

# BUSINESS NETWORKS IN SMALL TEXTILE ENTERPRISES: THE CASE OF NOVA FRIBURGO-BRASIL

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*Business Networking is an innovative business paradigm that can help companies to remain competitive in the market. Nevertheless, its practical implementation is very complicated because of the several dimensions that it involves. There are several cases of business network cooperation; however, each one has its particular characteristics that determine its success. This paper addresses the domain of collaborative networks, established by SME in textile industry, in the scope of an academic research project based on a case study research methodology and centered on a large industrial pole in Brasil..*

## 1. INTRODUCTION

Manufacturing companies have to face constant change and permanent pressures. Competition is marked by volatile demand, shorter product life cycles, globalization, mass product customization and time to market. To meet today's challenges, companies are moving away from traditional functional structures, to process oriented approaches (Azevedo *et al.*, 2005). In that context, new ways of organizing production environments have been evolving, so that companies are able to address the increasing demand for flexibility, to improve the precision of on-time delivery and to reduce lead-times. Companies generally recognize that tight interaction and coordination among all the participants of their supply-chain is a key requirement for their continued survival. This new reality leads to networking with other companies as a natural approach, and gives rise to a new concept of cooperative value adding.

The main problem with the traditional business paradigm is that it assumes each company is an "island" i.e., an independent and self-operating entity. Such a view does not consider the fact that a company is instead part of a much broader matrix of business systems composed by customers, suppliers, products and global information. This leads to integration along different axes, namely geographical (physical) and functional (process). However, it can also be evidenced that in general terms small companies do not have enough conditions to compete in this

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Azevedo, A., Faria, L., 2006, in IFIP International Federation for Information Processing, Volume 220, Information Technology for Balanced Manufacturing Systems, ed. Shen, W., (Boston: Springer), pp. 149–156.

environment. One of the possible ways, discovered for these companies, was to start to cooperate between themselves, forming diverse types of alliances.

The aim of this paper is to address the domain of collaborative networks established by SME in the scope of an academic research project based on a case study research methodology. This paper underlines the necessity to consider several critical aspects that have to be fulfilled for network success, emphasizing the importance of trust competency and information technology infrastructure.

The reminder of the paper is organized as follows. After this introduction, the next section presents main problems and difficulties for business networks success usually considered by several researchers. The third section presents some successful experiences in the domain of collaborative networks of SME, showing that it is possible to get advantages from the cooperation and to conquer space in the market, including mainly the international market. The fourth section addresses the case study related to network cooperation in small textile enterprises of Nova Friburgo – Brasil. The last section contains the conclusions of the paper.

## **2. ENTERPRISE COOPERATION**

The globalization process involved much more than the diffusion of technologies and productive processes, standardization of consumption and capital flows. Its bigger consequence was the reinforcement of the bonds of the economic interdependence between the companies and, for extension, between countries in the scope of the productive process - by strategic alliances and other networking forms.

Currently, however, the context of enterprise organization became completely different. The consumers have changed their behavior, demanding personalized products. When the consumer started to pull the production, the productive environment became more dynamic and uncertain, requiring high quality and conformity to the established standards.

In that context, co-operation motives can be cost and risk reduction, knowledge transfer or just the reduction of time to market (Eschenbacher *et al.*, 2001). Collaborative business environments can exploit the better cost position of the partner or use economies of scale. Even if this concept is now rather well known, few SME are actually involved in such alliances and their success rate after a couple of years seem low. Participating in a collaborative network means investing time and money, and both resources are scarce for an SME. The motivation to continue to actively participate clearly depends on the balance reached between efforts and benefits (Pouly *et al.*, 2005).

### **2.1 Cooperation Advantages**

It is a fact that companies, very centered and vertically integrated, are not agile enough to adapt to the fast requirement of changes in the market. This search for more efficiency finishes in reaching contradictory objectives: the organizations need to be global and at the same time local; they must serve a widened market and also the more specific ones; they have to operate in a coordinate and synchronized form along the supply chain levels; and they simultaneously have to adapt to the unexpected market alterations, always guaranteeing a range of varied products with

a reduced cost. It can be said that the main objective that makes the companies act on a linked strategy is to search, in the cooperative performance, for competitive advantages in the functions that add more value in the product, or in its value chain.

The successful network enterprise can bring the following main advantages: it allows the definition of joint strategies; it preserves the individuality and protects the information of the companies; it values brands and enables shared marketing strategies; it reduces production costs and investments risks; it intensifies the communication and the access to the information; it extends the productive scale and the market dimensions; it facilitates the credit access to the management qualification.

## **2.2 Requirements for the networking success**

Despite the fact that enterprises networks are emerging as a valuable organizational instrument that can create considerable competitive advantage for small firms, unfortunately, its practical implementation is very complicated. Even if rational facts like the increase of market share, new business or cost reductions are key factors in evaluating the interest of a collaboration, “soft” factors like the exchange of experience and knowledge, human factor and sharing of common activities should not be underestimated (Pouly et al., 2005). Some studies estimate that up to 60% of the alliances fail to meet their initial objectives (Ellis, 1996), in a clear indication that there is still a lot of work to be done regarding the creation and management of these networks (Caldeira, 2004). This is due to the complexity of several dimensions that the concept of business networking implies and to some confusions and insufficiencies arising from the fact that the argument only started to be treated as a managerial and organizational topic a few years ago.

In general terms, the construction, running and the failure phases of the network depend on three basic aspects: trust, competency and ICT inter-organizational integration. (Casarotto Filho and Pires, 2001).

The trust perspective refers to the aspects linked to the cooperation between the companies, involving cultural aspects, of interest in such a way of the people as of the companies. The trust is fundamental in the business world, since the economic transactions involve risk, mainly the ones related with the unknown of the future events. If these risks will not be controlled, they can prevent businesses that would bring benefits for the companies of the network to become materialize. The building up of trust between organizations is one of the greatest challenges in the concept of collaborative networks. Moreover, transparency is a key success factor, opportunistic and selfish behavior will kill the collaboration very quickly.

The competency perspective deals with issues associated to the essential abilities of each partner. It involves material and physical aspects, as the installations and equipment and even though those incorporeal ones as the processes and know-how. Each member must be carefully selected during the construction phase to create value for all of them. In order to manage the creation of tighter cooperation within the network, a systematic identification of competencies’ maps of the firms and an evaluation of their competencies levels should be followed.

The information technologies (IT) and namely the information flow, are vital in the cooperative environment between companies. However, traditional IT solutions have difficulties coping with enterprises networks, mainly because they were based

on a centralized data base, located in one single site, and do not satisfy the distributed planning and control needs within a production network neither do they support the enterprise wide business process. Considering this, the development of an efficient information infrastructure that allows the companies to answer to this business dynamism can be considered an important competitive advantage. Among others things, the IT infrastructure, in particular, for collaborative production networks, should facilitate the negotiation of orders in real time, through a fast and more precise evaluation of the productive capacity, and should permit an optimized and synchronized activities planning of all partners and facilitate the control of the production orders flow giving more support to the decision making in order to solve problems referent to the occurrences that disturb this flow (early warnings).

Therefore, it can be inferred that the development of the information systems is directed towards the improvement of the inter-organizational processes management, giving particular emphasis to the customer operations and should be flexible enough to adjust itself to the structure of the enterprise network.

From an operative point of view, the main difficulty that has to be faced for networks efficiency is the design of network business processes that cover the needs of specific business purposes on one hand, and that reasonably fit with single business processes of network members on the other. Another crucial issue to point out as a possible barrier for network consistency is the definition of the most appropriate legal structure that formally identifies responsibilities and liabilities of network members with respect to stakeholders (Copani *et al.*, 2006).

### **3. SOME SUCCESSFUL EXPERIENCES IN THE WORLD**

There are diverse known cases of network cooperation; however, each one has its particular characteristics that determine its success. That conclusion can be easily achieved after studying some industrial networks, namely, as example:

- The Virtual Factory – an organized network for regional co-operation in the manufacturing industry consisting about 30 enterprises out of Germany, Switzerland and Austria (Zheng and Possel-Dolken, 2002);
- Swiss Microtech – is a network of 8 independent SME active in the screw machining industry and USCO – is a network of 11 complementary SME active as suppliers to the machine industry (Pouly, 2005);

To give support to the case study research project considered, some known networks experiences have been studied, here briefly reported: Italy's experience as pioneer country in the formation of network cooperation between companies, and Denmark's experience mainly due to its peculiarity by the fact that the cooperation between companies has been "imposed", as a consequence of the great need to increase the companies' competitiveness in the country when faced with the threat of an increment in the external competition.

#### **3.1 Italy's Experience**

In Italy, the cooperation is characterized by the relations between micro and small companies, having been the result of the existence of a sufficiently favorable scene for its development: a great number of companies who had accepted the culture of

cooperation very easily. For the Italian economy, the formation of the enterprise networks, also involving unions and the local government, keeps contributing to the increase of the competitiveness and the flexibility of the companies.

In the known region of the Emilia-Romagna there are hundreds of networks that are constituted by about 25 thousand small companies and offer a great deal of services, such as the creation and the development of services centers where market research of technology benefits all constituent companies of the networks. This is one of the main characteristics of the region, which refers to the creation of the "*consortia*" between companies, and the most common refers to the financial provision and marketing services (Best, 1990).

One of the generating factors of success for the Italian nets was the fact that the companies provide chances for the executives to meet and to gain mutual confidence, which expedited the collaboration and allowed the companies to take advantage of the chances of the market together.

### **3.2 Denmark's Experience**

In the late eighties, Denmark faced a period of an increasing commercial deficit, high taxes of unemployment and low capitation of investments. It was pointed that the generator of the problem was the fact that the Danish companies were very inefficient and small, while the changes in the panorama business-oriented favored the wide scale operations of the multinationals companies.

For the fast development of the economy, the adopted solution was the prevalence of the small companies, but with flexible productive units. Therefore, these companies were joined in flexible nets, for which promoters were now needed.

The Commerce and Industry Ministry of Denmark established a general plan with the purpose of constructing a great number of companies' nets. To such, it started to promote the idea of cooperation by publishing information on the main concepts of cooperation and forming "brokers" for the enterprise network (private consultants who see in the cooperation networks a way of organizing the small companies in big groups), having in the mind the promotion of cooperative projects. This program was called "Strategy 92". Between 1989 and 1990, 3,000 of about the 7,300 Denmark's industrial companies had constituted network cooperation.

Therefore, the development of the Danish nets followed a different way than that of the Italian industrial districts. In Italy, the development of the flexible nets was the result of an evolution, with the support of the local governments. In Denmark's case, they developed a previous model just to create the cooperation.

## **4. CASE STUDY: NETWORK COOPERATION IN NOVA FRIBURGO, BRAZIL**

The case study presented here is the result of a preliminary research study about the advantages and disadvantages of collaborative business networks for the increase of export levels in textile industry located in Nova Friburgo, state of Rio de Janeiro – Brasil. The capital focus will be the identification of main characteristics, organizational structure, main tendencies, and future strategies. Furthermore, in the

scope of the research work, we plan to quantify the main advantages the cooperation brought for the companies, as well as for the region where it is located.

#### **4.1 The Development of the “Network” in Nova Friburgo**

With the increase of the international competition, the textile industry of Nova Friburgo entered a period of inevitable decline. The man power that was fired owned the know-how and so, it started to invest in machines and equipment opening its own business. For several identifiable reasons, the most viable alternative for these small companies was the confection of lingerie.

In 1998, the SEBRAE/RJ (Service for the Support to the Micron and Small Companies in Rio de Janeiro), together with the FIRJAN (Federation of the Industries of Rio de Janeiro), conducted a study that pointed the strong presence in the region of hundreds of small companies, very concentrated, and specialized in the sector of lingerie confection. The study recognized that most of companies were rather disorganized concerning operational processes and most of them do not even have any formal organizational structure. As a result, the efficiency and effectiveness levels of these companies were very low. Thus, a regional project, encompassing all local companies, was initiated aiming to create the adequate conditions to foster export trade levels through production networks and with of the mission to transform the region of Nova Friburgo into a recognized international pole specialized in lingerie domain. Therefore, the appearance of this specialized production network was not a natural development, having been induced, organized and fomented for diverse support institutions, with the prominence for the SEBRAE.

#### **4.2 Productive environment**

Currently, the industrial district of Nova Friburgo comprehends more than 4 thousands garment companies, and only about 600 are formally registered, corresponding to 25% of the Brazilian production of the segment, generating about 20 thousands ranks of work, with 8 thousands direct jobs and 12 thousands indirect ones. Most of the companies (68,5%) are very small (1 to 9 workers). In 2004, the turn-over of the pole was around 300 million USD (IntimaFriburgo, 2006).

Although the region hosts a significant concentration of very actively companies in same business domain, the existing pole still cannot be characterized as a cluster, mainly due to the low degree of cooperation between the companies, as much in the production as in the constitution of national and international commercialization channels or even in the technological cooperation. One of the causes of the relatively low level of organization and cooperation is the lack of qualification and the low level of education of the entrepreneurs. The majority of the entrepreneurs is outdated and not interested in the qualification programs promoted by the operating entities in the pole.

An important factor that makes the relevant participation of the pole's companies in the market more difficult, is related to the fact that, for textile sector, in general, there are a lack of barriers concerning the entrance of new competitors and mainly because the available brands are identified with low price and insufficient quality.

The confection sector of Nova Friburgo is intensive in man power, with lack of qualified staff, rendering the work directed toward the operation very difficult, creating barriers to the entrance of new technologies.

Despite the small representation, the external market is the main focus of the development projects of the pole. The objective is to increase the exportation for the countries which are already experts in the region's potential, and also to expand to other markets. According to Prochnik (Prochnik, 2002), the trusts are fundamental for the promotion of the exportations. The future strategy is that the consisting trusts launch a proper brand and a quality stamp to facilitate the products acceptance in the international market.

In accordance with the author, in 2002, there was little presence of business or services rendering between the companies. The ideal would be that, in the pole in question, there was the integration of the productive chain between producers and suppliers, inter-sector integration between the industrial and commercial areas, services and, still, solidarity and cooperation bonds between the companies. According to the study, in 2002, only 40% of the interviewed companies carried out some type of business.

The project implemented in the pole of Nova Friburgo is constituted by diverse programs that are part of the strategic development plan: the Strategic Program of Communication and Marketing; the Program for the Modernization of the Productive and Management Processes; the Program for Quality Increment and Design Improvement; incentives for better access to the markets; and simplified access to the credit.

### **4.3 Risks and Opportunities**

The research study, developed so far, allows us to identify several main risks and difficulties for the Nova Friburgo's production network, namely: lack of information about the distribution canals and the final consumer, lack of politics of the product differentiation, technological difficulties of the small companies in improving its production and exporting, and the scarce participation of the entrepreneurs, workers and of the population in general in the project.

On the other hand, concerning the identified opportunities, we should underline the following ones: congruity and sharing of strategies and policy efforts for the institutions that support the network development, ample access to financial resources and great acceptance and future perspectives in the international market.

### **4.4 External Effects**

It is important to point out that the proximity of lingerie's pole can represent important development opportunities for the other sectors of the region, as is the case of the metal-mechanic sector. However, Ferreira (Ferreira, 2002) evidenced that the interaction degree between the textile-confections sectors and the metal-mechanic one is still much reduced: only a very small number of the interviewed companies produces complementary accessories for the Lingerie's Pole. This lack of complementation between the local activities was pointed by the enterprise leaderships as one of the main problems for the development of the metal-mechanic sector. In special, the production of machines and components for the confection

sector represents a great business chance for the local economy that must be explored. In accordance with the author, one of the attitudes that is being taken to increase the generation of jobs is to look for new forms to diversify the pole, creating new economic activities that can counterbalance the common cyclical variations of the region, as it is excessively specialized.

## 5. CONCLUSION

Although the research study is still running, the results achieved so far allow us to conclude that, despite the great expectations related to the development of the Nova Friburgo's Pole, it is essential for the project success that the sector entrepreneurs start to interact more between themselves and between the support institutions, so that the project can become self-sustainable.

An active participation of the institutions can be observed, mainly of the SEBRAE and the FIRJAN, in the implementation and coordination of the pole. These institutions acted as mediators and brokers of the local development, inducing the most direct joint between the entrepreneurs, in favor of the companies' modernization on the sector.

Finally, in spite of its initial development phase, this production network propitiates a development, not only for the companies of the confection sector, but also for the Nova Friburgo city as a whole. However, for this project to perpetuate and generate all its expected results, the companies must compulsorily change its individualistic culture and start to act in coordination with all members, or, with the predictable and planned retirement of the support institutions, it will not have any more "all" and it will be the end of the network.

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