

PRODUCTIVE COOPERATION NETWORK AMONG SMALL AND MEDIUM SIZE ENTERPRISES: A COMPARATIVE STUDY BETWEEN SÃO PAULO STATE (BRAZIL) AND VENETO REGION (ITALY).

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ABSTRACT

The purpose of this article is to discuss the opportunities and barriers relating to the creation and development of productive cooperation network involving small and medium size enterprises (SME's), under the industrial restructuring context. Specially the intention is to analyse some particular aspects of the Brazilian context, specially in the state of São Paulo (one of the most industrialized state of Brazil), comparing to another developed region in Italy – that is Veneto. As the main results, the present paper try to point out some possible ways to improve the organization performance supported by this new kind of inter-firm arrangement, through the concept of *regional clusters* and, finally, to propose some public politics to the state of São Paulo.

Keywords: Network, Restructuring, Clusters, Cooperation.

INTRODUCTION

The process of globalization and the intense changes in the modern capitalism world, specifically the emergence of new technologies relating to the microelectronics and the infoways, have imposed deep changes in the organizational structure of the enterprises in order to get more competitive advantages. Under this context, the advent of the *“lean production paradigm* or *“agile production”* has provoking, in particular terms, new kinds of inter-firms relationships, towards the increasing of the company competitive power, in general. Inter-firm networks have been created and got more and more importance not just in the developed countries as Italy, Japan, and Germany, but also in the newly industrialized countries as Mexico, Chile, Argentina and Brazil.

The main argument in this article is that the emergence of new types of industrial organization, specifically those relating to stimulate more inter-firm cooperation, offers new elements to public policies that can support the SME's development plans. Policies which consider this dynamic aspect of cooperation among companies operating within the same production chain (and not in an isolated form), that can create synergy of positive impacts, called *“collective efficiency”*, in order to improve an inter-firm network as a whole.

METHODOLOGY

The methodology of the present paper will involve a comparison study between São Paulo State in Brazil and Veneto region in Italy, focusing some special aspects as for example:

- The importance of micro, small and medium size companies in the recent regional economy development process (its specific contribution in terms of regional income and job creation);
- The comparing levels of quality and productivity among that kind of companies;
- The comparing levels of Technology (of product, process and information) among the companies;
- The inter-firms cooperation aspects;
- The institutional aspects, investigating, for example, if there is some specific public policies (specially local policies) supporting the small and medium size companies development.

Besides those points the investigation method will also point out the following aspects :

- The influence of the new types of Telecommunication and Information Technologies (*Internet, Intranet, Extranet*) on the phenomenon of inter-firms networks and virtual organization);
- The importance of an adequate social and cultural environment to stimulate the cooperation among SME's;
- The institutional aspects involving the needs for reforms in Government Policies in Brazil.
- Physical Infrastructure: creation of adequate telecommunication and information infrastructure .

A COMPARATIVE STUDY BETWEEN VENETO (ITALY) AND SÃO PAULO STATE (BRAZIL)

The flexible specialization networks in *Third Italy* and the Veneto region

Situated in the north and northeast region of Italy, around the *Bologna, Florença, Ancona, Veneza* and *Modena* cities, there are a large small and medium size companies network , created in the beginning of the 70's, which involves since small shoes, ceramics, textile and ready-made articles factories, until motorcycle, agricultural equipments, autoparts and machine-tools producers, working as the model of ***flexible specialization*** (PIORE; SABEL, 1984). This modern industrial developed achieved a sapecial position in the whole italian industry and performed a fundamental economic role during a recessive period (between the 70's and 80's), when the big companies had reduced their production activities and dismissed their employees .

The most important advantage provoked by this kind of industrial organizational form, not only in this specific region (Third Italy), but also in the whole italian economy during the recent years, it was the graet ***innovative capacity*** and ***flexibility*** offered by this new industrial arrangement. This networks of small firms propitiates advantages which are named as ***agglomeration economies*** (AZEVEDO, 1990).

Just to illustrate this phenomenon it could be said that among the 20 regions relating to the whole italian administrative structure, the *Emilia-Romagna* region (with a 3.9 million inhabitants and 325,000 registered firms, with 5 employees/firm in average) was that showed the most high level in terms of income per capita of whole italian economy. It be known that in this region 90% of manufacturing industry is compounded by small firms with less than 99 employees, corresponding to 58% of total workforce of this region. Besides this the most part of the workforce is autonomous (BEST, 1990).

The center of this region is Modena, that became one of the main industrialized region of Italy. The unemployment in Modena was 5,5% more or less, while the national index reached at 12% in average. The number of registered firms grew up from 12,500 in 1971 to 22,000 in 1981, while the number of employees plus *craftsman-owners* grew up from 100,000 to 140,000 (6.4 by firm, in average) (BEST, 1990).

Other special characteristic of this region refers to the consortium of enterprises structure (*consortia*). The main purposes of these consortium are multiples, being the most usual those relating to financial and marketing services.

Specifically talking, in Veneto (northeast of Italy) there is the predomination of micro, small and medium size enterprises in the following economic sectors:

<i>Economic sector</i>	<i>% on region employees in manufacturing</i>	<i>number of firms</i>
clothes and textil industry	18.17%	9.640
furnishing	15.80%	9.495
metals and metal products	15.00%	10.286

Consisting 8,5% of the national income, *Veneto* has traditionally an “*export oriented*” industry and during the recession of the beginning of the 90's this region contributed meaningfully to attenuate the crises effects on the Italian economy as a whole.

The main towns of this region and their respective participation in terms of industrial production is showed below (data from 1993):

City (town)	Industrial Production
Belluno	4.5%
Padova	20.8%
Rovigo	5.2%
Treviso	17.8%
Venezia	16.5%
Verona	17.7%
Vicenza	17.5%
VENETO	100.0%

Source: Miotto, S. “Alcune considerazioni sull'economia Veneta negli anni '90: Imprese, reddito, esportazioni”, in Angeli, F., 1994, p. 19.

Veneto has also presented a better economic situation comparing to the northwest region. Based only data from the beginning of 90's this situation can be observed as showed below:

Evolution of gross income and added-value (AD)					
		1989	1990	1991	1992
Veneto	Income	100.0	112.2	120.3	127.6
	A D	100.0	114.4	124.9	133.4
North-west	Income	100.0	108.6	112.9	117.8
	A D	100.0	109.0	114.9	120.1

Source: Volpato, G. and Stocchetti, A . , “Evoluzione Strutturale dell'Industria Veneta per grandi raggruppamenti”, in Angeli, F., 1994, p.27.

In general, it could be said that the one of the most important factor of the success of small and medium size companies in Veneto is the intense investments both in technology innovation (of products and process) and management capabilities. On the

other side, there is a traditionally common law relating to the cooperation among small and medium size companies in “Third Italy” in general and in Veneto in particular.

The case of the state of São Paulo (Brazil)

The industrial income in São Paulo State corresponds to 41% of all the Brazilian industrial income and the total economical income is US\$ 290 billion equivalent to 36% of Gross National Income.

Besides losing many new direct investment projects (mainly in the industrial sectors) to other states, the perspectives are already optimistic for São Paulo. It was announced US\$ 26.5 billion of new investments in São Paulo state to the next two years. Those new direct investments are being applied to new industrial plants installation, building of new malls and to modernization of the existent ones (data from Science, Technology and Economic Development Secretary of the State of São Paulo). All of those new investments should stimulate the modernization of São Paulo economy in a special moment of economic recession (by the way, this fact is not only specific to São Paulo State, but is affecting the Brazilian economy as a whole), when some traditional segments are losing power. For example, there were almost 2.800 textile companies in São Paulo State until 1990. Nowadays, unfortunately, there are only 1.900. A lot of textile plants were closed during that period and the companies changed their strategies, looking for other regions where they offer fiscal and cost attractiveness, mainly those relating to a low wage regions (northeast region of Brazil, specially).

Replacing that kind of industry, new plants of computers and telecommunication parts and equipment are being founded in São Paulo State. New auto-maker and auto-part factories are also being installed in São Paulo (Honda, Volkswagen’s truck and engine plants), despite a lot of ancient plants have been reducing their operation and, in case of auto-part companies, many of them have been closed.

The regional distribution of those new investments prioritizes the Vale do Paraíba region with 32% of total capital invested. In second place, the region of Campinas city appears with 26%, followed by the “A .B. C. and Great São Paulo” region (involving Santo André, São Bernardo do Campo and São Caetano cities) with 13% of the total investments. The 29% remaining should be distributed among the other regions of the state.

In short, one could say that the present moment marked by the globalization process seems to contribute with São Paulo State, that traditionally has the most important industrial park, besides the fact of concentrating the greater number of skilled professional and technical workers of Brazil, in general (this fact can be understood by the presence of the most important universities, research centers and technical school in State of São Paulo).

The most part of the future investments should come mainly from the transnational companies, as well as from Brazilian companies. There are many Brazilian groups and consortia preparing themselves to participate in privatization processes of the old state companies, those traditionally belonged to the monopolized markets (as mining, telecommunication sector, besides others).

Besides those US\$ 26.5 billion in private investments, there are also public projects involving US\$ 50 billion, relating to transportation and telecommunication system modernization, which should create 400.000 direct and indirect new jobs in São Paulo State (data from “Exame” magazine, Ed. No. 658, 1998).

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 sited 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 are 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. Among all of those companies, only 3 of them have the ISO 9.000 quality assurance certification, being 2 large companies and 1 medium size company.

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.

In terms of Internet utilization it was observed that only 10% of all the companies utilize this kind of resource, in spite of the existence of 3 Internet providers in that region.

Finally, referring to the relationship between the SME's and the large ones, one may say that relationship is not so relevant, existing only some joint actions in cases of exporting programs, participating in fairs of the sector (shoe industry) or in new products to introduced in the market.

The other region is *Birigui*, a small town sited in the center of the State of São Paulo, specialized in children's shoe production made of synthetic material.

The third region is the city of *Jaú*, which produces women's leather shoes. In both cases (Birigui and Jaú) 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 regional cluster in São Paulo State is the *textile and clothing* in *Americana*, a medium size city (sited 100 km north from São Paulo city). In this region one can feel the intense impact of the commercial liberalization for the imported articles, mainly those coming from the Asiatic southeast (China, specially). In consequence of that fact, the local production fell 60% from 1992 to 1995. The same occurred with the employment level. It fell from 23,895 to 17,743 job places. Meanwhile, Brazil as a whole imported 113.344 ton/year (in 1993) of textile articles, in general.

Nowadays it remains only those companies which can compete in price and quality aspects. The surviving companies decided to invest in their modernization process. Between 1996 and 1998 it occurred a production retaking because it was invested US\$ 300 million in new equipment and production process modernization. Consequently, an increasing number of companies operating in that sector (from 621 in 1996 to 634 in 1997) could be observed, for the first time after 10 years. The number of employees also increased during that period: from 13,418 (in 1996) to 14,014(in 1997). (data from SINDITEC, 1998).

Besides those two cases previously discussed - the shoe and the textile industries - it is possible to point out some other cases of developing regional clusters in São Paulo State, and 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 are the most concentrated number of researchers per inhabitant in Brazil. This occurs 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 to telecommunication systems.

In *Limeira*, a medium size city sited in the center of the state (almost 120 km north 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 mayor house 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 are a lot of other cases that could be studied as cases of “*regional clusters*”. But just to illustrate that tendency, some of them one could be mentioned:

REGION (predominant sector)	ECONOMIC	ACTIVITY(
Ribeirão Preto		Graphics
Porto Ferreira		White ceramics
Ibitinga	Embroidery (articles)	
Itatiba		Furniture
Votuporanga		Wood furniture
Jardinópolis and Itu		Red ceramics

Source: SEBRAE, 1996.

CONCLUSIONS

Comparing to another international successful experience in terms productive network cooperation (as the Veneto region in Italy), there are a lot of great opportunities for small and medium size companies if they decide to work together in some specific targets. However, despite of all of that optimistic scenery, referring to the expectation of new direct investments and to the Brazilian state restructuring process, there are a lot of restrictions and barriers facing the Brazilian economy modernization challenge as a whole, as well as to the possibilities of inter-firm cooperation network development.

Besides the institutional-political barriers, which inhibit a great policy decision making by the Brazilian state in order to implement the various of reforms (fiscal, administrative, social-security, etc.), there are still other kinds of specific problems (as a consequence of the prior items), as for example the precariousness and obsolescence related to the telecommunication infra-structure in Brazil.

Specifically talking, the formation of cooperative networks can be seen as a promising approach, since part of SMEs from Brazil has the opportunity to achieve global markets without losing their economic independence. Moreover SMEs have their own identity and want to remain in such a way. Cultural aspects related to cooperation among partners have been a common practice in companies where the lack of resources has forced them to project and manufacture products in an outstanding creative and innovative manner, sometimes subcontracting, leasing or borrowing resources from other companies to achieve the desired results. These forms of cooperation are not always formalized in the sense of an official collaboration, instead they have been more seen as support among colleagues. Therefore, cooperation companies is an already frequent practice of Brazilian companies. However a major problem for the introduction of inter-firms network and/or virtual organization in Brazil is the lack of entrepreneur culture; companies owners are usually happy with their current success and they are not looking for new business opportunities, some companies are just concentrated in performing everyday operations and there is no vision for the long run. The fact is that SME's usually are family business where one persons makes all the decisions and there is no strategic plan for business or technology.

Referring to the Internet utilization to support *virtual organization* among SME's , the limitations refer to the lack of new investments in the new telecommunication infoways, which imply more intensive utilization of optical fiber and digital systems replacing the real analogous ones. In that way, the Brazilian public authorities are already announcing investments around US\$ 90 billion in the telecommunication system until the year 2.002 in order to implement a suitable infra-structure to support the enterprise competitive power under the context of a global economy.

In terms of expected outcome the present study tries to indicate some possible ways to Brazilian SME's break the most part of the those found barriers to create and develop inter-firm networks as a modern way to improve its competitiveness.

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