

MEXICO'S STEEL INDUSTRY STRATEGIC FACTORS: THEORETICAL APPROACH

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ABSTRACT

The competitiveness of companies is currently tied with strategies that can be adopted or created by organizations, which can be developed in different ways. A theoretical proposal of strategic factors, presented in this research, serves to promote the internationalization of companies in the steel industry in Northeast Mexico, which is characterized as an industrialized area. The objectives of this article are to present the current situation of the steel industry worldwide, in Mexico and in the Northeast. Also, the idea is to theoretically support the strategic management and production factors that allow for a gain in market share in terms of Quality, Innovation, Delivery Time, Cost, Marketing and Logistics: international arena firms value chain of the steel industry and improve its competitiveness. Therefore, the theoretical elements of these strategic factors are presented.

JEL CLASSIFICATION & KEYWORDS

■ F13 ■ F23 ■ F44 ■ INTERNATIONALIZATION ■ STEEL INDUSTRY ■ NORTHEASTERN MEXICO ■ COMPETITIVENESS

INTRODUCTION

The steel industry is one of the most important worldwide for being a supplier of raw materials for numerous industries, notably the automotive, construction, food, appliances, heavy machinery, among others. These companies are a great source of wealth by providing economic benefits to thousands of families around the world. The future looks bright for this industry since the growth of countries like China and India will need a vast amount of steel as well as the rest of the world since the creation of infrastructure required for this material.

In today's competitive and globalized world, it is essential to have mechanisms and structures for effective and efficient relationships that enable companies to gain competitive advantages (Jiménez, 2006). In Mexico's steel industry, the demand was increased drastically in 2012. A production of 18.1 million tons was taken, which was increased by 7.3% over the previous year (CANACERO, 2012).

In particular, Northeastern Mexico is the largest steel producer in the country. According to CANACERO (2012), in this area 7,000 tons of steel produced represents 38% of the total domestic production; states like Coahuila and Nuevo Leon are top producers of this product. However, globalization demands constant innovation in order to be more productive as there are threats of steel going into Mexico, mainly from Asia. Consequently, Mexico has a negative trade balance of 43,000 MMD as the commercial battle is tough, but this also gives opportunity for Mexican companies to internationalize and enter into a world market.

Steel chain is divided into three broad sectors that are explained as:

- First Sector: raw materials are from metal mining and obtaining steel.
- Second Sector: the products corresponding to blocks of steel and hot rolling and cold.
- Third Sector: the products of rolling and become the primary inputs for the metalworking chain.

The steel chain provides the industry with high added-value in automotive, petroleum, and construction field. Currently, the industry, in general, is immersed in a global competition as the market increasingly specializes more; customers are more demanding, asking for good quality products. But, with a competitive price, this factor has impacted negatively this business segment in Mexico.

We reviewed several research papers that indicated the existing gaps in research on the elements, such as Metallurgy magazine pointing at one of his articles that there are major steel companies in Mexico, but that require greater investments and strategies to become more competitive with increased production, improved quality, and lower production costs. Other researchers, such as Fernandez (2014), Point out that because of the trade liberalization that occurred since 1998 this Mexican industry has decreased its market share, due to the reduction of tariffs unreasonably, this factor increased imports as the case of tin, often resulted in an unfair trade practice market mainly from China, where steel business has an annual subsidy of \$ 52 billion (ANDI, 2011).

Due to all the mentioned above the steel industry in the Innovation is a factor that must be present in order to be more competitive. It is important that innovation be present to be more competitive, so it is important to identify factors production and management to enable them to increase their competitiveness against the threat of Asian steel being sold in the world. For some researchers, formulating competitive and productive strategies involves an analysis of the strengths and weaknesses to determine its position relative to its competitors and an internal and external environment analysis (Porter, 1990). The research has focused on examining two strategic types: one conducted by Porter (1990) and proposed by Miles & Snow (1978). The latter is more accepted by their organizational vision and considers the relationship between external and internal (O'Regan & Ghobadian, 2005) resources.

Miles & Snow (1978) are based on the following three premises:

- Companies are successful where its systemic approach to adapt to its environment is appropriate and timely.
- Clearly identify the following strategic guidelines are defensive, prospectors, analyzers, and test.
- Any Orientation – defensive, offensive or analyzer - can lead to a good business result.

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According to these authors, the strategic process has the following guidelines:

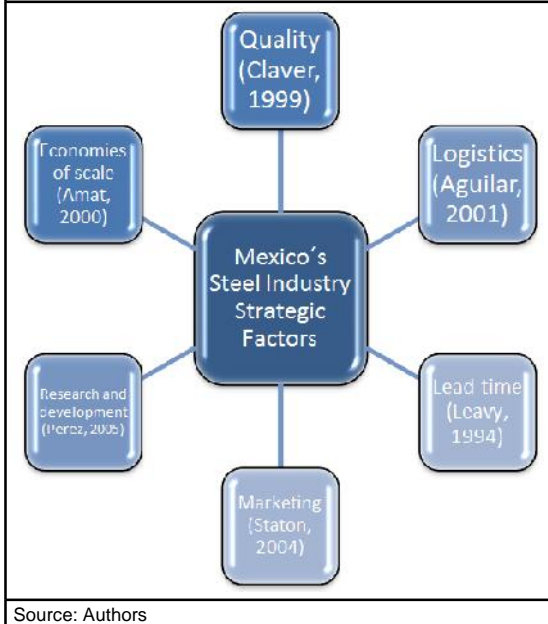
- **Defensive:** The strategic orientation corresponds to companies that focus only on the market and try to protect its market share, and its primary strategy is to reduce costs and optimize efficiency.
- **Analyzer:** These firms avoid excessive risks, but excel in the delivery of new products and/or services. It typically focuses on a limited range of goods and technologies and tries to outdo the other on the basis of quality enhancement.
- **Reactive:** A type of company that have little control over their external environment, lacking the ability to adapt to foreign competition and lacking in effective internal control mechanisms. They have no strategy, design, or a systematic structure.
- **Foresight:** A type of company that seeks to exploit new opportunities, to develop products and/or services and creating new markets. Its core skills lie typically in marketing and R&D and tend to have a broad range of technology and product types.

In the above listed which may have different productive ways, but if the company does not discuss your type of organization to be competitive in the market you want to participate, you can bring problems in the short or medium term. Moreover, internationalization also includes administrative areas that improve productivity comprehensive company. Note that the administrative aspects are directly affected by the value that is given to interpersonal relations in the Mexican environment, so that this situation could not only affect the efficiency and productivity indicators (Seward, 1991).

All the above points are within an integrated company so this study will be divided into two groups, productive and administrative factors of the steel industry. On the one hand, everything that is related to the production and competitiveness of their product, on the other, the integration of administrative indicators where human resources and other administrative factors are involved. Therefore, the research question of this project is: What are the strategic factors in the theory and affecting mostly in the internationalization of the steel industry in Northeastern Mexico that increase the competitiveness of companies in this sector?

To promote the internationalization of the steel industry is important to determine not only aspects of production systems, but also administrative aspects as Marketing, Logistics, Cost Optimization, Delivery on time, product innovation and quality, which are integrally involved in all production chain, covering the entire supply chain. So the development of the theoretical framework in conjunction with the literature review, it was determined that the factors

Figure 1: Overview of the internationalization of the domestic Steel industry



Source: Authors

analyzed in this article are six variables determining proposals for industry competitiveness internationally, why then describes each one. The Figure 1 illustrates fundamental factors for Mexico's Steel Competitiveness.

Literature review

In order to find all high-level methodologies that cover steel industry strategic factors, we have to conduct a robust research using knowledge databases, such as EBSCO, Emerald, Elsevier, and Springer. Key variables in this study include Quality, Costs, Lead time, Research and development and Marketing. Table 1 indicates the numbers of publications related to the main topic under the umbrella of Steel Industry Strategic Factors from 2011 to 2015.

Steel Industry Strategic Factors

It is important to highlight that 97 percent of the publications can be categorized into three main topics: 1) Lead time, 2) Quality, and 3) Costs. Based on the literature review, it is determined to create a Model of the factors interact to the incorporation of companies in the international Market, as shown in Figure 2.

CONCLUSION

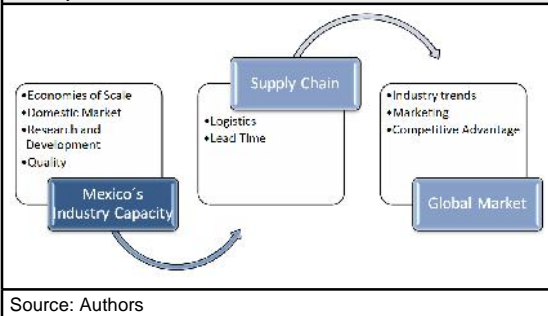
In this theoretical model created based on the literature review it was determined that in today's competitive environment, companies must face the challenges of

Table 1: Empirical research on steel industry competitiveness

Strategic factors	2011	2012	2013	2014	2015	References
Quality	1946	1876	1858	1400	13	(Claver, 1999) Hill & Jones (1996)
Costs	1607	1541	1638	1146	6	(Amat et al., 2003) Prieto & Santidrián (2007)
Lead time	5026	4934	5233	4094	43	(Leavy, 1994), Lee and Ansari (1985) (Resa, 2004; Aguilar, 2001)
Research and development	173	267	149	97	1	(Castellanos, 2003) (Pérez et al., 2005)
Marketing	10	18	20	11	0	Stanton, Etzel, & Walter (2004)

Source: Research papers Retrieved from EBSCO, SCOPUS, ELSEVIER, and SPRINGER

Figure 2: Overview of the internationalization of the domestic steel industry



adopting strategies to drive innovation, reduce costs and meet the demand for high quality and service, improve delivery time, plan a viable international marketing and use logistic processes that enable these companies operate in competitive international markets. Another important factor is that despite large investments have been made in this sector has not been enough for internationalization, its primary investment has been in technology. However, it is important that innovation schemes covering intangible but significant on competitiveness, as administrative factors that may be a link that is incorporated into the strategy, so it is important to improve the competitiveness of the industry. Why, this article theoretically reflects the importance of these administrative and productive strategies to promote the internationalization of the steel industry in Northeastern Mexico.

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