THE FORMATION OF REGIONAL CLUSTERS IN DEVELOPING COUNTRIES: A STRATEGIC ORIENTATION FOR BRAZILIAN SME´S.

João Amato Neto*, Maria Elena Leon Olave, Rodrigo Salamoni
Escola Politécnica – Universidade de São Paulo
Departamento de Engenharia de Produção
*E-mail: amato@usp.br

ABSTRACT

In recent years increasing attention has been paid to the social and economic importance of the small and medium enterprises (SME’s) to bring about economic growth through productivity gains based on collaboration in developing countries. The role of small enterprises in economic growth is well recognized in Brazil. The industrial restructuring process in Brazil is heavily influenced by the change of strategies of the transnational corporations in the country, and also dependent on the capacity of local firms in terms of creating the competitive strengths in the new forms of collective organization- clusters, networks, chains, which are characteristic of the new era. Essentially, regional enterprises need to be open and honest about their capabilities. Regional small enterprises should be knowledgeable about their strengths and weaknesses and be willing to co-operate locally in order to compete globally. An objective of this work is to encourage the building of clusters to include regional agencies and universities, for the benefit of small and medium enterprises, and discuss the competitive SME’s cluster as well as the role of developing SME’s clusters in emerging economies such as Brazil.

Key words: regional, cluster, small, medium, collective, network.

1. Introduction

The development of a strong small firm sector has become an increasingly important priority of industrial policy and account for significant shares of employment. According to GUO (1999) research on small firms growth has been concentrated in three primary areas: 1) external environment issues, such as product and market structure; 2) internal structural dynamics of the firm, for instance the firm’s management structure, control and reporting situation; and 3) characteristics of the owner and manager.

The emergence of new types of industrial organization, specially those relating to stimulation of more inter-firm cooperation, offers new elements to public policies that can support the SME’s development plans. The clustering and networking idea has been especially attractive as a means by which small and medium size enterprises can collaborate to compete more effectively in the global marketplace. Formal policy mechanisms have been introduced in several developing countries in recent years to address structural deficiencies and raise competitiveness by encouraging cooperation among small and medium firms. (INGLEY, 1999).
2. Inter-Firms Relationships

Different models have been proposed to investigate the inter-firm relationships, such as alliances, partnerships, consortia, networks, clusters, joint-ventures, etc. Each model analyses and explains different and complementary aspects, focusing the attention on the nature and characteristics of inter-firm relationships.

PORTER (1998) defines a cluster as a geographical proximate group of interconnected companies and associated institutions in a particular field, linked by commonalities and complementarities. The idea of geographic clustering among firms that cooperate and collaborate for economic advantage is not new (INGLEY, 1999).

3. The Competitive SME’s Cluster

The pathways for the consolidation of competitive clusters of SME’s have not been always the same in any local context. They depend on the starting conditions, the local environment, the competitive context, and it is not said that any cluster could reach the same level of articulation, complexity and innovative capacity, many of them can limit their development process if they don’t meet further favorable conditions, lack of technical and managerial capabilities.

The competitiveness of a particular region in a time of globalization of the world economy must be looked at from an international perspective. The international competitiveness of a particular country, economic sector or region, is always based on the competitiveness of the different businesses which function on the particular territory.

According to BERTINI (1999) “it is possible to list several dynamic factors contributing to the competitiveness of SME’s”.

First of all, especially in the initial stage of horizontal proliferation, clusters are characterized by strong internal competition, even by rivalry. The need to survive first, and to succeed later, move enterprises to reduce costs, to increase efficiency, to improve the quality of the products/services, to reduce time-response to market, to look for new clients, markets, distribution channels. In a few words, competition generates competitiveness.

A second element generating competitiveness is the low cost of information and of product differentiation, due to the presence of a wide number of subcontractors, component producers, and to the possibility to efficiently manage the production process by pieces.

Third, SMEs in clusters can focus their limited resources on just one objective product/service, a single part of the production cycle or of the value chain. This is possible because they can easily find complementarities and specialized resources around themselves; in this way, entering the market is less expensive and less risky. At the same time they can accentuate their specific competencies on the product, process technology and practice, and client’s needs in their unique business. This is the base of their capacity of problem solving, improvement of quality and continuous incremental innovations.

Fourth, when the cluster reaches a certain level of development, SMEs can exploit collective advantages due to their local concentration. The region in which they are located becomes a point of attraction for clients, providers of raw materials, technology providers, professionals, and so on. In addition, when a cluster becomes very relevant in a region, the local government and the private business associations concentrate much more their attention on specific sector problems and needs of public support to firms. The whole community becomes in charge for the success of the cluster. It can ensure high solidity to the industrial system and perspectives of competitiveness over the long run, thanks to the local synergy between different, but related activities. This synergy depends on: mechanisms of purchasing of goods, services and machines, exchange of complementary information, solving problems in collaboration among different enterprises. We can establish that SMEs working in clusters, even if risking a continuous selection process, are competitive because:

- They are focused in terms of business, competencies and resource destination;
- They develop capabilities and relationships for quick and appropriate problem solving;
- They are advantage by collective resources, otherwise inaccessible for them,
• They work in a stimulating environment, rich in competitive pressure and rivalry, information and examples;
• They work in a context of trust, in which, even smaller producers, feel protected and respected by the community.

According to BERTINI (1999) when a cluster reaches a high level of competitive success and possibilities of expansion, existing firms can invest in new technologies and employ new workers, new firms enter in the market. If the cluster becomes strong enough, this process can lead a local community to high levels of employment and income; that means prosperity on a competitive base. Thus, the two typical objectives of an industrial democracy (competitiveness and diffused prosperity) can be reached simultaneously by the development of an industrial base centered on clusters of SMEs.

4. Developing SME Clusters in Emerging Economies

The development of a cluster of SMEs is not easy, nor a rapid process. It must be considered in a medium long term perspective. The critical point of a strategy for developing a cluster of SMEs is that it cannot be deterministic. An important role, in fact, is played by the case and by spontaneous reactions, that may be different according to social conditions, culture and traditions, location, institutional context, economic and competitive environment. Anyway, for a cluster development strategy it is crucial to take into account the role of spontaneous activism and entrepreneurship of local forces. Developing SME clusters means enabling the local environment to stimulate people’s entrepreneurship and SME competitiveness.

4.1. Small Enterprises and Economic Development

The relationship between job creation and enterprise size, namely whether small enterprises generate disproportionately more jobs than large ones has been the center of the attention given to small enterprises in recent years. The work of BIRCH (1979) has been very influential in changing government attitudes away from “the bigger the better” to “small is beautiful”. Birch found that 67% of the new jobs in his survey were created by firms with fewer than 20 employees and that 80% were created by firms with fewer than 100. The proposition that small firms have a large if not vital role to play in job generation is now generally accepted.

According to Reynolds (1997), SMEs have a substantial presence in international trade. About 10% of all SME’s (mostly in the manufacturing sector) were active in overseas activities. Within OECD member countries, 26% of direct exports were provided by SMEs (35% in Asian countries). Reynolds estimated that there are about 35,000 transnational firms in the world of which 20,000 have fewer than 500 employees, that is to say, they are SME’s.

4.2 Regional Development

At the national level, there has been great interest in the role of small enterprises in regional development, specifically in the São Paulo State. According to Davidson et al (1995) the regions which have experienced the most favorable development of economic well-being are those that had a good mix of industries and business sizes, and whose business sector was characterized by a relatively rapid pace of change. One example of substantial regional differences is found in Italy (PIKE,1995), where regions of new industrialization like Emilia- Romagna with a heavy concentration of small firms, grew in prosperity, whilst regions of old industry like Lombardia and Piemont, with a strong presence of large firms, declined. Collectively in some regions, SMEs have created a sustained competitive advantage for their region.

4.3 Relations in Co-operation

According to PLAGGO and CHAPMAN (1999), one route to competitiveness in the modern world economy is through groups of firms organized in a cluster. Some structures such as network are sometimes perceived as a third method of organizing economic activities, outside the market and the
administrative hierarchy. Within networks, so the argument goes, firms have technological and production relations which give them the effects of scale, while at the same time maintaining flexibility of activities. Small and medium size enterprises functioning in networks of co-operation and clusters have a greater chance of obtaining competitive advantage, both on national and international markets. It can even be argued that the appearance of co-operative relations is becoming and important factor in the international competitiveness of the SME sector.

5. Requirements for the development of cooperation networks among SMEs

Based on HUMPHREY & SCHMITZ (1998) there are two ways to treat the risks: One is through the sanction that creates incentives, but also penalizes companies that don’t act correctly. This is connected to the idea of opportunism (WILLIAMSON, 1995). To this author, all companies have their price, all of them have their opportunism level. So, it is necessary to establish a formal agreement between the partners. The core argument here is the “transaction costs”:

“Transactions involving uncertainties about their results are frequent and require investments in specific activities; therefore, these risks will tend to be internilized by the company (hierarchy). On the other hand, the simple transactions, not repetitive and those not requiring investments in specific activities will tend to be accomplished through the market (market transactions).” (WILLIAMSON, 1995).

So, in this sense, market and hierarchy refer to different forms of economic activity coordination. Meanwhile, there are coordination forms which are not assured by the company (hierarchy) neither by the market. They are exactly the result of cooperation among companies; they are the inter-firm cooperation networks, that are just based on confidence or trust.

Still according to HUMPHREY & SCHMITZ (1998), many economies don’t succeed in development, because there isn’t the minimum trust among their companies. This is very bad, as it is known how important is a company to become competitive by establishing partner relationship with others.

Trust as key element in the cooperation relationship, is a decisive factor, that allows the partners to respect the assumed commitments among the firms in the specific network, and it is also pointed out by other authors: JOLY & MANGEMATIN (1995), apud LEÓN (1998) present different aspects in this sense:

- the importance of the pre-existent social relations networks
- the importance of the mutual respect
- the learning of the relationship
- the importance of the reputation of each partner
- the risks involved in cases of opportunistic behavior, mainly in terms of the necessity of shutting out some partner from the network
- the learning of the social “savoir-faire”, among others

In brief, one of the most important characteristics of the transition from the mass production paradigm to the flexible one, is the possibilities to think about a balance between competition and cooperation among companies, in terms of entrepreneuring strategies.

6. Strategic Orientation In Small firms

The key problem in strategy formulation is seeking the best coherence among three basic components (see figure 1):

1) External environment (Macro e Competitive),
2) Strategy (fit environment firm),
3) Internal configuration (organizations and systems).
According to BELLINI (1999) the researches on strategy formulation have been oscillated
between two opposite approaches:

An external-internal approach, seeking the coherence starting from the analysis of
environment (scenario, industry, competitors). An internal-external configuration (resources,
organization, culture).

Figure 1. Basic Approaches to Strategy Studies.

Last decade showed a growing and exceptional interest first on the resource-based, and then
on the competence- based approaches to economies and researches. Several authors have proposed
the competence-based as evolutionary theory for technological change. More heterodox issues
propose a contamination between elements coming from traditional perspectives( e.g. relevance of
external environment in transaction cost economics) and key- concepts of competence perspective(
e.g. evolution of internal knowledge stocks by means of learning mechanics). The strategy
management literature shows, a similar oscillating debate between authors identifying the core
competence approach (PRAHALAD and HAMEL, 1994) on overcoming traditional Harvard
frameworks, and authors sustaining an integration between resource approach and competitive
advantage.

7. Research Methodology

The qualitative research using case study methodology is appropriate for researches like this,
involving research problem in an open system (YIN, 1994). An important issue with a multiple case
study approach is the number of cases that should be studied (EISENHARDT, 1989). Case study
analysis was the principal means used to examine field data

8. Business Cooperation Cluster: The Brazilian Case

Due to its great economic potentiality, the possibilities of inter-firm dynamic cooperation
among the Brazilian companies seem to be multiple. These opportunities involve from the large
companies or mega-corporations to the SME's , belonging to the industrial, financial, commercial or
service sector in general. As an emergent economy with a potential consume market composed by
160 million inhabitants and with a US$ 700 billion Gross Internal Product, the expectations of new
direct foreign investments in Brazil should create an optimistic economical scenery.

One of the most interesting successful case of cluster in Brazil is the shoe industry in "Vale
dos Sinos" region, placed in the Rio Grande do Sul State. In this case, the geographical proximity and
the operating the same market operation provoke a greater independence degree among the partners.

In the São Paulo State, in terms of regional clusters it is possible to identify some industrial
regions relating to some economical sectors. First of all there are three regions, which are specialized
in shoe industry. The most important of them is the shoe industry of Franca, a medium size city
located in the north of the State of São Paulo. This region is specialized in men's leather shoes. In
that region it is possible to observe the predominance of SME's working together with some large
companies as Samello, Sandalo and Vulcabrás, traditionally exporting companies (GARCIA,1996
apud IPT,1998).
There is a strong predominance of SME’s in this region (Franca). Among 390 shoe maker companies, 365 are micro or small ones (94% of all). Other 15 (3.8%) are medium size and only 10(2.5%) are large companies. In average terms, the companies work with 30 days of lead-time. The most part of the companies has low degree technology, using old equipment in general, and in some special cases of automation, they are rigid type, that is, not flexible production systems are used.

The other region is Biriguí, a small town located in the center of the São Paulo State, specialized in children’s shoe production, made of synthetic material. The third region is the city of Jâu, which produces women’s leather shoes. In both cases (Biriguí and Jâu) a greater presence of SME’s can be observed. This fact could represent a great potential to the inter-firm cooperation relationship among those companies.

The other predominant region cluster in São Paulo is the textile and clothing in Americana, a medium size city (placed 100 km northwest from São Paulo city). In this region one can feel the intense impact of the commercial liberalization due to the imported articles, mainly those coming from the Asiatic southeast (China specially).

Besides these previously discussed cases - the shoe and the textile industries - it is possible to point out some other cases of developing regional clusters in São Paulo State, however there are only few studies about them until now.

One of the cases is the High Technology and Science Park, in São Carlos, a medium size city, 230 km north from São Paulo, where there is the most concentrated number of researchers per inhabitant in Brazil. This is due to the existence of two important public universities and some of the most important research centers of the country in that city. Since 1985 (date of the foundation of that Science Park), more than 50 small “high-tech companies” were created, most of them specialized in new material production to the industry, industrial equipment, computing, automation of process and equipment telecommunication systems.

In Limeira, a medium size city in the center of the state (almost 120 km northwest from São Paulo city), a great number of jewel and costume jewel small factories have been increasing the, for the last two decades. Due to the random development process of that sector during that period, the local city hall decided to implement an “industrial district” and an “incubator of companies” to take shelter for those factories (mainly in terms of the treatment of the waste water and the remaining material used in the production process), as well as to stimulate the local economy and create new investments opportunities.

There is a lot of other cases that could be studied as cases of regional clusters. But just to illustrate that tendency, some of them could be mentioned: (Table 1)

<table>
<thead>
<tr>
<th>REGIÃO</th>
<th>ECONOMIC ACTIVITY (Predominant Sector)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ribeirão Preto</td>
<td>Graphics</td>
</tr>
<tr>
<td>Porto Ferreira</td>
<td>White Ceramics</td>
</tr>
<tr>
<td>Ibitinga</td>
<td>Embroidery (articles)</td>
</tr>
<tr>
<td>Itatiba</td>
<td>Furniture</td>
</tr>
<tr>
<td>Votuporanga</td>
<td>Wood Furniture</td>
</tr>
<tr>
<td>Jardimópolis and Itú</td>
<td>Red Ceramics</td>
</tr>
</tbody>
</table>

Table 1. Regional Clusters. Source: SEBRAE, 1996.

8. Some Conclusive Remarks

The development of a cluster of SME’s is not easy, nor a rapid process. It must be considered in a medium long term perspective. It’s an important role in fact, played by spontaneous reactions that may be different according to social, cultural and traditional conditions and competitive environment.

This work has shown that small firms with well-defined strategic postures can benefit from collaboration in order to compete. By sharing of the resources with competitors, suppliers, trade
association, the community provides a better outcome for the partners. Generally, larger firms are at a higher level of competitiveness both on the domestic market as well as internationally. The very clearly visible differences in terms of the evaluation of competitiveness in the favor of larger firms appears through the emphasis on determining factors as production technology, the quality of the management staff, financial possibilities, effective marketing, research and development. Such discrepancies between large firms and SMEs suggest that there exists big disproportions in competitiveness between the SME sector and large companies. One potential way of overcoming the lack of competitiveness of small and medium size enterprises is co-operation.

Specifically talking about the main requirements for creating cooperation networks among SME’s in Brazil, a set of problems or barriers can be identified, for instance:

1. lack of real commitment and confidence among the partners of this kind of network;
2. lack of resources in terms of information technology (IT). SME’s are not used to deal with IT the same way that the big companies are used to do.
3. SME’s don’t use to cooperate with each other. Very often the companies owners ( “the self-made men”) are satisfied with their real situation and they aren’t worried about any kind of new business opportunities.
4. The precarious organizational structure and the specific organizational culture of SME’s is very often the main factor of a lot of problems involving the relationship with another companies or partners. The forms of cooperation are not always formalized in the sense of an official collaboration.

9. References


SCHIMITZ, H. *Small Firms and Flexible Specialization*. IDS, University of Sussex, UK. 1989
