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A Case Study on the Governance Role in a Metal-Mechanic Cluster: Challenges and Prospects

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ABSTRACT

The industrial clusters formation phenomenom has been considerably intensified in Brazil. For this reason, this paper aims to identify, describe and analyze the management solutions developed by the governance of a major metal-mechanic cluster in the state of Sao Paulo – Brazil, as well as its challenges and perspectives. From the case study method, it was observed the following positives initiatives: conceptualization and implementation of one of the most important metal-mechanic sector fair and a development of a project to encourage joint activities such as collective purchasing, sharing experience, creation of a quality certification and joint development of a system to improve products quality. The main difficulty found in the cluster management is the low involvement of the companies' director, creating a retarding issue to potential results.

Key Words: Cluster; Governance; Small and Medium Enterprises.

1. INTRODUCTION

The small firms have sought, in industrial clusters, strength and prominence gaining in the competitive market they act, ahead large and leading companies of sector, usually owners of the largest share of the local economy, forming networks of cooperation and technological innovation.

The industrial clusters formation phenomenon can also be observed in Brazil and has been considerably intensified. The State of Sao Paulo stands out for economic and social outcomes achieved by some excellence clusters: Sertãozinho metal-mechanical, San Carlos Technology Base Sector, Campinas and São José dos Campos and the Red Ceramics Industry Sector in Santa Gertrudes (SEBRAE/SP, 2007).

The study of funded clusters bound to investigate and analyze the process of implementation of integrated management technologies (best management practices, improvement and organizational changes). Moreover, it is possible to characterize the type of production network: business characteristics, scope planning, governance, market, social capital, performance critical dimensions and the infrastructure and framework for available cooperation.

Competitiveness is not about a single improvement point such as reducing costs to obtain competitive advantage, but several aspects that will form the competitive structure, as the supply of right products at the right time and with the perfect quality. With the advent of expertise and experience of the clusters, and the results achieved by this type of organization, companies are looking for something more, not only get the benefits of collective efficiency (Albaladejo, 2001).

Some features are crucial to the competitiveness of SMEs embedded in clusters, as the factors at the country level, among them the macro-economy, political framework, financial and non-financial services, factors at the cluster level such as

external economies, joint actions, trust and connectivity, and factors at company level, among them skills, working conditions and physical infrastructure and machinery.

Clustered firms, among other objectives to be pursued, seek competitiveness, performance level increase, to participate and be favored with the exchange of experiences between countries and increase individual and collective economic gain, through joint actions and their geographical proximity. To achieve competitive advantages arising from the cooperation between firms, there must be governance that can coordinate joint action and thus maximize the benefits.

The article aims to identify the management solutions developed, the challenges and prospects for governance of a metal-mechanic cluster of the state of Sao Paulo - Brazil. The results of this research aim to contribute to the theoretical and practice discussion of following research question: What is the role of governance in the industrial clusters development?

In the next section, concepts that guided this research development will be briefly described, such as: cluster, governance, business management and cooperation networks. Then, will be presented the cluster under study and identify the management's strengths and weaknesses. Finally, will be discussed the factors that influenced the cluster development, as well the prospects and future challenges.

2. LITERATURE REVIEW

In the wave of globalization, firms from developed and developing countries tend to adopt the innovative approach, forms of cooperation and collaboration. This requires openness and commitments made by different companies in a cluster or in different countries, on a continuous integration to meet new challenges and opportunities. Thus, understanding the role of innovation clusters and networks is

essential to the success of innovative local and transnational corporations (Carayannis and Wang, 2008).

2.1 Clusters

Agglomerations of firms called industrial clusters have became an essential element for the Small and Medium Enterprises (SMEs) to survive and gain competitive advantages. The clusters provide a fertile environment for SMEs to innovate and develop linkages with large companies and international partners (Eurada, 2008).

According to Menzies (2002), cluster is a geographical concentration of enterprises related to each other, which have features such as specialized suppliers, service providers, industries and institutions (universities, agencies and trade associations) that compete in the same segment, but also have features of cooperation.

The concept of this kind of agglomeration of firms does not have an agreed definition, but, basically, is used to increase the competitiveness of SMEs to support collective research, to streamline an entire industry and implement an environmental management system (European Commission, 2002). According to Carayannis and Wang (2008), some factors that favor clusters are, in general, the sharing of knowledge and technology transfer.

To Altenburg and Meyer-Stamer (1999), the word cluster concerns only local concentrations of certain economic activities, and clustering of unrelated companies do not give rise to collective efficiency. According to the authors, most definitions of clusters adds some features to the basic notion of combining enterprises, such as:

- Positive externalities from the existence of a local pool of skilled labor and attracted buyers;
- Frontwards and backwards links between firms within the clusters;

- Intensive information exchanging between companies, institutions and individuals in the cluster, which gives rise to a creative environment;
- Joint action towards the creation of location advantages;
- The existence of a diversified institutional infrastructure to support specific activities of the cluster, and
- A socio-cultural identity made up of common values and immersion of local actors in a local environment, which facilitates trust.

Some causes may lead clusters to decay, and they derive mainly from factors like union rules or restrictive regulatory barriers, excessive mergers and other barriers to competition that feed the local rivalry, events or discontinuities in the external environment, such as technological discontinuity, which can lead to cancellation of the advantages of the cluster (Porter, 1999).

2.2 Clusters' Governance

The relationships between companies are an essential factor for the development of a cluster, since cooperation enables learning, updating, troubleshooting, and other forms of enterprise growth. Thinking locally, the collaborative relationship between the companies provides a range of improvements, such as local development, joint activities, strengthening of the sector, greater involvement of other companies and suppliers, among others.

According to Motta and Amato Neto (2002), the cornerstone for the development of a network is to create enough confidence, through a mutual learning process, which can be properly stimulated and guided by an external agent, trained to perform such function. In order to create a relationship based on trust, entrepreneurs

need to be exposed to an interactive process, leading to perform critical analysis based on the results.

The governance concept should be enhanced, because its condition is to structure the competitive strategy that takes each site, and in consequence, reflect actively in local economic development (Sugden; Wilson, 2002).

Volkmann and Albert (2005) consider governance and coordination in a supply chain as being complementary. The governance structure describes the power to establish rules for members of a chain, and coordination to ensure implementation and adherence to these rules, which can mean specifications, criteria or standards of logistics processes.

The causes that can lead clusters to decay primarily derive from factors like union rules or restrictive regulatory barriers, excessive mergers and other barriers to competition that feed the local rivalry, events or discontinuities in the external environment, such as technological discontinuity, which can lead to nullify the benefits of the cluster (Porter, 1999).

According to the Organization for Economic Cooperation and Development (OECD, 2000), some steps can be observed for the development of clusters from the perspective of governance. In summary we have:

- Initiation of the cluster development process, by leaders of public and private sectors, identifying the specific local attributes in the economy;
- Defining the roles of relevant entities in support of clusters;
- Characterization of the cluster and the local economy, with the help of capacity and governance structures;
- Establishing an appropriate organization to monitor the process;
- Infrastructure, training and research investments;

- Effective coordination of public and private activities in order to increase competitiveness;
- Evaluation of goals, participants' roles, the initial progress, production and performance, and
- Institutionalization of successful mechanisms and repeat the process to achieve the expected benefits or to terminate.

According to Altenburg (2001) the success of competitive clusters in industrialized countries is due to the high degree of specialization and division of labor between firms, and large and small companies complement each other. Some recommendations such as use of public-private partnerships to incorporate the experience of companies have a system for monitoring and evaluation to discriminate the cost of each measure and its impacts, and take initiatives to develop strategic perspectives in different regional levels, as measures to raise, round tables, trying to create a participatory environment is important when you want to promote clusters.

According to Altenburg (2001) some instruments selected as best international practices can be grouped as areas of development, they are:

- Support to problems identification and common strategies formulation;
- Horizontal articulation Incentives, and
- Strengthening supply chains and encouraging innovation.

3. RESEARCH METHOD

The result of this research methodology can be summarized as shown in Figure 1. Initially, to build the theoretical research will be conducted a literature search on the following topics: clusters, governance, micro and small enterprises and business management. From the theoretical contributions on the subject by analyzing the

experience of the metal-mechanical cluster in Sertãozinho-SP and an interview to identify governance practices, we could analyze the case and identify the prospects and challenges.

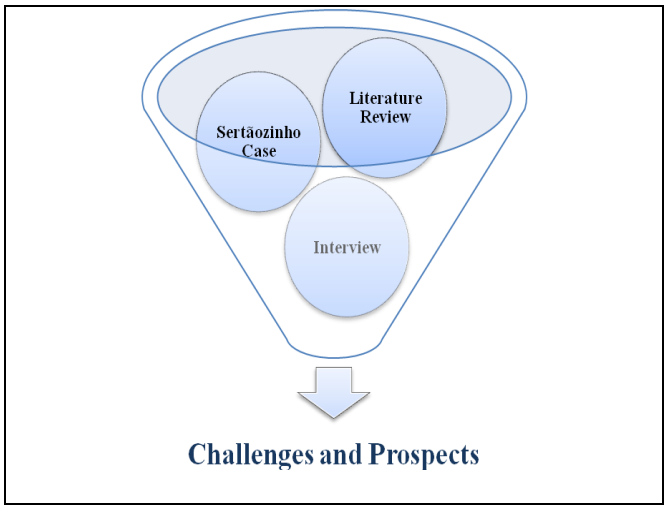

Figure 1 – Research's Methodological Sequency

This research is characterized as a case study that focuses on the perspective of individuals and their context (natural environment) and is indicated when the boundaries between the phenomenon and its environment are not well defined. The researcher defines what should and should not be taken into consideration in data collection. The sources of data quality in general, are: interviews, observations and document analysis (Yin, 2001; Bryman, 1989).

When studying clusters there is a limitation in identifying the types of actors involved and understanding the rules, policies and constitution of this arrangement. For this reason we held two visits to the seat of governance, located in Sertãozinho - SP, to know the main actors that articulate the initiatives in the cluster. The main actors identified as governance of the metal-mechanics cluster are Small And Micro Enterprises Brazilian Support Service (SEBRAE) and the National Industries for the Sugarcane Production and Energy Center (CEISE).

There were two visits, one in March 2009 and another in June 2009. The first visit was a meeting with two members of the governance CEISE to expose the purpose of research and get access to information necessary for the study. This meeting was put forward by the representatives of CEISE Metaltec Project, a project which main goal is to train the companies involved and to propose initiatives to encourage collective action.

The officials provided the researchers with a document containing the list of companies participating in the project, including data such as name, number of employees, location, contact and line of business, an industry directory, 2008, the brochure explaining the project and a Metaltec document the residents and associates of the business incubator of Sertãozinho - SP. With this information it was possible to characterize the cluster and to prepare the interview guide, as follows in Table 1.

On the second visit to the seat of governance, which is located CEISE was followed by a semi-structured interviews with a staff of governance, using the interview guide (Table 1) to identify whether there are initiatives to promote cooperation in the cluster and which future projects to promote collective action. After this visit, and together with the documents already submitted by governance, it was possible to analyze and structure the challenges and prospects of the metal-mechanics cluster in order to propose initiatives that can improve local development, collective and individual.

4. CASE STUDY: METAL-MECHANICAL CLUSTER SERTÃOZINHO

There are several factors that led to the emergence of the metal-mechanical cluster Sertãozinho-SP. According agents CEISE, the main predictor is the legacy left by the company Zanini. In the 60’s, the Workshop Zanini Ltda. was founded and over the years the company was expanding its activities and became a foundry. In 1964 the

first sugar mill built entirely by Zanini and, over the years, the company has developed technology and began to stand out in the market. Through the need for qualified professionals to follow the technological progress of the company, the company decided to invest in their professional qualification and created the Zanini School. Some administrative problems and an unstable environment caused to Zanini competitiveness lose and lead to the ending of the company, which was decisive for the emergence of the cluster.

Table 1 - Guided interview to identify the governance practices

Identification of Governance Practices
Locational factors
1. History and emergence of the cluster.
2. There are acts of public authorities? How?
3. What is(are) the factor(s) of local attraction?
4. The companies get the benefits of financial agents?
Incentives cluster
1. What is(are) the factor(s) of governance?
2. Since the decisions that comprise the cluster are taken?
3. How companies participate in decisions and initiatives?
4. What are the main obstacles faced by companies to achieve benefits?
Cooperation
1. Are there joint activities being carried out? What?
2. Is there sharing of experience and cooperation between the companies?
3. What methods are used for governance to promote the cluster?
Strategy and Training
1. Are there actions of strategic planning?
2. Are there ways of governance performance to optimize processes and improve business performance?
3. Is there evaluate the collective performance?
4. Are there evaluation systems certifiable?
5. Are there training programs for companies in the cluster?

Employees who were unemployed were very skilled and had achieved great technical learning in the workplace and many ended up opening their own business.

Many companies in the metal-mechanic came directly from graduates of the Zanini, and from this came the emergence of a complex web of interlinked companies with complementary characteristics of the products produced along the chain.

Being located in a region regarded as the national capital of alcohol, Sertãozinho is directly benefited by growing sugar cane. Currently, the city has four business districts and four ethanol plants, 90% with activities directed to the segment of sugar. To meet the demand of the construction of new plants and expansion of existing industries already have some contracts closed since 2008, expected by the year 2010. With the growth of services, also increases the number of contracts, which from 2001 to 2008 increased from 6 thousand to 15 thousand, the steel workers hired. The main countries receiving the manufactured products in Sertãozinho are: Germany, Italy, Poland, Sweden, France, Netherlands, United States, Mexico, Japan and China. These large financial transactions made revenues of the city grow to 158 million in 2007 (CEISE, 2008).

All this regional growth has made local leaders of Sertãozinho necessitates advantage of the benefits from the location and proximity of businesses to seek not only the industry's growth, but also improve the industries performance.

Metaltec Project is a partnership between CEISE and SEBRAE-SP, Chamber of Commerce, Business Incubator and the Mayor, who was born by the need to address the problems of the industrial sector in Sertãozinho and belief in the potential for market expansion. This project can be considered an embryo of the cluster, because its goal is to train, organize and structure the MEPs and service providing companies of the metal-mechanic Sertãozinho municipality and region, resulting in improved quality of services and products, increased sector competitiveness and markets expansion.

The audience for this project are the MEPs with annual sales up to R $ 2.400.000,00, working in the sectors of metallurgy, and machining, boiler making, metal structures, locksmiths, among others. The project currently has 22 companies and there is still the prospect for new business due to the limited number of consultants to meet the business needs.

Metaltec the project is divided into three stages: Production, Management and Market Access. In the first stage, SEBRAE specialist consultants made visits to companies in order to diagnose the main needs for enhancement and improvement, working in four specific areas: Processes and Materials Management, Quality Management, Layout and Production Equipment Maintenance. In the second stage, still being finalized, business incorporate in their management system tools for management, allowing monitoring and daily analysis of profitability, profitability and balance sheet of the enterprise. In the last step, after working in the production and management areas, the company is ready to seek new markets.

As stated above, the Project Metaltec has functioned as a template for the cluster, in which governance exercised by CEISE SEBRAE and has started to offer the first collective initiatives. To identify which governance practices cluster are now testing was performed a semi-structured interview, where we could observe some perspectives and challenges to be addressed.

4.1 Challenges and prospects identification

The cluster of Sertãozinho has a business environment that are related and are complementary to each other, thus enabling environment becomes conducive to cooperation. Accordingly, the Project Metaltec has sought, in addition to building businesses, strengthen the relationship between the 22 companies and begin to propose

actions that will contribute to the actors involved (enterprises) to enjoy the benefits from the agglomeration and cooperation.

According to the governance cluster, the factor of local attraction remains the presence of strong companies in the alcohol sector and regionally-oriented, and companies do not receive government incentives or easier access to finance. The sources of support has been the CEISE, SEBRAE and partnerships with education institutions through research projects.

All decisions related to the cluster are taken through meetings and held between the businessmen and actors and CEISE SEBRAE. Cluster Governance has sought, at first, involving companies directors so they can begin to have a closer relationship marked by trust and thus be encouraged collaboration and sharing of experiences.

Among the initiatives undertaken cooperative actions, has the FENASUCRO, one of the largest fairs of expression made by the industry and Project CEISE Metaltec. The fair joint has brought good results for companies in the cluster, since it makes them visible to the market, what did not happen before, because companies had no influence on the type of environment could not settle on their own. The initiatives to promote the fair together enabled these MEPs showing their products and services and in a small, but gradually, increasing market share.

The next step that governance is carried out to help businesses to be competitive is the beginning of the joint purchasing of supplies and materials, however, has not been possible to structure them, they're finding it difficult to meet everyone involved, the directors of companies participants, in order to discuss protocol and what is the procedure for joint purchasing. As the main difficulty is to get the commitment and involvement of all, to resolve these disagreements, governance wants to use two options to minimize this problem: The first suggestion is to use the program Cultcoop (farming

operation), a program developed by SEBRAE to encourage cooperation, and the second is to propose a course of leadership apply to directors, to strengthen relations between them and to encourage cooperation and the interest and commitment to carry out joint actions.

One way to results measure is through performance evaluation. Mean achieved by improving governance performance in business was through the first stage of the project, now completed, which aimed to provide advice on the production. There was some progress after this step and was able to verify improvements in internal processes and corporate performance, primarily through personal observation and further corroborated by Aequitas, a company hired to conduct the measurement of performance.

5. CONCLUSION

The case of the metal-mechanical cluster Sertãozinho allowed tests to see how governance helps in the development of industrial clusters. Through visits and interviews with agents of governance was possible to verify the initiatives proposed governance is seeking to achieve the benefits of collective efficiency. According to the literature, there are several competitive advantages when it comes to urban industries, but there have to be actors to coordinate joint actions to encourage all involved and get better results.

The semi-structured interview governance has shown that the metal-mechanic cluster is still incipient in relation to collective action. The Sertãozinho has more favorable for the development of the cluster, as companies and industries complement each other and the presence of institutions to support local economic development. However, due to the climate of rivalry in this sector, the entrepreneurs have shown a lot

of resistance to cooperation, since they could not see fully the benefits from sharing experience and collaboration, making the realization of joint actions that require more commitment and involvement of all.

Governance of the cluster has been engaged in offering training and the needs of businesses, providing performance improvements of internal processes and management, and despite having achieved good results of joint fairs and involve entrepreneurs in the decisions of the cluster, even has proved difficult to accomplish more complex actions such as joint purchasing. The biggest challenges are in the awareness of key players, companies, to realize the competitive advantages they may have as they undertake and offer their expertise. Governance aims to offer leadership courses to mitigate the impacts caused by lack of trust between agents.

Even in the initial stage, the metal-mechanic cluster walks in slow steps, but gradually, toward the development and evolution. Governance believes that as the directors of companies realize the improvements, of course, they will contribute more and seek joint initiatives. Although the actual practices of governance are just a few, there are great prospects for the future, as companies are becoming more interested in the issues and participating in collective decisions with the coordination of activities.

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