Developing a Business Strategy in a Sustainable Industrial Cluster

Sandra Cristina Santos Henriques

Department of Engineering and Management, Instituto Superior Técnico

Abstract
Portugal has been facing a global economic and financial crisis that damaged, among other economic activities its industry, causing a reduction in its industrial fabric. Given that the industry is responsible for a large contribution in terms of GDP and employment, the national reindustrialization is of key importance. The Vilar dos Prazeres Industrial Zone (VPIZ) is an industrial cluster dedicated to the wood furniture manufacturing and can be representative of the national industrial scenario since it witnessed a radical reduction in the number of companies. This dissertation intends to make an updated diagnosis of VPIZ, unravel the factors that caused the current situation and finally analyze how the cluster and its enterprises can revitalize. To address these issues there were held in-depth interviews with entrepreneurs and other relevant stakeholders of the cluster. Resources and capacity to safeguard competitive advantage were identified and sustainable business strategies were developed from these.

In terms of the cluster’s geographic centrality at national level, its history and consequent recognition, and the proximity to a tourist centre were the support for the development of strategies. At company level, the deep know-how of processes and products, flexibility and customization of products are the basis of the formulated strategies.

Keywords: reindustrialization, industrial cluster, sustainable competitive advantage, resource-based theory, SWOT analysis, furniture industry.

1. Introduction
Portugal has been facing a global economic and financial crisis that damaged, among other economic activities its industry, causing a reduction in its industrial fabric.

Although the number of Portuguese manufacturing companies is low, its weight in terms of turnover, gross value added (GVA) and personal service is more than ¼ of the total. Thus, given that job creation and economic growth in Portugal are urgent (GP, 2013) and that global consumption of tradable goods will double in the next 15 years (Manyika et al., 2012), the focus on reindustrialization of Portugal is a strategy to take into consideration. At national level, from 2004 to 2012 there was a reduction of almost 20,000 industrial enterprises.

The Portuguese furniture industry is mainly established (more than 65% in 2012) in the north of Portugal mainly in the municipalities of Paredes and Paços de Ferreira. From 2008 to 2012 we saw a decrease in the number of companies in the furniture industry in all regions of Portugal with the exception of the south where there was actually a significant increase.

For the first semester of 2015 the main export destinations for the Portuguese
furniture industries were France (28.7%), Spain (26.4%) and Germany (8.5%). Globally China corresponds to the largest exporter with 32% of market share.

The Vilar dos Prazeres Industrial Zone (VPIZ) is an industrial cluster dedicated to the wood furniture manufacturing. The cluster of this study lies in a locality that belongs to the municipality of Ourém. In this municipality is also located the town of Fátima which is about 8 Kms from VPIZ. Fátima is a pilgrimage destination in the Catholic world and receives about 4 to 5 million pilgrims and tourists a year.

The cluster at study witnessed a large number of closures, either by bankruptcy or by choice as well as the relocation of some of the already installed providers. The closures of companies caused an increase of unemployment in the area. Nowadays the vast majority of employees within the remaining companies have an advanced age and only have experience in this industry.

**Terra do Móvel**

In 2005 the Business Association of Santarém (Nersant), developed a cross-company cooperation network called Terra do Móvel (NERSANT, 2011). The main objectives of the creation of this network were: creating a brand image for the cluster; act as an agent of support to innovation, technological development and internationalization; and development of competitive and sustainable business strategies.

The main actions taken by the project have gone through: brand creation with collective use; creating a showroom (located in Fátima); development of innovative prototypes; creating a cooperative agreement between companies; and implementation of various joint promotional actions of the network (NERSANT, 2011). The national and international recognition of Fátima name as well as the number of people it attracts can be beneficial to VPIZ. Through this work it is intended to develop theoretical strategies for companies in the VPIZ in order to guarantee them sustainable competitive advantage. The VPIZ consists, mostly by industrial companies dedicated to the manufacture of home furnishing in wood and wood products. In order to develop sustainable business strategies, a survey of the resources and capabilities was made through interviews with entrepreneurs and other relevant actors of the cluster.

### 2. Research background

#### 2.1 Competitive advantage

Companies that have a unique feature that may constitute a comparative advantage in resources that will trigger a competitive lead in the long-term market if the resource is difficult to copy or acquire and hence lead to higher financial performance (Hunt & Morgan, 1995). The company that provides the competitive edge can ensure it if it continues to reinvest in assets that led to competitive advantage and if the efforts of competitors fail (Hunt & Morgan, 1995).

A sustainable competitive advantage corresponds to a performance above the industries average in the long run (Porter, 1998) and is achieved when a company implements a value-creating strategy that is not simultaneously being implemented by competitors and that competitors cannot replicate (Barney, 2001).

Porter (1985) identified four types of competitive advantage: cost leadership, differentiation, focus on cost and focus on differentiation. The 1st two approaches deviate from the 2nd to the extent that they are directed to a large number of segments while the latter are directed to short segments.

SWOT analysis, developed by Learned, Christensen, Andrews and Guth in Business Policy: Text and Cases (1969), has been the starting point for many authors that focus on external sources (opportunities and threats) and internal (strengths and weaknesses) of competitive advantage of a company.

#### 2.2 Resource-based Theory and Knowledge-based View

The Resource-Based View (RBV) appeared at the end of the 80’s. This model has the following assumptions: the purpose of running a business is to achieve a sustainable competitive advantage and when it reaches it the company will benefit from profits or from above average returns (Fahy & Smithee, 1999). The economic performance of companies cannot be attributed to industry conditions (Peteraf, 1993); resources are responsible for the performance differences between firms and are the source of sustainable competitive advantage of this (Barney, 1991; Kostopoulos, Spanos, & Prastacos, 2002; Mahoney & Pandian, 1992; Oliver, 1997; Wernerfelt, 1984).
heterogeneous and property of an industry (Barney, 1996; Peteraf, 1993).

According to Barney (1991), valuable, rare, inimitable and irreplaceable features ensure competitive advantage to the extent that competitors are unable to replicate the strategy.

The Knowledge-based view (KBV) is considered by many authors as an extension of the RBV (Deeds & Decarolis, 1999; Eisenhardt & Santos, 2000; Grant, 1996) and considers that the most significant feature of a company is the knowledge (Grant, 1996).

2.3 Clusters

According to Porter (1990), clusters are masses consisting of companies and institutions established in a specific geographical location and dedicated to a specific industry. Associated with these masses are a number of entities, such as specialized suppliers and services. Some clusters benefit from governmental and institutional support, such as universities, they guarantee education, training, research and specialized information.

The cycle of a cluster can be classified into the following phases: 1) emerging cluster which may arise due to historical circumstances, demand conditions, existence of suppliers (Porter, 1998) (Porter, 1998a), which consists of few and small businesses who are diluted in various technology areas (Menzel & Fornahl, 2007); 2) the emergent cluster is a self reinforcing cycle, at this stage appear suppliers, accumulates knowledge and institutions provide necessary inputs (Menzel & Fornahl, 2007; Porter, 1998); 3) growing cluster is characterized by a technological trajectory increasingly focused (Menzel & Fornahl, 2007); 4) sustainable cluster, which is characterized by dense networks of shared competence, fusion technology, generating innovation and new business (Menzel & Fornahl, 2007; Porter, 1998); 5) clusters in decline which are characterized by a decrease in the number of companies and employees because of bankruptcies, mergers and rationalizations (Menzel & Fornahl, 2007).

Porter believes that the clusters positively affect competitiveness in three ways: increase the productivity of established companies; promote innovation that underpins the production growth in the future; and stimulate the formation of new businesses, which strengthen the cluster (Porter, 1990).

Lindqvist, Ketels, & Sölvell (2013), in The Cluster Initiative Greenbook 2.0, developed an ideal model cluster. According to this model, the cluster’s actors work together perfectly: the government is aware of the clusters needs, the researchers maintain a constant dialogue with companies, educational institutions maintain contact with companies in order to understand their needs in terms of skills and capabilities, and funding sources interact with businesses and provide the necessary capital.

A Cluster Management Organization is key in that the away facilitates collaboration among cluster members and other actors in order to benefit from joint projects; establish good relations with cluster elements and policy makers; the organization can function as a link, communicating development needs; and identifies corrective action between the various actors of the cluster (Christensen, Lammer-Gamp, & Kocker, 2012).

In 1992 was developed the Porter project for Portugal aiming to highlight the industrial clusters in which Portugal had competitive advantages. The Wood Cluster of was one of the outstanding Clusters. The strategic vision for this cluster passed through investment in value-added products (ex. Furniture) (Monitor Company, 1994).

3. Methodology

In a synthesized way and through this work we intend to explore the reason why the cluster of VPIZ has a high number of closed businesses and how companies and the cluster of VPIZ can revitalize itself. In order to answer to these questions the investigation methodology chosen was the case study method. This methodology involves three steps: design of the case study, data collection and data analysis.
3.1 Case Study Design

For the design of the case study, the sample of cases was defined. In the selection of the VPIZ companies sample there was a focus on business characteristics (type of business, production capacity and generational phase), seeking heterogeneity. The final sample consist of 12 entrepreneurs/managers who are divided in the management of 16 companies (active or closed) of the sector and fixed in VPIZ. The sample of the remaining main cluster actors include Local business associations (ACISO and NERSANT), business associations of the furniture industry (APIMA and AIMMP), educational institutions (Professional School of Ourém (EPO) and ESTGV) and the Municipality of Ourém (CMO). In addition, some case studies of successful clusters nationwide were studied (APICCAPS and Municipality of Paredes).

At this stage, we developed a guide made with indicative questions to ask business owners/managers of the selected sample. These issues led to a diagnosis of companies and to perceive the cluster’s characteristics.

The tool adopted in developing the case study were semi-structured interviews. The interviews are streamed but guided conversations, respecting the guide but that adapt in an unbiased way (Yin, 1984). Interviews were conducted with the selected sample and respecting the guide but with opening for the introduction of new content. The data analysis was intended to produce analytical conclusions and allow the development of alternative interpretations of the data collected. The results of the analysis appealed to the analysis tool of explanations as a way to reach conclusions on the case.

4. Case Study: Data Collection

The history of this cluster include the following events: the appearance of electricity in the 50's that allowed the introduction of electric machines facilitating the production process; the emergence of new materials such as chipboard in the 60s, which brought flexibility in production; the creation of VPIZ in the 70s; the birth of 2nd generation companies in the 80s and Vilarplaca society; entry into foreign markets in the late 90s; the economic crisis causing a realignment of the companies since the early 2000s to date and the development of Terra do Móvel project in 2004.

4.1 Interviews with entrepreneurs

In Table 1 we can find the number of companies by activity for the selected sample.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Manufacturer</th>
<th>Supplier</th>
<th>Trader</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nº of companies</td>
<td>10</td>
<td>4</td>
<td>2</td>
</tr>
</tbody>
</table>

In Table 2 we can find the of companies by condition and generation for the selected sample.

<table>
<thead>
<tr>
<th>Generation</th>
<th>Condition</th>
<th>1st Generation</th>
<th>Active</th>
<th>Closed</th>
<th>2nd Generation</th>
<th>Active</th>
<th>Closed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nº of companies</td>
<td>8</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Factories in the selected sample with open activity, respectively have 60, 16, 14 and 2 employees and two factories have just one employee.

The production capacity was not carried out in quantitative terms. Was taken into account the development of the assembly line and machinery of these companies, the number of employees and own self-assessment of Entrepreneurs/managers in relation to other companies in the cluster. Entrepreneurs/managers rated their production capacity as high, medium or low. According to the classification assigned, the number of factories per productive capacity is available in Table 3.
These Entrepreneurs/managers also mention their presence at fairs as a means of disseminating. Factories with low productive capacity held no investments in this direction although they are sensitive to the importance of being present on online platforms.

Companies with their own lines and model creation that correspond to companies with medium or high production capacity do not innovate, they follow the market trends. Foreclosure of business and redundancies were transversal regardless of the productive capacity of enterprises. The introduction of new processes and investment in export are exclusively for companies with medium and high production capacity.

Regarding the inter-enterprise project Terra do Móvel, its participants are mainly the bigger enterprises.

Entrepreneurs/managers who participated recognize the importance and benefits that could be drawn from this project. All Entrepreneurs/managers interviewed identified the same cause for the failure of the project: the individual objectives of each company overlapped the ones of the group. The showroom created from the project highlighted the internal competitive attitude. Also entrepreneurs pointed out that it shouldn’t have been done in Fatima.

Regarding business associations Entrepreneurs/managers show a disbelief regarding the advantages and gains that these agencies can offer. Regarding the Municipality of Ourém, Entrepreneurs/managers consider that support to industry was insufficient.

Entrepreneurs/managers consider it positive to be inserted in VPIZ: they benefited from the area’s notoriety, absorbed work of other companies, allowed them to absorb more quickly the changes in the market and in the industry and they benefited from the existence of local suppliers. According to the Entrepreneurs/managers the financial problems of companies, the breakdown of consumption, the difficulty of access to banking, the lack of management skills, lack of state intervention, family and generational problems and the domestic market dependence are the main factors that caused the current situation of VPIZ.

Looking ahead, business owners / managers believe that it depends on the evolution of the construction and consumption, others claim that the industry is set to continue but with other contours.

<table>
<thead>
<tr>
<th>Production capacity</th>
<th>High</th>
<th>Medium</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nº of companies</td>
<td>4</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

From the large majority of the interviewed sample managers have between 55 and 65 years. They started working in the industry as employees of other companies and later formed their own companies. In terms of education they have between the 4th and 6th grade.

Entrepreneurs/managers have made investments in companies: machinery, changes / expansion of manufacturing facilities and creation of exhibition spaces. From the interviewed sample we found that the manufactured products are intended mainly for domestic use (wardrobes, beds, kitchens, shelves, tables and chairs). For companies with increased production capacity, the bedroom furniture and living room with standardized dimensions presents itself as the most attractive (profitable). Entrepreneurs/managers with low production capacity factories consider that kitchens are the most profitable product for being very customized and requiring specialized services.

It was found that companies with low production capacity provide the product directly to the end customer or intermediary furniture and decoration shops and in this case the product is customized. Companies with large production capacity sell to large retailers such as Jom, Aki and Sonae Group, to construction companies, such as Lena Group, and occasionally to domestic end users. Products are manufactured in series.

Entrepreneurs/managers of companies with high production capacity consider that their added value and differentiation factors are: 1) the speed, "if it has to be done quickly we’ll do it quickly"; 2) the quantity ensuring the quality, "we are focusing on “nice and cheap” products".

Entrepreneurs/managers of companies with low productive capacity highlight: 1) flexibility, "I could do everything that was asked of me"; 2) customization; 3) quality.

Regarding the communication and marketing actions, business owners / managers of companies with high and medium production capacity have shown a growing concern by investing in catalogs, Web sites and pages on social networks.
Companies with medium and high productive capacity present a more positive view on the market.

**Interviews with other cluster actors**

Business associations believe that the large number of company closures is due to the fact that they correspond to a group of very dependent on domestic consumption companies since companies with exporting capabilities were able to increase their exports. For the success of the Northern companies they refer to the importance of business associations with municipalities. Nersant revealed that they were the initial driving force in the project *Terra do Móvel* but then let locally to be identified and streamlined the potential and that this work had nothing to do with the VPIZ.

The CMO indicated that VPIZ is not considered to be an Industrial Zone in urban terms, since it was not subjected to a Detail Plan. In future projects with companies the CMO has indicated that it is intended to actively work with representatives of entrepreneurs.

The EPO states that it privileges the relationship with companies and they are developing protocols with companies inside and outside the county. The Furniture Design course turned out to be replaced by the *Técnico de Design* course since it was more comprehensive.

The CMP has indicated that it supports its companies at different levels. Currently 50% of the active population works directly or indirectly with the Furniture Industry and for being an industry with such an impact, the Municipality of Paredes (CMP) has been developing projects that promote it, such as Art on Chairs. From this project CMP intended to bridge the gap between the academic and industry in order to improve the creative component of products and to make them more appealing in foreign markets.

5. **Discussion of results**

From interviews to entrepreneurs, it was possible to reach a number of companies with open activity present in VPIZ. In total we recorded about 44 companies from which only 20 are open and with activity. The viability of many of the cluster companies may be compromised since the managers have an advanced age (for the most between 55 and 65 years) and there is a lack of interest of new generations in following up on the family business. This is corroborated by the low survival rate of businesses in the generational passage (from 5 companies that reached the 2nd generation only 2 remain open with activity). Also the succession process in companies when poorly structured can develop injustice and consequently bad relationships. Entrepreneurs of the interviewed sample, ACISO and the CMO President himself highlighted relational problems and individualist attitude as the factors responsible for the failure of inter-projects. These problems may be related to the limited of strategic knowledge of the Entrepreneurs/managers who are not aware that the success of companies is influenced by the overall success of the cluster. Entrepreneurs/managers praise the quality of their own products. This observation was accompanied with that the quality of the furniture of the largest international competitor, IKEA, is low since their products are not durable. Thus, it is understood that the concept of quality by the entrepreneurs is assigned in order to the mobile structure and strength. In terms of design, the companies VPIZ with their own lines are "trend followers": According to the President of the CMP for the cluster of Paredes, the change in product design, the change from being followers to be trend-setters, is considered as the differentiating measure ensuring the sustainable competitive advantage internationally. The location of the showroom *Terra do Móvel* project in the industrial area of Fátima was criticized by different cluster actors (entrepreneurs and ACISO). According to the interviewees there was inconsistency between the product that was intended to sell (furniture) and the location of the showroom (religious tourism center). However according to the president of CMP, the president of CMO, and the very ACISO, the brand *Fátima* has a potential that can be exploited by entrepreneurs. Thereby, their failure may be related to internal problems, such as relationship problems or even to the outskirts of Fátima, where there is not much flow of tourists.

Regarding the CMO, entrepreneurs criticize the lack of support infrastructure that should be supported by it. The lack of this type of investment can be related to the fact that the VPIZ has no Detail Plan as scheduled in the Municipal Director Plan (PDM). The inadequacy of Ourém’s PDM regarding the reality of VPIZ may have conditioned the CMO’s contribution to the cluster. Without this support, the benefits of being set in a cluster are weakened.
6. Design of sustainable business strategies

6.1 SWOT analysis

A SWOT analysis to the cluster was done when formulating sustainable business strategies. From the SWOT analysis were identified the resources and capacities capable of producing competitive advantage according to the RBV. Later were defined strategies starting from the generic strategies of Porter. Through the SWOT analysis, were detected internal problems and external to the cluster that needed to be corrected in order to ensure the sustainability of cluster companies. For these weaknesses and threats corrective or preventive measures were developed. From these results obtained through in-depth interviews to cluster actors, it was possible to develop the following SWOT analysis:

- **Strengths:** a) of the cluster: recognition and positive reputation of VPIZ; know-how of business owners and managers; proximity feedstock; availability of local suppliers; central location at the national level; b) exclusive for companies with high and medium production capacity: good level of industrialization at national level; production in large quantities and scale; export procedures; c) exclusive for companies with low production capacity: flexibility in the production and service; customization of product and service.

- **Weaknesses:** financial issues: access to capital and indebtedness; absence or reduced marketing strategies; absence or reduced innovation activities and R&D; failure to establish a local proactive institution; lack of research centers and training institutions of the sector in the region; geographical distance of the main Sector Associations (APIMA and AIMMP); aging Entrepreneurs/managers and succession issues; bad relationships and internal conflicts; inadequacy of the PDM of Ourém and performance of the CMO; pessimistic attitude and inertia of entrepreneurs.

- **Opportunities:** possible recovery of the internal market; absorption of the customers from companies that went bankrupt; benefit from the brand "Fatima" and travel to the site of a large number of people; new export markets to explore; new market segments to explore; Portugal 2020 and supports from IAPMEI.

- **Threats:** disappearance of local suppliers; lack of specialized human resources; disbelief in future inter-projects; continuation of an unfavorable economic surroundings: reduction of domestic consumption; shortage of skilled labor; presence of very competitive concurrency.

6.2 Business strategies

Companies with high and average production capacity are characterized by possessing advanced assembly lines, having flexibility in production and quickly produce large quantities of quality products (in terms of materials and finishes). Also these companies have already started internationalization processes. So these companies are able to continue to invest in international markets. However the attempt to try to follow the prices globally is not sustainable. The major global players have competitive advantages inimitable such as access to raw materials at a lower price (for buying in quantity or even through integration providers) and the ability to relocate production to countries that offer capital gains (cheaper handwork, for example). In this scenario companies with greater production capacity can compete internationally offering differentiated products, through quality and design. The smaller companies are mostly made only by an entrepreneur and have basic machinery and thus have low production capacity. The flexibility and customization of products and services match the capacities for greater potential to generate sustainable competitive strategies.

The lack of scale production affects these companies in terms of market because they can not offer competitive prices. Thus the lower-class and middle-market, less demanding in terms of materials and finishes, is excluded. These companies may also be geared to a more demanding market with greater purchasing power, which demand flexibility and customized products.

One of the most viable ways to reach these customers is through architecture and decoration workshops. Workshops that provide services in homes and services (such as trade) have very customized product needs and quality. In this approach to the market, entrepreneurs should come into direct contact with these companies presenting their portfolio. In addition to this market, there are other niches to which companies can be dedicated. Similarly, the versatility and working knowledge of the timber allow the development of many
products. The difficulty of working in niche is to identify economically viable niche and promote themselves within the same. Today, there are e-commerce platforms dedicated to these niches that may be the showcase of the products of these companies.

7. Conclusion

The know-how of the industry (products and processes), flexibility, speed of production, product quality in structure and finishing and customization correspond to the identified differentiating capabilities. These capabilities are spread unevenly over the business and can be grouped into two groups: the first group consists of companies with a modern manufacturing process that allows them to produce large quantities quickly, ensuring quality and diversity of products. The second group of companies is defined with a more handmade, customized and higher quality range of products. Based on these profiles were defined two distinct strategies: for the former, the lead for differentiation and for the second, focus on differentiation.

In terms of life cycle, the cluster of VPIZ is in a declining phase (decrease in the number of companies and employees because of bankruptcy), the loss of competitiveness due, among other factors, to the lack of cooperation between companies and to changing consumer needs. However the presence of inputs (local suppliers and proximity to raw material) may be attractive to attract new companies. Lying at this level, Entrepreneurs/managers can, collectively, apply for government support. However, the public measures should only be applied if the cluster is to be reborn or engage in a new market.

References


