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## Article

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Expert journal of business and management

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Expert Journal of Business and Management

*Reference:* Jaime Meuly, Rosalina (2015). Supplier analysis of the IMMEX in Sonora. In: Expert journal of business and management 3 (2), S. 189 - 193.

This Version is available at:

<http://hdl.handle.net/11159/2744>

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# Supplier Analysis of the IMMEX in Sonora

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*The objective of this research is to identify the factors that prevent the local supply in Sonora from having a bigger development in the export industry. The research methodology consisted of deep interviews to ten companies and their supervisors that we considered to be the most successful, as well as the application of a survey to 40 other companies. We have created a diagnosis of the actual factors affecting the low recruitment of Mexican local suppliers by the industry. The idea was to provide the information that we find interesting and relevant to industry associations and Council of State for decision-making that can help increase the supply for the local market and to big companies.*

**Keywords:** Supply, IMMEX, Sonora

**JEL Classification:** M10

## 1. Introduction

According to Carrillo and Zarate (2003), the development of local suppliers promotes growth, employment and economic stability, but face unequal footing with large foreign companies to sell their products. In Mexico, we have more than 728 economic units belonging to the electronic sector. Manufacturing companies are located mainly in states like Baja California, Chihuahua and Tamaulipas, giving jobs to approximately 258 000 people in the country, according to the National Institute of Statistics and Geography (INEGI) ([promexico.gob.mx](http://promexico.gob.mx)).

Following the figures of the Ministry of Economy (2001), between 2000 and 2010, the foreign investment in the electronics sector was of 625 million dollars, focusing mainly in the manufacture of computers and equipment. Despite the efforts of the private sector and the Mexican government, the participation of the National Procurement in the Manufacturing and Export Services (IMMEX) in its 40 years of presence in the country, has been relatively low. In 2004, the national turnout was 10% of intermediate consumption, this being even a lower involvement in the area of raw materials (Koido, 2003). Contreras (2000) notes that the National Border Program was established in 1960, from which the industry has become the most dynamic sector of the Mexican economy.

There is an idea that NAFTA is related to a more dynamic growth. However, in 2001 there was a significant movement of employment in the industry. For some reason, this movement of employment has something to do with some factors impacting the industry, including critical clauses in the context of NAFTA. The dynamism of the industry has generated a development in the market, which has been perceived as the passage of a dynamic core of the border economy to the most successful model of

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Article History:

Received 31 October 2015 | Accepted 12 November 2015 | Available Online 23 November 2015

Cite Reference:

Jaime Meuly, R., 2015. Supplier Analysis of the IMMEX in Sonora. *Expert Journal of Business and Management*, 3(2), pp.189-193

industrialization. Cities that are known for economic and industrial development, have created associations. Studies Carrillo and Hualde (2001) point out that local plants do not have the resources to produce inputs with high standards of quality and high technological level that are certainly required. Transnational corporations have to turn to foreign suppliers that have located their plants near its customers.

Also, according to the college of the north border (COLEF, 2002), local Mexican suppliers only produce indirect materials, they do not produce direct items. Foreign suppliers, however, made several direct items. There are several reasons why the IMMEX has not developed a strong network of local suppliers, but mainly because the plants to be installed in Mexico already had local suppliers in their own territory and who have already established a relationship of trust regarding the quality and delivery time.

## 2. Literature Review

Albert O. Hirschman (1981) stated, for the first time in 1958, the theory of the forward links and backwards, which constitute a sequence of investment decisions that take place during the process of industrialization that characterizes economic development. The backward links are represented by investment decisions and cooperation aimed at strengthening the production of raw materials and the goods needed for the production of finished products to happen. Meanwhile, forward links involve the incorporation of new technology and research and development to improve or create new products.

The types of chain may be a developing product, raw materials, secondary goods, infrastructure, human capital, manufacturing and logistics. Aoso Kaldor proposed a new theory, from which the model of Kaldor's explanation about the rise of capital is apparent. Kaldor's model (1956) is a thorough explanation of the theoretical possibility of a capitalism that can grow steadily and predict cyclical movements. We believe it can improve the income distribution (Zermeño, 2004, p.80).

In literature, ideas about Kaldor were found on other of the topics mentioned as important division in terms of economic activity from which the following statements emerge: a) only uses of natural resources such as land (under the assumption of diminishing returns) and; b) the industrial or processing activity (under the assumption of increasing returns). It is believed that both types of productive type activities (excluding in principle the services sector) exist in both economic regions depend on international trades so they can meet their requirements. However, "the growth rates of industrial activities, will determine the growth of a country or region" (Calderon and Martinez, 2005, p. 5).

The description of the first Kaldor Act establishes a positive relationship between the growth rate of an economy and its manufacturing sector, which means that the latter is the engine of growth. The explanation for this link is associated with high multiplier effect in the industrial sector due to high income elasticities of demand for manufactured goods; the strong production chains back and forth from industrial activities, and learning economies can be obtained with the division of labor and specialization progresses as a result of industry activities. Kaldor says that the rate of economic growth is associated with the growth rate of the manufacturing sector of the economy, which is considered a feature of the transition from immaturity to maturity, where the former is defined as a situation in which productivity is low compared with the industry, so the work is available for use in industry in relatively unlimited quantities (Thirlwall, 1983, p. 345).

*Taiwan supply model:* The development of suppliers in the electronics sector is aligned to the needs imposed by international challenging; the basic factor of success is its local supply base. We conclude that the gradual learning process and accumulation technological capabilities Taiwan has, they have facilitated the transition of manufacturing simple products to more complex processes.

*Malaysia supply model:* The local supply is characterized by the development of capabilities to meet standards of quality, cost and timelines required by transnational companies, establishing flexible production systems as well as training programs and defending the creation of new companies within existing ones, which act as incubators (Ariffin, 2000).

*Singapore supply model:* The importance of the electronics industry accounts for 40% of the value of production and exports, however, the participation of the local supply is minimal, since the chains of transnational corporations were primarily associated with other transnational companies in the region. Education policies and technical training for work have led to industrialization, however a local base of enterprises around the large transnational companies was founded. For more than three decades there was no policy for the development of SMEs, favoring large foreign companies against local small ones. Some local companies could provide support engineering to develop its own brands, making hard drives, chips, printed circuit boards and computers (Torres, 2007).

*Japan supply model:* Wants to propose a subcontract or vertical integration of other large companies with small or medium size. Plus, the integrator policy can offer a product that is designed and developed under certain technical specifications for several small companies, each of which performs one or more modules and then are integrated into a single final product. If the provider meets the requirements of quality and delivery times, the relationship should be lasting. The supplier development programs are efficient because the suppliers who have trouble meeting the specifications, usually send teams to improve productivity in companies owned by their suppliers (Gonzalez, 2000).

*Italian supply model:* It proposes to create horizontal business networks. The horizontal way differs from the nets, they are a form of cooperation and competition between companies that are located in distinct and consecutive positions in the production chain, and are associated for competitive advantage they couldn't achieve individually (Dominguez, 1996). Suppliers in value chains approach the market analyzing the value chain, meaning "all activities of a production process from design or product conception to delivery to the final consumer." (Porter, 1999).

Generally, the literature emphasizes these links across borders between productive enterprises and distribution systems, which allows to see the entire cycle (product design-receipt by the final consumer) as a process of continuous interaction and add value. The suppliers are connected with the industry that provides its principal office, corresponding those activities within the core of the chain.

### 3. Supplying in Sonora

During the research on the local supply state, we found that there are obstacles that limit their development. In the bullet points, we will present the characteristics of Mexican local suppliers, as well as the main obstacles they face to break into the IMMEX, according to a research conducted by different scholars in the subject (Arias and Solari, 2008; Bracamonte and Contreras, 2008; Carrillo, 2002 and 2003; Contreras, 2000; Mungaray and Benitez, 2000; Ollivier, 2007; Zárate, 2003).

Based on the 20 surveys that were applied to managers responsible for purchases in the industry, the following aspects were found:

- Most of all that input is reached out to the supplying companies that carry the industry and work with foreign firms, and only about 6% of them work with the Mexican industry.
- 6% of the inputs are purchased from the local industry, 3% are indirect, such as office suppliers and cleaning suppliers.
- In order to be an IMMEX provider, certain criteria must be achieved, such as:
  - a) Certification: must have a certification, which is granted by the ultimate purchaser.
  - b) Quality: requires to meet certain quality standards in their inputs, as this is what companies take into account analyzing the direct impact on production costs.
  - c) Price: in this department, 50% seek competitive prices.
  - d) Ability to manage inventory: all IMMEX flexibility requires its suppliers to deliver on time according to their abilities and depending on whatever the final order may be.
  - e) Good service: it must be reliable in delivery times, quality and flexibility.
  - f) Technological capacity: as to this department, they should ask their suppliers for innovation capacities, production and continuous improvements.

#### 3.1. Government's Support of IMMEX in Sonora

In the survey applied to managers of companies involved with IMMEX, they wondered if they ever received government support. Their response was somewhat varied, as some said no, they had never received any support or the federal government. Also, some companies responded that they had received support, consisting of employee training programs, and have also received support from 'Bécalos', the latter support has helped many employees mainly giving them the opportunity to continue studying thanks to the support provided by the Federal Government. They have also joined IMMEX programs such as CONACYT and Federal Ministry of Economics.

#### 3.2. Study Methodology

The methodology used in this research is strictly descriptive and documentary. To carry out and develop the topics discussed above we rely on bibliographical sources, which are: newspapers, official country statistics and theses. According to Alfonso (1995), documentary research, is a scientific method, a systematic process of investigation, collection, organization, analysis and interpretation of information or data about a given topic and in-depth interviews.

#### 4. Conclusion

With this analysis, we can be aware of the situation in our state in terms of the IMMEX program and we can draw some conclusions related to the problems that are limiting the suppliers in Sonora.

We think that in order to be a supplier of inputs for companies with the IMMEX program, you must go through a series of challenges, which are very important regarding quality, delivery compliance, capacity technologies. However, there is a big problem, that the state's producers do not have support and that many inputs are consumed in the same state. In connection with the development of suppliers, they are not interested in providing technological capability, however, they have supported the information about future demand requirements, conventions that are related to indirect inputs such as packaging material, labels and cleaning materials.

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