local tax regulations, etc. The spectrum of services provided by the system integrator could include, other than the Microsoft application itself, hardware, networking products, business consulting and training. Microsoft selects its business solution providers based on their know-how and their track record. This is measured by the number of certified installers within the company and its track-record of successful installations.

Figure 5. The Microsoft sales system



In Egypt, the first Microsoft relationship with a local partner started ten years ago. Both the number of partners and the type of relationship have evolved dramatically since then. As the number of partners increased, the level of sales and revenues increased; so has the level of retention of old partners, who have grown in scale and capabilities with time. In addition, Microsoft created the Partner Academy to serve Microsoft Egypt's top partners. This is the place where top Microsoft partners receive training and attend CEO events, which in turn increases the strength of their relationships and the depth of their capabilities.

### 3. Fieldwork methodology and overview of participating firms

Various companies participating in Microsoft's GVC were interviewed. For every company interviewed, either the CEO of the company or a designated expert responded so as to avoid any bias and to ensure that the strategic view of the company was captured.

Table 3. Profiles of interviewed firms

Firm's Name	Number of employees	Turnover in \$million	Major Shareholders (25% or more)	Important lines of business
Arabize	70	< \$1	Family Owned	<ul style="list-style-type: none"> <li>Localisation service provider</li> </ul>
Bayanet	70	\$1 - \$5	Privately Owned	<ul style="list-style-type: none"> <li>Business application provider</li> <li>Enterprise resource planner</li> </ul>
IT Worx	600	\$11 - \$40	Privately Owned	<ul style="list-style-type: none"> <li>Software professional services</li> </ul>
MNS	30	< \$1	Privately Owned and Owned by other companies	<ul style="list-style-type: none"> <li>Unified communications provider</li> </ul>
OMS	120	\$6 - \$10	Privately Owned	<ul style="list-style-type: none"> <li>IT infrastructure services</li> <li>Business – productivity solutions</li> <li>Off-the-shelf software packaging</li> </ul>
Xceed	1200	\$11 - \$40	Public Sector	<ul style="list-style-type: none"> <li>Contact Centre</li> </ul>

Based on Microsoft classification, the interviewed companies were split into two categories:

- Companies providing a service that complements an existing Microsoft product, thus vertically integrating into Microsoft's value chain. A typical example of such companies is a systems integrator. These companies' customers are the end-users of Microsoft's products;
- Companies providing the support functions for Microsoft, thus helping it deliver its final product. These companies' customer is Microsoft. It is worth noting that companies in this category tend to serve Microsoft on a global scale (as opposed to the first category of companies who serve Microsoft's local or regional customers) as the services they provide are largely location-independent.

Interviewed companies pertaining to the first group are:

**Bayanet** was established in 1998. It employs around 70 persons and has focused on providing business solutions to the Middle East market. Bayanet operates mainly in Bahrain, Egypt, Kingdom of Saudi Arabia and the United Arab Emirates. Bayanet partners with its clients to implement enterprise resource planning (ERP) applications, customer relationship management (CRM) solutions and business performance management (BPM) tools. Bayanet uses standard Microsoft products (such as the Great Planes ERP product) as the basis for the solutions it offers its customers. Building on its success in implementing Microsoft solutions in Egypt, Bayanet has expanded into the Gulf region and now serves other companies which are looking for solutions based on Microsoft products.

**OMS** has 120 employees and was established in 2000. It provides a variety of ICT services. Similar to Bayanet, OMS mainly operates in Egypt and the Middle East. OMS's list of services include assessment, infrastructure design and implementation, development of business solutions, custom applications development, educational services and support, and IT operations management. OMS also acts as a systems integrator for Microsoft products (taking a standard Microsoft product and customizing it to fit the needs and the environment of the end customer).

**Middle East Network Solutions (MNS)** was established in 1997 and operates in Egypt and the Middle East. MNS focuses on wireless solutions, e-commerce solutions, unified messaging and Internet/Intranet portals. MNS has developed products and software solutions that are based on Microsoft technologies, platforms or existing products.

**IT Worx** was established more than ten years ago. It is the largest software professional service provider in Egypt. IT Worx serves local and international customers - from the Middle East, Europe and North America - in a variety of industries, including financial services, education and telecommunications. It offers its clients solutions such as portals, business intelligence, service-oriented architecture and application development outsourcing services. Many of these solutions and services are based on Microsoft products and technologies.

Interviewed companies pertaining to the second group are:

**Arabize** employs about 70 people and was founded in 1994. The company offers single-language localization services with the target language being Arabic. Company services include localization of user interface (UI), printed and online user assistance (UA), documentation, computer-based training (CBT's), websites, web applications, marketing material, technical writing, and desktop publishing (DTP). Arabize provides these "Arabization" services to Microsoft prior to its product launch in the Arab region. This step is considered part of the localization effort required by a software company to ensure that its products are suitable for Arab users.

**Xceed** employs about 1200 persons and was founded in 2001. Its main line of business is the offshore outsourcing services to companies such as Microsoft, Oracle and General Motors. The contact centre provides customer contact solutions such as customer retention programmes, complaints management, order handling, BPO Services, helpdesk and technical support, telemarketing services, database management, enhancement and enrichment. Taking into consideration that 60 percent of its business is export oriented, Xceed's clients are located in more than 12 countries world-wide. Xceed

provides support services for several Microsoft products. Xceed's agents answer callers' questions about Microsoft's products, including Xbox, Microsoft's popular game console.

#### 4. Awareness and understanding of the Global Value Chain

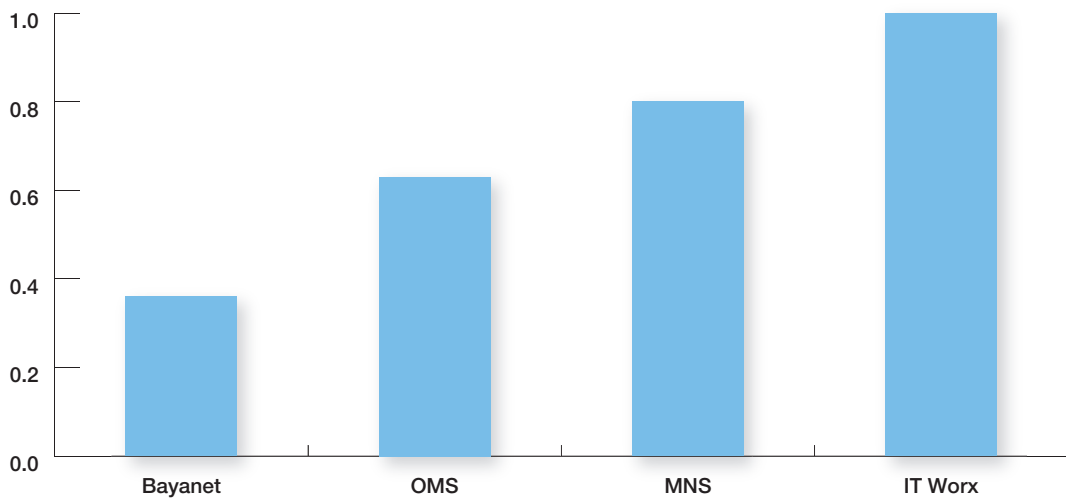
All the forward integration companies interviewed were clearly aware of the GVC. The following table includes their responses:

**Table 4. Firms and their Global Value Chain competitors**

Firm	Number of competitors in the GVC	Years in GVC	Size and Type of Competitors	Location of strongest competitor
<b>Bayonet</b>	3-5	3	TNCs and local companies	Gulf area
<b>IT Worx</b>	8-10	5	Pure development firms and system integrators	India
<b>OMS</b>	3	7.5	Varies	India
<b>MNS</b>	3	5	Unified communication companies	Local and in the Gulf Area

Based on interviews it can be seen that these companies have quite a recent history in the GVC. On average, these companies have been part of the GVC for 4.5 years. A large percentage of them have international competitors mainly located in the Gulf region or in India. Bayonet and OMS have a relatively low degree of transformation of their incoming Microsoft services (about 52 percent) compared to IT Worx and MNS. Although there is a high level of sophistication amongst firms, only one of the companies has reached the level of innovation required to develop its own products from scratch, and even then, this is still done only occasionally.

**Figure 6. Average percentage of service transformation for each firm**



Since the support function providers deal directly with Microsoft Ireland, the questionnaire was slightly adapted to tackle the service side of the GVC rather than the forward integration aspect. Both companies interviewed were clearly aware of the GVC. The following table includes the responses:

**Table 5. Firms and their Global Value Chain competitors**

Firm	Number of GVC	Years in GVC	Size and Type of Competitors	Location of strongest competitor
Arabize	25	11	Arabization and localization service companies	Local and in the Gulf Area
Xceed	3	3	Large outsourcing companies	India, Eastern Europe and North Africa

Arabize and Xceed's participation into GVC of Microsoft displays at a higher concentration than those companies which belong to the forward integration of Microsoft's GVC.

## 5. Cooperation within the Global Value Chain and with TNCs

It is evident that a symbiotic and reciprocal relationship of cooperation exists between Microsoft and their forward integration firms. As stated in an interview by a Microsoft Egypt representative: "Microsoft Egypt relies 100 percent on its partners". For the Microsoft partners, the relationship with Microsoft Egypt is of extreme importance in terms of aiding them to develop their business and expand their scope. The eco-system of partners is of great help to them with regard to new market entry and credibility. There is a general trend for long-term contracts with Microsoft. All of the interviewed firms mentioned that a personal relationship with Microsoft accentuates the element of trust, which is of great significance to them. All of the firms interviewed were Microsoft Gold Partners. This certificate is based on a point system created by Microsoft International. It is important to add that there are no exclusive relationships with Microsoft. However, over the years the Microsoft partner relationship grew stronger and allowed partners to experience the "lighthouse effect", that is credibility from serving a large well-known company, and therefore to expand geographically especially in the Gulf region where there is a lack of local skilled resources. This highlights the importance and prestige of the Microsoft Partner certification programme.

The Microsoft partnership has been instrumental in enabling local companies to access regional growth opportunities and therefore to become more integrated in the GVC, as opposed to being just a small local implementer. Many partners that have developed a successful relationship with Microsoft Egypt have used that network to implement Microsoft projects in other neighbouring countries. Microsoft has encouraged this expansion and has provided its trusted Egyptian partners with the necessary support (on technical and commercial fronts) to succeed in the regional markets. Microsoft benefits from this expansion in serving its customers in other Arab markets where resources are less available and technical know-how is less developed.

It is also evident from the interviews that the companies that provide Microsoft with services, have a rather symbiotic relationship with Microsoft. A relationship with Microsoft, like that with other TNCs, has provided the companies with a certain level of prestige. Companies such as Xceed are proud of such a strong tie with Microsoft that has aided them in impressing other TNCs. Both firms agree that certification is important not just as a "stamp to put on your marketing material" but as an intrinsic set of values and a management spirit that is based on quality, performance and trust.

With regards to contracts, the trend is for long-term contracts. Contracts involve extensive assessment by Microsoft of the firms' premises. The firms also provide Microsoft with presentations in their headquarters. Because of the emphasis on quality and performance the Contact Centre's seats serving Microsoft are doubling every year. With Xceed, the relationship with Microsoft started through an international tender whereas Arabize's relationship with Microsoft started through a subcontractor.

## 6. Dynamics of the cooperation, intellectual property, assets and competencies

None of the firms interviewed belonged to a cluster. Stiff competition amongst the Microsoft partners leads to them over-committing to end-customers. Very few firms belong to an industry association, making clustering a difficult task to achieve. However, both support function providers belonged to several industry associations. Arabize had no partners, whereas Xceed partnered with HR and training companies, Telecom Egypt and ITIDA.

In the Egyptian software industry, a firm's strength lies in its labour force's skills. All of the firms interviewed confirmed that the lack of qualified and skilled human resources posed a threat to their firm's position in Microsoft's GVC. Generally speaking, the lack of capable and available skilled human resources is a prevalent phenomenon in Egypt. The second threat to these firms' position in Microsoft's GVC is the result of their close relationship with Microsoft. A close relationship with Microsoft leads to the firms' over dependency on Microsoft's marketing network.

In Egypt, intellectual property rights (IPR) are protected by new laws specifically mentioning software, data base designs and layouts of integrated circuits. The law needs to be better enforced. The Egyptian Government, in cooperation with multinational donors, has started educating judges and district attorneys on the specific issues related to IPR violations.

The penalties imposed by the Government on intellectual property violations are in certain cases too harsh, so harsh that untrained judges find it difficult to implement them. As mentioned by the Microsoft representative, despite the fact that the number of IPR violations has dramatically decreased due to Government intervention, the rate is still over 60 percent.

As previously mentioned, there is a lack of originality amongst these firms and a relatively low percentage of product transformation. Most IT firms tend to be service-oriented companies that offer add-ons to an already existing Microsoft product rather than offering their own innovative and creative solutions.

The core strengths of Arabize were its stability, experience and high retention rate. Xceed's core strengths included its low cost and high quality service. Arabize's weaknesses were essentially Egypt's lack of skilled human resources, whereas Xceed's weaknesses included span control and country risks. The barriers to market entry for Arabize were the fact that most companies requiring such services are price driven. The barriers to entry for Xceed included the fact that it was very easy for customers to switch suppliers for outbound calls; however, the switching inbound calls is much more difficult as it involves more qualified human resources at lower cost than other countries.

**Table 6. Arabize and Xceed's strengths, weaknesses, assets and threats**

Firm	Strengths	Weaknesses	Assets	Threats
Arabize	Stability Experience High retention rate	Lack of skilled resources	Good management	Inflation rate Automatic translation machines
Xceed	Low cost High quality of services	Span of control Country risks	Strong pool of talent serving the company	Depletion of talent pool (scalability)

Both companies felt the need to grow by expanding their market. While Arabize did not wish to expand its services, Xceed wished to be more involved in business process outsourcing and the implementation of more complex technical support services.

## 7. Governmental initiatives and support needed to enhance the role of SMEs in the Global Value Chain

The Government has played an active role in Egypt's recent ICT growth. Laws were revised to encourage foreign direct investment and the development of infrastructure. In 1999 a national ICT plan was initiated, and the Ministry of Communication and Information Technology (MCIT) was created. Telecom Egypt (TE) was split through the separation of its regulatory and operational functions and the founding of the National Telecom Regulatory Authority (NTRA). In the year 2000 the national ICT plan was announced and adopted. The goals of the plan included:

1. the creation of an export-driven, private sector-dominated ICT market in Egypt;
2. the spreading of ICT among the Egyptian population as well as the private sector;
3. the upgrading of the Egyptian ICT infrastructure;

4. the creation of a supportive legislative system;
5. the development of Egypt's ICT human resources; and
6. the attraction of foreign investment in ICT.

The national ICT plan also proposed more than 20 different projects for the MCIT and about 15 others in conjunction with various other Egyptian ministries. The projects' main focus was the development of three areas: industry, human resources, and infrastructure.

The Government, through MCIT, has also actively supported the IT industry through various initiatives<sup>20</sup>:

1. High Tech Business Parks (e.g. The Smart Village) have been established to facilitate companies' operations by providing them with world class infrastructure at a very reasonable cost;
2. Subsidies of \$68 million were available to support training, marketing needs and technology development;
3. Partnerships have been made with major ICT firms such as Siemens, Alcatel and Cisco to train IT engineering graduates;
4. Specific initiatives to make PCs available at a reasonable cost were undertaken (PC for every student, for every household, for every teacher, etc.);
5. The "Free Internet" initiative was created to offer Egyptian users dial-up services to the internet at the same cost as a local phone call (done through a revenue-sharing agreement between Egyptian Internet Service Providers and Telecom Egypt).

### **IT Clubs**

1999 saw the creation of public-private partnership IT Clubs all over Egypt with a focus on underprivileged rural areas. Such clubs offered Internet access at a minimal charge as well as classes in computer skills. Currently IT Clubs rely heavily on Government subsidies. It is hoped, however that the revenue from the Internet and classes will increase so that the clubs become self-sustaining.

### **Techdevfund and Idevelopers**

The lack of venture capital triggered the creation of Techdevfund and Idevelopers. The Technology Development Fund was created to bring together investors and startups. It is managed by EFG-Hermes and has investments from various sources such as the Government, banks and Telecom Egypt. At the initial stage a sum of LE 50 million was dedicated to fund IT incubators. Idevelopers is a separate but related organization. It provides expert consultation services in order to help businesses increase their productivity.

### **The ICT Trust Fund**

In January 2002, the Ministry of Communication and Information Technology (MCIT) with the United Nations Development Program (UNDP) established the Egyptian Information and Communication Technology Trust Fund. The aim of the Fund is to foster socio-economic development through the creation of public-private partnerships to support the use of ICT. Such projects include: 1. the Mobile ICT Unit; 2. the Smart School Network; 3. the Community Development Portal ([www.kenanaonline.com](http://www.kenanaonline.com)); 4. ICT for illiteracy eradication; and 5. the Community Knowledge Generation E-Library.

The most successful have been the Smart School Network and the Community Development Portal. In 12 of Egypt's 26 governorates 38 Smart Schools have been created. On the other hand, the Community Development Portal ([www.kenanaonline.com](http://www.kenanaonline.com)) currently offers advice on health and business development as well as a job bulletin board and information about Egypt.

<sup>20</sup> Information Technology Industry Development Agency (ITIDA), 2006

### ***The E-learning and ICT training initiative***

Along with the private sector, the Government has started a plan to improve the workforce's IT skills. For 2000 to 2006, the MCIT has supported the training of 133,737 students in basic IT skills and 23,999 in professional IT training skills. In 2004, the MCIT along with Cisco have formed a public-private partnership to create the E-Learning Competence Center (eLCC). This center provides e-learning solutions for individuals and SMEs ranging from beginners' courses to networking and advanced trouble shooting computer skills. In 2001 the Egyptian Technology University was approved by the Prime Minister of Egypt. The University offers advanced graduate courses and currently has 22 executive MBA students.

### ***The free internet initiative***

This programme is one of the most successful governmental initiatives. This project started in January 2001 and helped Telecom Egypt and other operators to expand their networks with regards to capacity and coverage. Telecom Egypt opened its exchanges to hook up with licensed operators by co-locating equipment. As a result the number of Internet users rapidly increased by the second year of the programme from 600,000 to 11.7 million.

### ***The E-Government initiative***

The E-Government initiative is one of the most successful amongst developing countries. In collaboration with Microsoft, Egypt's Government services portal at [www.egypt.gov.eg](http://www.egypt.gov.eg) was launched in 2004. The MCIT has worked closely with various Government institutions and ministries and now 10 complete Government services are available online. These services range from requesting a birth certificate to taxation and customs services. In addition, information related to more than 700 services is available online. Available in Arabic and in English, the site also targets investors and foreigners living in Egypt.

### ***Research and development centers***

The first research and development centre was opened in 2005. The MCIT is the initial investor for the centers and hopes that they will be self-sufficient in three years after their creation. Four research and development centers have been established in order to increase innovation in Egyptian data mining and computer modeling, wireless technologies, mobile and e-services and electronic design.

### ***The low cost PC initiative***

The Government launched the "PC for Every Home" in 2002 as a step towards increasing the PC penetration in Egypt. This programme works alongside local PC retailers to provide below-market prices for computers. This is done through an installment plan, with the telephone line as collateral, and payment is done through telephone bills. The "PC for Every Home" initiative was not as successful as expected. In response, the Government introduced the "Low Cost PC" initiative at the beginning of 2006 offering even cheaper PCs. In partnership with Microsoft, these PCs come with an Arabic version of Windows. More limited than Windows XP, this version provides clear instructions in Arabic using voice and video on how to get started on the computer. Additional programmes have been launched since the "Low Cost PC" initiative targeting students and teachers.

### ***Information Technology Industry Development Agency (ITIDA)***

In order to make Egypt an even more attractive business destination, the Information Technology Industry Development Agency (ITIDA) was officially created by the e-signature law in Egypt in 2004. The Government, alongside AT Kearney formulated a strategy to develop Egypt's IT exports. Its objective is to create 50,000 new jobs and for exports to grow to \$1.1 billion by 2010. Currently, ITIDA is the main body responsible for the implementation of this strategy through training programmes, capacity building programmes for local IT companies, and image building programmes for Egypt. In



addition, it is also responsible for promoting legal reforms including those related to cyber crimes and intellectual property rights laws. ITIDA also functions as a mediator dealing with IT disputes and offering technical counseling and help related to the use of e-signatures and electronic transaction. Various ICT projects have already been allocated financial resources by ITIDA through the establishment of support programmes and funds with the main aim of stimulating the local market's capacity to grow exports. ITIDA has also sponsored various visits to international events, trade shows and marketing campaigns.

The ITIDA strategy includes<sup>21</sup>:

- Human Capital Development (management training and high-level IT professional training);
- Capacity Building (enterprise capacity building and the promotion of clusters amongst the Egyptian companies; financial support to IT companies to access bank loans and capacity building amongst local NGO's);
- Local Market Demand (raising IT awareness in strategic sectors by educating industries and encouraging the consulting industry);
- Export Growth (positioning and promotion, expatriate linkage and the creation of an awareness programme that incorporates outpost business centers).

All of the companies interviewed stated that the Government has taken a number of initiatives to support them to market their services regionally and internationally including participation in trade shows. However, an assessment of the impact of the many governmental initiatives and projects such as ITIDA cannot be made as they are quite recent. All of the firms interviewed stated that more support is needed with regard to the creation of a skilled workforce through more IT- oriented education.

## 8. Conclusions

The case study of Microsoft has provided some insights into both the nature of the relationships and how they can be enhanced:

1. Microsoft's partner model (forward integration companies) in Egypt follows closely the international Microsoft global partners' model used in other parts of the world (developed and developing countries);
2. Egyptian partners have benefited from their association with Microsoft in terms of increasing capabilities and establishing a track record. They are leveraging that partnership to drive growth in the Gulf market. The Gulf market is quite vast and lacks the necessary qualified and skilled human resources to implement all the IT projects it is undertaking. In this reciprocal relationship with its partners, TNCs are benefiting from having trusted companies that can work according to their standards;
3. Support partners are serving Microsoft globally. Companies that serve a TNC in one country, or region, find it easier to serve a variety of technology companies worldwide. In the global ITS and ITES sectors, these companies are entering an extremely large fast-growing market, which means they are also competing with a large number of companies from all over the world. TNCs such as Microsoft are often perceived as a highly visible "lighthouse account" that lends immediate credibility to service providers and places them on the global radar screen of other potential buyers;
4. When asked about Government support they needed, the companies were generally satisfied with the current initiatives but identified the following priorities:
  - The IT industry in Egypt is in great need of qualified experts. Therefore, training in the different ITS and ITES sectors should be the key priority;
  - Many Egyptian companies are small and lack the maturity to compete globally. Capacity building activities for SMEs to strengthen their management and technical

<sup>21</sup> ITIDA strategy document

capabilities will help equip them to compete more effectively in the regional and international markets;

- There is a clear lack of IT associations and clusters. Strengthening associations and encouraging clusters is therefore necessary;
- The general business environment needs to be improved through faster and more efficient Government service delivery, lower taxes for start ups and the enforcement of stronger anti-piracy regulations.

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## B. The role of SMEs in the Global Value Chain in the information and communication technology sector in Viet Nam<sup>22</sup>

### 1. Introduction

This chapter examines the role of Vietnamese small and medium-sized enterprises (SMEs) in the Global Value Chain (GVC) of IBM. The importance of TNCs in today's global economy is linked to their strengths in a range of knowledge-based assets, such as management and intellectual property, which allow them to take advantage of profitable opportunities in foreign markets by setting up subsidiaries and affiliates.

Affiliates under foreign control not only serve local markets, but have also become essential links in GVCs as they serve neighboring markets and provide inputs for other affiliates in the TNC's network. Cross-border trade between TNCs and their affiliates, often referred to as intra-firm trade, accounts for one third of world exports (UNCTAD, 2007). The development of GVCs also offers new opportunities to SMEs, although they also face important entry challenges in management, finance and the ability to upgrade and protect in-house technology. As suppliers, SMEs are often given more responsibilities in the value chain and more complex tasks than in the past. This places them under increasing pressure to merge with other firms in order to achieve the critical mass required to support R&D, training of personnel, control over firms at lower levels of the chain, and to meet product and process quality standards.

In an attempt to identify policies and programmes to enhance the roles of the SMEs in the GVC, this case study details the relationship between IBM and its business partners, which are Vietnamese SMEs. Various interviews both with IBM Viet Nam and with the CEOs of the local SMEs were conducted to obtain information on the day-to-day interactions between IBM and their SME partners. The case study identifies how the presence of IBM in Viet Nam enhances the role of these SMEs in the GVC. The GVC is influenced by management techniques and procedures, the individual characteristics of SMEs, its relation to the large enterprise, the local environment and policy support.

The following section focuses on the ICT market in Viet Nam, in order to give a basic understanding of the environment in which IBM Viet Nam and the local SMEs operate. The subsequent section examines the operations of IBM in Viet Nam as well as worldwide, how they see the GVC, their strategy and how they position themselves so as to best reap the benefits of globalization. The subsequent sections analyze the responses of SMEs, how they managed to build up a competitive advantage which enabled them to compete successfully in globalizing markets, given the presence of IBM in the Vietnamese market. This serves to identify policies and give recommendations on the support needed to enhance the role of SMEs in the Global Value Chain of IBM.

### 2. Viet Nam's ICT industry outlook

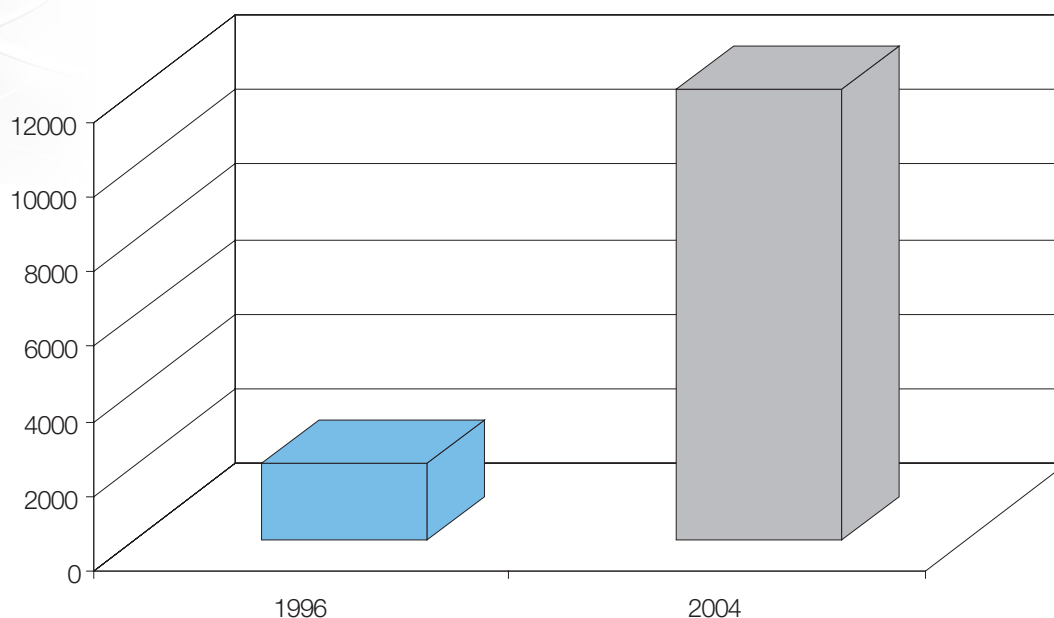
Viet Nam is among the few countries in the region which has an explicit policy for promoting its ICT, especially the software industry. Software technology parks have been set up in Ho Chi Minh City, Da Nang and Hanoi to attract investment in software development and outsourcing. The International Data Group (IDG) estimates that the ICT industry as a whole (software and hardware) has recorded a global annual growth rate of 25 percent. Software growth rate was 41.4 percent while hardware was 15.6 percent with a total market value of \$828 billion in 2005. A new Vietnamese ICT strategy has set a target for 2010 of \$1 billion in revenues for the software industry alone.

By 2004, the Ministry of Post and Telematics (MPT)<sup>23</sup> estimated that of the 2,500 companies registered to operate software businesses only 600 were in operation. These firms employed 12,000 engineers – a large improvement over the 2,000 employed in 1996. MPT estimated that of these 600 software companies, 37 percent employed less than 20 people and a further 39 percent employed between 20 to 50 employees.

<sup>22</sup> This paper was contributed by Bui Viet Cuong, Tradepoint Hanoi Viet Nam.

<sup>23</sup> MPT was established in November 2002 in order to further promote ICT Use and Development in Viet Nam.

Figure 1. No. of engineers employed in software industry



The software and IT industries in Viet Nam are in their infancy, but they are dynamic and experiencing rapid growth. The movement of software and related industries away from traditional producers and towards emerging markets presents excellent opportunities for Viet Nam to develop its ICT sector. Viet Nam has an affordable, high-quality labour force, a low investment risk, as well as close proximity to China and India.

Starting from very low levels, ICT usage in Viet Nam has developed impressively over the last several years. Liberalization has triggered these developments as people seek to benefit from it and in response to the challenges it poses. Viet Nam's telecom sector has experienced the fastest growth rate in the world, with the number of users and consumers and the penetration rate increasing sharply due to the high demand for telecom services, strong support by the Government and large investment.

Table 1. The telecom sector in Viet Nam 2005

	Viet Nam 2005	Asia 2005	World 2005
Telephones/100 people	29.42	37.39	49.45
Cell phones/100 people	10.68	22.24	31.90
Fixed telephones/100 people	18.73	15.76	19.84
Average growth rate of fixed telephones in 2000-2005 (%)	44.1%	11.9%	5.3%

Source: International Telecommunication Union (ITU), 2006.

The participation of the private sector, both foreign and domestic, in ICT is limited. The only form of commercial presence of foreign investors is through Business Cooperation Contracts (BCC)<sup>24</sup> while domestic investment is not permitted. Liberalization has proceeded slowly. The reduction in the market share of the dominant enterprise from 100 percent to 95 percent has taken more than 10 years. Competition is not high with only half of surveyed telecom firms finding competitive pressure significant.

The dominant firm still holds a monopoly position operating the strategic infrastructure, a major part of the backbone network, including fixed international and domestic long distance lines and international gateways, mobile international stations and gateways. More importantly, it has nearly total control of the local loop within the country.

<sup>24</sup> BCC is a contractual arrangement between the foreign and Vietnamese party and no separate legal entity is created. It is considered the most flexible arrangement in some respects but has other limitations with respect to the other investment types.

Infrastructure is reasonably well developed, comprising a digitalized network, satellite and fiber optic cables that allow fast international connections. Most telecom services are available, but only some are used extensively, due to high prices and the lack of knowledge amongst the public. Viet Nam has the advantage of a late comer in introducing new technology. In 2006, the total export revenues of software and services was about \$70 million (an increase of 55.5 percent with respect to 2005), which included a remarkable contribution by the digital content industry. The software industry has itself about 720 enterprises with 25,000 workers.

The hardware industry (computer hardware industry, electronic home-appliances industry, and telecommunication equipment industry) reached an average annual growth rate of 20 percent to 30 percent. Such results can be attributed to new laws such as the Law on Information and Communication Technology approved the 22nd of June 2006 by the Parliament. This Law together with the Law on E-Transactions and a number of other decrees promoted such growth.

In addition, a series of State projects has been initiated and submitted to the Government for approval: e-industry development, software industry development, digital industry development that created a consistent legal framework, which facilitates Vietnamese ICT development.

### 3. IBM and its Global Value Chain in Viet Nam

IBM is a world leader in IT with almost a century of professional experience. The company had a total asset of \$103.2 billion, operated in 160 countries and had almost 360,000 employees in 2006.

2006 was a strong year for IBM. Reported revenues were \$91.4 billion, up 4 percent, excluding PCs, from 2005 results. IBM's gross profit margin rose for the third consecutive year — to 41.9 percent, an increase of 1.8 points in 2006, up more than five points since 2003. Pretax income margin rose to 14.6 percent, an increase of 1.2 points. Both margins are at their highest levels in the past 10 years. These margins were achieved primarily by restructuring the business to higher-value segments and by achieving efficiency through global integration.

IBM operated in Viet Nam from 1938 to 1975. The company returned to Viet Nam in 1996 and founded IBM Viet Nam. In recent years, IBM Viet Nam grew at an annual rate of 30 percent, higher than the average level of the ICT market in Viet Nam.

While the growth of IBM Viet Nam is high, most of its activities remain concentrated in the hardware market, namely selling PCs and servers. The strength of the global company, which lies in innovation and in offering customers integrated business solutions, has not yet been fully developed in Viet Nam. IBM Viet Nam can still exploit the advantages of the Viet Nam's economy which are:

- young, dynamic, hardworking workforce: 60 percent of population (about 85 million) is under 30;
- comparatively cheap IT workforce in comparison with other countries;
- surplus in the labor market; and
- a stable political system and incentives to promote ICT.

**Table 2. Age, literacy and education in Asian countries**

	Average Age (years old)	Average Literacy Rate	Average Years of Education
Cambodia	20	69%	9
China	32	91%	10
Indonesia	26	88%	11
Laos	19	66%	9
Thailand	31	93%	12
Viet Nam	26	90%	11

Source : Runckle & Associates, Inc.

The companies interviewed for this case study are leaders in Viet Nam's ICT sector. All of the companies interviewed are SMEs both in terms of turnover and number of employees. Becoming IBM partners gave these companies a certain level of prestige. It signals that they are trusted suppliers in the products and services they provide. The relationships between these companies and IBM are global and not limited to the Vietnamese market. All the companies interviewed either had already entered international markets, mostly in the East Asia region or planned to do so and viewed the relationship with IBM as an important step or a necessary preparation to help them succeed. The relationship with IBM also helps the companies to provide quality services.

All the companies have been part of the IBM global sourcing system for less than ten years. The strength of IBM in Viet Nam lies in its superior hardware and not in its integrated business solutions which is its competitive advantage elsewhere. Thus, the SMEs are part of the IBM GVC in hardware, most often in servers and to a certain extent for the Lotus PCs.

**Table 3. Overview of SMEs interviewed**

No.	Companies	Staff	Turnover/year (\$)	Products Categories
1	FSS	>500	7.69 mil	Software solutions
2	CMCSoft	>200	1.5 mil	Software solutions
3	FPS	>200	100 mil	Hardware distributor/reseller
4	Hong Co	<100	>5 mil	Hardware distributor/reseller
5	CFTD	<100	>5 mil	Hardware distributor/reseller
6	Tinh Van Group	>250	>2.5 mil	Software solutions Hardware distributor/reseller
7	Roda IT Solution&Services	<50	<1 mil	Hardware distributor/reseller Software distributor/reseller

FPT Software Solutions Co., Ltd. (FSS) is a leading software provider in Viet Nam. FSS also makes continuous efforts to penetrate the regional markets. The company provides a wide range of software solutions and services for banking, finance, enterprises, telecommunications, government, health insurance and petroleum. The company provides services in the form of packaged software as well as tailored-made software or software consulting which is an important competitive advantage. FPT/FSS officially established a relationship with IBM in 1992 in the field of computers, technical support and system warranty. FSS is recognized as for its application development and as a value-added service provider for IBM Websphere, IBM MQ Series, and IBM Lotus Notes in Viet Nam.

CMC is one of the most prestigious providers of high quality solutions and IT products in Viet Nam. CMCSoft is an authorized system integrator and service provider for Hewlett Packard, IBM, Cisco, Microsoft, Oracle etc. CMC is a provider of integrated standard solution models in many fields such as finance, banking, insurance, and telecommunications. One of its specialties is the Digital Library solution which is built and developed by CMC in order to satisfy the need of IT applications in modernizing library systems. The company provides consultancy, design and implementation services of highly-secure systems and assures the continuous performance of the systems with the combination of solutions and products of leading IT corporations. CMC is an authorized IBM Corporate Reseller and in 2000, it was chosen by IBM to be its Solution Provider – pSeries.

Hong Co Informatics & Trading Co., Ltd. is a provider of IT consulting services for hardware, software, system solutions, as well as analyzing, programming and applying software.

Tinh Van Group is one of the leading players in developing and supplying IT products and services for almost ten years in the domestic market. The company is a provider of software solutions, ERP consultancy and implementation, IT consultancy, software outsourcing, content management technology, E-commerce and online services, advertising service based on communications and telecommunications. Tinh Van is a recognized IBM Software Business Partner and an agent of IBM in providing servers. The company is a provider of IBM high quality products, technology solutions and equipment. Technical staff of Tinh Van work closely with IBM Viet Nam.

Digiland is a major distributor of IT products and provider of IT services in Viet Nam. Its major vendor partners - IBM, Lenovo, Hewlett Packard, Western Digital, Dlink, Liebert are leading global brands for which Digiland distributes PCs, notebooks, servers, printers, peripherals, hard disk drives, enterprise storage, UPS, motherboards, wireless network, and components. Digiland has a full range of e-service solutions for SMEs, designed to manage business efficiently in the age of e-commerce. In 2000 Digiland became a distributor for all kinds of IBM PSG products.

CFTD is a large-scale company specializing in trading high-tech equipment as well as the R & D of high technology products; the distribution of IT products; and the provision of informatics services and solutions, outsourcing services, and cash management solutions for banking sector. CFTD is a provider of IBM hardware, mainly servers, including the IBM P590, one of the most powerful servers in the world.

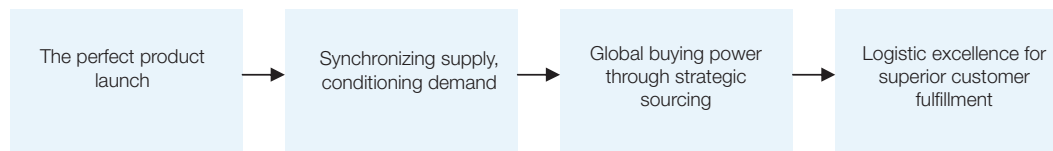
RODA Co., Ltd., is an IT service company founded and run by a group of IT engineers with ten years of experience. The company is a provider of computer hardware, software, solutions and services to enterprises and organizations. RODA's business philosophy is to help the customer do more with less. RODA became an IBM business partner in 2006.

#### 4. Awareness and understanding of the Global Value Chain

The main objectives of any company are profits, growth and reduced costs. According to the 2005 Value Chain Benchmarking Study conducted by the IBM Institute for Business Value, IBM leaders must strive to attain supply chain effectiveness which is more than just low cost. Revenue growth and profitability are best achieved by creating an integrated value chain with the ability to influence demand and respond to supply chain shifts with innovative products and services.

During the interviews with IBM and IBM partners, they stated that they are progressing toward the vision of an on demand, customer-driven supply chain – one that is integrated end-to-end across the business and with key customers, partners, suppliers and service providers. The GVC for IBM and the partner companies in Viet Nam is best described below:

Figure 2. IBM's GVC

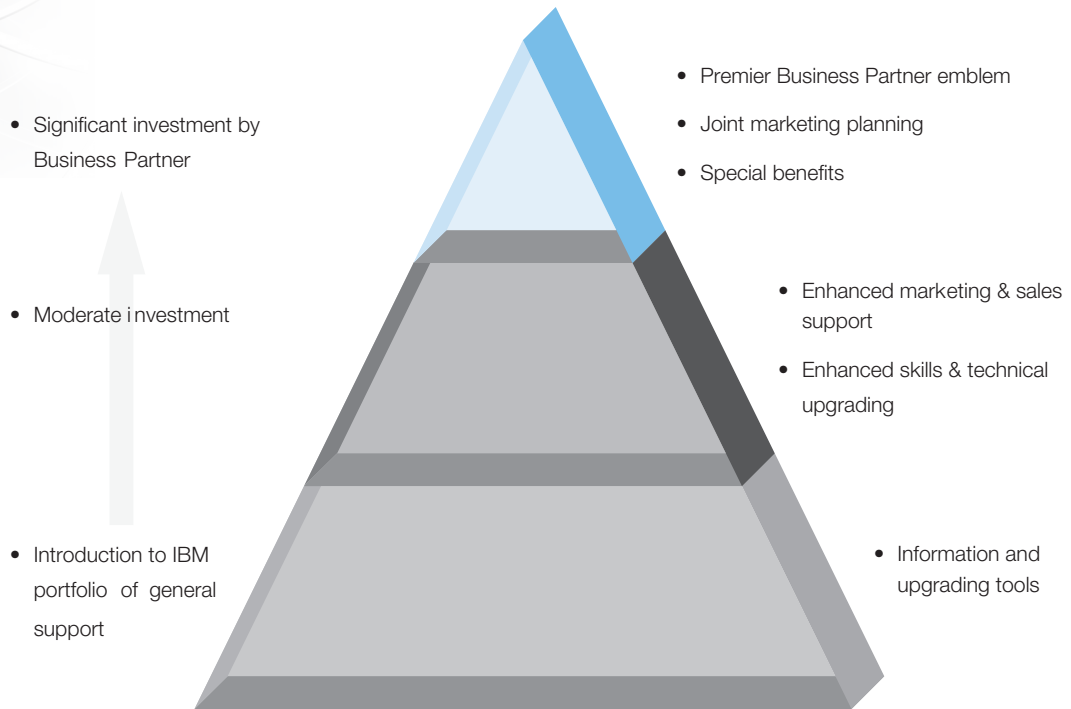


The perfect product launch: product introduction and lifecycle management;

- Synchronizing supply, conditioning demand: customer-driven planning;
- Global buying power through strategic sourcing: dynamics of global sourcing;
- Logistics excellence for superior customer satisfaction: perfect order attainment (Butner, 2005).

In order to bring the companies into its GVC, IBM has a special programme called IBM PartnerWorld. The programme is described below.

Figure 3. Pyramid for IBM PartnerWorld



Benefits tiered by business partner achievement

Source: IBM website

IBM PartnerWorld is the IBM business partner programme designed to help SMEs succeed in the marketplace and strengthen their relationship with IBM. IBM PartnerWorld is a comprehensive marketing and upgrading programme providing a vast array of benefits for all IBM business partners (Butner, 2005). SMEs qualify for one of three benefit levels according to their level of investment: Member, Advanced and Premier.

**Member level:** requires minimal commitment from business partners which includes completing an online registration form and accepting the PartnerWorld agreement. In return, IBM provides support covering a broad portfolio of IBM products and technologies. There is no charge to become a member of PartnerWorld.

**Advanced level:** business partners have committed to maintaining a prosperous business relationship with IBM and are recognized and rewarded for that commitment. If the company has a qualified labour force, revenue achievements, or has successfully implemented IBM-based solutions at a customer site, IBM delivers an enhanced level of benefits to the company in marketing, sales support, technical upgrading and skill development at no charge.

**Premier level:** membership is for business partners who make a very significant investment in IBM products and technologies through a combination of:

- certifications;
- solutions;
- revenue achievement;
- high customer satisfaction;
- joint marketing plans.

The larger companies, FSS, FPS, are aware of the GVC while smaller companies do not have an extensive knowledge of the term but, nevertheless, they make full use of their participation in the GVC

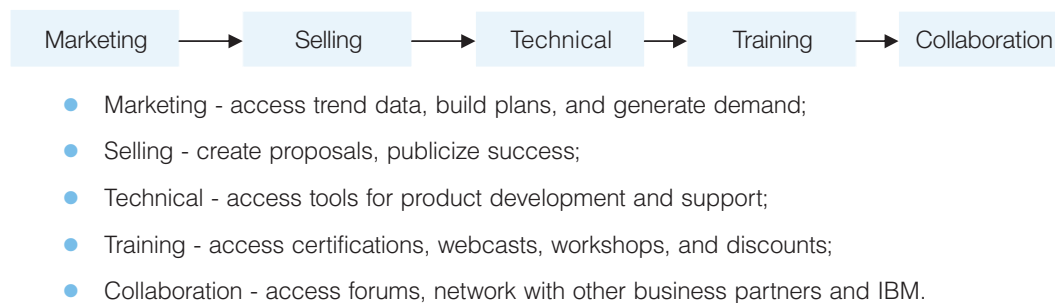


in practical ways. These companies fully exploit the advantages that participation in the GVC brings. The companies benefit from the prestige of the IBM brand. In Viet Nam's ICT market to be chosen as a partner by TNCs such as IBM, Microsoft, and Hewlett Packard, confers on the companies the reputation of being trustworthy.

## 5. Cooperation and types of linkages in Global Value Chain

Becoming an IBM partner in the IBM PartnerWorld gives the SMEs the resources needed to begin building and selling IBM-based solutions and products to better meet their clients' needs. PartnerWorld offers participating SMEs a wide range of sales and marketing tools, skill-building courses, technical support and collaborative opportunities to support business. Member SMEs can better innovate, grow their businesses and enjoy increased profits. IBM business partners actively participate with IBM in joint planning and the development of a mutually strong relationship to achieve success. IBM, in turn, provides the highest level of marketing, sales and technical support.

**Figure 4: PartnerWorld programme benefits**



Participation in the GVC helps the companies as well as IBM to attain the common goals of any well-functioning enterprise:

- coordinating business functions across the supply chain;
- developing mutually beneficial ways to strengthen supply chain relationships;
- synchronizing supply and demand through planning and forecasting;
- managing supply chain cycles;
- developing variable cost structures;
- sharing risks with partners; and
- using real-time information to create responsive, customer-driven processes (Butner, 2005).

As IBM's partner these companies not only receive support in marketing, sales, and technical areas but also are recognized as successful and prestigious companies. The SME partners also get the experience of dealing with a TNC which will help them learn or adopt their managerial style, the environment and the culture of a big company. The CEO of these SMEs agree that this helps them to be prepared and to be more confident when they expand their businesses abroad. Participation in the IBM's global sourcing system also offers companies the opportunities for their technical staff to work closely with the IBM technical staff worldwide as in case of Tinh Van Group. This has a positive impact on technology transfers and spillovers not only for the particular company but also for the whole Vietnamese ICT market. The company and the Vietnamese market gain access to the latest innovations of IBM.

Being a partner of IBM also means that the SMEs need to comply with high product and process standards. The SMEs are introduced to a new, more professional way of offering products and services, including after sales services.

## 6. The relevance of technological skills, standards and intellectual property rights

Most Vietnamese software companies are small-sized enterprises. There are only a few medium-sized enterprises in the software industry. Among Viet Nam's software companies, there are about 15 companies that have won the quality certificate ISO-9000, and there is only one that has won the highest quality rating of Capability Maturity Model (CMM) – Level 51. Two others have won CMM-4, and around 20 software companies are now striving to apply for CMM-3 or CMM-4. The Ministry of Post & Telematics (MPT), together with the Viet Nam Software Association (VINASA), has taken steps to increase quality standards for the industry.

However, intellectual property rights protection and enforcement are still weak. Vietnamese software enterprises have great difficulties in entering the international market. In Viet Nam, there is an incipient export-oriented software sector. Its growth prospects are currently compromised by factors such as limited knowledge of English and widespread software piracy. In Viet Nam, it is a challenge to actually acquire legal software. For export-oriented software companies, this creates a serious problem. Being a partner of IBM means that the SMEs need to comply with the high quality standard of the services IBM offers.

In past years, the universities in Viet Nam have concentrated on training software specialists for information technology. The Vietnamese Government has also invested heavily in training software engineers in seven main faculties at different universities. In addition, many other universities and institutes have participated in training information technology students. Currently, there are about 100 organizations, including universities, colleges, institutes and information technology centres that have trained IT students. Based on the statistical figures, it has been estimated that there are about 3500-4000 IT students graduating every year from universities, institutes and others. These include the numbers of students that IT companies trained themselves.

Nevertheless, one question emerging is how to balance the increasing quantity and quality of the trained persons. Many experts in information technology have believed that universities and training centres could satisfy the demands for the quantity of IT engineers and university graduates. However, there are a number of IT graduates who need to be retrained in order to meet the general requirements of software companies. Viet Nam students are as intelligent, diligent and able to design software as well as Indian students, but they lack experience and are timid in their work. Their knowledge of English is inadequate. These are the challenges faced by the country.

## 7. Policy initiatives and recommendations

The local Vietnamese IT sector has received strong support from the Government through tax incentives aimed at encouraging investment. Fiscal incentives include income tax exemptions and preferential tax for ICT workers as well as a VAT and import/export tax grace periods for companies. In addition, there are a number of Government-supported ICT and software parks in place, under construction, or being planned (in and around both Hanoi and Ho Chi Minh City). The focus on software is in part based on the competitive advantage of Viet Nam because of low land costs, a highly capable work force, and relatively low wages.

But there is still a low level of commitment to ICT, outside of policy initiatives, by the Vietnamese Government. IPR protection is a major concern of firms and is slowing domestic software development significantly. To foster and support the ICT development in Viet Nam, several policy measures could be considered:

- Innovation policies to increase the level of knowledge and technology embodied in production and exports;
- Policies to upgrade the human resource base to the need for more highly skilled workers or a different mix of skills; implementation of ICT training has been slow and is failing to keep up with demand;

- Policies to foster entrepreneurship, new firms and innovation and technology to boost new areas of economic activity;
- Cluster policies to capitalize on local and regional strengths that are important assets for economic development;
- Policies to enhance Viet Nam as an attractive destination for foreign direct investment to foster new areas of economic activity;
- Intellectual property rights protection which strikes an appropriate balance between the diffusion of technology and provision of incentives for innovation.

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# 6 / Case studies in the cinema and audiovisual sector

## A. Domestic SMEs in the television Global Value Chain: the case of Caracol in Colombia<sup>25</sup>

### 1. Introduction

Over the last 10 years Colombia has witnessed the introduction of several private national and regional TV channels, the beginning of the cable/satellite TV and the arrival of several transnational advertising agencies<sup>26</sup>. Combined with an increased demand for animated TV entertainment and a technologically sophisticated advertising industry, the first 3D-animation producers in Colombia were propelled into what today can be considered one of the fastest growing industries in the world.

Colombia's 3D-animation market might be unknown to the outsider, but not so Colombia's image as the world's third largest producer of TV serials, known as "telenovelas". The industry is booming and the demand for 3D-animations growing. The ever-increasing Hispanic population in the United States and the penetration of major United States-based TV channels and networks (TV-CNs) into Latin-America, opened up new business opportunities, not only for Colombia's flourishing 3D-animation market, but also for its main rivals in Argentina.

Consequently, a new market was created within national borders and linkages to international TV-CNs established, mainly driven by cost-oriented offshore-outsourcing motives of the transnational corporations (TNCs) in the international entertainment industry.

This case study provides some insights from a number of interviews conducted with several actors in the Colombian 3D-animation value chain, mainly those located in the cities of Bogota and Medellin. The paper begins with a brief overview of the Colombian television, TV commercial and 3D-animation market, followed by some information on the firms. The remainder of the paper analyzes the responses of the firms to the questionnaire developed to examine their role in GVCs. Some tentative conclusions are drawn in the final section.

### 2. Colombian television, TV commercial and 3D-animation market in context

The animation industry is one of the fastest growing industries worldwide. The growth is supported by the rapid advancement of technology and characterized by a growing demand for animated entertainment with the increased penetration of cable/satellite TV and the internet in many countries. The major markets include Canada, France, Germany, Japan, the United Kingdom and the United States. The big entertainment studios such as Walt Disney, Warner Brothers, Cartoon Network and HBO increasingly outsource animation production to Asia and Latin America, due to their much lower labour costs for competitive quality products - compared to North America and Europe, where the production costs are much higher (Digital Vector, 2006).

Animation<sup>27</sup> is primarily used as a tool in creating entertainment characters for movies and television, but also for the production of commercials, video clips, computer games, architectural and industrial design, medical demonstrations, and teaching aids. In Colombia, most 3D-animations are

<sup>25</sup> This paper was contributed by Sascha Furst, International Business Department, EAFIT University, Medellin, Colombia.

<sup>26</sup> The term television channel generally refers to either a television station or its cable/satellite counterpart. A television network describes a group of geographically-distributed television stations that share affiliation/ownership and some or all of their programming with one another.

<sup>27</sup> Animation is defined as the process of giving the illusion of movement or life to cinematographic drawings, models or inanimate objects. This is achieved with sets of drawings photographed in sequence on successive motion picture frames or images generated by computer software (Wikipedia, 2007).

used for TV commercials, followed by an increased demand for TV show/serial promotions, TV show/serial identity packages and TV channel branding.

As TV ratings show, the Colombian television market is clearly dominated by two national private TV channels, RCN and Caracol (M2M Marketing to Marketing, 2007). Privatization of the Colombian TV market began in 1992 and in 1998, RCN and Caracol officially started to operate as independent private TV channels. Both channels are owned by the country's biggest business groups - RCN belongs to the Ardila Lülle Group and Caracol to the Santo Domingo Group (Ciberamerica, 2007).

Colombian TV ratings are headed by the so called "telenovelas"<sup>28</sup> as the most popular television serials in the country. After Mexico and Brazil, Colombia is the third largest producer of telenovelas, including producers such as RCN, Caracol, Teleset, Telecolombia and RTI Colombia. Telenovelas are not only immensely popular in Hispanic America, Brazil, Portugal, Spain and in Hispanic communities in the United States, but also have a wide following in China, Eastern Europe, France, Indonesia, Israel, Japan, Malaysia, the Philippines, the Republic of Korea, the Russian Federation and Singapore (Wikipedia, 2007).

Both TV channels are increasingly engaged in international alliances for production and distribution. Caracol, for instance, signed a co-production agreement with Telemundo Network Group in the United States (owned by NBC) and a production agreement with Buena Vista International (owned by Walt Disney Television International). The export of film production, especially telenovelas, represents around 10 percent of revenues generated by both TV channels and there are plans for further penetration into international markets.<sup>29</sup>

According to the market research institute IBOPE Colombia (2007), most advertising investments are spent on TV commercials (53 percent), followed by radio (26 percent) and print media (21 percent). The advertising industry in Colombia is clearly dominated by subsidiaries of transnational advertising agencies that either fully-own their local subsidiary or are in an alliance with a local partner. The market is controlled by the following companies (in order of expected income for January 2007): Sancho/BBDO, Toro Fischer, DDB Colombia, Lowe, Leo Burnett, Ogilvy, J Walther Thompson, Young & Rubicam, McCann-Erickson and Grey (IBOPE, 2007). These companies manage both national and international accounts for advertising purposes in Colombia. However, some firms also manage international accounts for international markets, which means, that for instance, TV commercials are produced in Colombia and delivered for transmission in markets such as the Caribbean, Central- and South America.

There are several institutions in Colombia that offer educational programmes related to film production. The higher education sector is dominated by undergraduate programmes in social communications that includes the study of broadcasting, journalism, telecommunication, publicity, television, radio and public relations. This is followed by undergraduate programmes in movie and film production, and different courses and seminars on a continuing education level. The vast number of programmes is offered in the country's capital Bogota (Proimágenes, 2007).

3D-animation training is still scarce in the country. Some universities incorporate 3D-animation content into their curricula, especially for programmes in graphic design, or offer specific courses for continuing education. There are also some special 3D-animation training providers in the market, mainly in Bogota. The National University of Colombia recently offered the first post-graduate programme in animation in the country. All in all, and compared to the educational offer of countries such as Canada where around 80 institutions provide courses related to 3D graphics and animation, Colombia is still in its infancy, but showing a trend towards an increased offer of 3D-animation training (3DLinks, 2007).

<sup>28</sup> Telenovela is the term used to describe limited-run television serials and is derived from the terms tele, short for television, and novela ("novel"). Telenovelas are essentially soap operas in miniseries format, with an origin in Spanish and Portuguese broadcasting. While most English-language soap operas can potentially continue indefinitely, almost all telenovelas run for a predetermined duration. They usually feature a fictional romantic melodrama, air five or six days a week, and run for an average of 120 episodes.

<sup>29</sup> Information obtained from interviews.

According to the national movie and television industry directory, there are 23 3D-animation producers in Colombia. Eight of them already have a presence in international markets, such as Canada, Panama, the Bolivarian Republic of Venezuela and the United States. General digital animation producers outnumber 3D-animation producers. These firms specialize in general graphic animation, including 2D-animations. Table 1 gives an overview of the number of key players in the 3D-animation value chain in Colombia, which will be further described in the following section.

**Table 1: Numbers on key players in the 3D-animation value chain in Colombia**

<b>Animation firms (including freelance)</b>	
3D-animation producers	23
3D-animation producers with presence in international markets	8
Digital animation producers (not necessarily specialized in 3D-animations)	34
Total (without international offices)	57
<b>Film producers</b>	
General film producers	20
Documentary film producers	18
Total	38
<b>Production and post-production firms</b>	
Production and postproduction firms for TV commercials	79
<b>Advertising agencies</b>	
Advertising agencies	68

Source: S.O.S. Manual de Cine & Televisión de Colombia, 2007.

### 3. Value mapping for 3D-animations in Colombia

The following section illustrates the relation between the different actors in the 3D-animation value chain in Colombia. As mentioned above, the focal point of the study is 3D-animation producers that enter in different relationships with a diverse set of clients, both nationally and internationally.

According to figure 2, 3D-animation producers enter into six different relationships with clients and four with suppliers. Such relationships do not only occur within national borders, but also span several geographical regions, such as Asia, the Caribbean, Central and South America and North America.

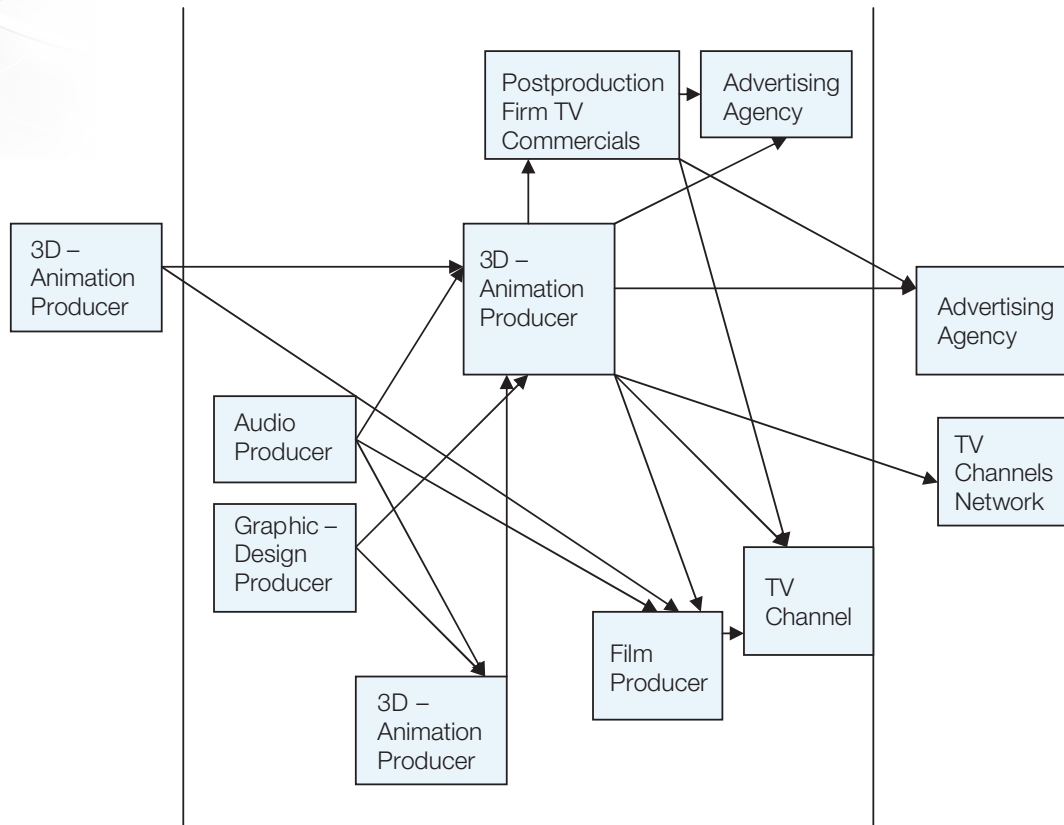
On the supply side, 3D-animation producers outsource mainly audio production, such as voice, music, composition, and in some cases, graphic design. Complete production of 3D-animations is also occasionally outsourced to other companies within Colombia and in some cases to countries, such as Brazil and China.

On the client side, 3D-animation producers enter in direct relationship with:

1. national firms that specialize in the post-production of TV commercials;
2. transnational advertising agencies located in Colombia;
3. transnational advertising agencies located abroad;
4. international TV-CNs, mainly located in the United States and Canada;
5. national TV channels; and
6. national film producers.

Accordingly, 3D-animation producers might act as first- or second-tier suppliers in the value chain; as first-tier suppliers in the case of advertising agencies, advertising agencies abroad, international TV-CNs, national TV channels, and as second-tier suppliers in the case of post-production firms and national film producers.

Figure 1: Value mapping for 3D-animations in Colombia



#### 4. Fieldwork methodology and overview of participating firms

This section provides an examination of the material gathered through interviews with selected 3D-animation producers, post-production firms for TV commercials, advertising agencies, film producers and national TV channels. The section begins with the fieldwork methodology, followed by an overview of the firms participating in the research process, and concluded by the results of the interviews. The national industry directory for cinema and television “S.O.S. Manual de Cine & Televisión de Colombia” was used for firm identification and sample construction. Firm selection was dependent, for the most part, on those that met basic criteria in terms of:

- participation in the creation, supplying and/or usage of 3D-animations;
- were located in Colombia’s capital Bogota and/or the city of Medellin; and
- were also willing to make a senior manager available for an interview.

The interviews were guided by a semi-structured questionnaire conducted in person and supplemented, where necessary, by some further discussions via email and telephone. At the request of the participating firms, their names and identities have not been used in this paper. Table 2 presents a summary of some of the descriptive traits of the participating firms.

The firms selected for participation in the research project include different actors at different levels in the value chain: two national TV channels, two national film producers, three transnational advertising agencies located in Colombia, four post-production firms specialized in TV commercials and five 3D-animation producers.



Table 2: Participating firms

Firm	# years of existence	# employees	Turnover (\$ million)	Major shareholders	Service categories	Estimated proportions of total cost of production going to production, marketing, support, R&D	Estimated labour and capital investment proportions attributed to total production costs
<b>3D-Animation Producer</b>							
1	3	5	< 1	Privately owned	Graphic packaging and branding for television 90%; Animated series 10%	Production 70%; Marketing 5%; Support 25%; R&D 0%	No data provided, but clearly labour dominant
2	1	2	< 1	Privately owned	3D animations for commercials; Background design for video games; Architectural visualizations	Production 80%; Marketing 0%; Support 1%; R&D 19%	No data provided
3	1,5	6	< 1	Privately owned by 4 shareholders (23% each), one shareholder 1%, and participation of 8% by a business incubator	3D animations for commercials, architectural presentations, entertainment and educational purposes	Production 40%; Marketing 20%; Support 10%; R&D 30%	Clearly labour dominant with 60%
4	1,5	12	< 1	Privately owned by 3 shareholders (50% local family, 40% individual, 10% individual)	Architectural visualization 40%; Multimedia Internet presentations 30%; 3D animations 30%	Production 30%; Marketing 60%; Support 5%; R&D 5%	Clearly labour dominant with 90%
5	7	50	1-5	Privately owned by 4 shareholders (each 25% participation)	3D animations for TV commercials 70%; Virtual tours for architectural designs 20%; Internet/Multimedia design 10%	Production 70%; Marketing 10%; Support 10%; R&D 10%; R&D investments are constantly increasing	No data provided, but clearly labour dominant
<b>Postproduction Firm TV Commercials</b>							
6	6	42	1-5	Privately owned by 4 shareholders (major shareholders own 40% and 37%)	TV commercial postproduction 80%; Feature film production 20%	Production 60%; Marketing 7%; Support 15%; R&D 18%	Labour 65%; Capital 20%



Firm	# years of existence	# employees	Turnover (\$ million)	Major shareholders	Service categories	Estimated proportions of total cost of production going to production, marketing, support, R&D	Estimated labour and capital/ investment proportions attributed to total production costs
7	24	35	1-5	100% owned by a major Colombian business group	Production and postproduction of TV Commercials 99%; Music videos 1%	Production 90%; Marketing 4%; Support 1%; R&D 5%	No data provided, but clearly labour dominant
8	17	50	No data provided.	Privately owned (no further information provided)	TV commercial postproduction; Promotional corporate videos; Multimedia websites	Production 40%; Marketing 30%; Support 10%; R&D 20	No data provided, but clearly labour dominant
9	9	9	< 1	Privately owned by 4 shareholders (each 25% participation)	TV commercials 70%; Music videos/Video clips 20%; Short films 5%; Promotional corporate videos 5%	Production 30%; Marketing 30%; Support 20%; R&D 20%	More capital than labour intensive
<b>Advertising Agency</b>							
10	11	4 (Department that deals with TV commercials).	< 1	Transnationally owned subsidiary with 60% participation	TV commercials 30%; Promotional corporate videos 60%; Radio commercials 10%	Production 40%; Marketing 10%; Support 30%; R&D 20%	No data provided.
11	13	5 (Department that deals with TV commercials).	No data provided.	Transnationally owned subsidiary	TV/Radio commercials 60%; Print media/direct marketing 40%	No data provided	No data provided
12	8	9 (Department that deals with TV commercials).	< 1	Alliance between local partner and 30% participation of transnational advertising agency	Internet/Multimedia design 60%; Animated TV commercials 40%	Production 60%; Marketing 10%; Support 15%; R&D 15%	Clearly labour dominant with 60%

Firm	# years of existence	# employees	Turnover (\$ million)	Major shareholders	Service categories	Estimated proportions of total cost of production going to production, marketing, support, R&D	Estimated labour and capital investment proportions attributed to total production costs
<b>Film Producer</b>							
13	2.5	9	< 1	100% family owned	Documentary films 90%; Promotional corporate videos; Fictional film	Production 70%; Marketing 0%; Support 5%; R&D 25%	Labour 40%; Capital 60%
14	13	1	< 1	Privately owned	Animated movies for education, entertainment and promotional purposes	Production 55%; Marketing 5%; Support 35%; R&D 5%	Clearly labour dominant with 80%
<b>TV Channels</b>							
15	10	Total employees 850; Employees in inhouse production (includes animation production) 22	No data provided.	100% owned by a major Colombian business group	For 3D in-house production: TV shows/serials identity packages and promotion	No data provided	No data provided
16	10	Total employees 1200; Employees in graphic design department (includes animation production) 9	No data provided	100% owned by a major Colombian business group	For 3D in-house production: TV shows/serials identity packages and promotion	No data provided	No data provided



## 5. Awareness and understanding of the Global Value Chain

Most companies interviewed were not familiar with the concept of a value chain and less with a GVC, but clearly were aware of the immediate supplier-producer relationship.

Both TV channels have their own in-house production for 3D-animations. 3D-animations are used for TV shows/serials, identity packages and promotion, and TV channel branding. However, on many occasions, 3D-animation production is outsourced, either if in-house production capacity is insufficient or if outside providers possess more specialized technological equipment for specific productions. In the case of film producers, 3D-animation production is completely outsourced, either to specialized firms or to individuals working freelance. In the case of advertising agencies, these firms outsource all TV commercial production and 3D-animations are included in the post-production process. Only in one case, the advertising agency uses its own in-house division for the creation of 3D-animated commercials. All post-production firms have their own in-house production for 3D-animations; outsourcing is used occasionally if capacity limits are reached or for specific projects where more specialised technological equipment is needed. 3D-animation producers on their side, outsource mainly audio production, such as voice, music, composition and in some cases graphic design. Outsourcing partners, in many cases freelance, are mainly located in the same city, but in some cases also abroad, in countries such as Brazil and China.

One film producer is actively involved in the production and supply of documentary films for a major United States TV channel. Becoming a supplier to such a channel is not an easy task as competition is tough, especially from countries like Argentina, Brazil and Mexico. According to the company's general manager, despite such a competitive situation and high-entry barriers to become a supplier to this channel, one can find competitors of all different sizes, ranging from SMEs to big firms. The value added can be regarded as very high for documentary film production, as the client in many cases only provides the initial idea: the company takes care of all the intermediate steps, from the script to the production, from the filming to the editing, thus creating the entire product.

The competitive situation is equally tough for advertising agencies, with a major concentration in the country's capital Bogota. It is interesting to note that in some cases Colombia serves as a so called "Creative Hub" for some transnational advertising agencies, which means that most creative work is designed and produced in Colombia for major transnational firm located in the Caribbean, Central- and South America.

Almost all post-production firms are located in Bogota and are more or less of equal size. Company officials stated that competition is high. Nevertheless, there exists a friendly relationship among them and bi-weekly meetings favour the exchange of information regarding industry news. These regular meetings among post-production firm managers can be considered as unique in the sector as no other actors in the value chain cooperate in a similar way. The degree of transformation of TV commercials is very high according to all participants (between 70 to 90 percent, taking into consideration that the advertising agency normally participates with the story-line, the story-board and/or the brief<sup>30</sup> in the TV commercial creation process).

Most 3D-animation firms are located in Bogota. All participants from these firms considered the competitive situation as high and firm size can range from the individual freelancer to bigger medium-sized companies. The value added can be described as intermediate to high, depending on the type of project.

All interviewed companies confirmed the increased importance and demand for 3D-animations in television productions. This is not only the case in international markets but also within Colombia. Although, many companies still consider the international markets, especially Canada and the United States, more attractive for animated products because of their high demand, better margins and Colombia's price competitiveness compared to local suppliers in these markets.

<sup>30</sup> A story-line refers to the textual description of a narrative - the story. The story-board are graphic organizers such as a series of illustrations or images displayed in sequence for the purpose of pre-visualizing a motion graphic or interactive media sequence (Wikipedia 2007). A brief however gives detailed instructions to the creator about the design of the animation.

## 6. Cooperation within the Global Value Chain

3D-animation firms seem so far relatively independent from their clients. Only in two out of five cases, the company depends on a major client. In one case, a United States-based cable TV network and in the other case another Colombian 3D-animation firm.<sup>31</sup> In the case of film producers, one firm directly depends in terms of revenue on a major United States-based TV channel. In general, it can be observed that such industry production is outsourced based on specific projects and contracts assigned for a specific piece of production. Long-term contracts do not exist. Although, most firms express a high level of independence from their clients, many companies wish to establish or to increase their existing relationship with a specific client looking for a more long-term relationship that provides them with a more stable client base and revenue flow.

3D-animation firms are fully independent regarding their choice of own suppliers and production processes applied. Only in one case, a major United States-based TV channel recommended the use of a supplier based in Brazil, but rather as a recommendation than an obligation.

The level of interaction between client and 3D-animation producer varies according to the type of client. In general, it can be observed that 3D-animations for TV production show a higher level of freedom for creativity than for TV commercials. In the case of advertising agencies and post-production firms for TV commercials, the company submits the story-line, story-board or brief, whereas in the case of TV production, the 3D-animation producer only receives the initial idea and needs to add value based on his own creativity. Due to such limitations in the creative process, many 3D-animation producers prefer working with TV-CN or film producers than with advertising agencies or post-production firms for TV commercials.

For many 3D-animation producers and also, in one case, for a film producer, it makes a difference whether they work with a national or an international client. International clients are in all cases more demanding regarding quality, especially in the case of international TV-CN. Interestingly, in such cases, spillover effects occur through constant feedback from the client side on how to improve certain creative work and/or animation design processes. In one case, the Colombian film producer also participated in a workshop offered by a United States-based TV channel on topics like quality control and proposal presentation. However, such direct training from the client side can be considered as exceptional based on the observed cases.

A form of due diligence applies in some cases for the selection of suppliers for the national TV channels and advertising agencies. In these cases, the client personally visits potential suppliers to inspect the level and standard of technology employed and to check the human resource base.

Relationships between suppliers and clients also depend on the type of client. In the case of postproduction firms for TV commercials, film producers and TV-CN, relationships are based on trust and even sometimes on friendships, which favour a more long-term oriented business relation. Advertising agencies, however, do not stick to a preferred supplier. Contracts for a specific creative work are assigned based on tenders where usually the supplier with the lowest price-offer wins. Accordingly, this adds to the negative image that most 3D-animation producers held regarding advertising agencies as clients.

Apart from the price, trust is an important factor for supplier selection and is based on the two factors of quality and delivery time. Price, however, is more important for national than international clients, as two survey participants confirmed. If the supplier is already known by the client, the most common practice for contract negotiation is email and/or telephone.

Suppliers that enjoy a trustful relationship with their clients are also favoured in terms of contracts, many new projects are offered from the client side and passed on to their suppliers. In such cases, the 3D-animation producer takes a reactive position rather than a proactive position regarding new contract acquisitions.

<sup>31</sup> In this case the supplier directly depends on its client. The client rents office space at an economic rate to its supplier, reserving itself the right of exclusivity for some projects. Both companies are 3D-Animation producers.

Suppliers frequently mentioned the importance of image that a relation with a major national or international client brings. Being a supplier of one of the two major national TV channels, a big transnational advertising agency and/or an international TV-CN has a positive impact on the supplier's image and facilitates future business opportunities.<sup>32</sup>

## 7. Dynamics of cooperation, intellectual property, assets and competencies

The majority of firms interviewed do not belong to any industry association. However, there are currently two initiatives to establish industry associations for TV film producers and post production firms. According to many participants, the absence of such associations in the country often has the negative effect in that no industry standards and regulations exist (i.e. price regulations), which often causes a lack of transparency in business practices.

In general terms, cooperation between firms is limited - no one wants to cooperate and some even consider that association with competitors is something that culturally won't work in the country. However, at a closer look, some survey participants could think about cooperation in terms of better promoting and positioning the industry abroad.

Despite all these comments, some form of cluster development can be observed. On the one hand, based on inter-firm cooperation and on the other hand, based on geographic proximity. The following cases occur:

- Two post-production firms for TV commercials share one major international account for advertising production in Latin-America;
- One 3D-animation producer sub-rents office space to two of its suppliers in the same building;
- In some cases, film producers and postproduction firms rent technical equipment to each other;
- In many cases, if one firm reaches capacity limits, it outsources certain 3D-animation production to competitors.

The majority of firms interviewed are located in the country's capital Bogota, which is also Colombia's biggest and economically most active city, followed by the city of Medellin, where the rest of the firms are located. Typically and in most cases, clients and suppliers are located in the same city, and there are hardly any relationships between suppliers and clients from different cities (except if the client is an international TV-CN). In this case, geographical proximity can be considered as an important factor for successful business relationships, at least at national level.

The driving factor behind outsourcing of 3D-animations for the two national TV channels mainly lies in the degree of specialization of many 3D-animation firms. Officials from both channels indicated that in many cases suppliers do possess more specialized technical equipment, and their investment in such technology is not justified. Furthermore, participants from both channels stressed the excellent human resource talent of their suppliers.

Talking about key assets of 3D-animation producers, all survey participants highlighted the importance of a) talented personnel and b) technological equipment, but clearly dominated by the human resource factor. The bulk of people working with 3D-animations either studied publicity or graphic design at Colombian higher-education institutes. Nevertheless, specific software capabilities for 3D design are mainly acquired through self-education. This is done on own initiatives or in some cases the firm also offers in-house training. Recent trends in Colombia are that more and more universities include 3D-design and modelling in the curricula of their respective undergraduate programs, or such courses are offered as part of their continuing education portfolio (see section 2). Besides, a software provider for 3D-animations recently opened a training centre in Colombia. However, such initiatives are just beginning to flourish and, as mentioned before, most

<sup>32</sup> Recommendations and references from respected clients are especially important in the marketing promotion activities of 3D-animation producers.

people dedicated to 3D-animations choose self-education and learning-by-doing. Interestingly, most senior staff of 3D-animation producers, post-production firms for TV commercials and film producers received their respective post-graduate degree in the art field from universities abroad, mainly United States and Europe.

Regarding key strengths, all suppliers indicated creativity, quality, delivery time and price as important. Especially for international markets, 3D-animation suppliers feel that price is an important competitive factor because of labour cost advantages in Colombia. Although in many cases, survey participants frequently mention Argentina as their main competitor with equally talented people and low prices. Besides the above key strengths, three suppliers also consider their English language abilities as a strength and competitive advantage, especially for conducting business with international clients. In three cases, the 3D-animation producer and post-production firms also have their offices abroad, mainly Canada, United States, and the Bolivarian Republic of Venezuela<sup>33</sup>. Such an international presence is also regarded a strength, and especially in the case of Canada<sup>34</sup> and United States, the firms consistently confirmed the positive learning effect from the market and its clients.

Just as technology is regarded as a key asset for suppliers, it can also represent a weakness if such equipment is not possessed. This is the case for two of the interviewed firms that lack investments in hard- and software, basically because of financial limitations.

Most 3D-animation producers consider the increased competition from India and China as a threat for their position in the GVC. Although many United States-based TV-CNs tend to favour Hispanic producers for their Latin-American productions because of cultural affinity, as three participants confirmed. Besides, many suppliers fear that they might not be able to follow the rapid pace of technological innovation and to always possess the necessary financial resources to acquire the latest technology in terms of hard- and software. Some participants also made the point that another threat could be an increased in-house production of 3D-animations by film producers, postproduction firms and TV-CNs. One firm interviewed, that acts as a supplier for a major television channel in the United States, highlighted the fact that its greatest concern would be to become repetitive in its creative work. According to the participant, such big clients often change suppliers if current suppliers lose their capabilities of creative innovation. In the case of post-production firms, the participants consider the increased presence of foreign-affiliated post-production companies as a threat to their business as it increases competition in Colombia.

The bulk of firms spoken to indicated that to increase their role in the GVC they constantly need to invest in training of their personnel and new technology in terms of hard- and software. Talented personnel can be regarded a key asset of the firm, the attraction of such talent is also necessary to increase its role in GVCs. In one specific case, the founder of a 3D-animation company was a former employee of a major United States-based television channel. As two other participants confirmed, such linkages are not unusual - former employees of big client companies leave and set up their own business to work as suppliers to their former employers.

Clients do not require quality certifications, such as the ISO 9000 standard, from their suppliers. Among all interviewed companies, only two of them are certified according to the ISO 9000 standard - a post-production firm and an advertising agency.

## 8. Support needed to enhance the role of SMEs in the Global Value Chain

So far, all firms interviewed never received any kind of support from the Government. In two cases, companies approached the Ministry of Commerce and the Colombian Export Promotion Agency Proexport<sup>35</sup> for information, but could not get any satisfying answer or help.

<sup>33</sup> According to Bolivarian Republic of Venezuela law, the production of TV commercials requires a certain percentage of local content/production. For that reason and to exploit better business opportunities in the Bolivarian Republic of Venezuela (many Colombian manufacturing companies are present in that market), some postproduction firms for TV commercials have their own representation and production in Caracas.

<sup>34</sup> The major markets of the global animation industry include Canada, France, Germany, Japan, United Kingdom, and United States. Especially Canada trains and provides the world's best-known computer animators, and the major industry software suppliers are located in that country (Digital Vector, 2006).

<sup>35</sup> Proexport is the government entity in charge of promoting Colombian non-traditional exports, international tourism and foreign investment to Colombia. It provides domestic companies with support and integral advisory services for their international trade activities, facilitating the design and

Proexport just recently started to include service exports into their portfolio of advisory services. In a telephone inquiry with Proexport, the official indicated that so far no major support was given to the television industry but that they are considering it. Many firms interviewed see Proexport as the key player from the Government side to promote and position the Colombian 3D-animation business in the international markets through trade fairs and industry specific showcases.

To become more competitive in international markets and hence, to increase their participation in GVCs, SMEs suggested the following measures:

- Government could promote more vigorously local talent. According to several participants, there is a lot of creative talent in Colombia, but many do not have access to adequate training because of financial limitations. As most training for 3D-animations is provided by private universities and institutions, this is a major restriction for people who cannot afford the tuition;
- Tax benefits could also be implemented by the Government in two ways. On the one hand, tax credits for the acquisition of technology (hard- and software), and on the other hand, tax credits for 3D-animations that are supplied to international clients and hence, exported to international markets;
- Many firm staff still cannot travel freely for business purposes, as foreign governments put visa restrictions on Colombian citizens. Consequently, they cannot visit clients abroad;
- One participant also referred to the Government-imposed restrictions regarding the number of foreigners allowed to work in a Colombian company. Such restrictions can prohibit further business development of many companies if they are not allowed to hire foreigners.

Firms interviewed also indicated that Colombian 3D-animation producers, post-production firms and film producers increasingly improved their reputation abroad because of the quality of their work and competitive prices. This is especially the case among Latin American countries and the United States. However, the general negative country image (an image often related to drug-trafficking and violence) doesn't favour the industry. In that sense, Proexport could play an important role by promoting and positioning the industry more effectively in international markets.

## 9. Conclusions

The following section summarizes the main findings, gives additional information and presents some tentative conclusions to shed more light on Colombia's growing 3D-animation market and its linkages with GVCs.

Most firms interviewed are structured as private limited companies, apart from the subsidiaries of transnationally owned advertising agencies and the two national TV channels (see table 1). It is interesting to note that 3D-animation firms were established during the last two-three years, except one company that already exists for seven years. This reflects the newness of the industry in Colombia. As all participants confirmed, the 3D-animation market is growing, and the international market (especially Canada and the United States) is becoming a very important market for business development (some companies already have established offices in Canada and the United States). Turnover is still below \$1 million per year for most firms, but higher revenues are also possible as two cases illustrate.

The number of employees varies significantly (between 2 to 50) for 3D-animation firms, and additionally, there are many freelance artists in the market. Freelancers work in some cases as suppliers for 3D-animation producers, but can also compete directly with them for major clients (post-production firms, advertising agencies, film producers and TV channels). Therefore, the 3D-animation market can be seen as fragmented, with established firms of varying sizes, complemented by a scattered market of freelancers.



In general, it can be observed that the cost for creation or transformation of the product is labour intensive. This is followed by investments in technology (hard- and software). According to the interviewed firms, talented labour constitutes the most important asset. The turnover of employees is often a problem, especially for the SMEs, whose employees are often attracted by higher salaries of the bigger firms.

The great bulk of costs can be attributed to the actual production of the 3D-animation. Marketing expenditures for 3D-animation producers are relatively low. Participants indicated that most business promotion is realized through word-of-mouth communication (referrals) and already established contacts. Only in one case the company is aggressively expanding its business activities in the United States market, which leads to higher marketing costs due to increased travel expenses. R&D expenditures are increasingly important, as the production of 3D-animations is highly dependent on the efficient and intelligent usage of hard- and software technology. The creative and technical skills of the SMEs account for a significant part of the value-added of the product/service.

There is a general tendency to outsource 3D-animations as investments in technology can be quite high. Such a trend favours 3D-animation producers. Besides, the Government is increasing investments in local film production, and there are plans to introduce a new third private TV channel in Colombia for 2009. Consequently, such a development favours business expansion for 3D-animation firms and their linkage to the television production chain. According to many participants, more joint efforts among firms and between Government and companies would be necessary to increase linkages with the television international production chain. The Government-led export promotion agency, Proexport, is considered an important player in such an effort, but has been inactive so far.

As most 3D-animation producers pointed out, it is more attractive for them, in terms of creative freedom and revenue, to work for film producers and national/international TV-CNs than post-production firms for TV commercials or advertising agencies. Nevertheless, most 3D-animation firms cannot rely only on film and television clients, as the market for animated TV commercials still dominates in Colombia.

The absence of an industry association and a general fragmentation of the 3D-animation market in Colombia cause problems of lack of transparent business practices, characterized by a lack of industry standards and (price) regulations, and a general attitude of non-cooperation between firms ("competitors"). However, an initial cluster development can be observed - both in terms of geographical proximity and inter-firm-cooperation.

Besides the above- mentioned support that Government might provide another issue would be the promotion of English language communication skills, which was considered an important strength by some companies to successfully establish linkages with international TV-CNs and hence, GVCs.

In conclusion, being part of a GVC, especially being supplier to a major United States-based TV-CN, is beneficial in several ways for 3D-animation producers:

- More steady order inflow and hence, a more constant revenue flow (although no long-term contracts exist, but it is important to be on the list of suppliers of the procurement manager);
- More space for creative freedom and innovation (compared to advertising agencies as clients);
- Increased potential for skill upgrading. Positive spillover effects might occur through constant feedback from the client side on how to improve certain creative work and animation design processes;
- Potential for better margins (compared to working with a national client);
- Image upgrading (importance of being a supplier to a major TV-CN for marketing purposes).

The 3D-animation market in Colombia is relatively new but growing rapidly and linkages with GVCs can have an important impact on local SME development, as the cases in this study have shown. Government intervention would be needed to create a more business friendly environment that caters to the specific needs of these, often (very) small, companies.

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## B. Assessing the participation of domestic SMEs in the international production chain: the case of Nu Metro in Nigeria<sup>36</sup>

### 1. Introduction

A viable film industry contributes to the economic development of a country through employment and wealth creation. The film industry is labour intensive. From production to distribution many people are directly or indirectly employed in the industry. In this respect the domestic value chain of movie production is enormous and its economic spin-offs are even larger. In Nigeria the turnover of the industry has been estimated to be \$200 million–\$300 million per year. This is a significant contribution to an economy that relies primarily on the petroleum sector. The country is the third-largest film producer after the United States and India, and the sector is dominated by SMEs.

The case study investigates the Nigerian branch of a South African media company and the emergence of a Nigerian movie cluster called “Nollywood”<sup>37</sup>, which draws on a number of native Nigerian movie stars.

While film making can be traced back to 1939, it was the emergence of the digital and communication technologies that allowed the industry to take off in the 1990s. It is important to note that the origin, development and growth of Nollywood could be attributed to SMEs which are the dominant players in the industry. Nollywood is the result of the resourcefulness, creativity, resilience and entrepreneurship of Nigerians. They produce movies on a shoe string budget of time and money. An average production takes just two weeks and costs approximately \$15,000. Unlike many film industries in the world, Nollywood is self-financing and not dependent on financial support from Government.

The diffusion of digital and communication technologies in the 1990s has accounted for its fast growth. Currently, some 300 producers churn out movies at an astonishing rate; somewhere around 500 a year. Nigerian directors adopt new technologies as soon as they become affordable. About 30 new titles are delivered to Nigerian shops and market stalls every week and an average film sells 50,000 copies for \$2 each making them affordable for most Nigerians and providing high returns for the producers. Although SMEs are the backbone and dominant players in the industry they are not really playing an important role in the GVCs of film production and distribution. This is attributable to a number of factors which will be examined in this paper.

### 2. General overview of the film industry in Nigeria

The film industry in Nigeria can be tracked back to 1939 when the British Government set up the Colonial Film Unit with regional branches in East Africa, Central Africa and West Africa. It sought to educate Africans about the European way of life and preserve the best of African traditions, whilst also entertaining. The projects were not designed to create a commercial film-making tradition but were essentially for purpose of sensitization and propaganda. At first European films were re-edited, screened and the necessary commentary added to achieve desired results. The Overseas Film and Television Centre, London trained Nigerian film makers including the general manager, Brendan Shehu; managing director, Kola Ogunbanwo; and the cinematographer, Mohammed Yusuf—all of the Nigerian Film Corporation.

Since 1944 there existed a vibrant theatre industry in Nigeria with ‘stars’ like Hubert Ogunde, Adeyemi Afolayan (Ade Love), Duro Ladipo etc. In 1972 the Indigenization Act nationalized film distribution and exhibition which attracted these stars of the Yoruba Theatre to the film industry. The Paris-trained film maker, Segun Olusola, collaborated extensively with the stars of the Yoruba Theatre to produce a number of box office hits. Confident of their box office value the Yoruba stars launched themselves as producers and directors in concert with people like Duro Ladipo who had considerable

<sup>36</sup> This paper was contributed by Kunle Ola, Nigerian Copyright Commission.

<sup>37</sup> A New York Times reporter wrote a feature story on the Nigerian movie industry titled “Give Way Hollywood: Here comes Nollywood”. The name has stuck despite the controversy surrounding its propriety. On one side of the divide people like Tunde Kelani and Femi Odugbemi believe that the name is not original, others insist that the name Nollywood is now a brand. After all, the name Nigeria is not from Nigerians, but from Lord Lugard.

experience in television. In 1982 for instance, over forty films were shown at the National Theatre. Other organisations like the West Africa Picture Company also had chains of theatres. There were also a number of theatres privately owned by the Lebanese and Indians. In effect a robust feature film industry already existed in the seventies, thanks to a strong economy. This made it possible to shoot in Nigeria and process the film abroad preferably in London.

### *The downturn of the 80s and the switch to home videos*

Up till the 1980s, Nigeria was still producing up to four features a year. In the late 1980s and 1990s Nigeria faced a growing epidemic of crime and insecurity. The decline of the economy made it impossible to sustain feature film production. Movie theatres closed as people became reluctant to be out on the streets after dark. Cinema attendance in Nigeria took a drastic downturn because of this general state of insecurity, the absence of a supply chain, and the subsequent takeover of the theatres by churches. In fact the National Theatre with a combined sitting capacity of almost 8,000 seats comprising two cinema halls and main hall sank into dilapidation. The modern era in cinema exhibition probably commenced with the launch of Silverbird Galleria, a multiplex of about five screens. There are other multiplexes such as Nu Metro Cinema at the Palms Shopping Mall, City Mall and Nu Metro Cinema, Abuja. Others are under construction in Abuja, Lagos, Port Harcourt and Ilorin.

To remain in business, Nigerian filmmakers working in 16mm turned to reversal stock and from there to video. Videos for home viewing imported from the west and India were only mildly popular. The production of videos for home viewing took off in November 1992 when Chief Kenneth Nnebue's Nek Video Links released the movie: *Living in Bondage*. The simple story of a man who uses his devoted wife for moneymaking rituals became an instant hit nationwide. It inevitably spawned a sequel, *Living in Bondage II*. The success of *Living in Bondage* did not go unnoticed. Chief Nnebue's erstwhile collaborator Okey Ogunjiofor, who claimed to have initiated the project, floated a new company the Video Sonics Studios. It went into partnership with one of the leading actors in *Living in Bondage*, Kanayo O. Kanayo (Chief Omego). They invited Chief Justin Okafor, an Onitsha-based electronics dealer, trading under the name J.B Merchandise, to finance and distribute the movie titled *Circle of Doom*.

*Living in Bondage* and *Circle of Doom* sold pre-packaged movies to distributors. However, it was *Taboo* that introduced what later became the marketing system.

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#### **Box 1: The case of *Taboo***

*Taboo* is a movie realized by SAGE Production INC in association with Colombia Business Services LTD and Ketrad Nig LTD in the early '90s. It was directed by Vic Mordi, starring Kenneth Okonkwo. The movie was well funded at the beginning, but it eventually ran into stormy financial waters as a result of cost overruns and delays in post-production. Consequently the producers fell out with the financiers who withdrew funding. As a result, Sage Productions completed the movie without any means of importing the blank VHS tapes, dubbing, printing the jacket sleeves and releasing the movie. Faced with this dilemma, Dan Oluigbo pioneered a crude kind of pre-sales agreement. Distributors were appointed for different territories in return for upfront payment. This money was used to print the posters and jackets. Distributors were then given master tapes to dub. Thereafter, the distributor purchased the inner sticker and jacket sleeves from the producers. This flawed innovation was a radical departure from *Living in Bondage* and *Circle of Doom*. Traders in the market financed both movies, imported cheap video cassettes from Asia, dubbed the movies, packaged and introduced them into the market as complete products. They were thus responsible for production, marketing and distribution.

Source: UNCTAD's interviews, 2006-2007.

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*Taboo* established a trend where the producer's job ends with post-production. Having handed over the master tape, he would have to rely on the distribution chain known here as the marketer for details of the movie's performance. This system is obviously flawed. Having gotten one foot in, marketers eventually started pirating the movies by printing their own stickers and jackets since

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the producers had no means of monitoring sales. The marketer, who was responsible for dubbing, could dub any quantity he liked. The marketers, thus, funded their way to commissioning production themselves.

### Nollywood movie industries

Nollywood, unlike Hollywood, is not a physical place or location. Nollywood is a cross between an ideology of film making; dependent on mobile digital equipment, location shooting and a cost-effective production system. Contrary to popular belief, Nollywood is not one industry but actually a conglomeration of four separate industries comprising English, Yoruba, Hausa and Edo language movie industries. Movies are shot in different local languages since the Nigerian industry caters primarily to the local market, but English-speaking films are becoming increasingly popular.

The English language movie industry has major production centres in Lagos, Aba, Enugu, Onitsha and Owerri. Lagos, Aba and Onitsha are the distribution points. The movies are packaged in VHS tapes and VCDs and moved from Lagos where the replication plants are located to the distribution points over the weekend, for display and sales on Monday. Though the movies are scripted and interpreted in the English language, the stories are predominantly Ibo in origin. This side of the industry is controlled by Ibos from the south-eastern part of the country. Distribution is controlled by the Association of Film & Video Producers and Marketers of Nigeria (AFVMP). AFVMP has three branches; Lagos, Onitsha and Aba. Each branch is autonomous. While Aba and Onitsha are more or less exclusively Ibo, Lagos is made up of Ibos and Yorubas who trade in the popular Idumota Market. Leadership of the Lagos branch alternates between Ibos and Yorubas.

### Box 2: Professional guilds and associations

*There are various professional guilds and associations: Association of Movie Producers (AMP), Directors Guild of Nigeria (DGN), Screen Writers Guild of Nigeria (SWG), Creative Designers Guild of Nigeria (CDGN), Nigerian Society of Editors (NSE), Nigerian Society of Cinematographers (NSC) and Actors Guild of Nigeria (AGN). These organisations are national in composition and outlook. Most of them have state chapters across the country. This segment of the industry can arguably be described as "mainstream Nollywood". An average of 100 movies is released every month. The minimum quantity released is in the region of 5,000 VHS and 10,000 VCD. The average budget is N2 million. The professionals, dissatisfied with the distribution of movies, formed the Filmmakers Cooperative of Nigeria (FCON). FCON has the Nigerian Film Market with 36 shops in Surulere.*

Source: UNCTAD's interviews, 2006-7

The Yoruba language film industry is dominated by the descendants of Ade Love, Hubert Ogunde and Moses Olaiya. The movies are interpreted in the Yoruba spoken in the south-western part of the country. Production centres are mainly Lagos and Ibadan. The major distribution point is Lagos. However, Yoruba movies have sustained the tradition of cinema exhibition popularised by the Yoruba Theatre. Movies are screened at the National Theatre, LTV Hall and at other venues including town halls. This segment of the industry is controlled by Association of Nigerian Theatre Practitioners (ANTP). ANTP is made up of actors, producers, directors etc. Yoruba movies are released in Idumota, Lagos.

The Hausa language segment of the film industry has Kaduna and Kano as the main production centres. The commercial city of Kano is the main distribution centre. An average of two movies is released weekly. About 10,000 copies are released per title and as many as 20,000 sold. Kano has over 100 production companies with over 23 directors. The movies are interpreted in the Hausa language and the industry is represented by the Motion Picture Practitioners Association of Nigeria (MOPPAN). The Hausa movies circulate beyond Nigeria to the Islamic world and also travel the old trans-Saharan trade route. Surprisingly, in 2000, 192 Hausa movies were censored by the National Film and Video Censors Board surpassing the more than the 186 Yoruba movies censored. In 1999 over 100 Hausa film were made. The average budget was N200, 000.

Edo speaking Binis from the south-south geopolitical zone have distinguished themselves as the biggest minority language industry. Over 20 films are made annually with modest budgets ranging from N50, 000 to 200,000. There is no organised distribution mechanism. Edo film makers have recently launched the Congress of Edo State Movie Practitioners (CESP) which is made up of the state chapters of the Actors Guild of Nigeria (AGN), the Directors Guild of Nigeria (DGN), the Association of Movie Producers (AMP), the Screenwriters Guild of Nigeria (SWGn) and local groups like Edo state Artists Forum, the Congress of Female Artists, the Edo State Film Producers and Marketers Association, and the Video Club Owners Association of Nigeria.

### 3. A case study on Nu Metro West Africa

Nu Metro Films West Africa is a lead firm in the national value chain and is a member of Avusa Limited, South Africa's leading entertainment and Media Company, formerly named Johnnic Communications Limited (Johncom). Avusa Limited is a private company listed on the Johannesburg Stock Exchange. As at 31 March, 2005, it reported revenues of \$640 million. It was ranked 15th amongst the top 200 South African companies. The company includes Nu Metro, Gallo Music, Sunday Times, Sowetan, Sunday World, Daily Dispatch, The Herald, Weekend Post, Elle, Longevity, and SA Home Owner.

Other investments (joint ventures) are the Exclusive Books Chain, Sturk and New Holland (book publishers), M-Net/SUPERSPORT, Caxton/CTP. Johnnic and Pearsons of United Kingdom own BDFM Publishers. This company produces Business Day, Financial Mail and Summit Business Television.

Nu Metro West Africa engages in the following activities: cinematographic distribution, theatrical exhibition, specialist retail, home entertainment, music and allied distribution businesses which operate in both the retail and wholesale trade sectors. It also operates an optical disc replicating plant, Compact Disc Technologies Limited. Nu Metro West Africa has the following subsidiaries:

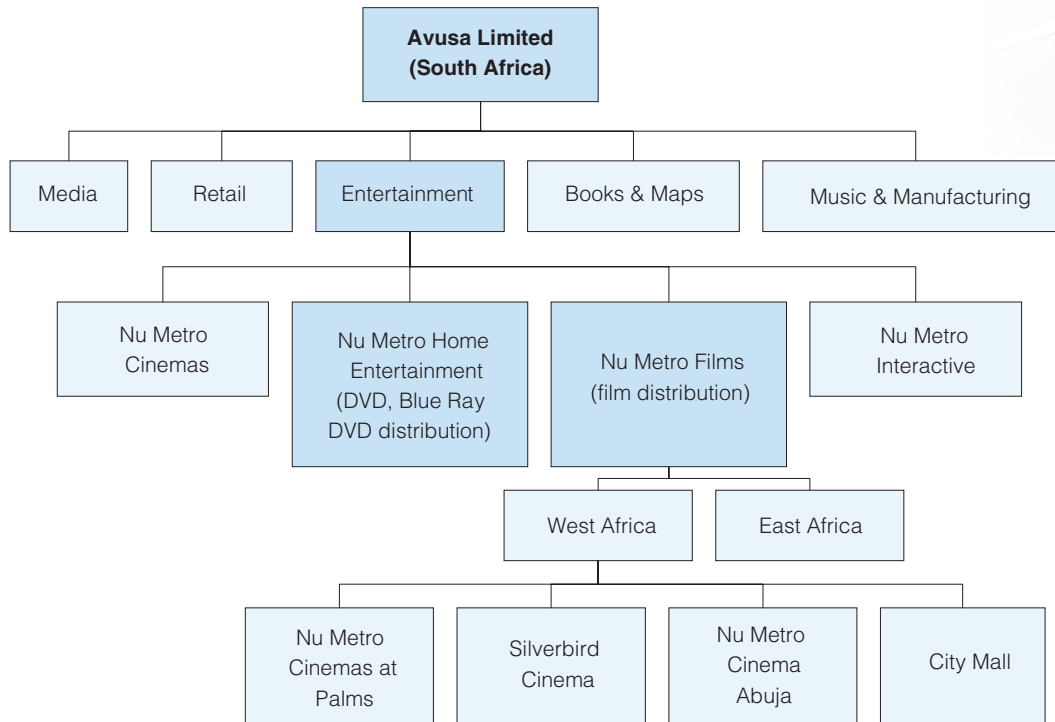
1. Nu Metro Retails Nigeria Limited consisting of:
  - a. Nu Metro Media Store
  - b. Nu Metro Cinema
  - c. Nu Metro Distribution
2. Nu Metro Home Entertainment West Africa Limited.

Nu Metro regularly features in-store and in-cinema exhibitions, cultural events, poetry readings, musical events, book launches, religious activities, children's events and other events which include inter alia Nigeria in the Movies' screenings, film festivals, charity and orphanage screenings, premiers etc.

The Nu Metro has brand presence in Ghana, Kenya, Nigeria, South Africa and Zambia. Nu Metro is a licensee to major Hollywood studios like Buena Vista Entertainment (Disney), Warner Brothers, MGM, and Twentieth Century Fox, making it an integral part of the international movie/cinema production. Nu Metro Distribution is the sole supplier of content to Silverbird Cinemas at the Galleria, Victoria Island, Lagos, Nu Metro Cinema at The Palms, City Mall and Nu Metro Cinema at the Ceddi Plaza, Abuja.

Nu Metro Distribution is best described as a monopoly. Attempts by Silverbird to gain direct access to Hollywood content were recently thwarted but it is still working at gaining direct access to the said contents.

Figure 2: The GVC of Nu Metro Distribution



#### 4. Role of Nu Metro in the Global Value Chain

This section gathers information on Nu Metro: its products, services, the structure of its ownership and the proportion of costs and value added. At the latest investment forum held in Abuja where the Group Chairman of Johncom gave a keynote presentation on the company's vision, he said:

*West Africa and East Africa represent the Group's next phase in pursuance of Group vision. The group has been attracted to West Africa's large and deregulated market and has used the Nigerian market as the arrowhead of its West African expansion. It embarked upon a planned three year "Beach-head Strategy" to achieve this with measured success to date. Local partners have been chosen for their proven track records in the territory and complement the business by adding the requisite knowledge of West African conditions and modus operandi.*

Nu Metro is connected to the GVC through partnership agreements with MGM, Warner Brothers and 20th Century Fox. Under the Nu Metro brand, Avusa distributes and exhibits top movies and supplies the retail and rental trade with videos and DVDS. It has successfully interlinked cinemas and media stores to create a one-stop leisure destination environment. This is a pioneering initiative of the Group which has never been implemented in this fashion elsewhere in the continent.

Table 1: Cost structure of Nu Metro

	Production	40 percent
Marketing		20 percent
Support activities (accounting etc)		35 percent
R&D		5 percent

In effect the lowest cost is in research and development. In the transformation of goods and/or services from suppliers to customers, the cost structure is as follows:

Table 2: Cost structure of Nu Metro (2)

Labour	38 percent
capital investment	40 percent
Other costs	22 percent

## 5. Awareness and understanding of the Global Value Chain

This section explores Nu Metro's position in the GVC. Nu Metro has a strategic partnership with Warner Bros, MGM and Disney. This makes Nu Metro part of a global supply chain stretching from Hollywood to Lagos, Nigeria. The movies are supplied through Nu Metro Distribution. In the case of movies destined for theatrical distribution, little value is added to the product. The prints are circulated and exhibited in a line up that begins in South Africa then Nigeria and Kenya. Nu Metro has been part of this global chain for about two years. Nu Metro in line with the Government's vision of promoting quality is partnering with the Government to do the following:

1. Screen Nollywood movies in digital format on screens from March 2007;
2. Follow the international release trends of 35mm Premiere, 35mm Cinema Release, Home Entertainment Release and finally Television Release;
3. Establish Africa's own film festival to be held in Nigeria commencing 2007;
4. Ensure that quality rather than quantity is the trademark of Nollywood; the first such initiative is the collaboration between Nu Metro and the Cross River State Government to promote a full blown 35mm Cinema Release of Jeta Amata's *Amazing Grace* which has set a benchmark for Nigerian producers and directors in its quality, scope, reach and magnitude.

Within the GVC Nu Metro belongs to the fist-tier. Nu Metro has fourteen (14) suppliers and leads two global supply chains, namely the movie/cinema industry and the optical disc production industry.

In the case of DVD sales, Nu Metro faced strong competition from local pirates who were part of organized crime syndicates with contacts in Southeast Asia. Importation of DVDs made them uncompetitive despite their superior quality. Low purchasing power limited the sales of the imported goods. Imported DVDs sold for \$19 as against \$1.20 for pirated DVDs.

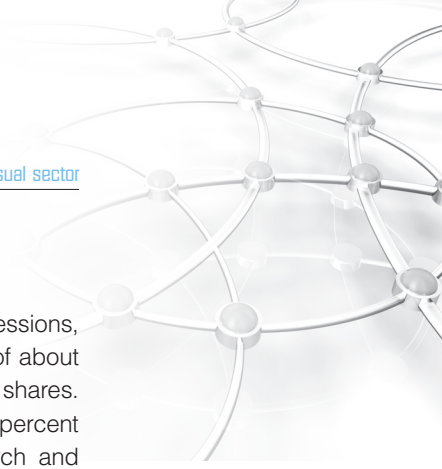
The pirates were entrenched in Alaba International Market whose location close to Seme Border ensured efficient distribution throughout the West Africa sub-region. Thus, pirates had an efficient distribution system and an advantage in pricing. Nu Metro reappraised its policy and set up a DVD replicating plant in Lagos. It also converted some of the erstwhile pirates into legitimate distributors. This has made their pricing more competitive at \$1.20.

As stated above, Nu Metro has 14 suppliers/major dealers/customers, running through the two global supply chains to which it belongs. For the movie/cinema chain, the following belong to the chain:

1. Silverbird at the Galleria, Victoria Island, Lagos;
2. Nu Metro Cinema at The Palms, Lagos;
3. City Entertainment at the City Mall, Lagos;
4. Nu Metro Cinema at Ceddi Plaza, Abuja.

From the visits to the above named, Silverbird is typical of the other three cinemas which are part of the chain. They all face similar challenges and are hopeful that the Government will put in place basic infrastructure like energy and as well as good policies that would encourage the industry.





### *Silverbird*

Silverbird is an entertainment company involved mainly in the exhibition of movies, concessions, hall rentals, and media (radio and television). It has about 44 staff members and a turnover of about \$1-5 million. The major shareholder is the Murray-Bruce Family with over 25 percent of the shares. The breakdown of costs is as follows: 35 percent to production, 40 percent to marketing, 20 percent to support activities such as accounting and human resources, and 5 percent to research and development. In the transformation of goods and/or services from suppliers to customers, labour accounts for 10 percent, capital for 70 percent and the remaining 20 percent are other costs.

As part of the trading chain of Nu Metro, Silverbird receives its products from Nu Metro Film Distribution. They are basically used for screenings at the Galleria where the multiplex cinema is located. The competition is minimal. The three other cinemas in Nigeria located at The Palms, City Mall and Ceddi Plaza, receive their products from Nu Metro Film Distribution as well. Interestingly the strongest competition is not international, national or state-wide but rather it is local.

Silverbird appears to be well positioned within the chain, as it has been able to break the illegitimate use of Hollywood movies and establish a new era where there is the legitimate use of Hollywood movies. The only challenge is that Silverbird is totally dependent on Nu Metro in sourcing its products and would prefer to have direct access to these products. Most of its operations are outsourced such as security, legal assistance, public relations, supplies and maintenance. Some services are provided through the intra-group, that is, Silverbird Television which provides support services such as publicity and marketing.

As part of the GVC, the presence of Silverbird in the chain has curbed the illegitimate use of Hollywood movies, thus creating a platform for the protection of intellectual property rights where copyright owners receive due compensation for their work. The challenges faced by Silverbird are similar to those of Nu Metro and the expectations and suggestions related to Government intervention in the operation of the chain are also similar.

### *Compact Disc Technologies Limited*

On the second-tier of the GVC is the optical disc production industry. Nu Metro is linked to Compact Disc Technologies Limited (CDT), a replicating and duplicating plant for the production of CD's and VCD's. Their machines have the capacity to make DVDs, but presently they do not make DVDs but rather receive them from their parent company in South Africa and sell them in Nigeria at their media stores which are located within the cinema premises. They also supply them to other interested buyers.

CDT's customers can be categorized into ten main groups representing the different interest groups in the Nigerian entertainment industry:

1. Nigerian Association of Recording Industries (NARI);
2. Association of Movie Producers (AMP);
3. Association of Film and Video Marketers and Producers of Nigeria (AFMAN);
4. United Movie Traditional Association of Nigeria;
5. Alaba Producers and Marketers Associations of Nigeria;
6. Music Label Owners and Recorders Association of Nigeria (MORAN);
7. Video Rental Operators Association of Nigeria;
8. Motion Picture Practitioners Association of Nigeria;
9. Confluence of Edo Movie Practitioners;
10. Association of Nigeria Theater Practitioners (ANTP).

CDT's customers amongst the above mentioned associations exceed 120. The GVC in this tier is instructive in the sense that the producers and marketers are the major participants and they work closely with the replicating plant. This does not preclude the copyright owners themselves from working independently. CDT employs more than 20 staff and its management is separate from that of Nu Metro West Africa. CDT through its parent company Johncom has the right to reproduce foreign works in Nigeria.

The prevalence of piracy in Nigeria created an enabling environment for illegal replication to take place and these illegally produced optical discs were sold at incredibly low prices making it difficult for original optical discs to be sold. The CDs VCDs and DVDs imported were sold at about \$15 while the illegally produced version of the same work was being sold for about \$1. To end the illegality, the Nu Metro group set up CDT to locally replicate Hollywood movies for which they had obtained rights and by this action, the price of the works produced locally was able to compete favourably with the illegally produced works.

One of the regulatory agencies recently issued the optical disc plants' regulation which regulates the operation of replicating plants in Nigeria. It enables the Nigerian Copyright Commission, in conjunction with producers and copyright owners to monitor and control the process of replicating CDs, VCDs and DVDs and to enforce a high standard of copyright protection.

Thus, the chain flows from Hollywood to South Africa to CDT, to Nu Metro Distribution, to Nu Metro retail, to local distributors and to the public at large. The impact of this chain on the economy is large, affecting not just distribution but employment, and the opportunity for copyright owners to make a living from their works.

## 6. Cooperation within the Global Value Chain

This section identifies the tensions and power relations within the GVC as well as the importance of location and their impacts on Nu Metro. There is virtually no addition to products except for branding. Coordination within the chain is low and outsourcing is high in areas such as accounting, legal services and construction.

There is a high level of interdependence. Nu Metro Distribution gives movies to the exhibitor Nu Metro Cinemas and to the retailer Nu Metro Stores and also to Nu Metro Home Entertainment. In turn Nu Metro in Nigeria depends totally on what is received. And so there is little choice at this point in the GVC. But there is a high level of independence in terms of marketing and operations with local suppliers.

The nature of relationship with the local suppliers in areas such as trust, disclosure (costs, prices, strategies) and knowledge-sharing has not been too open. In the case of competitors, it is not open at all.

External linkages are quite low and limited as the group appears to have been designed to be self-supporting and self-propelled. Belonging to a GVC has created some advantages for the local subsidiary such as continental/global branding, capital, technology, and management. Nu Metro in turn is required to meet international standards.

Contracts do not have a restricted format, however, they are greatly influenced by long-term relationships. The trend in the industry favours shorter-term contracts. Negotiation of contracts is also not restricted. It depends on the client and is usually on the basis of a long-term relationship.

## 7. Dynamics of the cooperation, intellectual property, assets and competencies

This section describes the network of cooperation in which Nu Metro is involved. It also looks at the key assets, competencies and threats to the firms' position in the GVC.

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Nu Metro belongs to the Association of Movie Producers (AMP). In the line of operations, the most important partners for Nu Metro are the upstream and horizontal ones, that is, the parent company in South Africa and the distributors in Nigeria.

In terms of the strengths and weaknesses within the GVC, trust has been identified as the key strength, while cost or price of products/services is the key weakness. Similarly, the key asset to Nu Metro is the brand name and quality of products. On the other hand being monopolistic in operations is the greatest weakness of the firm in the GVC. The biggest threat to the firm is cost which keeps rising.

The entertainment industry in Nigeria is a cluster of determined minds, firms and individuals who against all odds have moved the industry from nothing to Nollywood. Nu Metro belongs to this geographic cluster and is working together with the others for the development of this cluster in the entertainment industry. The scope for development is dependent on the regulatory agencies.

## 8. Scope for government intervention

The Nigerian movie industry (Nollywood) is the product of an aggressive entrepreneurial spirit which has shown no sign of abating. The greatest asset of Nollywood is efficiency. It probably has the most efficient production system in Africa. A project can go from script to screen within fourteen days. This efficiency has made it possible for Nigerian producers to churn out movies faster and in greater numbers than their rivals. Over 2000 movies were released in 2005. An average of forty-six movies is released every two weeks. Nollywood emerged as a spontaneous cluster not as a policy-driven cluster that was triggered by the Government. Nevertheless, this sector has difficulties in participating in GVCs and could use some Government support in terms of policies and programmes.

There are indications that the Government is now committed to supporting the sector. This is manifested in certain key initiatives such as increased funding of parastatals relevant to the sector.

The key parastatals in the sector include the Nigerian Copyright Commission, the National Film and Video Censors Board, the National Broadcasting Commission and the Nigerian Film Corporation.

Various other support measures have been undertaken. The Federal Government has greatly strengthened training through the National Film Institute. Within the Lagos cluster, a number of training institutions have emerged on their own. These include Pencils Film and Television Institute (PEFTI) owned by television producer Wale Adenuga; AIS Film Works owned by another producer, Amaka Igwe; Lagos Film Institute operated by the President of the Association of Movie Producers, Madu C. Chikwendu. The University of Lagos has established a Theatre Arts Department while Lagos State University has greatly strengthened its existing department.

The National Economic Empowerment and Development Strategy (NEEDS) has established targets for facilitating technology upgrading, fostering the development of a Nigerian version of Hollywood for film production and encouraging the local manufacture of film production inputs and support service clusters. SMEs have inadequate finance to invest in technology to meet international standards. Modern film studios and other equipment can enhance the participation of Nigerian SMEs in GVCs. Government intervention is necessary and many states of the federation are in the process of constructing a film village in their respective states such as the Cross River State Government which recently built a modern film studio.

Rule of law is essential for the development of an economic sector. Copyright protection provides incentives to creators. There is a very high level of intellectual property infringements and violations. Over 35,000 video clubs in the country rent out local and foreign movies without authorization. Luxury buses crisscrossing the country illegally show Nigerian movies. Major efforts aimed at strengthening the regulatory environment include

1. the approval of the Optical Disc Regulation under the Nigerian Copyright Commission;
2. establishment of the Motion Picture Council of Nigeria, whose draft act has been forwarded to the National Assembly;

3. Nigeria in the Movies (NIM) launched by National Film and Video Censors Board;
4. Strategic Action Against Piracy (STRAP) launched by the Nigerian Copyright Commission, under which vigorous anti-piracy raids have been embarked upon, pirated goods worth billions have been seized and destroyed;
5. revamping of the Video Rental Regulation by the Nigerian Copyright Commission to ensure all persons engaged in the business of rental, hiring, leasing, loaning or otherwise distributing cinematographic works for commercial purposes shall comply with the established guidelines and thus ensure that copyright owners receive due compensation for the use of their works. Towards this end, the Commission has also engaged stakeholders in the revamping of the hologram scheme under the Copyright (Security Devices) Regulations.

Piracy, especially counterfeiting, has suffered a setback in recent years because of the aggressive strategies of the Nigerian Copyright Commission. Hundreds of thousands of goods worth millions of dollars have been seized by the Commission and destroyed.

There is greater synergy between the movie industry and financial sector. Diamond Bank invested in Amazing Grace, 35mm feature and also in Videokiosk- a mobile video distribution system. Other banks are developing a number of projects. Nu Metro West Africa is co-funded by Capital Alliance Venture Capitalist. This implies the availability of institutional funding but more needs to be done.

## 9. Conclusions

The potential of Nigerian movie and cinema industry is huge. But the markets are fragmented as a result of the proliferation of interest groups, the absence of a structured distribution network, piracy and the high cost of operations due to lack of basic infrastructure. The problem of lack of basic infrastructure has led to high costs of doing business which also include the cost of censorship and compliance. For example, the fee for censorship is N20, 000 per title which in Nu Metro's view is prejudicial to formal retailers but not to informal marketers. Energy costs particularly electricity absorb 8-10 percent of the turnover.

The industry can be enhanced in the following ways:

1. The private sector can partner with Government to create a more predictable, consistent and secure policy environment;
2. Governments can fast-track the provision of appropriate and efficient economic infrastructure;
3. Build a culture of respect for intellectual property rights;
4. Partner with the Nigerian Copyright Commission in the fight against piracy.

Whilst the existing legislation is inadequate, it is still necessary to improve enforcement. In terms of prosecution, the judicial system is particularly slow while the legal system is cumbersome.

Increased funding should be made available. There could be more institutional investors like Capital Alliance. Tax breaks and tax holidays would attract both local investors as well as foreign direct investment. Local content of the GVC should be increased in terms of inputs and personnel.

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