Globalization of industry in Mexico - a commodity chain approach to the analysis of linkage-capabilities.

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Introduction

Over the years there has been little consensus in development studies regarding industrial development in the Asian and the Latin American NICs. The topic has been addressed from many different perspectives e.g., state involvement, labor market, market failure, the role of TNCs, culture, ect.. This paper will contribute to the confusion by taking yet another point of departure: the social and economic processes though which indigenous industry in developing countries are being integrated to the world economy. According to Gary Gereffi: "the standard development literature has presented an oversimplified picture of the semiperiphery. The East Asian NICs have been most successful in the areas of commercial subcontracting and component supply, with secondary and declining importance given to the export-platform role emphasized in the "new international division of labor" literature. The Latin American NICs, on the other hand, have a different kind of relationship to the world economy. They are prominent in the commodity-export, export-platform, and component-supplier forms of production, but they lag far behind the East Asian NICs in the commercial-subcontracting type of manufactured exports." (Gereffi, 1992:110). Gereffi's point of view is that the implications of linkages between the Third World industry and the markets in the core countries should be analyzed instead of only focusing on trade regimes.

Commercial subcontracting, also called OEM production (Original Equipment Manufacturing), has been an important factor in the industrialization of East Asia: in 1980 the East Asian NICs accounted for 72% of this type of goods produced in the LDCs for the OECD markets, where Latin American NICs only accounted for 7% (Gereffi, 1994). The distribution between Asian and Latin America may have changed since, but according to the OECD (1995) Asia's share in total world merchandise trade increased from 20.9% in 1980 to 27.0 % in 1992 while the share of Latin America declined from 5.0 % to 3.6% leaving little room for increased exports though commercial-subcontracting.

With the NAFTA agreement the Mexican Administration has committed the nation to a free market regime and an export oriented development strategy, which may include increased commercial subcontracting if a situation of export-driven growth is to reached. In the present situation, with a national economic crisis, it still seems uncertain how the industry will respond as

a hole. I intend to analyze the potential of commercial subcontracting in Mexico by focusing on a particular segment of the textile industry the knitwear sector.

I base the analysis on the concept of *commodity chains* defined by Hopkins and Wallerstein (1986) cit. Gary Gereffi (1992) as "a network of labor and production processes whose end result is a finished commodity". Gereffi (1992) used the concept in a study of commodity chains between the US market and Third World producers in the footwear industry. What I missed in that analysis was an explication of how the producers in Third World countries are being linked to these transnational commodity chains. This is especially important in the case of Mexico, where the national non-maquila producers have limited experience in exports. In order to elaborate on the discussion of the functional aspects of commodity chains with a discussion of linking processes in establishing such chains, I intend to introduce the concepts of *developmental associations* and *industrial clusters.*

The main theoretical objective in this paper is thus to assess how we can understand linking processes or linking capability within a commodity chain framework. After presenting the theoretical framework I will discuss three case studies of industrial clusters in Brazil, Mexico and Peru based on a literature review, making a preliminary conclusion on linkage capability; second, I present findings from my own studies of two industrial clusters in Mexico in the knitwear industry. It's concluded that exports have increased after NAFTA and the peso devaluation;
that a variety of different institutional framework for establishing commodity chains have emerged in a short period of time;
that the key factor in explaining linkage capability seems to be firm size and technology on one hand and institutionalized industrial learning on the other; and
that there seems to be a potential for international commodity chains to develop.

The theoretical framework

Commodity chains

I have already cited Hopkins and Wallerstein (1986:160-163) for their definition of commodity chains as "a network of labor and production processes whose end results is a finished commodity", they elaborate on the definition stating that: "One must follow two steps in building such a chain. First, to delineate the anatomy of the chain, one typically starts with the final production operation for a manufactured good and moves sequentially backward until one reaches the raw material inputs. The second step in constructing a commodity chain involves identifying four properties for each operation or node in the chain: (1) the commodity flows to and from the node, and those operations that occur immediately prior to and after it; (2) the relations of production (i.e., forms of the labor force) within the node; (3) the dominant organization of production, including technology and the scale of the production unit; and (4) the geographic loci of the operation in question". Gereffi furthermore argues that it is necessary to understand the power relations involved in commodity chains which seems to be why he introduces a distinction between producer-driven and buyer-driven commodity chains:

"Producer-driven commodity chains refer to those industries in which transnational corporations (TNCs) or other large integrated industrial enterprises play the central role in controlling the production system (including its backward and forward linkages). This is most characteristic of capital- and technology-intensive industries like automobiles, computers, aircraft and electric machinery.".(...) "Buyer-driven commodity chains refer to those industries in which large retailers, brand-named merchandisers, and trading companies play the pivotal role in setting up decentralized production networks in a variety of exporting countries, typically in the Third World. This pattern of trade-led industrialization has become common in labor-intensive, consumer-goods industries such as garments, footwear, toys, consumer electronics, house-wares, and a wide range of hand-crafted items (e.g., furniture, ornaments). International contract manufacturing again is prevalent, but production is generally carried out by independent Third World factories that make finished goods (rather than components or parts) under original equipment manufacturer (OEM) arrangements." (Gereffi, 1994: 97).

It seems that Gereffi here complicates the picture by putting different commodity chains under one umbrella, I prefer to understand commodity chains as belonging to different integration modes defined by Gereffi (1994): commodity-export; commercial- subcontracting; export-platform; and component-supplier, acknowledging the importance of power structures involved. The focus here is the labor-intensive industries, called buyer-driven by Gereffi, where largest share of surplus is accumulated by enterprises in the core countries, also controlling the operations. As mentioned above, commodity chains within the commercial subcontracting scheme have been extremely important to the export-oriented industrialization of the East Asian economies, but it has to be analyzed how the condition has been reached and which are the implications in a wider perspective, as this vary according to the particular country and context. Also, it's necessary to understand the consequences of commodity chains as an integration mode. It could be argued, that the different integration-modes are similar in their importance because they all result in foreign-capital earnings. Nevertheless, the consequences for industrial development are rather different in the case of commercial-subcontracting as compared to other integration modes e.g., raw-material exports.

There are both pros and cons from the perspective of a Third World government wanting to pursue the development of commercial-subcontractiong. Among the main advantages are: first, the country can use its comparative advantage in low labor costs; second, the entry barriers are low; and third, the linkages can promote learning effects which can contribute to the development on the firm level and other institutional levels e.g., up-grating the educational systems.
Among the cons are the following: first, the Third World producer may get a small part of the profits compared to the companies in the core countries organizing the transactions; second, the commodity chains are highly unstable because the organizing firm will tend seek the cheapest offers while the standardization requirements make it easy to switch suppliers and third, the lack of a political and institutional environment linked to the participating businesses may lead to limited and isolated results.

The social processes involved in establishing the industrial and social links making up a commodity chain have has only been limited researched. In the case of Latin America little has been done, which is more understandable than in the research on the East Asian industrialization, since Latin America have had limited involvement in OEM-production in the past. The Latin American debate has instead, to a overwhelming degree, focused on the national business within the informal sector framework, or, on the TNCs from a more pessimistic point of view.

There is however, a body of literature touching on this specific integration mode:

1) The industrial cluster literature focusing on SME dynamism in a globalization context.

2) Anthropological studies aiming at understanding the impact of the changes on a local level.

3) Studies of NGO organized integration.

4) Studies of industrial organization in the "Third Italy".

In the following sections I will discuss the institutional frameworks within which industrial linkages can be established. First, I will look at the arguments made by Charles Sabel about the role of developmental associations in industrial learning and change and second, focus on the industrial clusters as an environment for such arrangements to be found.

Developmental associations and industrial learning

Charles Sabel believes that the discussions on business associations can be divided into two categories: the neo-liberal view which sees them as predatory rent-seeking lobbies and the neo-corporatist view where they are comprehended as organizations regulating the interaction between the state and interest groups, in both cases they are seem as harmonizing organizations between the interests of their members and external interests (Sabel, 1994: 149). Sabel sees developmental associations as different: “A central role of the developmental associations that emerge in strategies of learning (...) is to help create the interests and identity of its members.” (Sabel, 1994: 149). Sabel states that sometimes the interaction among firms will create predatory

behavior sometimes it wont. This doesn't necessarily depend on the pre-conditions for the cooperation but more on the process itself. The economic post-war success of Japan, Taiwan, Korea and Germany is in this perspective not only due to a strong state with a knowledge superior of that of the firms themselves, but to the emergence of developmental associations, supported by the state, inducing firms to agree to learning by monitoring. (Sabel, 1994, 148). The essence is therefore how this "learning by monitoring" is being set-up, and the effects it has for the performance of firms, this follows the simple idea that: "decentralized learning that has been institutionalized so that the interests of the parts are consistent with the interests of the whole." (Sabel, 1994: 141). Sabel exemplifies this with changes in the Japanese industrial organization after the Second World War focusing on intra- and inter-firm schemes of cooperation in a situation of economic disequilibrium. The argument is that industrial learning is only possibly when the actors involved can monitor actions and motives for new actions proposed by interlocutors. Only when this interaction is institutionalized is industrial learning and industrial change possible. Developmental associations therefore, have the same relation to the state as autonomous groups within the firms to management and relations between. I will use this idea to explore how indigenous firms are being linked to commodity chains though commercial-subcontracting. Sabel states that developmental associations cannot be seen as a historical heritage from the Japanese colony period although he draws most of his empirical examples from East Asia. He exemplifies this by referring to another context, Brazil, in his discussion of a furniture-industry, which developed from a fragmented handicraft industry into a competitive one on a national level, though interaction between local government and business associations. This furniture-industry example is quiet similar to the industrial clusters in LDCs which will be discussed in the following section.

Establishing transnational commercial-subcontracting commodity chains

In this section I introduce one specific part of the literature related to the question of establishing commodity chains: the literature on industrial clusters. Industrial clusters in LDCs has become a object of research since 1989 and one of the most important contributors is Hubert Schmitz who coined the concept of *collective efficiency* to grasp the economic gains which can be attributed to clustering by SMEs (Schmitz, 1989). Hubert Schmitz used the collective efficiency concept to introduce the flexible specialization debate in a LDC context, drawing on the discussions of the industrial district and flexible specialization paradigms. It aims at a broader understanding of the environment of SMEs in LDCs focusing on the social and economic dynamics in SME clusters.

Hubert Schmitz defines collective efficiency within clusters of SMEs by the terms *external economies* and *joint action*. Clusters are simply defined as sectorally and geographically concentrations of enterprises. The original definition by Alfred Marshall of external economies is taking over by Schmitz. Visser (1996) gives a more elaborated definition emphasizing the role of technology, excluding the pecuniary economies effects in his definition of external economies: “From the viewpoint of the producer, externalities or non-traded side-effects of economic activities of other units (suppliers) for the technical possibilities of a firm (the receptor) with respect to its activities in the field of transformations, innovation, marketing and risk-management” (Visser, 1996: 47). Schmitz distinguishes between two forms of joint action: the co-operation of individual firms, i.e. in developing new products or sharing equipment; and groups of firms joining forces in business associations. (Schmitz, 1995b: 536). Instead of joint action Visser talks about the dynamics of local linkage-effects (1996: 78).

The main argument for introducing the cluster concept to the discussions of industrialization in LDCs is, that it can be a path for SMEs to gain a comparative advantage in order to survive and perhaps prosper in a de-regulated world economy. But, it isn’t implicit to the SME cluster approach that collective efficiency will always occur in industrial clusters, Schmitz sees the potential for the development of competitive clusters as strongly related to trust relations and joint action. To Schmitz "the question is not whether small enterprises have growth and employment potential but under what conditions" (Schmitz, 1989), and argues that such conditions may develop in the cluster organization. To Schmitz the question is therefore, if the cluster can implicate a competitive advantage, and under which general conditions.

In their literature review Hubert Schmitz and Nadvi (1994) make little mention of East Asian cases, in Latin America they discuss studies from Mexico, Brazil and Peru, in South Asia most examples are reported from India and Pakistan and only a few cases are reported from Africa. I will suggest that the clusters which can by found in Latin America, Africa and South Asia share a number of similarities with the East Asian Countries, especially Taiwan. It seems strange that the industrial structure of the latter group of countries is not considered in the industrial cluster literature. I think that the exclusion of the East Asian experience has to do with the different approaches to SMEs development within different paradigms, e.g. the informal sector discussions where East Asia has hardly been touched upon as if informal economic activities in this context belonged to another category (Gereffi and Cheng, 1994 and Tokman, 1995).

Nevertheless, the industrial cluster literature is a good starting point when addressing the question of the establishing of transnational commodity chains in a Latin American context. The focus are the supposedly most competitive of SMEs and if commercial-subcontracting can be established in Latin American it ought to be within this context.
The collective efficiency model have been used in a number of case studies. In the review by Nadvi and Schmitz (1994) mentioned above, a number of case studies departure explicitly from a collective efficiency framework, while others in different ways touch on aspects related to it. There are a number of books dealing explicitly with flexible specialization / collective efficiency in LDCs: Späth (1993); Pedersen, Sverrisson and van Dijk (1994); Visser (1996) and one special issues of World Development (1995).
In the review by Nadvi and Schmitz (1994) four aspects are discussed related to the industrial cluster framework: the importance to the national economies in LDCs; the degree of vertical and horizontal relationships in the organization of clusters; the importance of the local social environment and the role of government.

1) The importance in the national economies in LDCs;
It is concluded that clusters is a common phenomenon in a wide range of countries and manufacturing sectors. The overall importance for the national economies and industrial clusters share of national industries has not been assessed. Clusters located in intermediate towns seems to be the most successful, but they can be found both on rural areas and in the major cities. In the latter they tend to be less dynamic and more and example of survival strategies. The clusters have all developed in an environment of protected domestic markets, and are at present facing the competition from the world markets. Three of the reported cluster have been capably of breaking into international markets (Schmitz and Humphry, 1995:14).

2) The degree of vertical and horizontal relationships in the organization of clusters (joint action);
There is intense rivalry in the horizontal relations and a high degree of variation in the relationships between producers. Vertical relations varies and stems from organized sub-contracting to loose and informal relations. It appears that no firm conclusions can be made on the importance of local association, although they exist in a number of clusters. Recent studies e.g. Visser (1996) and Schmitz (1995b) have focused more on these issues.

3) The importance of the local social environment
Acording to Schmitz (1995b:541): "Our understanding of how social networks actually function and influence economic relations within clusters continues to remain rather inadequate.". Although there are a few studies aiming at understanding the importance of social relations between actors: Wilson (1994); Arias (1992) and Visser (1996) to mention some. In a recent paper also Hubert Schmitz focus on this aspect (Schmitz and Bazan, 1997) linking what the authors call *social capital* to the economic performance of a Brazilian industrial cluster. In their view the economic performance cannot be understood without the changing influence of the social environment.

4) The role of government

According to Schmitz there is a mismatch between what is known about the role of government and the actual impact on the competitiveness of the industrial clusters. Is concluded that state intervention cannot create industrial clusters, but that government participation can be important when there is a joint action between government and local business groups especially concerning the provision of business services, what is called “real services” in the industrial district literature.

Industrial cluster cases

I will present three case studies from the industrial cluster literature, focusing on how transnational commodity linkages are being established and changed; identifying the enabling and constraining factors in the process and concluding by summering the conditions which can be refered to linkage-capability from the cases.

The first case study is made by Hubert Schmitz of a Brazilian shoe producing cluster. It developed from being a rudimentary handicraft industry serving the national market to an exporter of considerable size (Schmitz, 1995a). The second is a study made by Roberta Rabellotti of two shoe producing clusters in Mexico exporting to the US (Rabellotti, 1994 and 1995). The third is a study by Visser of an apparel producing cluster in Peru. Although it has a considerable size and importance on the national markets there are only limited experience with export (Visser, 1996).

Case 1) In terms of exports the Sinos Valley cluster has been successful, generating US$ 900 million in foreign currency in 1991 which stands for 70% of total output. Schmitz divides the development of the cluster into three time periods: first, up to the late 1960s were 400 enterprises were established serving the national market; second, from the 1970s to the mid 1980s which was a period with high export growth rates, 24% higher than Taiwan and Korea; and third, the period up to the 1990s where increased competition from especially China lead to industrial restructuring. Schmitz explains the export boom as related to changes in the international markets in the 1960s. The large retailers and manufactures of shoes in the US began to source from Asia. The contacts were initially made though a local business institution which began arranging trade fairs. Buyers and journalists from the US and Europe were invited and a group of business people took their products to the US. Soon retail chains set up offices in the Valley and independent export agents, mostly foreigners, established themselves. The role of theses agents as organizers is crucial having performed the following tasks: international market studies; development of models and production of samples; inspection of quality and provision of technical assistance; and taking care of transportation and payments arrangements. They worked as the mediators between the local producers and the foreign buyers. In 1991 there were 70 such agents working in the Valley. The exports are concentrated in a group of very large producers having as much as 2000 workers whereas the small firms employing less than 100 workers produce mainly for the national markets, but many have also managed to export as 25% of them were exporting 50-100% of their output between 1992-1993. Some large producers have remained highly integrated and have increased the degree of integration, but the general tendency is towards increased subcontracting relations in the present situation with increased international competition. Schmitz puts much emphasis on the role of local business institutions in forming the competitive strength of the cluster and the role of local government.

Case 2) The non-maquila shoe production in Mexico is distributed between three areas: Mexico City, Guadalajara and León producing 90% of the total national output. Production is distributed almost equally among them specializing in different types of products: athletic, women's and men's shoes in Mexico City, Guadalajara and León respectively. Rabellotti made a study of the clusters of Guadalajara and León.
As in the Brazilian case, the Mexican clusters have developed with the protection of the imports-substitution policy up to the late 1980s where markets where de-regularized at high speed as shoe imports rose from 2.4 million pairs in 1987 to 38.2 million in 1992.
At the national level there where 4986 firms and 83 030 employees including maquiladoras according to the 1993 economic census (INEGI, 1994), with 1674 firms and 38 970 employees in León and 366 firms and 12 837 employees in Guadalajara. The data regarding the non-maquila producers are probably underestimated, but nevertheless, the number of firms and workers are comparable to the Brazilian cluster where 88 000 workers in 1991 found employment in 1190 firms. The Brazilian as well as the Mexican industry is almost 100% family owned. One difference between the two is the size of firms as more than 80% of the Mexican firms employ less than 50 workers whereas 56% of the Brazilian firms in 1983 had more than 50 workers. A second important difference is the degree of vertical integration which is more pronounced in Mexico than in Brazil, although the data are difficult to compare. In 1991 the Mexican shoe export reached a total value of 81 million US$ but the largest share was exported by maquiladoras. The most successful of the national producers were those producing cowboy boots, of which most are located in León. Rabellotti mention the importance of foreign buyer but doesn't say if they have established themselves in the business environment as in the case of the Sino Valley, however, I doubt it to be the case. In the sample of 51 firms 33% were exporting but only 8% exported more than 40% of total production. The most export-oriented firms were also the largest. It's common that firms have to refuse export-orders because they lack production capacity. Like the Brazilian case there are local business association aiming at supporting the industry, but apparently they haven't been very oriented towards promoting exports.
The Rabellotti study was carried out before the 1994 devaluation and the sectors improved export performance therefore isn't discussed. In 1994 shoe producers in the Guanajuato State, i.e., firms located in León and San Francisco del Rincón, exported the amount of 75.8 million UD$; in 1995 exports rose to 101 million UD$ and in the first six months of 1996 reached the amount of 75.4 million UD$ (SECOFI, 1996). It could be reveling to know if the increases were related to a more competitive export price alone, or if there are others factors involved such as a changed institutional environment.

Case 3) The industrial clusters studied by Visser are located in Lima, Peru., the main objective is to study the economic advantages of clustering. Different segments of the apparel industry with more than 6,000 business is analyzed comparing different economic environments: a cluster; a low-income area and a high income area. The firm size is much smaller than in the footwear cases mentioned above with 75% of the enterprises having less than 10 employees and 12% having between 10 and 14 workers. The technological level is low in the businesses studied but highest in the cluster as compared to the control groups. Some of the main conclusions are that firms located

in the largest cluster perform better than firms located in other areas and that the difference isn't related to firm size but to external economies effects. At the same time it is being concluded that firms in the cluster are more vertically integrated than in the control areas, because of different labor-market conditions. The industry expanded in the import-substitution environment based on a fragmented retail market, but also the Peruvian industry has been exposed to international competition in the mid-1990s which has diminished the competitive advantage of the cluster firms. Up to 1994 there wasn't any cooperative networks in the cluster but since business group aiming at upgrading their business and getting into export markets were established. Also local government began to take interest in the industry setting up training schools. In 1994 two producers organizations were established. They have established discussion groups according to different product segments; have made contacts to export markets, got a lone arrangement from a development bank, hired a consulting firm and hired a marketing expert. The author makes no firm conclusion about the importance and future of these initiatives, but it seems unlikely that this cluster can find a place in the exportmarkets within a short time-perspective.

Linkage-capability in commercial-subcontracting

Based on the theoretical framework and the three case studies I will enter the discussion of the conditions for linkage-capability in commercial-subcontracting.
The most obvious factors which differentiates the three cases are the sector, firm size, and exports. In all three cases the industry has developed protected from world market competition, producing consumer goods with low technological and organizational requirements. In the Brazilian case the export links were established before the national market was deregulated. It wasn't just a response to national market changes, but to changes in the international markets and only the largest firms were capable of meeting the new opportunities. Their success lead to changes in the institutional framework enabling smaller firms to get access to the export markets. In Mexico the producers didn't feel any incentive to establish export linkages before the de-regulations in the late 1980s and also in this case the largest companies were the most capable. It should be investigated if the Brazilian producers felt are stronger market pressure to internationalize than did the Mexican in the 1960s and what firm sizes and organization meant in this connection. Also, it still has to be assessed if there have been any changes in the institutional framework which are now enabling exports in the Mexican case. In the Peruvian case the producers are small and without incentives or contacts enabling them to export. Quality has been low until recently and producers are facing multiple problems related to firm-internal-; sector- and institutional factors.

I will regard the following factors as essential to linkage-capability in international commodity chains:

1) Perceived need from producers to seek new marketing strategies;
2) Changes in strategies related to firm organization and markets;
3) Initial joint action between producers;
4) Local institutional frameworks facilitation industrial learning e.g., export agents and business organizations;
5) Compatibility between the demand from buyers regarding price; quality and security for production and the possibilities and flexibility of producers;
6) Interaction between learning institutions and producers with less linkage-capability than the first movers.

In the next section I will present some findings focusing on the establishment of commodity-chain linkages in the Mexican knitwear branch. First, I will present the two industrial clusters which are the institutional background and second, present four different cases, or frameworks for institutional learning.

The empirical context

Characteristics of the Moroleón textile industry

In 1995 Moroleón had 47.159 inhabitants (21.923 males and 25.236 females) (INEGI, Conteo 95, 1996). The town is located in the State of Guanajuato 300 km to the west of Mexico City. Moroleón is an old center for textile production, where different textile sectors have succeeded one another for the last 140 years.

The sweater branch is the latest and most dynamic branch in the local textile industry. It has existed for the last 40 years but it was from the mid-1980s it began to grow rapidly both in terms of producers and output. At present there are some 200 established firms using computerized machinery and a much larger number of workshops using more simple technology. My own data and a survey made by COFOCE (1996) shows that the sweater industry is surprisingly young; more than 50% of the enterprises in the business started up between 1990 and 1993. In spite of its recent development, a significant number of the producers have acquired the most advanced technology on the market, and as a total, the business in Moroleón has reached the largest market share in the national sweater market.

Contrary to other parts of the Mexican economy, which is in the worst recession since the 1930s, the producers of Moroleón have experienced some of their best years in 1995 and 1996. The reasons for this being the devaluation of the Mexican peso, which triggered the economic crisis, but also made the imports of inexpensive Asian garments almost prohibitive, while the Federal Administration though the SECOFI at the same time introduced import restrictions for all Chinese products due to demands from national manufactures.

The structure of the knitwear sector

The following sectors can be found in the Moroleón industry: shawls, blankets, carpets, woman and children clothing and knitwear. In this paper only the knitwear sector is addressed, the other sectors had their up-turns in earlier periods with the exception of the clothing sector which has being developed in parallel to the knitwear branch. The clothing- and knitwear sectors are responsible for as much as 90 % of production in the local textile industry, but only the knitwear branch has been though a process of technological innovation.

In the knitwear branch we find about 200 producers using primarily CAD and electronic knitting machines. In the following we will denominate this flexible technology (FT). Workshops have from 1 to 15 machines, the majority having between 3 and 6.

The transformation process is highly integrated within the workshops, but there are signs of increasing use of subcontracting following three different schemes:

1) capacity subcontracting, 2) embroidery subcontracting and 3) technical subcontracting. Since 1991 there has been an increasing use of all types of subcontracting due to changes in transaction strategies. The three forms of subcontracting can be divided in the following groups:

Ad 1a Knitted cloth
Ad 1b Sewing
Ad 1c Specialized operations

Ad 2a Handmade embroidery
Ad 2b Embroidery on CAM machines.

Ad 3a Mechanics
Ad 3b Accountancy
Ad 3c CAD programmers

The workshops employ predominately female labor but also an increasing number of men. Woman perform the different sewing tasks. Men are employed as operator of knitting machines and steam pressers. In recent years men are also seen to work as sewers, most of them being migrants from other parts of Mexico.

The second group of garment producers are using manual or automatic machinery. They are not only producing knitted garments but also buy fabrics performing only the cutting and assembly. They relay on family labor or hire a few sewers in the high season.

A third group of about 15 producers have recently started to sell part of their fabrics to small workshops. Of this group about 5 are producing only the fabrics while the rest are also making sweaters. In the last two years, these 15 enterprises have invested in more than hundred circular knitting machines, both of the electronic and mechanical type as they are best suited for this production.
The small workshops are not working as subcontractors, but are selling the products on the informal market. The producers of knitted cloth report of a booming demand, in the high season buyers are lining up in front of the outlets in order to getting the best fabrics. Because of the high quality which the producers using electronic machinery have, it has become increasingly difficult for the smaller with manual machinery to compete. It is understandable why this is the case when making the following consideration of variable production cost for the group of established producers:
Raw-material 90-95%
Wages 5-10%
The cost of raw material is the same for almost all producers, only the largest or best connected can get significant discounts. Therefore, the small producers can only difficult offer lower prices than the group using FT. At the same time, they are under pressure to do so because their knitting machines have few design possibilities. This is why an increasing number instead buy the fabrics from outside, only making the cutting and assembly part.

All businesses are family owned, in most cases run by a married couple, with both wife and husband participating in management. Brothers and sisters are also seen to manage a business as

well as single individuals; both male and female. Almost all producers have initiated in their own houses gradually accommodating them to serve as workshops. The most successful producers, most of the producers using FT, have brought new, often very luxurious houses, leaving their old houses for production and in some cases they have bought additional space. Within the last 2-3 years some producers have been constructing factories both outside and in the town, in order to improve working conditions and productivity. In the business environment there are now talks about initiating an industrial park, with support from local government, but nothing concrete has happened yet.

Local institutions

There are several institutions in Moroleón, which directly or indirectly support the industry: technical schools, financial institutions, providers and an export agency sponsored by the local state.

There are two technical school, the first was iniciated in 1981 and is still one of the very few technical schools in Mexico specialized in textile industry. The second was established in 1995 as a on-the-job training program, a local state initiative for upgrading the qualifications of the working force in Guanajuato. Moroleón also has a small private university offering law studies and accountancy. A new technical university aiming at supporting the textile industry is to be build in 1997 financed by the Guanajuato State.

Although several of the national banks have branches in Moroleón, the most important financial institution in the 1990s has been the Industrial Credit Union, which came to have 109 members-/owners all belonging to the knitwear sector, before it ran into financial problems as a result of the 1994 crisis. In 1993 the Union, financed by the members and the Mexican State though NAFIN (Nacional Financiera), had taken over almost all the business from the local banks. Besides credit, the Union was providing a range of other services: an annual sweater fair; FT programming and management courses.

Four manufactures of knitting machine technology have local agencies in Moroleón. They provide technical support for the machines they sell and employ programmers who make the computer aided designs for the machines. In addition to this service, a variety of freelance programmers operate in the town. Both the freelance programmers and the employed have in most cases been taking courses in Italy, Japan, Spain and Germany.

In February of 1996 COFOCE, an agency of the Guanajuato State Government opened a local office in Moroleón, in order to promote the industry in general and exports in particular. There has for many years been very limited exports from Moroleón despite of an increasing potential due to the technological innovation. The agency has succeeded in joining some of the local entrepreneurs in task groups. Their biggest success so far has been to get financial support from the Guanajuato State Governor in order to build a new conventional hall for the annual sweater exhibit. The conventional hall is planned to be inaugurated in 1997.

Markets and economic performance

The 1982 crisis was an important factor in bursting demand in the local industry as the local producers and shop-keepers were capable of adapting to and benefiting from the changes in the Mexican economy. The crisis meant that large consumer segments had to look for the cheapest products which lead to the upcoming of informal markets, the *Tianguis*. Moroleón has an old tradition for commerce, but it was local people who brought the merchandise from the producers to the markets in the larger urban areas. In the years following 1982, merchants began arriving to Moroleón looking for cheap garments. In few years hundreds of small retailshops were established and the workshops were capable of selling virtually everything they could produce. This market change was clear in 1985 where the workshops at the same time began introducing new electronic knitting technology. It was the electronic flatbed machines which gave new design possibilities and increased production significantly. Until then, the producers have been using manual, motorized flatbed or circular machines. From the beginning of the 1982 crisis the producers have hardly experienced a bad year, with the possible exceptions of the 1993-1994 period. The producers have also felt the impact of the de-regulation of Mexico's trade policy, but to a much less extend than other producers in the same branch. This situation is due to competitive prices, increasing quality, the informal trade and the technological innovation.

The group of FT firms are using three different ways of marketing their products: first, the most passive and common marketing strategy, followed by all workshops to different degrees, is to wait for the customer to knock on the door. The clients are mostly independent retailers coming from all over Mexico, buying from a few to several hundred pieces. The local retailers are also buying directly from the workshops. Some workshops own their one stores in Moroleón, but in most cases this only makes up a small part of their sales; second, a few workshops have begun to make advertisement of their products which they send out to potential customers; third, some workshops have recently begun selling to the national retailers such as Woolworth and Liverpool. It isn't possibly to give a precise figure of the exports of knitwear from Moroleón alone. The figures from the Guanajuato State as a total are increasing: in 1994 they amounted to 780,299 US$; in 1995 to 3,659,815 US$ and in the first six months of 1996 to 1,631,447 US$ (SECOFI, 1996). Knitwear exports is still far from reaching the export level of apparel in Guanajuato which totaled 42,5 million US$ in 1995 jumping from 29 million in 1994 (SECOFI, 1996).

Main Characteristics of the Villa Hidalgo textile industry

Villa Hidalgo is located in the northeastern part of Jalisco some 600 km from Mexico City and had in 1995 13.703 inhabitants (6.640 males and 7.063 females) (INEGI, Conteo 95, 1996: 123). The industry in Villa Hidalgo is less developed than in Moroleón although there are some 150 work-shops in the textile and clothing branches. But only about 10 of them dispose of electronic knitting machines and only two workshops have more than two. Like Moroleón, Villa Hidalgo has an important market for textiles and clothing. A large number of buyers, mostly small retailers from the Northern parts of Mexico, arrive in buses in large numbers in the final months of the year. This informal market is better organized than in Moroleón, e.g. there are three shopping centers in the town and the shops give a better, more established, impression than those of Moroleón and are offering a better variety of products. The informal market began at the same

time in both places, but unlike Moroleón, the producers of Villa Hidalgo were severely affected by the crisis and a number of producers preferred to invest in the commerce instead of the industry. Probably the quality of their products made it difficult for them to compete with the foreign imports as well with the competition from Moroleón. In Villa Hidalgo there have been very few new-starter in the 1990s and limited technological and product innovation. Therefore, most sweaters sold in Villa Hidalgo are actually produced in Moroleón. This also implies that the lack of market access isn't the reason for them of not having upgraded their workshops. In the late 1980s and early 1990s a few workshops owners began to invest in new technology, although two suppliers of knitting-technology has offered their products and services, one of them through a now closed store. Few of the support organizations in Moroleón can be found in Villa Hidalgo: there are two banks, an active business Chamber, a producer co-op and three FT programmers, two of which are working for one company only and one which is freelance. One the other hand, the producers of Villa Hidalgo are capable of benefiting from the location close to Aguascalientes only 45 min. away as this city of one million inhabitants can provide many inputs, e.g. yarns and different services.

Case studies of four types of institutional frameworks for establishing commercial-subcontracting in the Mexican knitwear industry

CASE 1 Linkage-creation within a local business institution framework

The Credit Union of Moroleón and the COFOCE have both been promoting the establishment of export linkages. In this case-study we will look at the experience of both organizations.

The manager of the Credit Union took an early interest in promoting exports. Management courses in exports have been arranged, but the most important influence was through selecting local partners for interested American companies. As a result of a high profile in the local business community, interested business people from Europe and especially the United States got aware of the Credit Union and the local industry and contacted the manager in order to get information on the possibilities of commercial subcontracting. Very few producers were actually interested in neither the courses nor business relations, but some relations were created. In the following we look at two different situations.

One producer, we will call him Mr. Martínez, had been well connected to the Credit Union and its manager for several years. He took interest in the possibilities of exporting because of personal financial problems resulting from the 1994 crises. In early 1995 Mr. Martínez began to work with a firm in New York who, wanting to source women sweaters, had previously been in contact with the Credit Union manager. Mr. Martínez was never satisfied with the payments, but found that it was necessary to get the work in order not to lose the workshop. A machine supplier took one machine back in 1995 because the workshop couldn't meet the payments, and they also had large debts with the Credit Union. Mr. and Mrs. Martínez made the necessary samples and shipped their first export order in 1995. Soon after, they managed to export a second order and the client was apparently satisfied with the quality and the working relation. They were about to start producing the third shipment when they ran into problems. The had made more than 40 samples and expected to get the OK in order to start production. But, then the client wanted more changes in the styles which infuriated Mr. Martínez. He told to client that he would end their relationship immediately. At this point the workshop had overcome their financial problems, because of the exports and a good 1995 season. In 1996 they could increase their production capacity buying two more electronic knitting machines.

The experience didn't make Mr. Martínex give-up the export, as he later began to subcontract for a Mexican producer located in Celaya who had for a number of years been exporting to South America and the States. Mr. Martínez makes less money this way, but is more content with the relationship to the Mexican partner. He now feels that it is better for the workshop to specialize in production leaving the international marketing to others.

The Credit Union manager felt that he had played an important part insetting up the deal, discussing with Mr. Martínez how to work with the client and how to make the necessary

paperwork. When Mr. Martínez had turned down the client, the manager of the Credit Union proposed the idea of exporting to another workshop, which he thought was capable and with who he had a good personal relationship. This workshop is managed by three brothers, their father which initiated the business and the wives of the two oldest brothers.

The brothers have been working together for 10 years, which is not common, as brothers tend to split up when the marry, establishing individual enterprises. The brothers invested in FT in the late 1980s but the workshop stagnated in the early 1990s, in their own view because of an insufficient marketing strategy. They had got used of having the customers arriving at the factory door, but with the increased competition in the early 1990s this strategy wasn't appropriate any longer. The three brothers have divided the management tasks among them and have achieved a well-organized business, one of their main advantages being good designs and quality. In 1994 they began looking for new markets outside Moroleón. They are now having important clients in other informal markets, they sell through retail chains, and they subcontract for several larger producers outside Moroleón, of which one is the enterprise located in Celaya, for whom also Mr. Martínez is working.
They made their first export order for the American client in 1995. Unfortunately it was stolen in Mexico City before it was shipped leaving them with a loss. But nevertheless, they accomplished to make a new, although smaller order and ship it. In the second half of 1996 they made a second and larger order to the client.
It seems that they perceive the cooperation with the client as unproblematic. Is hasn't been necessary to develop as many samples as in the case of Mr. Martínez. Apparently, the client has learned from the experience with Mr. Martínez being more considered in his demands. The client himself doesn't speak Spanish but has a secretary who does so, and they have both visited the workshop in several occasions.
Their worst problem has been to meet the clients quality requirements. The owners were used of making one-size sweaters and the new client wanted 4 sizes in accurate measures. The client decided to send an expert to solve the problems, one solution was to change yarn in order to enable more accurate cuts, but the owners didn't perceive the changes to be difficult to achieve. The brothers don't have any fixed agreements with the client about future orders, they are never sure if they get the next order or not. In spite of their positive experiences in export, they aren't looking for new clients in the US or on other export markets. They hoped to be able of continuing working with the client, but as they didn't receive any order by January 1997, when sales begun to drop on the national market, they contacted the same person in Celaya for whom also Mr. Martínez is working and decided to produce for him for the South American market. They did so although they realized that they would make even less than working with the American client. In both cases they have made detailed calculations of costs and revenues as did also Mr. Martínez.

So far COFOCE have had little success promoting linkage-creation. They have reached other results and consolidated the organization, but these aspects wont be discussed here. Instead we will point at two cases where COFOCE have accomplished to promote exports.
Several interested business people have visited Moroleón on COFOCE's invitation in order to seek commercial-subcontractors. Most of them have lost interest when they found out how

production was organized. They were impressed by the technological standard but uninterested in getting involved with producers which they found gave them little security in meeting their demand to production.
So far two producers have got export orders because of contract made though the COFOCE. Both are making handicraft-looking products with very distinct designs from the majority of producers in Moroleón. One is making sweaters using traditional embroidery the other is the only one making leather applications to the garments. In both cases the customers were merchants from Central America. They had come to Mexico in order to purchase a variety of products, not only sweaters, and bought what they found suited the taste of their clients. They wanted no samples made and just bought the designs they liked most. They made orders of a few 1000 pieces in each case, but expressed interest in repeating the transaction.

CASE 2 Linkage-creation within a family based framework

I have already touched upon the importance of the family in organizing the workshop activities. The two following cases will focus on the capability increasing linkage-capability within a family framework.

The couple I will mention first, Mr. and Mrs. Hernández, have owned a workshop since they married in 1984. Both are out of families which have been involved in the local industry since the early 1960s. They both worked together with their respective families before they married and established a workshop by themselves. In both cases their fathers went to the US as migrant workers in the 1950s and raised some capital which was partly invested in the workshops run by their wives, and at one occasion one of them brought back with him a knitting machine. Mrs. Hernández´s uncle, her father's brother, settled down in Chicago, where he, his wife and children have lived for more than 30 years. A daughters of his studied business administration and was employed in a bank. She has for many years been interested in starting a business on her own and she contacted her cousin in 1994 to discuss business plans, wanting to sell their products in the US which they accepted. After having participated in a number of fairs and receiving good response from potential clients, they decided to work with a retailer in Chicago interested in purchasing smaller batches. Mr. and Mrs. Hernández had problems accomplishing with the quality requirements, especially the many different sized they had to make of each style caused many problems. They found out that their flatbed machines only with difficulties could make the necessary width. The problems meant that they had to make 7 travels to Chicago in order to negotiate with the customer. They broke several deadlines but finally finished the hole order in 1995. The customer was satisfied with the quality and with the large sizes which are difficult to get produced, and therefore wanted to make a second order. But, Mr. and Mrs. Hernández found that they had actually lost money because of the many journeys to Chicago and wanted to reconsider before exporting again, although they never actually made any calculations of the profitability of the export order. They have now decided to relay on the national market instead and to work towards a better organization before they try again. Especially Mr. Hernández has lost confidence in continuing exports.

The second example of family cooperation includes 3 workshops. All the male owners are brother-in-laws and have been helping out each other for years, the three wives are also very active in management. One workshop started out in the early 1980s the other two began 10 years later and received financial help from their in-laws to do so. One have told that the influence and encouragement was very important for their decision to quit their jobs and get started in the industry. In 1996 the three workshops were among the largest in Moroleón all having more than 7 electronic knitting machines each. Two of them have well organized factories while the third have more problems with organization. They are all very actively pursuing new marketing strategies and very successful in establishing new business contacts, both in Mexico and abroad. The two best organized workshops made a joint venture in 1994 manufacturing fabrics on electronic circular machines which they sell locally. The third workshop is also highly involved in this business, but prefers to work alone.

In 1996 they all three decide to go into exports establishing a common company to pursue this goal. The idea is to have a shared assembly plant so that they can meet the quality requirement

from the clients, planning to group together their best workers in this new plant. The fabric will be made in the three separate workshops and sold to the new company. They hired an engineer to head the new company. Their first action was to participate in a textile fair in Chile supported by COFOCE and BANCOMEXT, the Mexican export bank, and they got a positive response from a number of potential clients. Because of the devaluated Mexican currency they could offer very competitive prices and their designs were also appreciated. Subsequently, they send samples to interested potential clients but, in spite of the positive response they didn't get any immediate orders. The manager explains that the South American clients prefer a face-to-face negotiation. He feels that it's necessary to visit the most important retail chains several times a year to get orders. Another problem they face in Chile is that the local companies in the knitwear business have improved their competitiveness because of diminishing prices on raw-material, whereas in Mexico prices are increasing dramatically.

Their goal in 1997 is to be present at an important fair in Florida where buyers from all over Latin America will participate. They are interested in getting into the Latino oriented market in the States as well, promoting their design as "made in Mexico". To do this they have develop a new trademark wanting to make a common design for exports only. They are also interested in doing commercial-subcontracting for American clients depending on the conditions. In order to reach this goal they have hired a second manager, specialized in international business management to assist the engineer.

CASE 3 Linkage-creation within a business to business framework

Mr. Soto is a man in his early 30s and managing director of the only company in Moroleón with a long export experience to the US. He recently took over after his father who established the company in the 1960s. Mr. Soto explains that his father always wanted to do business in a proper manner, he early took interest in creating a good organization. In 1983 the father was contacted by a American company who wanted to source from Mexico. They had got aware of the Moroleón industry by reading a national business directory. As one of the very few workshops in Moroleón, this was member of the National Textile Chamber and a corporation. This induced the American company to contact them as they were looking for a well organized company.

They received an offer which gave them a small profit compared to what they were used to. But they accepted it because it would give them production in the low-season, and because they saw it as an important experience.

In 1996 they still exported now almost all production. They had worked with the same customer for many years, but had recently started to diversify their stock of clients.

The company is among the best organized in Moroleón. They have developed a number of specialized tasks: design and sample making; sales manager; productions planning. As the only company they decided recently to move the assembly part to another city in Guanajuato in order to avoid to deteriorating working conditions in Moroleón. Mr. Soto has a very negative impression of the quality of the local working force, and feels that the problems are incompatible with a well-organized production. Mr. Soto also plans to build a new factory in this city integrating his business and received financial support form the State Administration for this project.

CASE 4 Linkage-creation within a producer co-op framework

The birth of the producer co-op

In 1994 a group of three workshop owners decided to contact one of the national retail chains. The three were among the largest in Villa Hidalgo and all had invested in FT in the 1990s. The answer from the retail chain was negative however, but they would be interested if the three could sell as a group and thereby facilitating the relationship.

A few years before, they had went on a trip to Italy together with 7 other local producers in order to get an impression of production-systems in Italy in small garment producing towns, and also to get the possibility of purchasing new knitting-technology. This trip was initiated and partly financed by NAFIN, an agency which also offered to finance the investments they would make in Italy. Several members of the group have told me that they were very impressed by what they experienced in Italy, and a number of them felt that the form of cooperation between producers that they saw in Italy ought to be replicated by themselves in Mexico. In early 1995 NAFIN invited the same group to visit a successful producer co-op in Atotonilco, Jalisco. After this they decided to establish a co-op within the legal framework of "Empresas Integradoras" and was promised support from NAFIN. They invited other producers to participate and ended up having a group of 23 producers.

Their first project was to develop a common line of design which they would offer to national retail chains. At the day for an initial business meeting, where a designer from Guadalajara was to

participate, another person from Guadalajara, Miguel Sedano, visited Jesús González, the president of the business chamber and one of the initiators of the co-op. Jesús González invited Mr. Sedano to participate in the meeting. At this meeting Mr. Sedano explained about his ideas of exporting to the United States, he told about his experience as a sales manager in the textile business and offered to work with them.

The cooperation with the American client

The leading members of the Integradora co-op agreed to work with Miguel Sedano with the aim of exporting sweaters to the US. Miguel Sedano told that their first action would be to produce samples for the client. They accepted, and told Mr. Sedano that he could stay in Guadalajara and only visit occasionally. The daily management of the Integradora co-op would be taken care of by a young female manager who came directly from business school, and a young english speaking secretary. They all soon discovered however, that Mr. Sedano had to participate on a daily basis in the management of the Integradora co-op, if the project was to succed, and Mr. Sedano relocated to Villa Hidalgo.

The American client, which Mr. Sedano introduced, is an important buyer of garments located in New York as the majority of textile brokers in the US. The company has suppliers in more than 15 Third World countries and has an interest in beginning sourcing from Mexico. Their interest in Mexico is due to the close location, making it possible to cut transportation costs considerable and obtaining a more flexible supply. Their US costumes are small independent retailers and the client expressed interest in placing orders of as much as 10 million dollars in Mexico on a yearly basis if they could reach an agreement. Mr. Sedano had previously worked with the company especially with one of their designers working free-lance for the corporation. The client required that the Integradora co-op should develop a new spring line in collaboration with their designer, finishing the sample making by mid December, in order to start production in January. The workshop owners were not prepared for this time-consuming and tedious work which required fundamental changes in their organization. They were used of making very few models repeating the same year after year, so in the beginning they simply saw it was a waste of time. Because according to Mr. Sedano, they had to develop numerous samples based on sketches and use complicated combinations of colors and send it to New York for approval. Mr. Sedano repeatedly had to explain the purpose of the different tasks and he didn't get much help from the manager, being as she was, totally inexperienced in management and in textile business. The person who best understood Mr. Sedano was the president of the co-op, Antonio Moreno. Mr. Moreno is the manager of the largest sweater plant in Villa Hidalgo, the only which can rival most of the Moroleón workshops with it's German flatbed computerized machines. Mr. Moreno was also member of the group of three who made the initial contact to the retail chain. At this time, Mr. Sedano felt that he could trust Antonio Moreno and that he was capable of influencing the other owners. Every time an important decision was to be taken Mr. Sedano could go to Mr. Moreno and expect him to solve it with the partners.
Mr. Moreno's workshop and another, also with FT at their disposal and an in-house programmer, made most of the samples, the rest were made by the free-lance programmer and some of the minor workshops. They all felt it as a problem to perform this task, being in the high season

where a inactive machine would mean a loss. An owner using automatic machinery told that he had spend 3 weeks making a sample. In the FT workshops it went much faster, but it was still a problem. It helped when the owners received the salary for making the samples from the American client.
Nevertheless, in January of 1996 Mr. Sedano felt that he could get no further, especially because of the incompetence of the manager of the Integradora co-op, which he felt was jeopardizing the hole project. He collected his things and returned to Guadalajara. At this point they had made a deal with the US client, but couldn't start production in January as expected because the client wouldn't give a purchase order at that time. Mr. Sedano had lost confidence in the Integradora co-op, not only because of the manager, but also because he felt that the president wanted to lower his commission, now where it looked as they might be able of getting into business. Also, he felt that Mr. Moreno tried to take the largest share of the business to himself and his relatives, of which 2 were partners of the Integradora co-op.
In spite of this, he was rather satisfied with their progress. He felt that the wokshop owners now understood the necessity of making samples and almost competed among themselves in order to make the best. After a while Mr. Sedano agreed to get back in, but decided that he would now also work with another, much larger plant in Aguascalientes as well.

The new management of the Integradora co-op

Mr. Moreno took the consequence of Mr. Sedano's criticism and fired the manager. He offered the job to a friend of his, Mr. Pérez, a former manager who worked 10 years for Volkswagen in Puebla. He also spend a year in Germany where he worked at a plant, learned the language and had the opportunity to travel in other European countries. As an employee of WW Mexico he travel all over Mexico as a controller of the sales-outlets.

Mr. Pérez didn't know about the textile industry either, but he knew about management and soon got into the new job. Mr. Sedano didn't trust him at first, since he was selected by Mr. Moreno alone, whom he now mistrusted, but this mistrust disappeared after a while when they learned to know each other.

Mr. Pérez hired his cousin as a local sales manager. The idea was that he should take care of the local clients in Villa Hidalgo, who were buying much of their merchandise in Moroleón. He also hired a young female bookkeeper who had just graduated from one of the Universities in Aguascalientes and had relatives in Villa Hidalgo. He English speaking secretary soon left for Los Angeles, where her family lived and he employed another. The firth person to arrive was an university student. He was studying industrial organization at an Aguascalientes university and needed to serve an internship-period in a company before graduating, and was accepted at the Integradora co-op. He soon came to work as an assistant to Mr. Pérez. Finally the American client signed the contract in April of 1996. They made the deal directly with Mr. Sedano and he wanted the Integradora co-op to make 37 sweater styles and the Aguascalientes plant the remaining 13.

The consolidation of the Integradora co-op business activities

In August of 1996 the Integradora co-op finally began exporting. In the following months it made three additional shipments to the American client. Later in 1996 they where contacted by the Bancomext, part of the Mexican development bank system, setting up a contact to a buyer in Costa Rica. This client required woman garments which were simple compared to those of the American client. This made it possible for a number of owners with a lower technological level to fulfill this order.

The largest workshops belonging to Mr. Moreno, having the largest share of the American deal, began to export independently of the Integratora to a buyer in Chile. Mr. Moreno now wanted to produce only for export markets and was also keen of avoiding paying commissions to middlemen as Mr. Sedano.

Learning effects in workshops and the Integradora co-op management

The export experience has meant major changes in especially the two largest workshops. The quality requirements made it necessary to change many routines in the assembly and finishing part. These procedures were integrated in these two workshops while the rest operated as subcontractors in producing the knitted fabrics. This distribution of the transformation process is probably why the impact has been limited for the workshops belonging to the Integradora co-op as a total.

During the hole process there has been very little discussion between the partners about business and the necessary investments and changes in structure. Many owners talked to me about investing in knitting technology which would be more appropriate for the American market, but the necessary steps were not taking. The Integradora co-op management on the other hand had reached a impressing organization in a short period of time, the tasks involved in exports were now routines to them, and they were proud of the results they had obtained.

In late 1996 the Integradora co-op received a substantial number of business proposal from American buyers, many of which were identified and handed over to them by Mr. Sedano. At this point, all producers were deeply involved in the high season production, but this time there were no one trying to establish a common ground for the future. Apparently a number of partners had no confidence with the new manager which they felt were too strongly connected to Mr. Moreno. Also, many had problems with relating to a manager who took an expert role towards them, while they saw him as an ordinary employee and in some cases as inferior to them.

Concluding remarks

Developmental association was introduced as a concept representing institutionalized industrial learning. It has been argued that industrial clusters in a certain way can be seen as developmental associations, as an environment for industrial learning to be institutionalized. The establishment of commercial subcontracting linkages, understood as commodity chains, has been the focal point in the case-studied presented.

The case-studies indicates that the processes of establishing new business linkages consist of factors which are both internal and external to the firms and that they work simultaneously. Firm size and use of FT *per se* is not the decisive factor, as there are also export markets for garments made with low knitting technology. What make owners of workshop with advanced FT more capable in setting up linkages is not the technology alone, but their approach in the way they do business and their capacity to adjusting to changing conditions. Because although knitting technology isn't a prerequisite for becoming part of a commercial-subcontracting arrangement, flexibility and the capacity of adapting to customers demands is.

The Integradora co-op could be thought of as very promising scheeme for a developmental association grouping together owners of both large and smaller workshops based on kinship- and friendship relations. It would seem as a good environment for the smallest to reach a rapid improvement of their organization. Joint action was important and the set-up did solve initial collaborative problems, but unforeseen factors hindered a fast change in organization, factors which can primarily be attributed to the entrepreneurs, the way they do business and the way in which they relate to others.

When we look at the four frameworks for establishing linkages, the largest workshops have had most success, actually the smaller firms are only involved if they have an institutional framework supporting them: e.g. the Integradora co-op, COFOCE or an experienced family member in the States. But even with this support they have problems adjusting or getting into productive learning processes. The larger workshops can benefit from institutionalized arrangements, as in the case of the Credit Union, but, the most important factor for them however, is whether they can establish a cooperation based on learning with the other nodes in the commodity chain, e.g. the middleman or the company abroad. The mayor task of the local institutions seems to be in initiating this cooperation or interaction. Cooperation and interaction seems to be central factors in the process of setting up linkages in commercial subcontracting in all the cases studied. In industrial clusters the proximity between producers makes it possible for collaboration to develop, but this alone doesn't guarantee the outcome.

The cases presented here, exemplifies a very recent increase in commercial subcontracting linkages within an industry and in an institutional environment where such experiences are totally new. I have shown that there exist a potential for linkages to develop, especially in Moroleón, but also that no efficient framework institutionalizing the necessary learning effects have so far been established.

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