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GOING ABROAD FOR NEW SOURCING POSSIBILITIES – AN ANALYSIS OF THE
ADOPTION OF STRATEGIC GLOBAL SOURCING BY EMERGING COMPANIES – A
CASE STUDY IN THE ELECTRICAL AND ELECTRONIC INDUSTRY IN RIO
GRANDE DO SUL STATE

São Leopoldo

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partial fulfillment of the requirements for the
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Learning is the only thing the mind never exhausts, never fears and never regrets.

Leonardo da Vinci (1452 – 1519)

ABSTRACT

Companies are moving abroad to look for advantages in alternative sources of supply. Primarily associated with the lack of local suppliers or lower acquisition costs, these reactions have driven business to a more proactive perspective by the adoption of Strategic Global Sourcing (GS). GS is conceptualized as the company's strategic direction for the search and monitoring of global supply markets and their efficient management through the integration and coordination of activities related to the functional areas of business, as well as the units of local purchases of a set of related companies. Companies from emerging countries are developing their own GS, in the same manner as companies from developed countries. Most GS literature considers emerging companies the emerging companies to be the suppliers, not the buyers. These "late movers" have more strategic motivation, as well as goals, to internationalize their activities. In this study, we investigated emerging Brazilian companies in the electrical and electronic industries from the state of Rio Grande do Sul as buyers in the global market. The initial step was a literature review, followed by the development of a theoretical framework. The framework was applied to a case study. Six companies from the selected industry sector were investigated. Four were classified as adopting GS. The main motivations that led these companies to adopt GS were identified as faster access to new technologies, the establishment of presence in global markets and the motivation to become a global player. The cultural differences were identified as the main difficulty. A set of differences between these companies and the adoption of GS from traditional MNCs in terms of the structure and process were also identified with special consideration given to the use of IPOs in earlier stages of internationalization sourcing. It was possible to confirm that the adoption of GS is a competitive advantage for these companies.

KEY-WORDS: Global Sourcing. Internationalization. Emerging companies. Electrical and electronic industries.

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1 INTRODUCTION

In the last few decades, international trade transactions have increased all around the world. Companies decided to go abroad to find advantages that could enhance their competitive positions in their respective markets. In this race for competitiveness, companies began adopting different strategies to move upstream and downstream in their supply chain activities in foreign countries. The transmission of resources, which is the essence of international business according to Fayerweather (1969), became more intense with the expansion of procurement and supplier markets as well as with increases in traded amounts. The strategies adopted by a considerable number of companies began to include the fragmentation of the entire production process in different countries according to the possibilities of conducting different parts of the value chain in different countries.

This fragmentation in production occurred as companies were reorganizing their supply chains. The vertical fordism model did not represent the preferred option for most industries and fragmentation was associated with the development of more complex supply chains. This phenomenon had become more prominent during the 1990s, when the management challenge involved identifying the company's core competencies and outsourcing other activities. To establish better-constructed supply chains, companies revisited their activities to decide if they should be responsible for parts of their processes or source inputs or services from a supplier. In this context, the purchasing area achieved a different focus and would subsequently assume a different status in the structure of companies.

The essence of the make-or-buy decision is related to the development of procurement studies. The establishment of a company and its structure through time leads managers to decide if they will hire employees to fulfill all their requirements, from raw materials to delivery and post-sale services, or purchase some of these materials and services in the market (Coase, 1937). According to the Transaction Cost Approach (TCA), sourcing decisions involve comparing the production costs incurred by producing a process/product internally (hierarchy) with the transaction costs related to purchasing a product/process from an external source (market) (Williamson, 1975, 1979). The cost analysis must include all the costs associated with the production and purchase (direct and indirect costs) (Williamson, 1975). Coase (1991) highlights that the cost of internalizing an activity depends on the other activities that the company performs or intends to engage in; in this context, the focus of

investigation is not the company but its transactions. Williamson (1991) presented a third alternative between the market and hierarchy approaches: the hybrid structure, in which the purchasing company establishes contracts and joint ventures with suppliers and relationships with suppliers become an important part of the sourcing process. This theory leads us to the development of knowledge about purchasing as a way to access markets and/or develop a hybrid structure. Poppo and Zenger (2002) highlight that sourcing transaction costs increase with asset specificity because the increased complexity of the interactions required to produce sourcing outputs requires increased monitoring and control costs to protect source investments. The essence of whether to internalize an activity lies in the analysis of costs such that they are minimized, and the decision to buy is taken when transaction costs are lower than production costs (Shook et al, 2009).

The increase in the number of available suppliers around the world led companies to manage sourcing activities in a more complex way. Analyzing costs and focusing on cost reduction was no longer sufficient to ensure competitiveness. Competitiveness was now related to the adoption of a strategic approach to sourcing. The strength of this strategic approach depends on the relationships that a company develops with its suppliers and the strategic manner in which all sourcing activities had begun to be managed.

By the end of the 1980s, the traditional term 'purchase' started to be replaced by the term 'procurement'; at the same time, some companies started adopting the term 'sourcing' and, to denote a strategic approach to this area, the word 'strategic' was placed before this term. Because there is still some confusion in the use of these terminologies, a brief explanation of these terms seems to be important. Purchase and procurement essentially refer to the same functional activity that a company performs to access external resources such as raw materials, finished goods, and services. The term procurement became more common as some companies developed electronic approaches to purchasing and classified them as e-procurement. Sourcing represents a broader view of this activity because it includes relationships with the functions of other companies' as well as with suppliers. Strategic sourcing represents the combination of these activities with the corporate strategy; by building sourcing process excellence and aligning capabilities with the requirements of the company, the procurement function can play a key role in the corporate quest for value improvement (Anderson, 1998). Strategic sourcing can be defined as the process of designing and managing supply networks in line with operational and organizational performance objectives (Narasimham and Das, 1998). Strategic sourcing represents an expansion of procurement activities with an approach that addresses aspects located both inside (other functions) and

outside (suppliers) the functional borders. It includes the effective management of the supply base through the identification and selection of suppliers for long-term partnerships, involves supplier development initiatives by effectively allocating resources to enhance supplier performance, provides benchmarks and continuous feedback, and involves supplier pruning activities (Talluri and Narasimhan, 2004). A company's sourcing strategy has become a driver of an effective supply chain (value system) supported by procurement activities (Burke, 2005). Strategic sourcing is based on the status of the purchasing function within the company, the level of internal coordination of purchasing with other functions, the sharing of information with key suppliers, and their development (Kocabasoglu and Suresh, 2006). Other strategic sourcing concepts focus on transaction cost theory (Walker, 1988), the importance of components to establishing a competitive advantage (Venkatesan, 1992, Sislilian and Satir, 2000), cost analysis (Welch and Nayak, 1992, Anderson and Katz, 1998), and the management of the R&D-manufacturing-marketing linkage (Kotabe, 1992).

The strategic approach to sourcing can engender a sustainable competitive advantage for the company in the global market. This advantage can be achieved by enabling companies to foster close working relationships with a limited number of suppliers, promoting open communication among supply chain partners, and developing long-term strategic relationships oriented toward achieving mutual gains (Chen, Paulraj and Lado, 2004) based on the transfer of knowledge between the purchaser and the supplier. This does not mean that all suppliers will be involved in close relationships with the sourcing company, but strong relationships will be developed with some of them. As Tangpong and Ro (2009) highlight, how companies manage their supplier relationships – choosing and monitoring suppliers, developing and dissolving relationships – is increasingly critical for their strategic success. In addition, the approach to suppliers is recognized as being a priority function of sourcing strategy; Narasimhan and Carter (1998) highlight that purchasing practices are still essential to this activity and will vary depending on the nature of the business, the competitive environment, product and market characteristics, and the technological intensity of the company's products or services.

According to Christopher, Peck and Towill (2006), the first challenge is to identify the appropriate supply chain. The second is to manage what are likely to be multiple supply chains. Completing this argument, the sourcing process can be understood as being

composed of two paramount strategic decisions: (1) choosing among various supply markets¹ and (2) choosing among various supply channels² (Akesson, Jonsson and Edanius-Hallas, 2007). These decisions must be made based on a careful analysis of the demand/supply characteristics of the various products/markets served by a company and must focus on the goal of facilitating the marketing objectives.

Expanding the geographic scope of suppliers increases opportunities, while also imposing new challenges. The options available for suppliers to consider and manage have increased the complexity of sourcing strategies (Anderson and Katz, 1998). Samli and Browning (2003) argue that international sourcing is being used to close the gap between a company's strategic approach and its efforts to integrate its process to implement this strategy. The term 'strategic global sourcing' emerges as the approach to adopting strategic sourcing on a global basis. According to Kotabe (2009, p. 121), global sourcing strategy refers "to the management of (1) logistics identifying which production units will serve which particular markets and how components will be supplied for production and (2) the interfaces among R&D, operations, and marketing on a global basis". Considering the strategic sourcing concepts already presented in this chapter, this research includes supplier management as part of the strategic global sourcing concept, involving their source, selection, development, and measurement. Based on the concepts of GS developed by Arnold (1989), Kotabe and Murray (2004), Trunick (2006) and Kotabe (2009), GS is conceptualized *as the company's strategic direction for the search and monitoring of global supply markets and their efficient management through the integration and coordination of activities related to the functional areas of business, as well as units of local purchases of a set of related companies.*

As referenced in the main literature, the term 'global sourcing' is currently used to represent the strategic global sourcing approach. This research will follow the literature from this point and use Global Sourcing (GS) instead of Strategic Global Sourcing (SGS).

The studies published until now and, as a consequence, most of the previous findings related to the adoption of GS, were developed through the analysis of companies from developed countries, such as the US, Europe and Japan. Emerging countries used to be seen only as suppliers. Beyond that, GS studies are traditionally based on assumptions that were developed 10 or 20 years ago, if not longer. In recent decades, the world has experienced

¹ Supply markets are understood as being the places (cities, regions, countries...) from which a company can supply its needs.

² Supply channels are understood as being the different ways a company can access a supply market, either directly or by using a subcontractor.

a reshaping the competitiveness standards. Traditional companies have reconfigured their activities in different countries and trading between units of the same companies in different countries has become a regular operation. Furthermore, the world has recently witnessed the emergence of new communication technologies that facilitate the use of global partners in regard to suppliers. Fleury and Fleury (2007) highlight that the previously developed theories about global companies do not apply to the “late movers”, which are the countries and companies that entered the global business environment later, because these companies went global in a very different global macro-environment. The environment encountered by newly entering companies is very different from that in which traditional companies developed their businesses and existing theories were developed.

Global companies from emerging countries were characterized as follows: (1) being mature and integrated, (2) having grown in markets that were protected from international competition, (3) intensely using natural and human resources, and (4) operating in extremely turbulent environments (Khanna and Palepu, 1999; Fleury and Fleury, 2007). These companies were primarily perceived as exporters in global markets and their involvement in operations abroad is recent (Fleury and Fleury, 2007). Fernandes and Seifer Júnior (2007) argue that their global expansion has been motivated by the entrepreneurial leadership of the companies’ owners, which has allowed companies to undergo fast internationalization processes. The growth of emerging multinational companies (MNCs) can be seen in the Global Fortune 500. In 1996, 10 emerging MNCs were part of the ranking, compared to 30 in 2000. In 2010, 75 MNCs were from emerging countries, 2 of which were from Brazil.

Examining Brazilian late movers, Rocha, Silva and Carneiro (2007) find that the transition of Brazilian companies took place later relative to companies from other Latin American countries. Barreto and Rocha (2003) determine that the internationalization process occurred later in Brazil because of (1) its size, which provides the country with a large internal market; (2) the lack of governmental support for the establishment of international operations; (3) the protection of its domestic market until the beginning of the 1990s; and (4) its cultural distance from other countries. Despite having been late movers, Brazilian companies such as Petrobras and Vale, both of which are listed in the Fortune 500 ranking, achieved success in their internationalization processes. According to Borini et al (2007), three factors have contributed to the success of these companies: (1) a global mindset, (2) bold decisions and (3) the realignment of the entire company to compete on a global scale.

1.1 Research problem

Increases in production fragmentation due to the emergence of purchasing opportunities in several countries have led to the adoption of new management practices for sourcing in the global environment. The search for alternative sources of supplies in foreign markets is considered to represent an opportunity to generate a competitive advantage. Primarily associated with the lack of local suppliers (of products, services and technology) or lower acquisitions costs, these reactive motivations have driven businesses to adopt a more proactive perspective (Monczka and Trent, 1991; Bozarth, Handfield and Das, 1998; Harris, 2006; Servais, 2007; Dutton, 2008).

Just as traditional companies (especially those from the US, Europe and Japan) are adopting this strategy, companies from developing countries, which will be called 'emerging companies', are also developing their own GS practices. These companies are facing more competitive environments and faster growth processes than they are used to, which could lead to similar approaches to the potential adoption of GS. Some emerging companies are competing with companies from developed countries and need to improve their performance considering their different growth paths.

The incorporation of GS into a company's strategy can be regarded as a recent phenomenon in some economies. Even for companies that are used to making international purchases, long-term consolidation of this activity into their strategic plans is becoming more prevalent. This situation will lead companies to face some challenges during the adoption of GS. It is necessary to consider that relevant theories have been developed based on the experience of companies in other countries and different environments. The economies of countries such as Brazil, Russia, India, China and South Africa are growing quickly at a time when they have greater access to technologies and communication tools and the establishment of complex governmental agreements can both facilitate and impose barriers on international trade. Moreover, emerging companies are undergoing rapid internationalization processes characterized by bold and aggressive actions early on (Sirkin et al, 2008). At the same time, the competitive advantages of emerging companies are usually related to price competition, which is more difficult to sustain than technology or brand-related advantages (Gammeltof, Barnard and Madhock, 2010).

The trajectories followed by emerging companies often differ from those followed by companies from developed countries. The surge of MNCs from emerging markets is reshaping the structure of international business (Gammeltof, Barnard and Madhock, 2010);

these types of companies accounted for approximately one-quarter of all MNC parent companies globally (Tolentino, 2010). As a consequence of emerging MNCs, the theories developed based on traditional MNCs are being tested, and, according to Gammeltof, Barnard and Madhock (2010), this initiative could lead to (1) expanding the scope of current theory; (2) extending current theory by rethinking its concepts, relationships and causalities; or (3) developing fresh theoretical perspectives.

Brazilian companies have grown in the last years, both in terms of number and international operations. This rapid growth has surprised researchers, politicians, and even businessmen and is leading academia to investigate their strategies in an effort to capture the characteristics of these new MNCs (Fleury, Fleury and Reis, 2010). Fleury, Fleury and Reis (2010) find the employed management models of these companies, which are based on a combination of organizational skills and management practices, to be noteworthy in the internationalization of Brazilian MNCs. Examining Brazilian MNCs, the authors find that whereas the internationalization of traditional MNCs took place through seeking new markets and access to resources, emerging MNCs from Brazil are engaging a mix of activities that also includes searching for strategic assets and enhancing efficiency. The motivations and goals of these “late movers” in terms of internationalization are, therefore, more strategic.

The electrical and electronics industry in Brazil can be regarded as an import-based industry. From 2003 to 2010, total imports increased by 47%, representing USD 24.882 million. This increase primarily results from dependence on international raw materials and finished products that are manufactured abroad because of technological availability and/or reduced costs. The importance of imports in this industry can also be seen in the ratio of imports to the internal market for final goods, which reached a level of 21.6% in 2010.

The state of Rio Grande do Sul has the second-largest cluster of companies in this industry in Brazil, most of which are owned by local capital. This industrial sector was chosen because this industry is dependent on international suppliers; their current markets as well as those of their suppliers are global even within the Brazilian territory. This situation provides companies in this industry with the possibility of choosing between purchasing raw materials from representative inside Brazil or abroad. This possibility can make strategy definition a complex process and lead to different sourcing approaches. The choice of investigating companies from Rio Grande do Sul was made because this industry is well-structured and the players are organized in an Industry Association. Before investigating each company, documents from the Industry Association had already shown the importance of GS in this industry.

The new competitiveness patterns that emerge from new challenges bring forth the need to investigate how theory can be applied to investigations of these companies to understand why companies in developing countries adopt GS, how they do so, which difficulties they face, the results they obtain, and how empirical results can be used to contribute to the existing literature. These questions guide this research and can be consolidated into the general research question of this study: *“How is the adoption of global sourcing strategies by Brazilian companies from Rio Grande do Sul in the electrical and electronics industry being conducted?”*

1.2 Objectives

General and specific objectives are presented in this section.

1.2.1 General Objective

The general objective of this study is to analyze the adoption of global sourcing strategies by Brazilian companies from Rio Grande do Sul in the electrical and electronic industry.

1.2.2 Specific Objectives

The specific objectives of this study include the following:

- a) To identify the motivations behind the adoption of GS by Brazilian companies from Rio Grande do Sul in the electrical and electronics industry
- b) To identify the difficulties faced these companies in adopting GS
- c) To present the key aspects of GS management for these companies
- d) To analyze how the adoption of GS these companies differs from that of traditional MNCs in terms of structure and process
- e) To analyze how the adoption of GS contributes to the generation of a competitive advantage

1.3 Justification

Studies focused on companies from developed countries – mainly the US, Europe and Japan – represent the foundation for theories about MNCs, most of which do not attribute adequate importance to emerging economies (Hoskisson et al, 2000). Studies focused on MNCs and GS were developed through the investigation of companies in developed countries (Narasimhan and Carter, 1998, Kotabe and Murray, 2004, Samli and Browning, 2003, Trent and Monczka, 1991, 2003, 2003a, Nassimbeni, 2006, Kocabasoglu and Suresh, 2006, Nassimbeni and Sartor, 2007, Trautmann, Bals and Hartmann, 2009). Developing countries are usually investigated as suppliers for those companies, not as the countries of origin of companies (Nassimbeni and Sartor, 2007, Lahiri and Kedia, 2009, Towers and Song, 2010).

Emerging countries are usually characterized by more active participation from the government in the economy and less sophisticated economic institutional environments. Their MNCs have a tendency to operate in more mature industries rather than in technological industries and exhibit variations in local institutional contexts, such as the fact that emerging companies are often state-owned, affiliated or family-owned and are often part of conglomerates (Gammeltof, Barnard and Madhock, 2010). Emerging MNCs face competition from established MNCs from developed economies and tend to use each other as points of reference in their internationalization decisions (Li and Yao, 2010).

Few studies have investigated the realization of foreign direct investment by emerging companies (Zhao, Liu and Zhao, 2010, Tolentino, 2010, Kalotay and Sulstarova, 2010, Li and Yao, 2010). These studies reveal a change in the way emerging companies develop relationships in their internationalization processes. Considering the supply side, efforts to view this activity from the emerging companies' points of view are rare. The role of emerging company subsidiaries was studied by Barnard (2010), who highlights that the availability of a better supplier base in the host countries rather than in the home country has led emerging company subsidiaries to develop capabilities that are useful beyond their immediate locations. This study reveals the importance of developing a GS approach from the emerging buyer's perspective as a way to fairly share the benefits from the supply base of the subsidiaries across the entire company.

Traditional relationships developed by companies from developed countries to cultivate suppliers abroad were based primarily on supplier dependence on purchasing companies. Developing country companies have the opportunity to achieve higher production

levels through their purchasers' markets; purchaser companies used to be larger than their suppliers as well as more technologically advanced and with more developed management processes. Many suppliers were highly dependent on buyers, not only as a market for their products but also as a means to access the knowledge and technology necessary for their own development.

Emerging companies can face the same situations with their suppliers, especially when they work with small suppliers from their home countries or other developing countries, but different types of relationships can also be developed by these companies. In some cases, they can establish relationships with suppliers that have their same size and characteristics, i.e., other emerging companies. In these cases, the dependency relation may not exist (when other suppliers and buyers are available) or could exist for both companies at the same time. A third possible type of relationship occurs when emerging companies have suppliers with greater bargaining power (usually companies from developed countries or stronger companies from their home or host countries); in this case, a dependence relationship with the supply source will persist. The choice between these different types of relationships will vary according to the structure of the company and industry and the three different paths must be considered as new challenges in the development of sourcing strategies.

Trent and Monczka (2003) highlight the need for future research on robust GS processes because they found appreciable diversity in terms of the development and implementation of this strategy in the companies they investigated. Samli, Browning and Busbia (1998) reveal the need for studies that investigate the adoption of GS, including business involvement in this process and the incorporation of this activity into corporate strategic planning. By investigating emerging issues in supply, Sheth and Sharma (1997) determined that GS activities should be explored further because of the opportunity to obtain a competitive advantage through this strategy. At the same time, the authors highlight that cultural and legal differences among countries are critical factors that are directly related to GS.

Another fundamental argument is related to the current relevance of the GS theme. The frequency of international economic transactions has been growing quickly in recent decades. Despite the recent international economic and financial crises and the imposition of protectionist tariff barriers to protect national markets and industries, the business environment contains opportunities that are not limited only to local contexts because companies had been increasingly accepting that the market, including suppliers, customers and competitors, covers the entire world. Companies may try to limit their international

suppliers' offers but cannot ignore what exists beyond their boundaries. Despite the increase in trading volume worldwide, Brazilian companies still engage in a very small amount of international trade, representing approximately 1% of the total according to the Brazilian Ministry of Development, Industry, and Foreign Trade. Given this situation, understanding the ways of engaging in international trade turns out to be a current theme.

Figure 1 presents the growth in international operations (exports and imports) for Brazil, Russia, India and China (the BRIC countries), and the US, over the last years. Growth in the international operations of these countries can be identified by looking at these data. Brazilian exports grew by 46.52% from 2006 to 2010. Export growth was 80.58% for India, 62.83% for China, and 31.82% for the Russian Federation. In contrast, exports in the US grew by only 24.59%. Brazilian imports grew by 99.81%, which is the highest growth rate among all the examined countries. Indian imports grew by 83.41%, Chinese imports grew by 76.27%, and Russian imports grew by 51.41%. Imports to the US grew by only 2.67%. This comparison is important in highlighting that recent growth in international trade flows can be attributed to emerging countries.

Country	Flow	Indicator	Partner	2006	2007	2008	2009	2010
Brazil	Exports	Total merchandise	World	137.808	160.649	197.943	152.995	201.915
Brazil	Imports	Total merchandise	World	95.838	126.645	182.377	133.678	191.491
China	Exports	Total merchandise	World	968.978	1,220.456	1,430.693	1,201.612	1,577.824
China	Imports	Total merchandise	World	791.461	956.116	1,132.567	1,005.923	1,395.099
India	Exports	Total merchandise	World	121.808	150.159	194.827	164.907	219.959
India	Imports	Total merchandise	World	178.410	229.370	321.032	257.201	327.230
Russian federation	Exports	Total merchandise	World	303.551	354.403	471.606	303.388	400.132
Russian federation	Imports	Total merchandise	World	164.281	223.486	291.861	191.803	248.738
United States	Exports	Total merchandise	World	1,025.967	1,148.199	1,287.442	1,056.043	1,278.263
United States	Imports	Total merchandise	World	1,918.077	2,020.403	2,169.487	1,605.296	1,969.184

Figure 1 – Total merchandise traded in US million. Source: World Trade Organization (2011)

Prior knowledge on GS considered developing countries to be purchasers and the previously presented numbers support the argument that international trade, especially in terms of imports, is increasing more in developing countries. This growth supports the

importance of understanding how companies from emerging countries are conducting their sourcing strategies.

In this global environment of opportunities and threats, with high competition among companies, investigating how a company can strategically perform one of its activities represents an opportunity to contribute to the improvement of the company's organizational and management processes. The GS theme has become the object of academic study over the last 20 years (Kotabe and Murray, 2004). Part of the emphasis on this subject is derived from the need to understand how GS has become a strategic decision that is influenced by the skills that are required to achieve competitiveness in the context of the current market. By adopting this sourcing strategy, companies can generate competitive advantages in isolation and in conjunction with their suppliers as well as explore the comparative advantages of the suppliers' location.

It must also be considered that a number of companies are making international purchases, many of which still belong to corporations with plans to expand in Brazil and abroad; their sourcing decisions can be managed together, thus increasing the complexity of this process while revealing new opportunities for companies to develop competitive advantages.

There are still very few Brazilian MNCs, especially in terms of forward-looking private companies. Investigating these types of companies allows us to better understand the trajectory of the sourcing process and how companies actually adopt GS. These facts lead us to consider that, even though most of the studies related to GS are based on MNCs from developed countries, investigations of GS in emerging countries, especially Brazil, must be conducted by focusing on companies that are internationalized, i.e., those that already engage in export and import processes or other types of international activities such as alliances or FDI.

The innovativeness of this research is related to (1) the establishment of an approach to comprehensively investigating GS that is based on understanding the dimensions of this research objective when examining the business environment from the purchaser company's point of view and (2) the fact that, under each dimension, the previous findings on GS are consolidated to guide empirical research on emerging companies. Although these dimensions can be viewed in isolation, it can be argued that the importance of the study relates to the investigation of this entire knowledge set in a new environment. The investigation of the previous studies related to GS reveals there is no theory that is specifically related to this subject. Most studies are based on economic theories such as TCA

and are related the development of hypotheses and their measurement through the analysis of variables.

1.4 Research Scope

When a company decides to adopt GS, it must be prepared to obtain the most value from the transactions that it will make. The debate between product and geographical expansion, although more related to exports, highlights the importance of the company structure in global environments. The growth of MNCs from an internal point of view was first investigated by Stopford and Wells (1966). Understanding the purchasing company when adopting a GS approach has been analyzed considering the configuration of the companies and the relationships between units of the corporation as well as the configuration of relationships with suppliers (Arnold, 1999, Schmitz and Knorringa, 2001, Harris, 2006, Quintens, Pauwels and Matthyssens, 2006, Akesson, Jonsson and Edanius-Hallas, 2007, Servais, 2007, Hartmann, Trautmann and Jahns, 2008, Mulani, 2008).

The search for opportunities to purchase globally requires a different approach by the purchasing companies. The ability to visualize the entire world as a potential supplier of raw materials, components, finished goods and services can be viewed as a prerequisite to GS (Monczka and Trent, 1991). At the same time, more knowledge of purchasing is required and more risks will be associated with the activities (Kotabe and Murray, 2004). As Butter and Linse (2008) emphasize, companies have begun to add value through the optimal orchestration of their foreign suppliers. However, conducting the orchestra requires companies to employ a strategic approach and purchasing areas in enterprises have recently achieved strategic status (Quintens, Pauwel and Matthyssens, 2006). Companies still worry more about costs than other variables when analyzing potential purchases and, in most cases, global sourcing activities have emerged opportunistically rather than being conceptualized as a strategic way to make purchases (Samli, Browning and Busbia, 1998). Despite these findings, the purchase paradigm has undergone a change process influenced by global competitiveness, the quest for total quality, the introduction of new enabling technologies and the restructuring experienced by companies in recent decades (Shet and Sharma, 1997).

The first GS concept was presented by Arnold (1989) and it has been used continuously as a reference in the development of GS research because it contributes to the conceptual understanding from which new approaches can be established. Research involving the identification of the motivations behind international purchases (Dornier et al, 2000; Trent

and Monczka, 2003; Harris, 2006; Rodrigues, 2007; Bernstein, 2007), risks related to international purchases (Wilding and Braithwaite, 2007), characteristics of international purchases (Trent and Monczka, 2003; Kotabe and Murray, 2004; Harris, 2006; Salmi, 2006; Trunick, 2006; Rodrigues, 2007; Wilding and Braithwaite, 2007; Mudambi, 2008; Kotabe, 2009), characteristics of international purchase enterprises (Liang and Parkhe, 1997; Arnold, 1999; Schmitz and Knorrninga, 2001), internal configurations of international purchase (Arnold, 1989; Quintens; Pauwels and Matthyssens, 2006; Knudsen and Servais, 2007; Hartmann; Trautmann and Jahns, 2009), organizational capabilities (Hult, 2002; Trent and Monczka, 2003a; Wilding and Braithwaite, 2007; Mulani, 2008), aspects of centralization and decentralization (Quintens, Pauwels and Matthyssens, 2006; Gelderman and Semeijn, 2006; Hartmann, Trautmann and Jahns, 2009), material selection (Smith, 1999; Gelderman and Semeijn, 2006), costs (Steinle and Schiele, 2008; Butter and Linse, 2008), supply relationships (Trent and Monczka, 1998; Rogers, 2005; Salmi, 2006; Knudsen and Servais, 2007; Ghauri; Tarnovskaya and Elg, 2008), influence of the acquisition and origin countries (Li, Murray and Scott, 2000) and performance measurement (Trent and Monczka, 1998; Mulani, 2008) are examples of GS-related activities that have been investigated.

The investigation of GS as a research subject represents an opportunity to assign a strategic role to global purchasing. Every purchase represents engagement between at least two companies in terms of selling and buying. Other companies may also be involved in this process through representatives or contractors or the provision of financial and logistical services. In defining the scope of this research, the choice was made to investigate only purchaser companies. This approach would allow for an in-depth investigation of the GS process. Moreover, even if a purchaser assigns responsibilities to its suppliers, it is usually still the most interested in the process. It was also decided that the research would analyze the purchase management process to understand the complexity and the relationships among the involved activities, thereby revealing opportunities to increase earnings from this activity. Complexity is defined as the application of the strategic sourcing concept with a global perspective that will create a need for different coordination and configuration decisions across the company. The space scope does not consider the foreign market but, rather, considers the global market as a whole. GS should not be regarded not as international purchasing but, rather, as the search for the best opportunities, wherever they may be. A final delimitation is related to time; the research must be developed during the global purchasing strategy management process to reveal the complexity of the process, the factors that need to

be managed for success to be achieved, and the results that can be obtained by using GS (Figure 2).

What	GS	Object	To assign a strategic role for global purchase.
Who	Companies that buy globally	Subject	To investigate the process of GS from the buyer company perspective.
How	By analyzing the structure, the process and the results of the management process	Method	To understand the complexity of activities involved and their relationships, revealing opportunities to increase earnings from this activity
Where	Global marketing	Space	Global market
When	During the process of management strategy for global purchase	Time	To reveal the complexity of the process; what need to be managed for successful activity; and which results can be obtain with GS.

Figure 2 – Analysis of GS Investigation

It is important to highlight that this description is focused on investigating the GS phenomenon rather than the company as a whole. The identities of the investigated companies are not revealed to protect their strategies.

1.5 Structure of the Thesis

In this first chapter, an introduction was made to the subject of this thesis. The justification, research question, objectives, and the delimitation of the theme were presented.

The literature review is presented in Chapter 2, addressing issues related to GS and presenting the development of the theoretical framework.

Chapter 3 is characterized by the presentation of the method. First the research method will be explained, including the technical procedures employed in the research, the data collection plan, the definition of the analysis' unit, the development of the data collection's instrument, and the plan to data's analysis. This chapter also presents the detailed work plan followed to conduct this thesis. Although the work plan is less rigid than the research method, knowing how the researcher conducted the work is important for understanding the results.

Chapter 4 presents the description of the cases investigated on this research. It starts with a description of the industrial sector of the companies. The five selected companies are briefly description in order to identify if they adopt GS or not. Only those companies that adopt GS are considered in the cross-case analysis.

Chapter 5 presents the phenomenon investigation based on the cross-case analysis. The analysis' process followed the theoretical framework. The investigation allowed the

identification of the differences and similarities in each dimension in emerging countries' companies. The identification of the key-success factors in each dimension was also conducted on this chapter.

Chapter 6 presents the final considerations, including the study limitations and research directions. It is followed by the references and the appendixes.

2 LITERATURE REVIEW

This Chapter presents the literature review developed in order to conduct the research presented in this thesis. This literature review is a compilation of previously findings investigated together in order to present a body of knowledge that supports this study.

2.1 Global Sourcing

The strategic vision of international supplies with the incorporation of the concept of GS appears in the literature in the late 1980s. To Arnold (1989), the strategic orientation of companies to seek global suppliers and markets, and the efficient management of these activities, is called GS. At a first moment, it is a systematic extension of the activities of suppliers in foreign markets. Subsequently, it calls for a strengthening in the establishment of a dedicated infrastructure for this type of market, with dedicated resources like sourcing offices, logistical support, and information systems. As a strategy, GS is characterized by (1) carrying out operations in international markets and (2) a general orientation of the company to develop new supply opportunities in heterogeneous environments, and identify and overcome the difficulties encountered to enable these opportunities (Arnold, 1989).

Although this concept reveals the strategic nature of GS, Arnold (1989) does not include the dimensions of the sourcing activity that may represent the strategic involvement as an approach to operational focus. This separation will be added in the GS model proposed by Monczka and Trent (1991). Nevertheless, its innovative character is evidenced by the amount of works referring to this concept by the Arnold original publishing of 1989 and the article of 1999, like Smith (1999), Li, Murray and Scott (2000), Trent and Monczka (2003, 2003a), Overby and Servais (2005), Gelderman and Semeijn (2006), Quintens, Pauwels and Matthyssens (2006), Knudsen and Servais (2007), Hartmann, Trautmann and Jahns (2008), Steinle and Schiele (2008), and Trautmann, Bals and Hartmann (2009).

In an effort to differentiate international purchases and global sourcing, it is possible to affirm that international purchases represent the simple purchase of goods from suppliers located overseas, being basically a reaction due to the company's global competitiveness, not involving the coordination among business units internationally. GS requires the integration of the supplies' activities, with the identification of common purchases, processes, technology and suppliers to the strategically coordination. Thus, it

implies the establishment of GS teams supported by a comprehensive information system for all units (Bozarth, Handfield and Das, 1998).

Strategies of GS refer to (1) the identification of which units will be met by suppliers of certain locations and how the related items will be available by the company, and (2) the establishment of interfaces between R&D, operations and marketing on a global basis (Kotabe and Murray, 2004). The establishment of these interfaces provides access to design resources and develops suppliers by the buying company at the same time it enables a better understanding of the implications of cost and quality of their relationships along the supply chain.

Sharing the same view, for Kotabe (2009), the strategy of GS refers to the choices made by companies for inputs and services through a set of activities developed within the company, as well as others, anywhere in the world. Thus, it refers to the management of the process of global opportunities' identification through the interaction between logistics and production units that meet specific markets and how the components will be provided. Although this concept does not have the same breadth of the essence of GS (Arnold, 1989), becomes significant because it incorporate the expression strategy, stressing the need to establish intra-company and inter-companies interfaces.

One of the attributions of GS, according to Trunick (2006), is the monitoring of the supplier environment by the buying company. Although the author's focus is on controlling the activities of the supplier, the observant eye should be extended to the whole environment, including variables external to the supplier company, as these issues affect the feasibility of an international purchase.

From this conceptual investigation one can realize the need to investigate from which point the purchasing activities represent the adoption of GS. To address this point, several researchers were conducted, as will be seen below.

2.1.1 The Strategic Approach of International Purchasing

According to Sheth and Sharma (1997), the paradigm of purchase has undergone a process of change influenced by global competitiveness, the quest for total quality, the introduction of new enabling technologies, and the restructuring experienced by companies in the recent decades. This restructuring process includes decisions related to making or buying that directly impacts the activity of supply and related areas like information management and human resources. These changes have caused modifications on the buying companies'

behavior in two dimensions. The first is related to market orientation, as the search in the domestic market was replaced by the search in the global market. At the same time, the orientation of sourcing activities has ceased to consider only transactions to include aspects related to the relationship between buyer and supplier. One of the motivations for this change was the identification of the possibility of obtaining value through the supply activity, through access technologies, markets and/or information, which thus generates a competitive advantage.

To Samli, Browning and Busbia (1998), the activity of GS has emerged as a more opportunistic than strategic activity, while it was perceived the increase of the possibility of expanding earnings through purchases from the adoption of this strategic approach. These findings come from a literature review that was conducted by the authors and result in the identification of five orientations of the GS studies (Figure 3).

Topical Orientation	Authors	Major Thrust of Findings
Evolution of the purchasing function	McGarry (1950) Ammer (1974) Jain and Laric (1979) Deming (1982)	<ul style="list-style-type: none"> • Procurement role is inherent in marketing. • Companies compete in buying as well as selling. • Organization buying function is important for the company.
Strategic <i>versus</i> Reactive sourcing	Hahn, Kim and Jong (1986) Watts, Kim and Hahn (1992) Birou and Fawcett (1993) Frear, Metcalf and Alguire (1992) Kotabe and Omura (1989) Kotabe and Murray (1990) Samli, Busbia, Davidson and Browning (1993) Ellram and Carr (1994)	<ul style="list-style-type: none"> • Opportunistic reactive sourcing both international or domestic, • Decisions are made at the middle or lower managements. • Emphasis is on cost and opportunities. • Little if any attention is paid to corporate goals and strategies.
From purchasing to GS	Birou and Fawcett (1993) Cayer (1988 a, b) Curtin (1987) Fagan (1991) Franceschini (1987) Levy (1995) Monczka and Trent (1991) Presuitti (1992) Carter e Narasimhan (1990)	<ul style="list-style-type: none"> • Reaching outside of natural boundaries and making purchasing a broader and managerially function activity is critical. • Problems in creating broad-based sourcing function and the key barriers are considered.
GS strategy	Kotabe (1992) Kotabe and Okoroafo (1990) Min and Galle (1993) Monczka and Guinipero (1984) Swamidass and Kotabe (1993) DeRosa (1991) Swamidass (1993)	<ul style="list-style-type: none"> • There must be a strategy to GS. • Such a strategy is bound to benefit the company in general. It will enhance the company's competences.
GS as a key strategic tool	Kotabe and Swan (1994) Murray, Kotabe and Wildt (1995) Freeman and Cavinato (1990) Carter and Narasimhan (1996) Samli, Busbia, Davidson and Browning (1993)	<ul style="list-style-type: none"> • GS must be a major strategic tool. As such, it must be placed in the upper organizational level where strategic planning takes place.

Figure 3 – A review of GS Research. Source: Samli, Browning and Busbia (1998)

The efforts to differentiate international purchases and GS, through its strategic character, can be seen in the work of Arnold (1989). The author has combined regional extension of supplier market with the purchase vision (strategic vs. operational) in a matrix through with four segments of sourcing are presented: (1) traditional procurement, (2) purchasing policy “going international”, (3) strategically-oriented procurement (as supply management), and (4) GS (Figure 4).

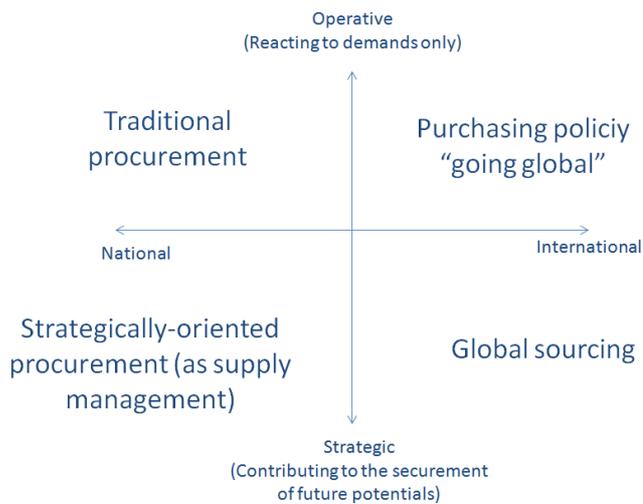


Figure 4 – GS as a strategic purchasing program. Source: Arnold (1989)

The model proposed by Arnold (1989, 1999), even though it represents the different choices that the company can make related to their international supply strategy, is restricted to the analysis of two dimensions, which do not reflect all the magnitude of the variables that a company needs to consider to internationalize their supply activities. It does not even consider the strategic level that must be applied to this decision.

The understanding of the GS strategy, to Samli, Browning and Busbia (1998), depends on the identification of the strategic and/or opportunistic degree attributed to the function. To the authors, this character derives from (1) the level at which decisions are taken in GS, (2) the role that is given to any company's strategic planning, (3) the extent of materials requirement planning, and (4) the existence of long-term agreements with suppliers. Samli, Browning and Busbia (1998) identify that companies that adopt GS take this decision in a higher hierarchical level as well as relevance is given to strategic planning in the company. These companies also include the demand of material in the strategic plan although the length of relationship with suppliers over time is still not privileged. While companies increase the participation of international sources in their purchases, the more they realize the need to treat their purchases in a strategic way.

By adopting GS, companies can reduce their production cost, but at the same time they can lose agility, in terms of speed and flexibility, to meet the changing in the customers demand (Jin, 2004). An alternative find out to face this challenge is to combine local with global supply. To Jin (2004), the greater the uncertainty regarding the demand, the greater the required percentage of household items in the total mix of company's supply as the uncertainty rises with the internationalization of sourcing. The local supply, according to Jin

(2004), should also be prioritized when there is a large contribution of manufacturing technologies and from manufacturing in the production phase. A third reason for the prioritization of local supply is the existence of clusters of local suppliers. Finally, there is still the existence of long-term relationships with pre-existing suppliers. These aspects only represent reasons for the establishment of a balance between domestic and international sourcing with a bigger volume of local sourcing, not featuring, in any way, the exclusive focus on this option. These are aspects to be considered in the decision making within the company regarding the implementation of GS.

2.1.2 From Local Purchases to GS

According to Monczka and Trent (1991), there was a lack of studies showing how companies could adopt GS. Although the concept of Arnold (1989) had identified a strategic nuance to the activity of GS, it was still requiring research to identify the difference between a non-strategic international purchase and GS strategy.

Given this lack of studies, Monczka and Trent (1991) developed, through a survey conducted in two phases, a continuum to explain the ways that international purchasing could be taken. The first phase involved a study with 26 U.S., Japanese and European companies. The second phase was characterized by the investigation of 85 U.S. manufacturing companies from 28 different industries.

The original model proposed by Monczka and Trent (1991) had four phases. Phase 1 represents the companies that perform only domestic purchases. In Phase 2, there were those companies who buy abroad only by necessity. In these two phases, the companies frame a reactive posture in relation to GS; while in the next phases it will be seen a proactive stance. Phase 3 is characterized by companies that had incorporated international purchasing in their sourcing strategy. Phase 4 represents the companies that made the integration of the overall sourcing (Figure 5).



Figure 5 – Internationalization of the Procurement Process. Source: Monczka and Trent (1991)

Based on data collected annually since 1994 with purchasing executives from different industries and regions, Trent and Monczka (1998) found that the 1990s was marked by a shift from the approach in the purchasing area in organizations. Among the causes of this change was the need to control unit and total costs, the growing influence of the supplier on the ability of a buying company to meet their clients' demands, the reduction of the supplier base, and the responsibility attributed to suppliers in the process of product development. This identification of the strategic potential of the sourcing area, with emphasis on the internationalization of this process, led to significant changes in the internal management of companies. Activities such as the management of international supply chain, the involvement into new product development and the strategic planning of sourcing, for example, have become more important in the sourcing area. Meanwhile, other activities had lost space within this area as production control, inventory management, shipping and handling (Trent and Monczka, 1998). In addition to the identification of the strategic potential of the area, the perception of potential gains of internationalization has been identified as another change by Monczka and Trent (1998).

The first proposed model, even though it fulfilled a number of limitations of the previous studies, still did not address in detail all the complexities of international sourcing. Monczka and Trent (2003) reformulated this structure with a survey of 162 respondents and the study of 10 cases, proposing as a result a new five-level model (Figure 6). Level 1 represents the company that uses only domestic suppliers. Levels 2 and 3 comprise what the authors called international purchasing, which is a commercial relationship between a buyer and a supplier located in different countries. The complexity of this type of relationship is the need to deal with different laws, currency fluctuations, language and time zone. In Level II there are those companies that do not have domestic suppliers or who need to use

international suppliers as their competitors do the same and get advantage from it. In this way, the international sourcing is a necessity. At the Level III, this type of sourcing becomes part of the company's strategy, although it does not yet have a coordination of international purchasing. It is possible to illustrate this level when the different units of the same company source globally separately.



Figure 6 – The process of sourcing internationalization. Source: Trent and Monczka (2003)

By becoming part of the corporate strategy, international sourcing activities can alter the relationship of the purchasing company and its suppliers. As identified by Schmitz and Knorrinda (2001), in some situations, there may be a change in the structure of the supply chain. The definitions for the product to be purchased can be so specific that the supplier only produces “tailored” to a global customer.

The next two levels comprise what the authors called “global sourcing”. It differs from the previous levels by the increased complexity as they involve the proactive integration and coordination, similarity of materials, processes, design, engineering and site operations. On these levels, the companies no longer need to be just trading partners to become active members who operate with a supply chain. Level IV represents the effective integration and strategic coordination between a company's supply units in different units. To achieve this level, it is necessary to have international information systems, human resources with specific knowledge and skills, communication mechanisms and extensive coordination, as well as a framework to allow the coordination of this activity through an executive leadership that encourages the pursuit of global suppliers. Level V represents the integration of other local units in a global process of sourcing, for example, in developing a new product and provide after-sales services. In some cases, the design, manufacture, and supply's responsibility for

the whole group is assigned to the unit more qualified. Even if the company adopts the Level V strategy, with the coordination of their purchases being made by a unit of the group, it is noteworthy that the benefits from this strategy may not be achieved if the company does not have an appropriated structure to assist the release and receipt of materials in different countries.

The incorporation of the concept of GS and the openness in the companies' analysis in those companies that adopt this strategy is the main change observed between the two models. Monczka and Trent (1991) state that in the 1980s, the motivations to international sourcing had an operational nature and that there were opportunities for companies to increase their global competitiveness by incorporating the strategic vision for the area of international sourcing. The model presented in 2003 by the authors reveals that this opportunity, viewed by the authors in 1991, not only materialized, as led to the development of this strategic approach and the need for a detailed analysis of the same, which became possible with the division of Phase 4 into Levels IV and V.

The investment for the company to adopt a proactive stance fully oriented to GS can be realized by adopting some strategies (Monczka and Trent, 1991). The first is to transform buyers traditionally oriented to a domestic market to international purchasers. By doing this, companies face barriers such as the buyer's lack of knowledge of the practices of international trade, language and cultural differences associated with resistance to change. These adversities were overcome through training, the encouragement of attitudes by the top-management, the use of help from outside the company, and the use of local representatives of overseas suppliers.

Another suggested strategy is the use of international units to assist overall purchasing process. That way, companies can obtain more knowledge about suppliers, establish geographically closer relationships between companies, and eliminate communication difficulties due to language. However, the success depends largely on the encouragement given to the subsidiaries to participate in this process.

The last suggested strategy is the integration and coordination of international strategies for GS. The needs of all units around the world are worked together to obtain best opportunities through the maximizations of scales on a global basis. One challenge is to align the interests of the local units in order to make them understand the role of the global unity and thus, obtain the results of collaborative efforts. The main gains are related to price, delivery, security of supply, and access to technology suppliers.

Monczka and Trent (2003a) point out that the companies have a desire to internationalize their activities of growing supplies in order to achieve the level of GS. However, these same companies often fail because they do not understand, or overlook, the commitment, the scope of operations, resources and skills that the activity of GS requires. This difference between international sourcing and GS was also researched by Trent and Monczka (2003) through the investigation of 162 companies randomly chosen within a set of 1,800 companies around the world. Companies that adopt GS differ from those that carry international sourcing, in the following ways:

- a) Companies that engage in GS are larger and are more likely to have competitors that are multi-regional or global compared with companies that engage in international purchasing.
- b) Companies that engage in GS perceive their strategy implementation progress to be further along compared with companies that engage in international purchasing.
- c) Companies that engage in GS perceive that performance improvement and cost reduction opportunities are more widely available from their sourcing efforts compared with companies that engage in international purchasing.
- d) Companies that engage in GS indicate that the development of global strategies is more important to their executive management compared with companies that engage in international purchasing.
- e) Companies that engage in GS indicate they face more rapid changes to product and process technology compared with companies that engage in international purchasing.
- f) Companies that engage in GS realize greater and varied benefits compared with companies that engage in international purchasing.
- g) Companies that engage in GS rely on a wider array of communication tools to support their efforts compared with companies that engage in international purchasing.
- h) Companies that engage in GS have in place more organizational features to support their sourcing efforts compared with companies that engage in international purchasing.
- i) Companies that engage in GS rate key aspects of their sourcing process as more similar across geographic locations and buying units compared with companies that engage in international purchasing.

- j) Companies that engage in GS rate certain factors as more critical to their sourcing efforts compared with companies that engage in international purchasing.

Trent and Monczka (2003) identified that the difference between the activities of international sourcing and GS is perceived by the members of the companies as they engage in global projects. This fact indicates that the complexity of the activity is partially disregarded until the activity is already being fully developed. The professional should view GS as a process rather than separate activities, transforming it in a part of the supply plan. One reason is the complexity of GS compared with international sourcing as it becomes necessary to create an executive vision, leadership and commitment of time and resources to make effective the developed planning.

2.1.3 Motivations and Barriers to GS

Companies purchase abroad in order to improve quality, decrease costs of production, purchase and transport, obtain economy of scale in purchase and production, establish alternative supply sources, anticipate the needs of materials (to new products and changes in demand), offer global support to local products, get support to their own international operations, increase reliability (products and suppliers), introduce competition on the supplier base, establish a presence in the global market, increase the number of available suppliers, react to competitor's practices, meet supply constraints imposed by governments, access new technologies and markets, reduce the product's development cycle, get better negotiations condition, get advantages from supply location and core competence, get the opportunity to sell to specific markets or countries, price goods at a lower cost in local currency to better position itself in the market, as well as improve quality control, delivery and customer service (Monczka and Trent, 1991; Bozarth, Handfield and Das, 1998. Dornier et al., 2000; Cho and Kang, 2001; Christopher, 2002; Jin, 2004; Agndal, 2006; Harris, 2006; Knudsen and Servais, 2007; Dutton, 2008).

Trent and Monczka (2003a) identify that, as a result of the purchase internationalization through GS, companies presents an average reduction of 15% in product prices and 11% in the total cost. The supplier's quality improves 6%. The delivery time reduces 5%, and the deadline's greeting increases 3%. The detailed analysis reveals that the initial benefits are directly related to price, and the benefits not related to this variable are only

perceived in companies that have integrated their GS activities, such as improvements in management inventories, increase responsiveness of suppliers and the consistency of the supply process, developed better relationships with suppliers, and established of information sharing flows between units.

Within the current competitive environment, the activities related to the sourcing area represent opportunities for cost reduction and value generation. To obtain these benefits, companies are struggling to organize their global supply network. In an interview with Bernstein (2007), John Mascaritolo, Director of Logistics of NCR Corp., says that after 2000 there was a change in the delivery model, which was centered in a country, and became a combination of regional manufacturing supplies with local and global supply. In this new landscape of business, activities such as export and import procedures are automatically incorporated into the company's supply chain. Consequently, the management process is supposed to involve more complex analysis of costs and time, as well as the impact of cultural differences in relationships with suppliers.

In fact, despite the benefits of the activity of GS, there are some risks. Steinle and Schiele (2008) point out that the main risk is the possibility of increasing the total cost of purchase. Among the reasons for it, they highlight the difficulty of measuring the real transactions costs and the differences between the planned and the realized total cost, due to estimating errors and variations inherent in the company's decisions. This risk was also highlighted by Wilding and Braithwaite (2007), according to whom it is important to consider that the larger number of intermediaries in the process and the long distances can lead to risks related to quality and operability. In this context, information sharing is a prerequisite for the success of such purchases, requiring companies to join efforts to achieve competitiveness. Depending on the form of the supply chain management, transparency in the analysis of total costs and forecasting may be compromised.

While in a process with a local supplier, the buying company and the supplier may exchange the product directly or negotiate the use of only one transport supplier. In a global transaction, the number of intermediaries is expanded and the possibilities for reducing them are limited (Harris, 2006). This means that by increasing the number of transactions, the company may raise the total cost and uncertainty.

The internationalization of aspects of the GS activity within the structure of the companies, helps to reduce risks from opportunistic behavior that often characterize international sourcing (Trent and Monczka, 2003a). The same result can be achieved through the supplier development and the management of relationships in a global context.

GS can decrease the company's agility and flexibility, but today's competitive environment requests agility, and a key component of agility is flexibility (Christopher, Peck and Towill, 2006). One solution for this dilemma is the balance between local and international sourcing (Jin, 2004). By sourcing globally, companies may not be agile enough to meet their consumers' needs on a time basis. According to Jin (2004), to minimize the cost/agility trade-off, many companies are using international³ and domestic sourcing simultaneously. According to the author, there are four conditions under which a larger portion of domestic sourcing can be formulated: greater level of demand uncertainty, information and manufacturing technology, local subcontractor cluster, and long-term relationship with a subcontractor. The greater or higher these items, the more domestic sourcing will be applied.

Besides all the benefits considered as reasons to supply globally, companies need to be aware of the complexity of this strategy. Not all the material can or should be supplied abroad or request a strategic approach. According to Kotabe and Mol (2009), the financial performance of a company will be influenced by the degree of outsourcing activities. To the same authors, it exist a degree of outsourcing where some activities will be outsourced and others integrated. Some difficulties around gaining the benefits of GS are the increase of distance, cost and intermediaries in the supply chain (Levy, 1995, Zeng and Rosseti, 2003, Butter and Linse, 2008). In order to decrease the cost of supply, some companies may be able to increase the total cost of their purchases (Steinle and Schiele, 2008). Managing the cost is a part of a more complex process and understanding it is a previous knowledge that companies need to obtain success in their strategies, especially considering MNCs that need to configure and coordinate their units all around the world. According to Bozarth, Handfield and Das (1998), despite the recognition of the importance of proactively selecting international suppliers, there are few efforts to identify strategic relationship management with international suppliers. The focus of the company stays on cost analysis and the supplier selection process is very often conducted in order to meet immediate needs as well as the purchase of those products that have no local supply. This way, managers seem to be wasting the potential gain from GS, as well as becoming more susceptible to loss in this strategy. Competitive advantage can only be obtained through GS if managers can skillfully execute it (Kotabe and Omura, 1989).

³ The author uses the term "global", but considering the definition of GS used in this research, the word was changed to "international".

International environments differ from local environments by institutional and cultural aspects, which can create barriers to the transfer of competitive advantages between countries. In addition, transportation costs and human resources will also affect the decision between global supply sources (Frear, Alguire and Metcalf, 1995). Investigating 135 U.S. companies that source abroad, Frear, Alguire and Metcalf (1995), identified four dimensions that group the barriers faced by these companies to use international suppliers. As described below:

- a) Competitive barriers, such as the company's own internal barriers that limit the search for international suppliers such as low production volume, continuous change in design, and the realization that suppliers can't meet international quality requirements.
- b) Competitive advantages, such as the company's ability to obtain raw material with high standards of quality and technological level, and to obtain inputs more suited to their needs of international suppliers.
- c) Comparative barriers that make it difficult for any U.S. company to use international suppliers such as government controls, import quotas, and standardization.
- d) Comparative advantage, referring to the firm's ability to capture cost advantages through the use of international suppliers.

The challenges of adopting GS also refer to language barriers, differences in customs and business practices, currency fluctuations, political stability, delays in transportation, inventory management, nationalism, quality maintenance, customs procedures, taxes, quotas, and documents required by specific markets (Cho and Kang, 2001).

Comparing international sourcing companies that do or do not adopt a strategic approach to sourcing, Bozarth, Handfield and Das (1998) found that, possibly, companies would be making international sourcing based on immediate efforts to reduce cost, and improve quality and technology. In this context, they would be neglecting the potential for developing partnerships with these suppliers. To Alguire, Frear and Metcalf (1994), the adoption of GS should be guided by technology and quality needs, rather than by simply cost reduction.

Cho and Kang (2001) surveyed 148 U.S. retailers to identify benefits and challenges of conducting GS. They found that among the benefits of the adoption GS, the obtaining of competitive advantages, the increase of quality, and the services offered to

customers are the most important. Among the challenges, they found that logistical issues, regulations, cultural differences and the uncertainty of the countries fall into the most representative for the sample.

Reaching benefits to GS depends on the size of the company, characteristics of their products, import volume, percentage of imports compared to the company's purchases, the company's experience in GS, and the region from which they are acquired (Cho and Kang, 2001). Cho and Kang (2001) found that companies with higher volumes of imports obtain greater benefits with respect to services such as improved delivery and availability of products than companies with smaller volumes. Companies with the lowest percentage of imports within the total company's purchases have lower logistical problems such as inventory management, customs procedures and delays in transportation, compared to companies with medium or high percentage. This last group perceives that regulations such as quotas, taxes and documents are more challenging to GS than the other two groups. In addition, companies with little experience in GS experience more cultural differences like language and business practices relative to companies with average or much experience in international sourcing area.

Compared with the sourcing of local representatives, purchases from foreign units require greater knowledge of the company over the sourcing process. It is the responsibility of the coordination of GS activities that make the necessary adaptations to the different cultural, legal and political issues (Kotabe and Murray, 2004).

Alguire, Frear and Metcalf (1994) found that in the international strategic supply environment, the barriers faced by companies could be divided into internal – imposed by the company as the risk of loss control and autonomy by the company to use supplier, and external – imposed by the external environment to the company as tariff and non-tariff barriers. Analyzing the perceptions of 115 supply managers of U.S. located companies, the researchers found that the internal barriers reduce the propensity of companies to conduct GS, mainly characterized by low-volume, continuous change in design and impossibility of allocating resources to the use of international suppliers. With regard to external barriers, the more difficult barriers to the achievement of international sourcing are the governmental control and import quotas.

2.1.4 International Buying Companies

The competitiveness in the global marketplace stems from the establishment of global supply strategies to obtain raw materials, material, finished products and other inputs. Thus, it is possible to exploit international opportunities through the creation of global chains, with the breaking of the barriers encountered in this transformation. Bertaglia (2003) argues that the organizations need to create infrastructure that can withstand the conditions in international relations.

The development of a portfolio of global suppliers allows the company to leverage the flexibility of obtaining materials in various ways (Dornier et al, 2000). Companies can change their supplier's overall emphasis on sourcing from countries whose currencies are devalued in real terms. At the same time, organizations can establish a balanced mix of local and global supply markets in which they are operating.

As a result of a research conducted through four case studies, Arnold (1999) identified three ideals of international sourcing organizations, namely as follows:

- a) Model of centralized purchasing, recommended for organizations with low level of supply process' internationalization. The strategic objective may be focused on economies of scale in purchases by a large purchasing department. While centralization is not necessary for all processes, there remains a core system of management and contracting suppliers.
- b) Model of coordination, which stems from the idea of cooperation between different business' areas. Thus, it combines the advantages of regional independence, with the benefits of centralization, and maintaining, for example, the gains from economies of scale, while leveraging the knowledge of the supplier market. The consequence of this model is the commitment established between the units.
- c) Model of outsourcing, which is established in environment with high level of decentralization, with local units autonomy to manage their global supply activities.

These models, despite having been developed from the analysis of corporations with plants in different countries, also have aspects that can be considered for the management of corporations in GS with domestic units only. Furthermore, it is important to note that even a single organization can adopt GS since it is a strategic approach to

international sourcing activity. In this case, some variables in managing this activity, such as the discussion of centralization and decentralization wouldn't be necessary.

With respect to a tendency toward centralization, Schmitz and Knorring (2001) consider that while the increased supply alternatives, there was a concentration of buyers, its mean, the union of buyers from different companies to make purchases together. Rabelotti (2003) investigated the cluster footwear's producers in the region of Brenta in Italy, and realized that there was a concentration of buyers in the purchases for the German market and its surroundings. In 2000, 74% of the footwear's sales from this region were made to buying groups.

By investigating four producing countries – China, India, Brazil and Italy, Schmitz and Knorringa (2001) identify that factors as quality, price, response time, punctuality, flexibility for larger or smaller orders, and design innovation were the key aspects of the supplier analysis. There was a performance difference with respect to these criteria, which leads companies to make their choices according to the needs of each purchase. Looking at the factors that limit the use of an international supplier, Schmitz and Knorring (2001) point out the establishment of import quotas, specially related with Chinese footwear, what lead the companies to the development of alternative supply sources.

To Schmitz and Knorring (2001), a feature of a global purchasing is precisely the possibility of buying from direct or indirect suppliers. Buying direct main advantages are the greater control and cost reduction through the elimination of the agent's commission. However, this reduction may not be representative in the total cost, as this situation may require the presence of a representative of the buying company in the supply market. Investigating the behavior of importers, Liang and Parkhe (1997), attributed to this profile importer the name of "Producers" as they import just to satisfy their own necessity. A second group was identified and named "Import Agent", "Business Brokers" or "Merchant". They are characterized by the sale of their imports. This indirect sourcing seen to be appropriated for purchases of small amount at irregular intervals, as well as more distant countries, not only geographical, of the client (Schmitz and Knorringa, 2001).

2.1.4.1 The Configuration of the Company for International Sourcing

Arnold (1989) points out some requirement for implementation of GS. The first is the size of the company. At the same time that large companies tend to have greater availability of resources, small organizations can take advantage of their greater flexibility

and a predisposition to differential performance as a qualifier for their international buyer. Knudsen and Servais (2007) argue that the internationalization of activities requires resources and time for its development. Noting the environment of small and medium companies, these authors argue that the size of an organization limits the extent of its internationalization, since the availability of funds tends to be lower in such companies⁴. At the same time, experience in international sourcing can facilitate this process.

A second aspect to Arnold (1989) refers to an inferior position given to the sourcing area in the organizations, which may limit its ability to explore opportunities due to internal negligence. The need for qualified personnel for this activity is another requirement.

The decision related with international sourcing and how the company is structured to perform these activities involve the alignment of all activities of the supply, including aspects related to product and services – quality and specifications (Quintens, Pauwells and Matthyssens, 2006). The company's procedures, specially the sourcing area, should be adjusted to the work within the international environment. Trent and Monczka (1998) identified that the structure of the sourcing area has changed with the increase in the number of individually negotiated purchases, focusing on the final item, instead of the traditional viewing of supplies such as commodities.

Investigating 151 Belgian companies that carry out international purchases, Quintens, Matthyssens and Pauwels (2006) developed the construct of Global Procurement Strategy, through the association of ideas of centralizations, coordination/integration and standardization, a perspective that integrates structure, process and organization. The focus of this approach lies in the internal organization of the company to perform activities of international sourcing. To these authors, the overall sourcing strategy results from the interaction of relevant resources and skills in a dynamic environment context. Within an approach of Resource Based View, the Global Procurement Strategy is presented as a way for the company to gain a competitive advantage against its competitors. This integrated view, as noted by the authors, generates benefits for the control of materials, reduce delivery times and increase responsiveness internally. The achievement of these outcomes requires the conduct and monitor of international sourcing team, the alignment of company strategy, and the study of the trade-offs between product and service dimensions and configuration of resources to this activity. One can highlight the importance of an efficient flow of information and

⁴ The authors do not present the criteria used to analyse the size of companies to achieve this result.

knowledge management as a ways to simplify and facilitate the standardization and centralization of the sourcing process.

This concern with the organizational structure for carrying out activities of GS is one of the largely unexplored aspects in GS (Hartmann, Trautmann and Jahn, 2008), although it is fundamental to build a GS strategy. To verify this Hartmann, Trautmann and Jahn (2008) conducted a study with eight MNCs to investigate the strategies adopted by these companies in three areas, each one with its variables, as follow:

- a) International strategy
 - a. Global competition
 - b. Economy of scale
 - c. Local responsiveness
- b) Organizational configuration
 - a. Matrix with dominant structure
 - b. Network structure
 - c. Excellence centers
- c) Interdependence
 - a. Headquarter interdependence
 - b. Subsidiaries interdependence

Looking at the strategic orientation of international sourcing through these dimensions, the authors identified that although all companies adopt a transnational orientation and realize the importance of balancing the activities between centralization and decentralization of control, they present two distinguished functional configurations. The first configuration, named global structure, is characterized by the centralization in the array with the participation of affiliated in the process of strategic development to meet regional peculiarities. The second configuration, named transnational structure, is characterized by being an integrated purchase network, leaving only the headquarter to coordinate the teamwork of the group. In the first group there are the companies that generally have a large dependence of the headquarter, while companies whose subsidiaries are generally more independent are positioned in the second group. The choice among these structures is influenced by the corporate organizational structure and distribution of knowledge on sourcing between the branches (Hartmann, Trautmann and Jahn, 2008).

When dealing with companies with different branches and different units of sourcing, Hartmann, Trautmann and Jahn (2008) found that, with respect to the formalization,

the focus must be on the definitions of governance and standards, and process control. Governance and standards are understood as the establishment of manuals, conduct's codes and the definition of competences. Control means the establishment of indicators and methods to monitor and compare the efficiency of the units.

According to Hartmann, Trautmann and Jahns (2008), the degree of centralization/decentralization of responsibilities for sourcing in MNCs will reflect the corporate organizational structure and the distribution of responsibilities between the sourcing units in the subsidiaries will reflect the distribution of knowledge/experience about this activity.

To integrate the purchasing activities in different countries, both global companies and transnational companies make use of a medium level of formalization, information systems, performance indicators and a degree of sourcing activities' centralization. Moreover, global companies strive for interaction between the headquarter and the subsidiaries as well as using higher levels of centralization than transnational. Transnational companies have a more active involvement of its subsidiaries in the strategic planning process, and strive for the emphasis between subsidiaries (Hartmann, Trautmann and Jahn, 2008).

2.1.4.2 The Presence of the Buyer Company in the Supplier Country

Investigating Swedish companies in the clothing sector, Akesson, Jonsson and Edanius-Hallas (2007) found that direct purchase from manufactures in global markets is the most frequent strategy adopted by companies, since it represents a way to achieve both flexibility and control in the manufacturing capacity and allows an approach to manufacturing operations. The presence of agents as intermediaries was found more frequently in geographically distant markets of supply, such as in Asia. The companies identified as manufactures of direct purchasers from Asian suppliers form a group of larger companies, compared with those that adopt other strategies. Companies are investing in the internationalization of their activities with the opening of the production and marketing units abroad, alone or with partners.

The activity of supply internationalization with the presence of the buying company in the territory of the supplier can happen in different ways that represent a continuum of involvement of the buyer (Harris, 2006). The first approach is the use of trading companies, which are companies hired to broker the negotiations and activities between buying and supplying companies. Considering that they are subcontractors, it does not imply

investment of the buying company. Moreover, as intermediaries, they usually conduct all or part of the operational activities of international sourcing. The second way is the use of local representatives of the buying company in supplier markets. One of these forms of representation is the opening of sourcing offices abroad – International Purchasing Offices (IPO). Its responsibilities are primarily related to the search for supplier, negotiate of contracts, request of quotes, eliminate of noises in the communication between the company and its suppliers, monitor of shipments, sample collection, management of technical problems, confirm of products' quality and visit to the suppliers units (Trent and Monczka, 2003, Mulani, 2008).

According to Mulani (2008), the IPO represents the alternative preferred by businesses to incorporate new suppliers into their supply chains. The governance has highlighted the importance for effective performance of these units, including activities as the identification of corporate guidelines for directing the activities of the IPO, the identification of coordinators for the units, the focus on supporting top-down, setting aggressive but realistic targets, maximization of transparency through communication with operations, and an emphasis on continuous training in order to reinforce corporate goals (Mulani, 2008).

The choice of a business unit abroad and assign to it the same responsibility on the development of a product, regional or global, is another strategy observed by Harris (2006). This way, the company can capture the best opportunities available in a particular place related to technology and production. The risks of this strategy stem from the degree of coordination required to make the information obtained by the unit and its actions be in harmony with the entire company.

There is not an established relationship between the different ways to position the supplier buyer in the supplier's market and the degree of involvement in this activity. In the last two stages of Trent and Monczka's continuum, it is highlighted that companies should use their international units to assist the overall sourcing process, like integrate the activities of the various business units. However, it is not conditioned to the entry of the buyer in the supplier's market. In Arnold's proposition (1999) did not appear orientations regarding to this positioning.

Although it is not clear what the relationship of the approaches to these aspects, because it is a more recent research subject, one must consider that the entry of the buyer into the suppliers' market is an alternative that may contribute to the success of the GS activity, not being a basic condition for their realization.

2.1.5 Key-Success Factors in International Sourcing

The success of organizations in making international sourcing depends on organizational skills. Trent and Monczka (1998) present some of these skills that allow companies to compete in the global supply bases, as the speed of product support and service, high quality perception of products, the work performance according to the conditions negotiated, low price as a result of low cost production, an ability to establish a presence in international markets and to introduce products faster than the average industry.

This last skill is a result of a transformation in the pattern of international competition. According to Trent and Monczka (1998), the market competition is characterized not only among big and small companies, but between fast and slow companies. To become competitive in this market it required to reduce lead-time orders and production, and increase responsiveness in the supply chain.

In the investigation of aspects of entrepreneurship, innovation and organizational learning in companies that carry out GS, Hult (2002) found that building an organizational culture that represents these values contributes to the success of this activity. Consequently, it was perceived an improvement in business performance through value creation in the form of products and services for customers.

Trent and Monczka (2003a) investigated the determinants of success for the activity of GS. The factors that represent the highest and lowest ratio can be seen in Figure 7, in a decreasing order of importance in the two columns.

Highest rated sourcing critical success factors	Lowest rated sourcing critical success factors
<ul style="list-style-type: none"> • Personnel with required knowledge, skills and abilities • Availability of required information • Awareness of potential global suppliers • Time for personnel to develop global strategies • Availability of suppliers with global capabilities • Ability to identify common requirements across buying • Units • Suppliers who are interested in global contracts • Operations/manufacturing support of the GS • Process • Internal customer buy-in to GS contracts • Direct site visits to suppliers 	<ul style="list-style-type: none"> • External support (such as consultants) • Decentralized procurement structure • An executive steering committee to guide the process • Marketing support of the GS process • International purchasing office support • Language similarity with global supplier • Compatible information systems with suppliers • Cultural compatibility with global supplier • Common part coding system across buying units

Figure 7 – Highest and lowest rated worldwide sourcing critical success factors. Source: Trent and Monczka (2003a)

Faced the findings presented in the Figure 7, one can highlight a few points. Regarding the need for professionals with a suitable profile for global activity, Trent and Monczka (2003a) claim that these professionals need to be able to make presentations and communicate effectively, have the ability to think holistically through a company or region, and the ability to work in an environment of cultural diversity. In order to ensure reliable and available information at the right time, some companies are investing in information systems that ensure this flow. Other relevant information is that the supplier that has the best skills for global supply may not be ready for this, which leads companies to accept suppliers that meet the competitive needs of materials. Finally, related to the greater impact factors, the researchers noted that despite the fact the costs for visiting international suppliers are high, the cost of a bungled selection of a supplier are even greater, especially when dealing long terms contracts.

The success of GS depends on a high level of transparency that is possible through the cooperation of proactive members in the supply chain to identify what is happening and manage situations that are inconsistent with the initial planning (Wilding and Braithwaite, 2007). In turn, information, as the ability to request information and data, and the ability to identify common requests is one of the success' factors for international supply activity (Trent and Monczka, 2003).

In addition, Wilding and Braithwaite (2007) argue that the successful adoption of this type of strategy requires six capabilities:

- a) Managing the total cost acquisition, enabling the identification of the costs involved in the process, clearly and precisely.
- b) Unique information flow in order to avoid conflicting of information and reduce communication breakdowns.
- c) Clear identification of products in order to ensure that the products will be delivered correctly, from a precise request and without delay.
- d) Visibility of the entire chain to monitor and anticipate possible deviations that leads to the need for corrections.
- e) Connection between the cycles of actual demand and sales development, through the sales performance information.
- f) Consistent and updated information platform, which manages the entire chain visibility.

The success of GS also depends of the organization's commitment to this strategy. Mulani (2008) highlights that some behaviors of the companies can contribute to this process. The first is its focus on people through training, education opportunities, the offer of attractive packages of benefits, and the provision of international opportunities of work aiming mainly at keeping people on the team. The involvement of other partners is another required behavior, as this is a way to absorb the knowledge of these companies, leverage expertise, maximize contracts and continually reduce costs. The measurement of performance using appropriate indicators is the third behavior. There is also the establishment of governance structures, for example, to make the connection between the activities of the IPO and the company's strategy. As a last behavior, Mulani (2008) presents the development of an adequate operational model which leads the company's activity. This model refers to the discussion of centralization and decentralization that will be presented in the sequence.

2.1.6 Centralization and Decentralization on International Sourcing

An internationalization strategy of an organization has two key dimensions (Porter, 1986a). The first refers to the location of each value chain activity of the company worldwide. The second refers to how these activities conducted in different locations would be coordinated. The definitions related with these two dimensions determine the needs of international logistics, including the sourcing activities, that faces a dilemma between centralization and decentralization.

When tackling GS, it must be considered that the GS strategy can be developed either by a single company that operates in the global marketplace, or a set of companies belonging to a corporation with units in a single country or in different locations. When the object of study is this second group of firms, some aspects are added to the management of this activity.

Whereas a global company, success in adopting a GS strategy implies the delegation of a sufficient degree of autonomy of its subsidiaries. Although the entire corporation must follow a homogeneous orientation, this flexibility will allow for greater speed of action in the market. The consequence is the need for a better coordination between units of the same corporation (Arnold, 1989).

Extending this discussion of the degree of centralization needed in managing GS, Matthyssens and Faes (apud Arnold, 1999) present arguments for and against the autonomy of the units. In favor of the decentralization, they show that the local managers responsible for managing the total cost may get frustrated if they can't control these costs. This strategy also facilitates cooperation among buyers and the consumer market, since the local units use to know better their customers. These same buyer also become more motivated and seeking local suppliers tend to be more fast, the delivery times reduced, relations are established with the community, as better buying conditions are obtained under certain conditions. At the same time, the authors argue that centralization can provide greater bargaining power to the buyer, with a buying uniformity that can generate economies of scale. Finally, it allows to the efficient use of the sourcing skills, and the reduction of administrative activities and operational costs. To Quintens, Pauwels and Matthyssens (2006), a high degree of centralization and coordination ensures better results in the generation of value through the activities of international sourcing, as well as the internal organizational of the company for the development of GS may provide greater opportunities to achieve competitive advantages.

Considering that the company will perform sourcing activities on a local or global base, the need arises to coordinate the activities of the company. The need is evidenced by Gelderman and Semeijn (2006) in a case study developed in a chemistry company with thirty subsidiaries around the world, stressing the need for the existence of a focus on both internal and external interfaces. According to these authors, the management of suppliers in various markets increases the complexity of organizational management.

The current standard of competitiveness requires MNCs to modify their ways of positioning as it is not possible to manage anymore their units as a set of independent national subsidiaries. Companies that have operations in more than one country must integrate their

activities across geographic locations (Trautmann, Bals and Hartmann, 2009). One challenge for managers is to identify which areas should be integrated and which should act independently. To identify these areas, Trautmann, Bals and Hartmann (2009) developed a single case study of a company that was starting to organize its GS structure. The authors focused their efforts on the study of functional activities and on how to manage them in order to get the better results for the sourcing area through the synergy of this activity. The synergy of GS is divided into three classes: economy of scale – reduction of the unit cost by increasing the volume of purchase, economy of information and learning – sharing information and knowledge through various units, and economy of process – benefits from processes supported by the creation of the best practices throughout the organization.

One of the bases for the study of Trautmann, Bals and Hartmann (2009) was the matrix of Kraljic (1983), whereby the sourcing strategy of a company depends on two factors: (1) the impact on the result, and (2) the risk of supply. The placement of items with respect to these dimensions generates four distinct classifications of materials: leverage, strategic, non-critic, and critic. The other main reference was the model of Olsen and Ellram (1997), which used two factors: the economic and the competitive. From these two studies, Trautmann, Bals and Hartmann (2009) developed a portfolio for GS, which relates the strategic importance and the potential synergy. According to this portfolio, when there is a high potential of synergy and it is something strategic, the purchase should be centralized, its mean, must be made by the corporation and not in an isolated unit. In the other situations, the sourcing process must be conducted by the units separately.

To define the degree of strategic importance, the authors suggested the analysis in two dimensions with their own attribute:

- a) Competitive factors
 - a. Extension of the purchase as part of the core competence
 - b. Conditions of the purchase to add technical or knowledge advantage
- b) Economic factors
 - a. Total volume of purchase
 - b. Impact of purchase on the final product (high added value)
 - c. Extent of the purchase item as part of a product with high profitability

The coordination of organizational activities to the GS refers to the essence of the decision to centralize and/or decentralize the functional activity, accomplishing this activity throughout all units of the same company worldwide. Trautmann, Bals and Hartmann (2009)

point out that this conflict exist because while globalization pressures for standardization and efficiency of process favor centralization, the need for customization and responsiveness leads to more decentralization and dispersal of activities in different countries.

Besides the organization of the company, another key aspect related to GS is the identification of which products will be managed from a strategic vision.

2.1.7 Choice of Materials for GS

One of the difficulties faced by companies is the definition of which materials should be purchase locally or globally, when the two alternatives are feasible. In an attempt to answer this question, Smith (1999) developed a matrix to define where the materials should be researched and sourced. As a result, the company have four alternatives: source locally, source from further but by locally (distribution), source and buy from further (nationally/trade block), or source internationally.

This decision is given from the analysis of six dimensions for each product. The first involves the product specifications, which analysis the needs and the degree of customization in the specification made by the buyer. The second dimension refers to product technology, including de analysis of the level of technology and the degree of technology change. The quality and process technology is the third matrix of analysis, that verify the risk of failure and the capacity of repair and tolerance. As a fourth dimension of analysis, the logistic and the availability of the item is presented, involving the product availability and the volatility of the demand. The criticality of the item and its volatility make up the fifth matrix. The last aspect to be analyzed is the cost, which includes the intrinsic cost, that's mean, the additional costs to the purchase price of the item and the cost of delivery.

After place the item in each of these six matrices, the positions should be superimposed on the original array. According to Smith (1999), if there is an overlap, and different classification were indicated, it is suggested to do a cluster analysis of the situation in order to obtain the best match.

Gelderman and Semeijn (2002) claim that the GS strategies should be developed based on arrays of classification of materials, which relate the number of suppliers and the value of purchases. These strategies are directly related to how companies convey knowledge to the different units of sourcing worldwide. To prove it, they investigated a Belgian MNC whose headquarter shares knowledge through a portfolio to the development of different strategies of sourcing.

The traditional supply development models usually consider the involvement of the supplier in the buyer company activity, but don't use to prominence to the fact that if they work with local or global suppliers (Grieco, 1995, Cebi and Bayraktar, 2003, Kamath and Liker, 1999, Simchi-Levi, Kaminsky and Simchi-Levy, 2003).

The need to establish relationships with suppliers to create value within supply chains leads to the conclusion that a company can only generate value if the conditions are provided by the suppliers. The buying companies tend to establish relationships in which information is shared through the development of trust relationship, as well as the establishment of formal relationships through contracts. Thus, companies can obtain an environment of cooperation, collaboration and mutual commitment (Rogers, 2005).

Investigating the relationship of Finnish companies with Chinese suppliers, Salmi (2006) finds that these relationships are built gradually, and the time of development is important to strengthening this relationship. Moreover, the involvement of the companies, such as for solve problems, is a key part in this process.

According to Knudsen and Servais (2007), global companies and the buyer companies have greater concern about the monitoring of its suppliers to avoid raising the total cost of acquisition and/or reduction of product quality. They also realize that the biggest risks are related to the reduction of final product quality and supply conditions for the company. In addition, these businesses have a closer relationship of cooperation and trust as a way to reduce these risks.

Another important aspect in the context of GS is the customer-supplier relationship. Knudsen and Servais (2007) emphasize that building relationships is more important in international sourcing than national sourcing. One reason is the high level of dependence that the buyer can achieve with the supplier. Thus, companies focused on imports need to aim at the establishment of strong relations, based in trust between the parties. Often the relationship is best developed in contracts for innovative suppliers, which favor the flexibility of GS (Dornier et al, 2000).

Though the deep investigation of the relationship of four suppliers with the buyer company, Ghauri, Tarnovskaya and Elg (2008) identified the importance attached to the development of interpersonal relationships with the sharing of a clear vision of the business between the buying firm and its international suppliers. They also highlighted the technological and financial support as other ways to develop better relationships. According to the authors, the continuous change of people in the companies leads to the loss in efficiency of international supplier.

According to Bozart, Handifield and Das (1998), despite the recognition of the importance of proactively selection of international suppliers – the effective implementation of GS, there are a few efforts identified to the management of the relationship with international suppliers with a strategic approach. These authors have adopted four dimensions for the evaluation of international suppliers, each one with their own variables, as follow:

- a) Exchange of information: daily interaction, availability of financial information by suppliers, availability of production information by producers, and feedback on the performance of companies.
- b) Multiple sources of supply: switching suppliers based on lower prices, request of lots of quotes before placing the order, and the use of protection contracts.
- c) Formalization of the relationships: the use of contracts, legal detailed contracts, and the signing of specifications.
- d) Informal relationships: adequate remunerations of suppliers, information sharing, and the work with suppliers to increase quality.

2.1.9 Costs in GS

The increase of globalization has generated a need for strategic management of sourcing activities. Thus, GS has become the link between sourcing decision and strategic decisions. While decisions regarding the choice to have international suppliers are made by high corporate level, the decisions related with “from where” tend to be taken by professional in lower corporate levels. From a literature review, Butter and Linse (2008) found that decisions related to supply in global organizations are not restricted analyzed to transaction costs and customs expenses, they also include costs incurred because of cultural differences and institutional policies.

Except for the lack of local suppliers, the search for cost reduction is the most obvious reason or the conduct of international sourcing. In a global context, the cost analysis must include, besides the price of the product, the costs of transport, taxes, storage, handling, and insurance also must be considered. This approach that justifies the source as a choice for total cost reduction is questioned by Steinle and Schiele (2008), for whom in order to achieve lower sourcing prices, companies may end up increasing the total value of the transaction. The authors’ reasoning for this assertion lies in the fragility of studies investigating the comparative costs between local and GS, which did not make clear whether the analysis was

made for sources within specific projects or routine sources. Another point highlighted is that the current analysis does not count of the cost of GS efforts that failure.

One of the studies that contribute to the advance of the researches related to the types of costs to be considered in an analysis of GS was made by Butter and Linse (2008). These authors segmented the costs involved with GS into two types. The first refers to the costs traditionally studied and most easily measurable, that the authors named “heavy costs”. In the second group they assembled the “soft costs”, such as the development and verification of contracts, information costs, communication problems resulting from the need of knowledge of legal procedures, the development of trust relationships, and the costs associated with the operation’s risk.

These two groups were further subdivided into those that are controlled by the company or not as shown below:

a) Heavy costs

- a. Decisions controlled by the company
 - i. Research cost to identify suppliers
 - ii. Direct transaction costs
 - iii. Transport costs
 - iv. Quality control
 - v. Installation and maintenance costs
 - vi. Intellectual property costs
 - vii. Training
- b. Decisions not controlled by the companies
 - i. Commercial law
 - ii. Exchange
 - iii. Licenses for import and export
 - iv. Government regulations

b) Light costs

- a. Decisions controlled by the company
 - i. Effects of supply’s decisions in the company’s current jobs
 - ii. Effects on company reputation and value of their brand
 - iii. Corporate culture, like the company’s ability to manage suppliers
 - iv. Sustainability of transaction costs within the company

- v. Risk aversion related to the company's ability to cope with the risks associated with new suppliers
- b. Decisions not controlled by the company
 - i. Sustainability arising from the relationships between local and global environments
 - ii. Cultural differences' interactions
 - iii. Political differences
 - iv. Environment (Butter and Linse, 2008)

Once you know these costs, the challenge is to optimize them in order to achieve maximum value with the lowest total cost. The ability to source products and services at the lowest price is less critical than the development of effective ways of overcoming tariff barriers. What happens is that in a globalized environment, these light costs become more important, leading to the sourcing area a strategic dimension (Butter and Linse, 2008).

In order to reduce the impact of GS costs in the final product, Bozarth, Handfield and Das (1998) found that many companies are working with the expansion of the GS volume to achieve economies of scale. This behavior was identified with the investigation of 55 U.S. manufacturing companies. The increased volume of sources is one of the factors that lead buyers to become preferred by their suppliers (Steinle and Schiele, 2008). In fact, when suppliers are perceived as valuable resources, they treat their customers better. However, Steinle and Schiele (2008) also found that geographic distance is a major factor for this behavior.

Within this context, a simple analysis of manufacturing cost is not enough, variable such as costs of resources, exchange rate fluctuations, availability of infrastructure (transport, communication and energy), industrial, cultural and political environment, must also be included. This need to extent the analysis to the development of a sourcing strategy is necessary because the main problems associated with international sourcing related to logistics, inventory management, distance, nationalism, and differences in working practices. However, despite these problems, the origin of sourcing, according to Murray and Kotabe (2004), is less important than how this activity is done. Thus, GS enables the aggravate of international supply to be properly management and their impacts minimized, or at least controlled.

Another approach to cost analysis was made by Zeng and Rossetti (2003). The authors developed a framework of five steps for evaluating the logistics costs involved in GS.

This framework begins by the identification of six categories of logistics costs involved in this process, as follow:

- a) Transportation
 - a. Shipping
 - b. Consolidation
 - c. Transfer rate
 - d. Collection and delivery
- b) Inventory
 - a. Stock market
 - b. Safety stock
- c) Management
 - a. Order processing
 - b. Communication
 - c. Overhead (payment made to international logistics group)
- d) Taxes and fess
 - a. Expenditure on clearance
 - b. Expenses cargo agents
 - c. Expenditure documentation
- e) Risk and damage
 - a. Damage, losses and delays
 - b. Insurance
- f) Moving and packing
 - a. Change in the terminal
 - b. Material handling
 - c. Input/output of goods
- d. Collection of empty container for stuffing
 - e. Packaging and storage

After identifying these costs, Zeng and Rossetti (2003) present a five steps model for the costs analysis:

- a) Identification of the goal through the verification of the logistics costs associated with GS.
- b) Establishment of possible combinations of transport models and configuration of the activities

- c) Development of a minimum number of parameters among the six categories listed above.
- d) Reclassifying the costs into three groups related to its causes: weight, amount, and frequency of shipments.
- e) Calculate the total logistics costs by establishing a matrix of each cost for each alternative in a way to see the costs of each alternative. The values obtained can be analyzed with technological resources in order to help the company to minimize the total cost.

Hong and Holweg (2005) identified three levels of costs that need to be considered when analyzing the cost efficiency of GS. Based on these findings, they proposed a framework for financial assessment of GS (Figure 9).

Static Cost	Dynamic Cost	Hidden Cost
1 Purchase price ex factory gate	1 Increased pipeline and safety stock due to demand volatility	1 Currency fluctuations, in particular for artificially pegged currencies
2 Transportation cost per unit, assuming no unexpected delays for quality problems	2 Inventory obsolescence due to long logistics lead-time, e.g. in case of quality problems	2 Remaining overhead at the Headquarters (purchasing, technical assistance, R&D, product development)
3 Customs and duty to clear one unit for export	3 Engineering time needed to address quality and warranty issues	3 The loss of intellectual property to contract manufactures
	4 Expedited shipments, e.g. air freight, to ensure uninterrupted supply	4 Legal risks in terms of ownership of facilities and market access
	5 Cost of lost sales and stock-outs, as the supply chain is unresponsive	5 The strategic risk of political instability and change

Figure 9 – A Framework for Financial Assessment of GS. Source: Hong and Holweg (2005)

These three studies that investigated cost in GS do not present an established relation between them. It is possible to identify that there is a distinction of costs that are easier to identify and manage, called ‘decisions controlled by the company’ by Butter and Linse (2008) and ‘static costs’ by Hong and Holweg (2005) and those ones that are more difficult to manage, called ‘decisions not controlled by the company’ by Butter and Linse (2008) and ‘dynamic and hidden costs’ by Hong and Holweg (2005). This situation lead the companies to the need to manage the GS process more carefully in order to avoid the risk to lose one of the most important benefits of GS: the total cost reduction. The management of GS activities will be investigated in the sequence.

2.1.10 Management of GS Activities

The model proposed by Trent and Monczka (1991, 2003) has been presented as a framework not only to analyze, but also to manage supply activities. Whilst being a process that can be adopted by companies to linearly move from a local to a global approach of sourcing, the model has an extremely high focus on the discussion between centralization and decentralization, being part of their discussions only to corporations that have more than one business unit. Although it is considered a widely accepted management model, other alternative models must be sought. In this search it was found the proposal of Zeng (2000, 2003) that extent the discussion on the management processes of GS, although this is a non-tested model.

The proposal of Zeng (2000) analysis GS through four dimensions: (1) Types of companies that make GS, (2) Types of item sourced globally, (3) Reasons for the global search, and (4) Countries identified for GS. For each of these dimensions, the authors identified variables to indicate how the model can be applied and what must be analyzed. These variables are shown in Figure 10. It is noteworthy that this is a perspective focused on the analysis of US companies.

Type of companies that source internationally:

- Wholesale trade, durable goods
 - Fabricated metal products
 - Industrial machinery and equipment
 - Wholesale trade, non-durable goods
 - Electric and electronic equipment
 - Chemicals and allied products
 - Furniture and fixtures
 - Rubber and miscellaneous plastic products
 - Stone, clay and glass products
 - Instruments and related products
 - Business services
 - Engineering, accounting, research and management
- Source: Frear et al (1992)

Types of items purchased from international sources:

- Finished goods
 - Electrical components
 - Mechanical components
 - Capital equipment for in-house use
 - Subassemblies
 - Raw materials excluding fuel
 - Chemical components
 - Services
 - Textiles
 - Technology
- Source: Min and Galle (1991)

Reasons for global sourcing:

- Improves competitive position
 - Global attitude
 - Lower prices
 - Enhance company image
 - Countertrade obligations
 - Better availability
 - Better quality
 - Local content requirement
 - High level of technology
 - Better terms of delivery
 - Unavailability of items in the US
 - More advanced technology abroad
 - Negotiability
 - Association with foreign subsidiary
 - Geographical location
 - Government assistance
- Source: Frear et al (1992)

Principle country of overseas sources:

- North America: Canada, Mexico
 - Europe: UK, France, Germany, Italy, Ireland, Poland, Hungary, Romania, Turkey, Yugoslavia
 - South America: Brazil, Venezuela
 - Asia: Japan, Singapore, Taiwan, South Korea, Hong Kong, China, India, Malaysia
 - Caribbean Basin: Puerto Rico
- Source: Frear et al (1992)

Figure 10 – Issues in GS. Source: Zeng (2000)

According to Zeng (2003), the GS process can be viewed in five stages. The first stage comprises the investigation before the adoption of the strategy, as can be seen in the Figure 11.

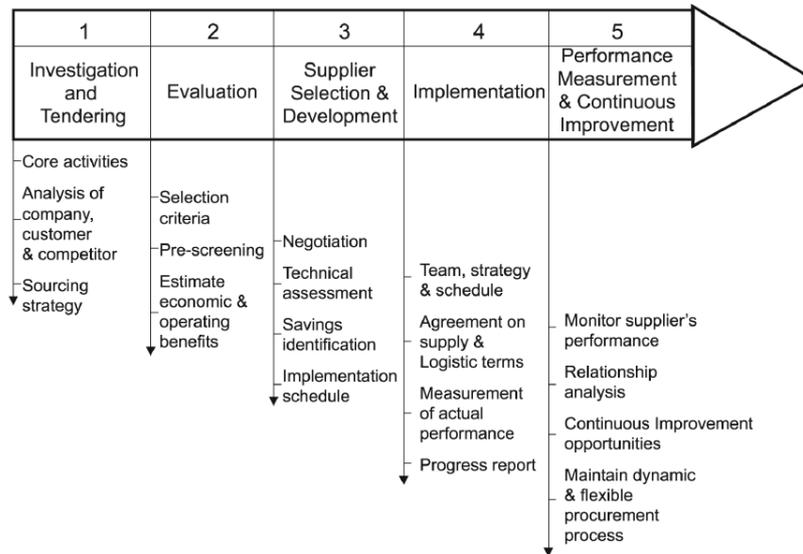


Figure 11 – A generalized five stage model to manage GS. Source: Zeng (2003)

Another way to manage GS is dividing the operational assessment of GS in different strategic levels, as Hong and Holweg (2005) proposed, and can be visualized in the Figure 12.

Time	Key issues	Variables
Operational (day to day management)	<ul style="list-style-type: none"> Labor cost Production and logistics lead times Product quality Customization of products 	<ul style="list-style-type: none"> Delivery lead time against customer order Transportation needs (how often do you need airfreight) Search and coordination cost Transportation cost Other indirect cost (travel, set-up-extraneous payments such as bribes etc.) Purchase/unit costs
Tactical (1-2 years' horizon)	<ul style="list-style-type: none"> Flexible configuration and local presence to gauge customer needs Need to provide appropriate product variety and innovation 	<ul style="list-style-type: none"> Tax regime Duties and tariffs Degree of product customization to local or customer needs Cultural, language, skill differences
Strategic (5 years' horizon)	<ul style="list-style-type: none"> Location of manufacturing operation Sourcing decisions Outsourcing of operations and services 	<ul style="list-style-type: none"> Political risks Market growth Labor cost Product life cycle Transaction costs

Figure 12 – A Conceptual Frameworks for the Operational Assessment of GS. Source: Hong and Holweg (2005)

The theoretical investigation revealed the absence of an approach to understand GS with a process perspective including the segmented aspects that had already been studied by the researchers. In order to fill this gap, in the sequence it will develop a discussion related about the different theoretical perspectives already presented in this chapter in order to propose a theoretical framework that can integrate the findings.

2.2 Analyzing GS and the theoretical framework development

This section presents an analysis of the concepts and theories previously studied in the literature review in order to explicit the development of the theoretical framework.

Through a literature review, the goal was to propose a theoretical framework that could be consider a kind of theory development. According to Baumeister and Leary (1997), this is the most ambitious goal of literature review. In this case, research proposes a novel conceptualization or theory regarding some phenomenon, providing a database from which the author draws conclusions about the merits of existing conceptualizations.

The proposed framework presents a set of interconnected activities that, together, represent the adoption of GS by companies. On its development, there was an issue to highlight the relation of GS with the company and with the suppliers. In an effort to simplify the analysis of the framework, five dimensions were identified in the theoretical framework: (1) antecedents of GS, including strategic orientation and organizational structure, (2) opportunities, (3) process of GS, including supplier's management and purchase process, (4) difficulties and risks, and (5) results. In the sequence of this section, each dimension will be investigated.

2.2.1 Antecedents of GS

Understanding the concept of GS is a preliminary point, but what leads companies to adopt it? Companies purchase abroad in order to reduce costs and also to access other advantages from the supplier country or the supplier company. Considering TCA, the essence to purchase is the complex cost analysis and the evolution of the research related to sourcing are showing that even cost is the essence, other benefits are being achieving through this activity.

Investigating the advantages from GS, Alguire, Frear and Metcalf (1994) identified that companies can obtain comparative and competitive advantages through this strategy. The comparative advantage is related to the ability of a company to capture local cost advantages through the utilization of foreign suppliers. The competitive advantage is related to the company's ability to offset competitive disadvantages other than costs, including access to superior quality or higher technology inputs, and the ability to obtain its requirements from offshore supplier more readily. Is the possibility of advantages that lead companies to source globally, and is the possibility to increase these advantages that will lead them to adopt GS. This evidence leads us to the investigation of the strategic orientation of the companies to adopt GS.

2.5.1.1 Strategic orientation

The motivations to GS can be related with the company's products or input's features, like when a product required a specific raw material that cannot be made by the company, or can be related with the supplier, like when one can obtain a product just in a specific country, or can get it with a less total cost. The investigation of motivations must be related with these two types of advantages and here will be presented which motivations are related with each construct. The motivations related with comparative advantage are those that leads the company to capture local cost advantages though the utilization of foreign suppliers. As it was not intend to make an investigation of cost's types, the total acquisition cost reduction was used as a way to include all costs related with a sourcing decision. The possibility of reduced cost through the exchanges rates must also be considered here. The competitive advantages are related to the company's ability to offset competitive disadvantages other than costs. In order to identify these motivations, a list of all advantages not directly related with costs that are presented in the literature were made. In an intuitive way the motivations were grouped in 4 categories to facilitate as can be view in the Figure 13.

Motivations to GS	
Constructs	Motivations
Motivations related with comparative advantages	<ul style="list-style-type: none"> • Total acquisition cost reduction • Incoming goods at a lower cost in local currency (exchange rates)
Motivations related with competitive advantages	<p><u>Product related</u></p> <ul style="list-style-type: none"> • Access new technologies • Deliver improvement • Flexibility to change the input's features • Product reliability improvement • Quality improvement • Quality control improvement <p><u>Supplier related</u></p> <ul style="list-style-type: none"> • Establishment of alternative supply sources • Increase in the number of available supplier • Supplier reliability improvement <p><u>Process related</u></p> <ul style="list-style-type: none"> • Access advantages from supply's market • Access advantages from supply's core competence • Anticipate material needs to new products in development • Anticipate materials needs in case of demand changes • Better negotiations conditions • Introduce of competition on the supplier base • Reduction of product development cycle <p><u>Company's marketing related</u></p> <ul style="list-style-type: none"> • Customer service improvement • Establishment of presence in global market • Get the opportunity to sale to a specific market or country • Meet supply constraints imposed by government • Offer global support to local products • React to competitor's practices • Support to the company own international operations

Figure 13 – Motivations to GS. Reference: Author based on Monczka and Trent, 1991; Bozarth, Handfield and Das, 1998. Dornier et al., 2000; Cho and Kang, 2001; Christopher, 2002; Jin, 2004; Agndal, 2006; Harris, 2006; Knudsen and Servais, 2007; and Dutton, 2008.

Quintens, Pauwells and Matthyssens (2006) proposed drivers and facilitators to GS (Figure 14). Under their analysis, drivers must be understood as elements that favor or speed up the global purchasing decision, and facilitators are the conditions that do not necessarily lead to more GS but ease its implementation.

Proposed antecedents of GS		
	Drivers	Facilitators
Product	<ul style="list-style-type: none"> • Cost advantages (materials and components) • Better delivery performance • Higher-quality products • Unique or differential products • Obtain better technology 	<ul style="list-style-type: none"> • Product cycle • Supplier certifications • Top management support • Nationality of parent company
Company/ management	<ul style="list-style-type: none"> • Assure organizational flexibility • Global attitude, orientation and experience • Centralization of decision making • Integration of worldwide activities 	<ul style="list-style-type: none"> • Knowledge on foreign business, exchange rates and global opportunities • Planning for global purchasing • Operational philosophy (lot sized, number of suppliers, etc.) • Development of communications skills
Network	<ul style="list-style-type: none"> • Take advantage of existing logistics systems • Diversification of supplier base 	<ul style="list-style-type: none"> • Long-term relationship prospects • Buying alliances
Industry/ competition	<ul style="list-style-type: none"> • Competitive positioning • Protect proprietary technology • Gain a foothold in new markets • Market size 	<ul style="list-style-type: none"> • Type of industry • Technological orientation of industry
Environment	<ul style="list-style-type: none"> • Cost advantages (labor) • Satisfy countertrade requirements • Guard against currency fluctuations • Stimulating foreign government policies • Advantageous legal and economic environment 	<ul style="list-style-type: none"> • Development of trade zones • Better foreign transport and communication • Capable intermediaries • Cultural similarities

Figure 14 – Proposed antecedents of GS. Source: Quintens, Pauwells and Matthyssens (2006).

These motivations and potential results were primarily identified through the study of companies that used to go abroad looking for countries traditionally seen as supplier markets. The companies from these countries developed themselves over time and are also looking for better supplier opportunities. As they came from countries traditionally with lower costs, will they be lead by the same motivations, basically costs, or other aspects will conduct the adoption of GS like complementary capabilities and access to new technologies? Will their motivations be more related to competitive or comparative advantages? The findings supports that comparative advantages are linked more with the first stages of international purchase, and competitive advantages linked more with GS, but that will be realize that in emerging companies? These questions lead us to the need to understand the reasons that conduct the adoption of GS by companies instead of just purchase abroad looking for cost reduction.

The sentence below presents a synthesis of these findings:

The adoption of GS is motivated by comparative and competitive advantages.

The literature reveals that a consistent group of motivations leads companies to GS, and the benefits can be achieved through the adoption of this strategy. While cost and reactive reasons are related to the international purchase, more can be obtained through GS. Understanding how companies adopted it requires the investigation of the companies' structure and process, and the next section will investigate the company's structure for GS.

2.2.1.2 Organization Structure

The structuring of a company's resources, process and supplier management are some of the aspects that must be included in the GS management process. The analysis of the structure will enable us to know if the company is purchasing globally with a strategy view and the process enables us to know how the company is doing the sourcing (Lima, 2004).

In GS studies, one must consider that an activity can be developed either by a single company that operates in the global marketplace or by a set of companies belonging to a corporation with units in a single country or different locations. When the object of study is the second group of companies, some dimensions are added to the management of this activity.

Much of the discussion about GS is around centralization *versus* decentralization of international purchasing (Arnold, 1989, Monczka and Trent, 1991; Trent and Monczka, 1998, 2003, 2003a; Arnold, 1999; Trautmann, Bals and Hartmann, 2009). According to Porter (1986a), an internationalization strategy presents two key-dimensions: configuration and coordination. Considering global companies, the success in adopting GS implies the delegation of a sufficient degree of autonomy of its subsidiaries. Although the corporation must follow a homogeneous orientation, this flexibility will allow greater speed of action in the market. The consequence is the need for better coordination between units of the same corporation (Arnold, 1989).

Extending this discussion about the degree of centralization needed in managing GS, Matthyssens and Faes (apud Arnold, 1999) present arguments for and against the autonomy of the units. In favor of decentralization, they show that the local managers responsible for total cost control feel frustrated if they cannot control these costs. This

strategy also facilitates cooperation amongst buyers in the consumer market, since they tend to know their customers better. These same buyers also become more motivated, they seek to local supplier became faster, the delivery times are reduced, relations are established with the community, and better purchase conditions may be obtained. At the same time, the authors argue that centralization can provide greater bargaining power and generate economies of scale with the uniformity of demands. A global view of supply may lead to better acquisitions, resulting from better knowledge of the market. Finally, it allows efficient use of the skills of procurement with the reduction of administrative activities and operational costs. To Quintes, Pauwells and Matthysens (2006), a high degree of centralization and coordination ensures better results in the generation of value through the activities of international supplies, as well as the internal organization of the company for the development of GS may provide greater opportunities to achieve advantage. The necessity to coordinate these activities emerges when considering that a company will perform purchasing activities on a local and global basis like presented by Gelderman and Semeijn (2006) to whom the management of suppliers in various markets increases the complexity of organizational management and there is a need for attention in the management of internal and external interfaces.

The concern with the organizational structure for carrying out activities of GS is still a modestly explored topic, although it is fundamental to building a strategy. To verify this, Hartmann, Trautmann and Jahns (2008) conducted a study with eight MNCs, investigating the strategies adopted by these companies in three areas, each one with its variables: International Strategy (global competition, scale economy, and local responsiveness), Organizational Configuration (matrix as dominant structure, network structure, and excellence centers), and Interdependency (Headquarter interdependency, and subsidiaries interdependency). Analyzing the strategic direction of international companies through these dimensions, it was identified that they all adopt a transnational orientation and realize the importance of balancing the activities of centralization and decentralization of control. They can present two different functional configurations. The first, named global structure, is characterized by the centralization in the array with the participation of affiliates in the process of strategic development to meet regional peculiarities. The second configuration, named transnational structure, is characterized by being an integrated purchase network, leaving only the Headquarter to coordinate the teamwork of the group. In the first group are companies that generally have a large dependency on the Headquarter, while companies whose subsidiaries are generally more independent are positioned in the second group. The choice among these structures is influenced by the corporate organizational

structure and distribution of knowledge on purchase between the units (Hartmann, Trautmann and Jahn, 2008).

Aspects of formalization became important to the management of GS when dealing with companies with different subsidiaries and different purchase units. Hartmann, Trautmann and Jahn (2008) found that, with respect to the formalization, the focus must be on the definitions about governance and standards, process and control. Governance and standards mean the establishment of manuals, codes of conduct and the definition of competences. Process is understood as the responsibilities of each company (headquarter and subsidiaries). Control has been considered as the establishment of indicators and methods to monitor and compare the efficiency of the units.

To Hartmann, Trautmann and Jahn (2008), the degree of centralization's responsibilities for procurement in MNCs will reflect the corporate organizational structure. The distribution of responsibilities between the purchase subsidiaries will reflect the distribution of knowledge and experience about this activity. To integrate the purchasing activities in different countries, both global and transnational companies, make use of a medium level of formalization, information systems, performance indicators, and the centralization of strategic purchasing activities. Moreover, global companies strive for the interaction between headquarter and subsidiaries, and use higher levels of centralization than transnational companies. They use the more active involvement of its subsidiaries in the strategic planning process, while committed the interaction between headquarter and subsidiaries, and with more emphasis between subsidiaries (Hartmann, Trautmann and Jahn, 2008).

The current standard of competitiveness requires companies to modify their position; they must integrate their activities across geographic locations (Trautmann, Balls and Hartmann, 2009). One challenge is to identify which areas need to be integrated and which should be independent. To identify these areas, the authors developed a single case study with a company that was starting to organize its global procurement structure. The researchers focused their efforts on the study of functional activities and how to manage them in order to get the best result for the purchasing area, meaning the synergy of this activity. The synergy of global purchase is divided into three classes: economy of scales – reducing the unit cost by increasing the volume of purchase; economy of information and learning – sharing information and knowledge through various units; and economy of process – benefits from processes supported by the creation of best practices throughout the organization.

One of the bases for this study was the Kraljic's matrix (Kraljic, 1983), whereby the sourcing strategy of a company depends on two factors: the impact on results and the risk of supply. The other main reference was the model of Olsen and Ellram (1997), which lists two factors: economy and competition. From these studies, Trautmann, Balls and Hartmann (2009) developed a portfolio for GS which relates to the strategic importance and to the synergy potential. The strategic importance is attributed to the consideration of competitive and economic factors and to the synergy which considers economies of scale, economies of information and knowledge, and economy of process. According to this portfolio, when there is high potential of synergy and it is a strategy input, the purchase should be centralized. In the other situations, each unit should make their own purchases.

Based on four case studies, Arnold (1999) identifies three typical alternatives for the GS organization that can serve as general models referring to different degrees of centralization: central purchasing model, the coordination model, and the outsourcing model. Schmitz and Knorring (2001) identify that the centralization tendency – that can be viewed through Trent and Monczka model – is a consequence of the increase in the supplier alternatives. This tendency can extrapolate the limits of the company and results in groups of companies developed for purchases globally. Analyzing the shoes production cluster located in Brenta – Italy, Rabelloti (2003) reveals this concentration of purchaser in describing the group that makes purchases from the region to the Germany market and it surrounding. In 2000, 74% of the sales to retail customers were organized into purchasing groups.

This centralization vs. decentralization conflict happens because while globalization and its pressures for standardization and efficiency of processes favor centralization, the need for customization and responsiveness leads to more decentralization and dispersal of activities in different countries (Hartmann, Trautmann and Jahns, 2009). The balance is required and, according to Trent and Monczka (2003), companies that adopt GS will realize that a centralized procurement structure is more important than companies that make international purchases.

The sentence below presents a synthesis of these findings:

The centralization of GS activities is related with the potential synergy between units, and their supply needs.

Looking at the company configuration to implement GS, it is possible to affirm that there are some requirements to implement it. To Arnold (1989), the first is the company's

size. At the same time that big companies seem to have more resources available, the small usually are more predisposed to flexibility. According to Trent and Monczka (2003), companies that engage in GS are larger and more likely to have competitors that are multi-regional or global than comparing to companies that make international purchases. Knudsen and Servais (2007) say that the internationalization of purchase activities require resources and time to be developed. Observing the international environment for small and medium enterprises, the authors argue that the size limits their internationalization expansion but the experience in international purchases can facilitate this process.

A second aspect is the inferior position given to the purchase area in organization that can limit the ability to take advantage of opportunities due to internal neglect. This aspect is supported by Arnold (1989) and Quintens, Pauwels and Matthyssens (2006), to whom the top management supports is a facilitator to GS. This will not necessarily lead to (more) global purchasing, but ease its implementation. Besides that, the internal articulation between areas requires balance between the areas to which the collaborative process can be accomplished. Trent and Monczka (2003) identified that the development of strategies by companies engaged in GS is more important to their executive management than compared with companies that engage in international purchasing. These arguments show that the required commitment of top management will be better visualized as companies adopt GS, and to efficiently adopt GS the commitment is required.

The identification if GS reflects a strategic approach to procurement in the company implies in the research of the corporate levels that are involved with the purchase decision process within the company's structure. GS requires that these decisions be taken by top-managers and in the case of corporations, the corporate direction and not isolated units. This level of decision making seems to be crucial in order to give the necessary importance to purchase function within the organization while aligning strategic planning and the planning of the purchase function.

The sentence below presents a synthesis of these findings:

The adoption of GS implies that the availability of resources for establishing and managing the activity is relative to the organization's size and, the importance attributed to GS, including the top management support, and the industry features.

A last aspect related to company's structure is the presence of the purchaser at the supplier country. The internationalization of supply with the presence of the purchaser

company in supplier's country can happen in different ways that represent a continuum of involvement (Harris, 2006). The first approach is the use of trading companies to broker the negotiations and activities between purchaser(s) and supplier(s). Considering that they are subcontractors, it does not imply investments of the purchasing company. Moreover, as intermediaries, they usually conduct all or part of the operational activities. The second way is the use of local representatives of the purchasing company in supplier markets. One form of representation entails the opening of International Purchase Offices – IPO. Its responsibilities relate primarily to search for suppliers, request quotes, eliminate noise in the communication process, negotiate contracts, monitor shipments, sample collection, management of technical problems, confirmation of the quality of products, and visit supplying units (Trent and Monczka, 2003; Mulani, 2008).

Aside from the benefits that IPOs can bring to companies, it is important to previously define how the units will interact. According to Mulani (2008), the IPOs represent an alternative preferred by businesses to incorporate new suppliers in the global supply chain. The governance has highlighted the importance of effective performance of these units, including activities as the identification of corporate guidelines for directing the activities of IPOs, identification of coordinators for the units, focus on top-down support, realistic goal setting (instead of aggressive goal setting), maximization of transparency through communication with the operation, and emphasis on continuous training in order to reinforce corporate goals.

The choice of a business unit abroad and assign the same responsibility on the development of a product, regional or global, is another strategy observed by Harris (2006). This way the company can capture the best opportunities available in a particular place, related technology and production. The risks of this strategy stem from the degree of coordination required to make the information obtained by the unit and its actions be in harmony with the entire company.

Investigating Swedish companies in the clothing sector, Akesson, Jonsson and Edanius-Hallas (2007) identify that direct purchase from manufacturers in a global market is the most frequent strategy. It represents a way of achieving both flexibility and control capacity of manufacturing and allows an approach to manufacturing operations. The presence of agents as intermediaries was found more frequently in distant supplier markets from purchaser's country, such as Asia. The companies identified as manufactures' direct purchasers used to be larger, comparing them with those that adopt another strategy. As companies are investing in the internationalization of their activities with the opening of the

product and marketing units abroad, this view is incorporated into the inclusion of international purchasing units, both from themselves as partnerships.

There is a relationship between the different ways of positioning the supplier and buyer in the market level of involvement in this activity. In the last two stages of Monczka and Trent's continuum, it is highlighted that corporations use international units of the corporation to assist the overall acquisition process, and integrate the activities of the various business units. However, the entry is not conditioned on the purchaser's entry into supplier market. In the propositions of Arnold (1999) orientations about this subject are not presented. Although it is not clear the relationship of the approaches to this aspect, one must consider that the entry of the purchaser on supplier's market is an alternative that may contribute to the success of GS, not being a basic condition for their realization.

The sentence below presents a synthesis of these findings:

The presence of the purchase company in the supply country is motivated by the adoption of GS.

The next section will investigate the opportunities to GS.

2.2.2 Opportunities

In the global environment, the number of opportunities supposed to increase and variables related with different external environments can affect the benefits of using global suppliers. In the management of a GS process, some critical success factors emerge and need to be more careful conduce. Matthyssens, Quintens and Faes (2003) identified as critical success factors the top management's commitment and willingness to support and follow-up on efforts, matching between GS and global company strategy, training and empowerment of employees involved, successful cases to get motivation going and constant learning, cultural empathy, open communication on all aspects involved and increased coordination between affiliates, and optimal use of supply partners/network. Trent and Monczka (2003a) did a more complex study and presented the factors that have more or less relation with the GS success in descending scale. The availability of time to develop global strategies and the availability to identify common requests by purchasing units are related with the capacity of the company to identify opportunities and get the better results from them.

The investigation and the design of a GS process were studied by Zeng (2003). According to him, the GS process can be separated into five steps. The first comprises the investigation before the adoption of GS, including the identification of a company's core competencies, requirements of consumers and the characteristics of markets and competitors in order to determine market potential supplier. The plan of GS must be prepared with the company's top management and top management will guide the next steps. Matthyssens, Quintens and Faes (2003) argue that a GS program have some key features for its development as market and supplier research (including e-information) and audit programs, knowledge availability and experience exchange, development of specific supply structures (pilot projects, coordination efforts and matrix like category buying structures), determination of the right transaction solutions with more complicated logistics (including transaction links), development of detailed partnership blueprints, and positioning as a reliable partner for value/technology. The second step is the evaluation one, which starts with the definition and application of some criteria for analysis of potential suppliers. The result is a list with few suppliers that will have requirements and costs analyzed in order to reveal operational and economics benefits. The selection of suppliers and their development are the third step. In addition to signing contracts with suppliers, the work schedules to the procurement activity is developed. Step four corresponds to the deployment. The beginning of the supply depends on the efforts of the staff assigned to conduct this process which will be proceed with arrangements developed for sharing resources and documents in the logistics process. The expected results should be documented to evaluate the process. The measurement of performance and development of ongoing improvements are included in the fifth step that will be focused on the supply process excellence, and dynamic and flexible adapt to market changes. To Agndal (2006), the extent to which learning from past activities positively impacts future activities; they can therefore be questioned by many managers that apparently do not perceive inward international expansion as an integral part of company growth in the way they believe outward expansion to be. The author argues that this may happen because the concern with accumulating knowledge and experience regarding GS is termed need-driven, opportunity driven, or even external pressure-driven, when companies are more or less forced into new markets by powerful stakeholders such as customers and owners. This leads to a situation where little is known about the GS process, and the necessity of documentation and evaluating became stronger.

To obtain higher gains from GS, it is prior to get involved in the identification of opportunities with global suppliers. The identification of the real potential of a supplier

requires a joint analysis of purchases with other functional areas such as product development (Quintens, Pauwels and Matthyssens, 2006). Besides this, the logistics become important to analyze the operational feasibility of the acquisition process. The relationship with these and other areas it is evident, therefore, as a dimension to be investigated in GS. With this research, one must analyze the mechanisms of integration used; how this integration occurs and how activities are coordinated among functional areas of business to ensure transparency and speed in these interactions.

To be able to identify opportunities in the global world, companies must dedicate resources to the sourcing area with the focus on the analysis of internal and external opportunities. GS requires the monitoring of actual and potential suppliers' environments, including the investigation of macro and micro-economic variables in order to identify the sourcing opportunity. Part of this work is related with the establishment of the alignment of internal functions and activities, and the investigation of join sourcing opportunities inside the company's structure. The proximity of purchase area with others inside the company results in the identification of potential supply demands, facilitating the pro-active approach of sourcing area to search potential supplier markets and companies.

The sentence below presents a synthesis of these findings:

The supply opportunity analysis process includes the investigation of the supplier company, the inputs, and the supply and sourcing environments, as well as customer requirements.

The process of GS will be investigated in the next section.

2.2.3 Process of GS

The GS process must be view as possible more complex process to the purchasing area to promote the entrance of inputs in the materials sourcing flow, and it must be considered that this area is not responsible just for the supply of materials, as services are also related. The investigation of a sourcing process involves the study of (1) the selection and development suppliers and (2) the analysis of the participation of the purchase areas in the supply materials flow (Lima, 2004). The discussion will start with the investigation of the supplier's management in GS process.

2.2.3.1 Supplier's Management

GS assigns responsibility to the company regarding the search for potential suppliers and the development of relationships with them. This search includes everything from identifying potential market suppliers to the selection of specific supplier for a component (Trunick, 2006). For the development of this activity, it is necessary to approximate the purchase area with the new products development, making this search result in the development of new opportunities for the company, not just the acquisition of what is already pre-defined. After the identification of potential suppliers, their development become essential and will require the involvement of other areas of the company. The involvement of other business functions reflects the support given to the strategic purchase function and alignment of this activity with the company's strategic planning. Beyond that, one can effectively analyze potential supplier. It is not possible to ignore the ones that are being used at the present as it is the comparison with those that enables the identification of opportunities for replacement suppliers. This way, the supply management comes as a central activity within the GS.

To Trent and Monczka (1998), the tendency to concentrate the company's purchases generates an expansion of the need for supplier development. Traditional supplier management models highlight the involvement of suppliers in the business, however, they do not make the distinction between local and global (Grieco, 1995, Cebi and Bayraktar, 2003, Kamath and Liker, 1994, Simchi-Levi, Kaminsky and Simchi-Levi, 2003).

Looking at the GS approach, the involvement of suppliers into new product development is an unexplored aspect. Considering that GS leads to a close relation between purchasers and suppliers, and with the areas inside the company, and that the motivations include the source for new technologies and access to supply capabilities, it is reasonable to question how is the engagement with global suppliers with respect to new product development. Will the intra-departmental approach required by GS support a better relationship with suppliers on this process? At the same time, global suppliers can represent a more difficult relationship comparing with local suppliers because of cultural differences, distance and other factors.

The sentence below presents a synthesis of these findings:

The adoption of GS contributes to the involvement of suppliers into new product development as the units of the company and units areas are more related, but at the same time, work with global suppliers can be more difficult comparing with local suppliers.

Investigating the relationship of Finnish companies with Chinese supplier, Salmi (2006) found that these relationships are built gradually. Time and commitment of the companies are important factors for the establishment of a relationship. According to Knudsen and Servais (2007), companies involved in international transactions have greater concern about the suppliers' monitoring to avoid the increase of total costs and the decrease of product's quality. They also realize that the biggest risk is related to the reduction of final product quality and supply conditions. In addition, these businesses have a closer relation characterized by cooperation and trust as a way to reduce risks. These authors also emphasizes that building relationships is more important in international purchases than national ones. One reason is the high level of dependence that the purchaser can achieve with the suppliers. Sometimes, the relationship can be better developed in contracts with innovate suppliers, which are more favorable to flexibility (Dornier et al, 2000). Investigating the relationship of four suppliers with a purchaser company, Ghauri, Tarnovskaya and Elg (2008) identified the importance attached to developing interpersonal relationships with transparency. Besides that, they also highlighted that technological and financial support are ways to develop the relationship; that people turnover leads to loss of efficiency in the process.

According to Bozarth, Handfield and Das (1998), despite the recognition of the importance of pro-active international suppliers, there are few efforts that identify the management of international suppliers through a strategic view. They suggested four dimensions for evaluation of these suppliers: exchange of information, multiple sources of supply, formalization of relationships, and informal relationships.

Developing countries are traditionally host of supplier with low cost and even quality, as they source worldwide companies. Also considering the fact that GS is an approach to identify better opportunities wherever they are localized, will the companies face differences with foreign suppliers at their country and abroad? Many of the MNCs have units worldwide that can source locally even though they do not have production in that country. This may represent benefits since the logistic challenges are smaller when sourcing locally, but will the benefits be the same, especially in terms of costs and other competitive advantages? Otherwise, the local presence of a supplier can increase the benefits related to

support and customer services and cultural distance could be reduced facilitating the negotiation process.

The sentence below presents a synthesis of these findings:

The choice to use foreign suppliers based on the purchaser country will be related with support, customer service, and cultural aspects related to the supplier management process.

The purchase process will be analyzed in next section.

2.2.3.2 Purchase process

The relationship between different areas inside each company and different units of the company requires a standardization of materials, maybe through codification, in order to facilitate the communication flows. Besides that, it is prior that the importance of each material also be considered in GS and to do so, the use of materials or purchasing portfolios represents an opportunity to a better management process. Different studies have revealed the benefits of its use and different variables were presented in the portfolios.

Gelderman and Semeijn (2006) suggest that the use of the purchasing portfolio tool is a good example of the management of internal interfaces within business units. Using the Kraljic's model, the authors identify that the products groups that cause problems and risks of dependence are the bottleneck and the strategic ones. Even they required more integration, it was identified that the portfolio tolls forces cross-functional teamwork, which improves the internal coordination within business units, but not across them. Gelderman and Semeijn (2006) highlights that the Kraljic's matrix presents a weakness when related to purchases worldwide as it does not consider the different countries of supply. This point was developed by Smith (1999) and Trautmann, Balls and Hartmann (2009).

The matrix developed by Smith (1999) consists of six separate matrices, that analyze (1) product specifications – necessity of customization or standardization vs. rate of change of specification (low or high), (2) product technology – level of product technology (low or high) vs. rate of change of technology (low or high), (3) quality and process technology – risk of failure (low or high) vs. ease of correction/tolerance (low or high), (4) logistics and availability – product availability (specific locations only or widely available) vs. criticality (low or high), (5) criticality and volatility – criticality (low or high) vs. volatility (low or high), and (6) costs – intrinsic product costs (low or high) vs. cost of delivery (low or

high). After placing the item in each of these six matrices, the position should be superimposed on the original one that takes into consideration that items can be: (1) sourced locally, (2) sourced and bought from further (nationally/trade blocks), (3) sourced from further but bought locally (distribution), and (4) sourced internationally. The concern about the degree of changes in the supply process is in accordance with Alguire, Frear and Metcalf (1994), to whom GS may not be effective for companies whose product experience frequent design changes and whose production volumes are low.

The sentence below presents a synthesis of these findings:

The GS activity is oriented to inputs consider strategic for the company, and the other inputs should be included in the context of this strategy.

There is a need for qualified personnel working with GS activities. Trent and Monczka (2003a) identify that those professionals with knowledge and skills are the most important success factor for GS. These professionals must be able to make presentations and communicate effectively, to think holistically through a company or region, and to work in an environment of cultural diversity. Mulani (2008) recognizes that the focus on people contributes to success in GS. This focus can be perceived through the training programs, educational opportunities, the offer of attractive benefits packages, and the forecasting of international work opportunities, mainly focusing on the maintenance of people on the team.

The sentence below presents a synthesis of these findings:

The GS approach requires qualified personnel and continuously training of them in order to identify better opportunities and conduct efficient sourcing process.

The availability of communication tools is another factor to be considered in a company's structure. The success of GS depends on a high level of transparency that leads to the pro-active cooperation between the members of the supply chain, the identification of what is happening and the management of situations that are inconsistent with the initial planning (Wilding and Braithwaite, 2007). Wilding and Braithwaite (2007) highlight that a company needs certain capabilities related to communication and information flow in order to implement GS. These capabilities are: total cost of purchase management analysis – enabling the identification of the costs involved in the process clearly and precisely; unique flow of information – to avoid conflicting information and reduce communications breakdowns; clear

identification of products – in order to ensure that the products will be delivered correctly, from a correct request and without delay; visibility of the entire supply chain – to monitor and anticipate possible deviations that lead to the need of corrections, connection between the cycles of actual demand and sales development through the sales performance, and a consistent and updated information platform which manages the entire chain visibility. Information, considered as the ability to request information and data, and as the ability to identify common requests, is one of the factors for the international supply activity; this is perceived at companies that adopt GS as they rely on a wider array of communications tools (Trent and Monczka, 2003).

The sentence below presents a synthesis of these findings:

The existence of communication tools and platforms are important to global supply management, including actual and potential suppliers, and actual and potential demands.

The difficulties and risks will be investigated in the next section.

2.2.4 Difficulties and risks

Since now an investigation about the motivations to GS and how companies can prepare themselves and execute it were presented on this chapter; but how about the difficulties and risks? The adoption of GS may lead companies to some losses in the sourcing process. This potential negative effect was separated here in two groups. The first comprehends the risks associated with the adoption of GS – as risks this research considers the negative aspects of GS that can reflect in the buying company. The second group comprehends the barriers to GS – as barriers this research considers the aspects that make the adoption of GS more difficult to the buying company.

Through the literature review, one can identify that the risks from GS to the buying company include the possibility of a decrease in the company's agility and flexibility, the increase of distance, cost and the number of intermediaries in the supply chain, the maintenance of the analysis' focus in specific source operation instead of the complete process what reduce the ability to analyze the situation, the possibility of a increase in the total costs, the failure of logistics support, difficulties to deal with cultural differences, regulations and country uncertainty (Levy, 1995, Bozarth, Handfield and Das, 1998, Cho and

Kang, 2001, Zeng and Rosseti, 2003, Christopher, Peck and Towill, 2006, Butter and Linse, 2008, Steinle and Schiele, 2008).

Cho and Kang (2001) consider that the risks related to GS including logistic support, cultural differences, regulations, and country uncertainty, can be considered challenges to overcome language barriers, different customs, different business practices, foreign exchange fluctuations, political stability, transportation delays, inventory management, nationalism, quality assurance, border-crossing procedures, tariffs, quotas, and trade restriction bills. Investigating these aspects, the authors realize that companies with large import volumes achieved significantly more in obtaining service enhancement (better delivery, customer service and product availability) than did companies with small import volumes. The companies with a low percentage of imports perceived fewer problems in logistics (inventory management, border-crossing procedures and transportation delays) than did companies with a medium or large percentage of imports. Companies with low level of experience in GS perceived cultural differences (language barrier, different customs and different business practices) as more challenging than did companies with high or medium levels of experience. Companies importing from Asia are found to have perceived regulations (quotas, tariffs and trade restriction bills) to be more challenging than did companies importing from South/North America or Europe. India and China provided significantly higher benefits in competitive advantage (accessing lower priced goods, obtaining better value for money and enhancing competitive position) than did Taiwan or Korea, and companies importing from India or China perceived more problems in logistics (inventory management, border-crossing procedures and transportation delays) than did companies importing from Taiwan or Korea.

Some of these risks had been well investigated through the investigation of developed countries MNCs and these results do not seem to present huge different in emerging MNCs. However, the differences of cultures and governmental aspects seem to be the most peculiar aspect of GS by emerging MNCs as the country of origin of these companies may have a growing process very different from developed countries and this may impact in the way they let their companies do their business.

The sentence below presents a synthesis of these findings:

GS includes the management of risks, considering cultural and governmental diversities and its special characteristics.

Barriers can be seen as factors that make it more difficult or even impossible to pursue or intensify GS. Using this definition, Quintes, Pauwels and Matthyssens (2006) present a set of barriers divided in five categories: (1) Product – limited production volume, different product standard, regular design changes, insufficient product modification, and delivery delays, (2) Company/management – parallel trade, lack of resources need for GS (staff, time, money, etc.), costs of travel and communication, accurate demand forecasting, nationalistic purchasing behavior, and increase paperwork, (3) Network – Just-In-Time sourcing requirement, finding qualified suppliers, and foreign supplier image, (4) Industry /competition – diverse business practices, limited industry information, agents/broken fees, and intensity of foreign competitive, and (5) Environment – import quotas, country of origin image, adverse political environment, adverse economic environment, customs regulations, different time zones, lack of government assistance, and language/cultural differences.

Another approach to understand the barriers to GS was developed by Alguire, Frear and Metcalf (1994), dividing them into internal and external. The internal barriers are directly associated with the risk that the company realizes choosing to source abroad and include low production volume, continuous design changes, and inability to commit the resources necessary to support the utilization of offshore suppliers. The external barriers are related with the governmental environment including government controls, import quotas, and military standards.

The sentence below presents a synthesis of these findings:

The analysis of external barriers is important during the process of purchase opportunity analysis to avoid risks and ensure benefits.

The results obtain through GS will be investigated in the next section.

2.2.5 Results

Comparing with companies that make international purchases, companies adopting GS can better understand that there are many business opportunities beyond what is being purchased. These companies realize better performance and costs reduction. To them, performance improvement and cost reduction opportunities are more widely available from their sourcing efforts. They can make changes in the supply items more quickly and, lead and coordinate strategic reviews more regularly in order to promote consistency by creating a

common language and approach of searching for suppliers at the organizational level (Trent and Monczka, 2003). They are also able to perceive their strategy implementation progress to be further along, face more rapid changes to product and process technology, and rate key aspects of their sourcing process as more similar across geographic locations and buying units (Trent and Monczka, 2003). As Mulani (2008) emphasis supplier involvement is a possibility to absorb knowledge, leverage capabilities, maximize contracts, and continually reduce total costs.

Analyzing data from 148 apparel retail industries, Cho and Kang (2001) identified three benefits factors to GS. The first is related with competitive advantage, including access to lower priced goods, enhancements in competitive position, and increased value for money. The second is quality assurance, involving access to higher quality goods and better quality control. The third is service enhancement, consisting of better availability, better delivery, and better customer service.

Trent and Monczka (2003a) discovered, as a result of the purchase internationalization through GS, that companies present an average reduction of 15% in products prices and 11% in the total cost, the supplier's quality improve 6%, the delivery time reduce 5%, and the deadline's greeting increase 3%. The detailed analysis reveals that the initial benefits are directly related to price, and the benefits not related to this variable are only perceive in companies that have integrated their GS activities, realizing improvements in management inventories, increasing responsiveness of suppliers and the consistency of the supply process, developing better relationships with suppliers, and establishing information sharing flows between units.

Quintens, Pauwells and Matthyssens (2006) identified that as a result of GS, companies get benefits related to (1) product – high-quality, better delivery performance, access to world-wide technology, reduced total cost of ownership, cycle time management, and functional performance, (2) company – improved financial performance in terms of return on sales and investments, and improved strategic performance in terms of market-share and sales growth rate, and (3) network/supply chain – more satisfying buyer-supplier relationship, and worldwide supply chain integration.

The sentence below presents a synthesis of these findings:

The adoption of GS leads to competitive advantage comparing with companies that purchase internationally.

These dimensions will constitute the theoretical framework that will be explained in the next chapter.

2.3 Theoretical framework

Through a literature review a theoretical framework with five dimensions was developed. These dimensions form the propose theoretical framework that presents a set of interconnected activities that, together, represents the adoption of GS by companies, and it will be tested in the case study that will be present in the sequence. Even though this research is focusing on emerging companies from Brazil that are not MNC, the developed framework was developed in a boarder context in order to comprehend the whole process in more complex environment of MNCs. On its development, there was an issue to highlight the relation of GS with the company and with the suppliers. In an effort to simplify the analysis of the framework, five dimensions were identified in the theoretical framework: (1) antecedents of GS, including strategic orientation and organizational structure, (2) opportunities,(3) process of GS, including supplier’s management and purchase process, (4) difficulties and risks, and (5) results (Figure 15).

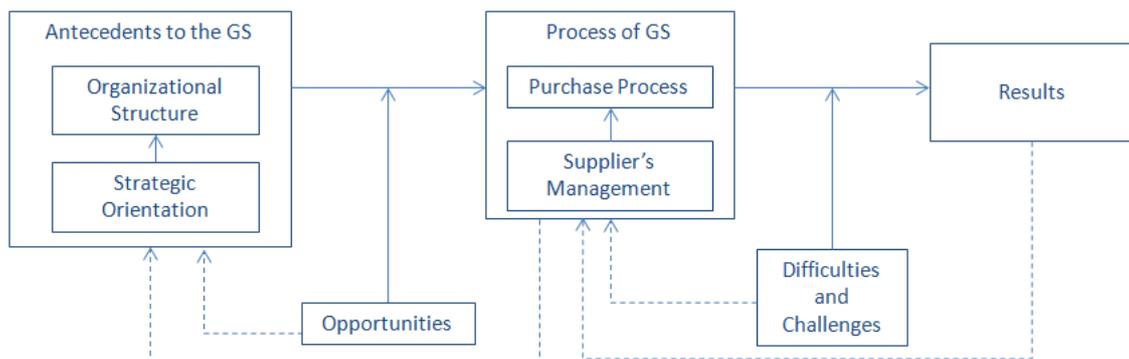


Figure 15 – Theoretical Framework

The understood of the process as a whole, lead to another aspects: how to investigate it in a company? In order to be able to make an investigation of a company that adopts GS, one need to previously understand the intra-company and the inter-companies interfaces. To clarify the understood about the subject, it is present here a reflection about how to visualize the phenomenon under study. The first aspect to consider is related with the purchaser company. GS must be adopted as an organizational strategy and the structure and

procedures of the sourcing department will represent this strategy approach through the company's features. The input's features also need to be investigated. A second perspective must be taken to the supplier's side, including its market's features and the supplier's features. As a result one will have the identification of the opportunity to source.

As companies will make business in different markets, the supplier market should not be seen as a specific country or industry, but as a global environment in which a few suppliers will be selected. As the focus remains in the buyer side of the relationship, all the investigations efforts will be made to investigate the sourcing side of the relation, and the way the supplier market and companies will be investigated will be under the buyer point of view.

Looking at Figure 15, the lines presented linking the dimensions were designed to present the sequence of the analysis investigation. They do not represent the analyzing focus of this research. The straight lines represent the direct flow of activities. The dotted lines represent the feedback process that happens as a consequence of the direct flow as example when a difficulty faced by a company generates a modification in the company's process of GS.

The next Chapter presents the method developed in order to conduct this research.

3 METHOD

Considering science as a systematization of knowledge, a set of logically related propositions about the behavior of certain phenomena that one wishes to study (Marconi and Lakatos, 2005), an ongoing search for knowledge and explanation of the phenomenon under study (Vergara, 2000), and having the existence of four types of knowledge – popular, scientific, philosophical and theological, it can be stated that this study seeks to investigate the scientific knowledge of its subject with the goal of scientific advancement.

For this advancement, it is necessary to use scientific methods. The method is understood as the systematic and rational set of activities that, with greater safety and economy, will lead to the achievement of the proposed goal – knowledge – by tracing the path to be followed, detecting errors, and aiding the decisions of the scientist (Marconi and Lakatos, 2005).

The first research method presented here is inductive. According to Marconi and Lakatos (2005), induction is a mental process through which, from private data sufficiently observed, one can infer a general or universal truth that is not contained in the parts examined. Thus, in an inductive method, the researcher believes that, if all assumptions are true, the conclusion most likely will also be true. This conclusion will most likely contain new information that was not even contained implicitly in the premises.

The positivist paradigm, represented by the hypothetical-deductive method, is the second research method. According to Popper (1972), hypotheses are formed to solve the problems identified as research subjects. These hypotheses should be tested for distortion, through observation or experiment that will confirm or refute them, and this result is provisional until there are new tests tailored to the hypotheses under study. The research developed within this thesis can be classified as deductive research, with the development of a deductive case-based study.

Following this brief discussion of the scientific method and the classification of the study, an approach to research methodologies appropriate to the organizational studies from the various taxonomies and existing classifications will be presented. Scientific research can be classified in terms of its nature, the form to approach the problem, the perspective of its objectives, and its technical procedures.

Within the terms of its nature, research can be classified as basic or applied. The aim of basic research is to generate new knowledge that is useful to the advancement of

science but without a practical application envisaged. Applied research aims to generate knowledge to solve specific problems; the goal of extracting information for the advancement of science is the solution of problems (Silva and Menezes, 2001).

With respect to how to approach the problem, research can be quantitative or qualitative. Quantitative research seeks to translate views and information into numbers for further classification and analysis using statistical techniques. Qualitative research believes in the existence of an inability to translate the information into numbers due to the existence of an indissoluble link between the objective world and the subjectivity of the subject, with analyzed data collected in an intuitive way (Silva and Menezes, 2001). A qualitative case study can be defined as empirical research that primarily uses contextually rich data from bounded real-world settings to investigate a focused phenomenon (Barrat, Choi and Li, 2011).

Gil (2006) classifies scientific research according to its goals, such as exploratory, descriptive, or explanatory research. Exploratory research aims at collecting information for a greater familiarity with the research problem, to clarify it or to build hypotheses. Usually exploratory research takes the form of bibliographic research and case studies. Descriptive research, in turn, seeks to establish relationships between variables or to describe the characteristics of a given population or phenomenon. To develop this type of research, it is customary to employ field research and surveys. Explanatory research is associated with forms of experimental research and *ex post facto* research that aims to identify the determinants for the occurrence of phenomena and provide a deeper understanding of reality.

Therefore, this research is classified as:

- a) Applied, as it aims to investigate the adoption of GS by Brazilian companies from the electrical and electronic industry in Rio Grande do Sul State and through this analysis, propose insights to the management of this strategy by other companies.
- b) Qualitative, as it has an unpretentious goal of quantifying the opinions and information collected. The data collected were analyzed in an intuitive way, as will be explained later in this chapter.
- c) Descriptive-Exploratory, as it seeks information on the greater familiarity of GS as a strategy developed by Brazilian companies from the electrical and electronic industry in Rio Grande do Sul State, to understand this strategy as well as to guide research on the development of data analysis and theory building.

The technical procedures will be presented in sequence.

3.1 Technical Procedures Employed in the Research

To achieve the objectives proposed for this research and after observing the classifications already made in this study, a case study was developed, and two technical procedures were used: literature review and content analysis.

The literature review is a study from already published materials such as books, journals, magazines, newspapers and electronic networks, materials that are accessible to the general public (Silva and Menezes, 2001, Vergara, 2000). Its purpose is to put the researcher in contact with everything that has been published on the subject (Marconi and Lakatos, 2005), representing a vital part of most empirical studies (Baumeister and Leary, 1997). As “better (i.e., publishable) research papers start from a broad literature base” (Stuart et al, 2002, p. 423), this research started with a literature review. Although this research identifies a few studies related to GS and emerging economies, it is not possible to presume that applicable theory does not exist.

The theoretical framework developed for this thesis aims to contribute to the understanding of the subject of study and to developing a theory. According to Baumeister and Leary (1997), this goal is the most audacious of a theoretical investigation. Although the theory here does not constitute only the theoretical review, this review was responsible for the identification of the theoretical framework that guided the empirical research.

The literature review is considered part of the preliminary exploration because it allows identification of the state of the research problem, the works that have been published, and the prevailing views on the subject (Marconi and Lakatos, 2005). The literature also becomes a fundamental part of the fieldwork, being the basis for building the data planning and collection instruments for the empirical research.

The research method selected for this study was the case study. According to Yin (2001), this is a strategy that allows the research to investigate the phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly defined. As presented in Figure 16, the case study is appropriate for research questions that investigate “how” and “why” situations and is also appropriate when control of the behavior events is not required and the focus relies on contemporary phenomenon.

Method	Research question	Requirement of behavior events control	Requirement of contemporary events focus
Experiment	How, why	Yes	Yes
Survey	Who, what, where, how many, how much	No	Yes
Archival analysis	Who, what, where, how many, how much	No	Yes / No
History	How, why	No	No
Case study	How, why	No	Yes

Figure 16 – Different research strategies. Source: Yin (2001, p. 24)

The case study is appropriate when research emphasizes the analysis of the phenomena and processes and not the behavior of individuals (Roesch, 1999). This procedure was also instrumental in the decision-making ability of this method of focusing on contemporary events, addressing various evidence from different sources and related to the various items investigated. A case study is suitable for descriptive and exploratory studies because it allows questions and hypotheses to be raised for future studies based upon the conclusions. Case studies attempt to clarify a decision or a set of decisions, including what motivated the decisions, how they were implemented, and which results were achieved (Schramm, 1971).

According to Handfield and Melynk (1998), it is important to match the research strategy to theory-building activities. To these authors, the purpose of theory extension and refinement is recommended in case studies, and case studies contribute to the expansion of the theory's map and a better structure of the theories in the light of observed results.

A case study is recommended when it is difficult to capture contingent conditions and when the research has not yet developed good definitions or measures for many of them. A third situation is when the conditions are constantly changing (Stuart et al, 2002). The first and third recommended situations are realized in operations management studies as the typical operation system is so complex and affected by so many factors that there may be several alternative explanations for the observed outcomes (Stuart et al, 2002). The second situation was noted during the literature review as well-supported definitions and metrics related to GS were not identified.

Case research represents the intersection of theories, structures and events (Gubrium, 1988). A case research methodology is "both appropriate and essential where either theory does not exist or is unlikely to apply (...), where theory exists but the environmental context is different" (Stuart et al, 2002, p. 423). As our research is related to the investigation of a phenomenon in a different environmental context, the use of a case

research methodology appears to be appropriate. It is also appropriate when the focus relies on the exploration and better understanding of an emerging, contemporary phenomena or issues in their real world settings (Barrat, Choi and Li, 2011).

A deductive study has the purpose to test existing theory according to other studies in the general business disciplines, such as management. Barrat, Choi and Li (2011) identified that deductive purposes are being used by researchers to develop case-based studies on a small scale compared with inductive purposes. In a deductive case-based study, the researchers are looking for patterns in the emerging data to compare with the theoretical derived propositions (Barrat, Choi and Li, 2011).

Johnston et al. (1999) highlight that there are three main requirements for using deductive qualitative research methodology: (1) the case study must begin with an existing theory for the development of research propositions, (2) a systematic and logical research design should be followed, and (3) researchers should implement evaluation criteria to independently assess potential biases and to ensure methodological rigor.

Content analysis is a research procedure applied to analyze data, especially data obtained from interviews. According to Bardin (2002), the phase of data analysis must be perceived as an interaction process, with an objective and a subjective view. In this manner, the process of data analysis will be divided into 3 steps. The first is the categorization of the data, to systematize the data and organize the information. The second is the codification, when the researcher identifies terms, sentences or others constructs through the analysis of the data. The third step comprehends the view of the whole phenomenon, where the researcher tries to go beyond the uncertainty to validate his or her impression about the facts investigated. To make this last step stronger, the researcher uses the literature to support the relations he/she is establishing.

As the objective of this thesis is to build theory on the subject of study, a diversity of technical procedures are aimed at expanding the sources and approaches to the same research subject, through which a better view of the phenomenon under study can be obtained. To Sutton and Staw (2003), a strong theory is traditionally part of a small set of research ideas that is the basis of building a detailed case logically, with simplicity and interconnectedness. To the authors, a theory is the answer to why, having the ability to explain and predict.

3.2 Plan for Data Collection

The research data collection can be divided into two phases. The first one is related to the theoretical research and the second is related to multiple case studies.

According to Saunders (1997), there are three types of literature available for a review: primary, secondary, and tertiary. The primary sources of literature includes papers, articles, conference reports, company reports, marketing research reports, some governmental publications, and unpublished manuscripts. Secondary sources include newspapers, books, scientific publications, and some governmental publications. The tertiary sources involve abstracts, catalogs, encyclopedias, dictionaries, bibliographies, and citation indexes. In the development of this thesis, primary and secondary sources were used.

It is noteworthy that the development of consistent literature implies the conduct of a *study* or *informative* read of the collected data. According to Marconi and Lakatos (2005), this type of reading represents a more complete absorption of the content and all of its meaning to ascertain the contents of the text, correlate data collected from other information, and verify its validity. For these objectives, this reading begins with a recognition process of the data observed. In sequence, there is pre-reading for better identifying the information available as well as selective reading to extract the most important information related to the problem. Following this process, the researcher should view this information with a critical perspective to evaluate it. From this criticism, an interpretation of the content of the relationship to the research problem is formed. Finally, an explanation follows, whereby the researcher seeks to verify the foundations of the information as presented by the authors.

The potential for differentiating case-based studies relies on the ability to address a wide variety of source evidence. Figure 17 presents a set of evidence and its positive and negative aspects.

Source of evidence	Positive aspects	Negative aspects
Documents	Stable – can be reviewed repeatedly. Discrete – is not created because of case study. Exact – contains names, references and exact details of an events Coverage – long span of time, many events and many different environments.	Resilience – may be low biased selectivity, if collection is not complete. Reporting of biased views – reflects the preconceptions of an (unknown) author. Access – may be deliberately denied.
File records	The same as mentioned for documentation. Accurate and quantitative.	The same as mentioned for documentation. Accessibility to the site due to certain reasons.
Interviews	Directed – directly focus on the topic of the case study. Perceptive – provide perceived causal inferences.	Biased view due to ill-prepared questions. Biased questions. Inaccuracies occur due to poor memory of the interviewee. Reflexivity – the interviewee gives the interviewer what he wants to hear.
Direct observations	Reality – address events in real time. Context –address the context of the event.	Time-consuming. Selectivity – unless coverage. Reflexivity – the event may occur differently because it is being observed. Cost – hours needed by human observers.
Participant observation	The same as observed for direct observation. Perceptive in relation to interpersonal behavior and reasons.	The same as observed for direct observation. Biased view of events due to manipulation by the researcher.
Physical artifacts	Perception capacity in relation to cultural aspects. Perception capacity in relation to technical operations.	Selectivity. Availability.

Figure 17 – Sources of evidence: positive and negative aspects. Source: Yin (2001, p. 108).

Evidence was collected from documents, interviews and direct observation. The documents were used to corroborate and enhance the evidence from other sources, with particular attention to the interviews. Reports from the company, its industrial association and also from the government were also used during the research.

The interviews were the most important source of evidence. The interviews conducted during the study were spontaneous and allowed the researcher to ask the respondents about key facts and solicit their opinion on certain issues (Yin, 2001). All the interviews were recorded, which allowed the research to be focused on the conversation. Scripted questions were followed (questionnaire), which are presented in Appendix 1. This type of interview can be classified as semi-structured and reflects the main objective to comprehend the meanings that the interviewees attribute to the questions and relative situations of the investigation focus (Godoi, 2006).

The questionnaires included both open and closed questions to allow the extraction of conclusions and to clarify the interviews. In-depth interviews, according to

Saunders (1997), are best used in exploratory studies. The main objective of this type of interview is to understand the meaning attributed by the respondents to questions and situations and to understand the constructs used by respondents as the basis for their opinions about a specific situation (Roesch, 1999).

The third source of evidence used in the investigation was direct observations. The interviews were preceded or followed by a visit to the companies' site. Observational evidence is, in general, useful to provide information about the studied topic (Yin, 2001). These visits were also important because the researcher was able to talk with other people in the company and receive more information about the companies and their GS strategy.

The use of different sources of evidence allowed the triangulation of the information and led to a convergent line of investigation. The findings and conclusions in a case study are likely to be much more convincing and accurate if the case study is based on several different sources of information, following a corroborative research style. According to Denzin (1970), triangulation, or the use of different methods, is an action plan that increases the bias arising from the above research unique methodologies – the combination of different methods leads to overcoming the deficiencies of research.

There are different types of triangulation – researchers, theories, data and a systematic perspective (Flick, 2009a). In this study, the triangulation of (1) theories, through the use of different theoretical perspectives to develop a theoretical framework, (2) methodology, through the use of different methodological approaches, and (3) data were used by seeking information from different sources, interviewees, documents and direct observation.

While research methods, qualitative and quantitative approaches have the advantage of allowing the phases of collection and analysis to occur simultaneously; thus, the researcher can conduct research according to their own discoveries. Proper use of methods ensures that the researcher can use this advantage while maintaining the quality of the study. Even as tools, methods bring consequences to a survey, as the method of collecting data affects the phenomena that are observed, how, where, and when to analyze them, and what meaning is taken from them (Charmaz, 2009).

3.3 Definition of Unit of Analysis

To develop this research, as presented in the delimitations in the introduction, emerging companies that have at least the minimum level of internationalization, as imports

or exports, were selected as the unit of analysis. The study focused on Brazilian companies as another delimitation of the unit of analysis. The goal of this research was to understand the strategies of companies from an emerging country, not to compare companies from different emerging countries. Inside these companies, the study was delimited in the investigation of the sourcing area, involving people from different organizational levels, according to each case studied, to seek the necessary diversity of respondents to ensure the reduction of possible bias on the part of respondents.

The second definition was the focus on an industry sector that was dependent of international suppliers. This industry sector must have global players in Brazil and a supplier market that acts global even inside the Brazilian territory. This situation would lead the companies of this industry to have the possibility to select raw materials from representatives inside Brazil or to purchase them abroad. This possibility of choice can make the strategy definition a complex process and lead to different approaches of sourcing.

Based on the investigation of potential sectors to be the focus of the analysis, the study selected the electrical and electronic industry sector because the companies have a dependence on raw materials manufactured by global companies located in developed and emerging countries. This situation lead companies to make decisions related to sourcing the materials from local suppliers that re-sell products from international suppliers or purchasing them directly from the manufacturer or other supplier abroad. A second delimitation was related to the geographical location of the companies. Only companies from Rio Grande do Sul State were investigated because this sector in the State is well structured and the players are organized in an industry association. As final delimitations, the researcher looked for companies that had experience with international sourcing and had a focus on the development of their competitiveness based on better sourcing decisions. This selection limited the results of this research, as they do not represent the consensus of Brazilian companies, not even from the companies of this industry. The results represent the experience of a set of companies from an industry sector that is extremely dependent upon imported inputs to their production.

3.4 Data Collection Instrument

A case study can benefit from the previous development of a theoretical framework to conduct the data collection and analysis (Yin, 2001). The data collection instrument was developed from the theoretical framework constructed in this thesis.

It should be noted that the strength of a theory built from qualitative research results from the use of relevant data, which may include field notes, interviews, recording and information reports (Charmaz, 2009). These additional forms may be used during the research as the need is identified by the researcher.

The data collection instrument was used to conduct semi-structured interviews. A questionnaire was used to conduct the dialog, and there was also flexibility to introduce new questions during the conversation. The interviews conducted during this research followed the episode mode, as they combined a sequence of questions and answers with the narrative of episodes (Flick, 2009). The use of interviews is one of the most used methods to develop qualitative research. The ability to focus directly on the research topic and allow the identification of casual inferences is one of the positive aspects of interviews (Yin, 2001).

The research protocol must encompass the principal documentation needed to provide the researchers with the necessary focus and to organize the visits and ensure that the trail of evidence is thoroughly documented (Stuart et al, 2002).

3.5 Plan for Data Analysis

With respect to the literature review, Marconi and Lakatos (2005) highlight the need for an external and internal critique of the data collection in the research literature. External criticism involves criticism of the text to identify changes since its publication, a critique of the authenticity to verify the circumstances of the material composition, and criticism of the provenance to ensure the origin and fidelity of the text. The internal critique, in turn, seeks to interpret or critique the hermeneutics, which is the ascertainment of the exact sense that the author wished to express, criticism of the internal value of the content that appreciates the work and forms an opinion about the authority of the author, and the value that represents the work and the ideas contained in it (Marconi and Lakatos, 2005).

Data analysis in qualitative research, according to Gil (2006), depends on many factors such as the nature of the data collected, the extent of the sample, the research instruments, and the theoretical assumptions that guided the investigation. Regardless of these factors, in empirical research such as case studies, one can define the process of data analysis as a sequence of activities involving data reduction, categorization and interpretation as well as report writing (Gil, 2006).

According to Yin (2001), the quality of case-based research can be verified by four tests: construct validity, internal validity, external validity, and reliability. The validity of

the construct can be achieved through the use of multiple sources of evidence, the establishment of chains of evidence, and the review of the case study report draft by key informants. Stuart et al (2002) highlight that to ensure validity, it is important to use multiple sources of evidence for each of the important elements or variables in the propositions; identifying sources that would be available at all sites makes it easier to demonstrate that the same phenomenon was measured in each situation. Internal validity can be achieved by performing pattern matching, and explanation building, addressing rival explanations, and using logic models. External validity requires the use of replication logic in multiple case-based studies. According to Stuart et al (2002), if the patterns identified into the data analysis can be replicated in similar cases (literal replication), the confirmation becomes stronger; in addition, if the patterns can be demonstrated not to hold for understandable reasons for dissimilar cases (theoretical replication), the confirmation becomes stronger yet. Reliability is achieved by using study protocol and the development of a study database. To assure reliability, Stuart et al (2002) argue that in a case-based study, it is important to use a research protocol and also to maintain a case study database that allows the researchers to easily retrieve notes.

To assure the construct validity, multiple sources of evidence were used. The first source was the conduction of interviews with key informants in the cases studied. In some cases, two professionals of the company were interviewed as the research subject was managed for more than one person at these companies. This study considered an interview to be the time that the conversations were recorded and the focus was on the sequence of questions of the research protocol. The second source was direct observation in the companies investigated. The interviews were preceded or followed by a visit to the companies' site. During these visits, the researcher spoke with other employees about the research subject. A third source was conversations with the managers of the industry association. Three formal meetings occurred with the industry association representatives. The first one was called to identify the potential companies to be investigated. The second one occurred during the data collection process to discuss partial results. The last meeting occurred after the data collection also to discuss partial results and validate the conclusions. The sources of the second and third type of information were not recorded; instead, the researcher took notes of the observations and conversations. A fourth source was the use of secondary data, such as reports from the companies and the industry association and also information available on governmental agencies about this industry and companies. Secondary data were also identified in journals and magazines and on websites. All the data obtained from these different sources were

analyzed together with the use of NVivo®, which allowed us to tag different types of documents to create the database. Thus, the establishment of evidence chains within the data was assured.

Internal validity is an important aspect to be analyzed in studies aimed at identifying causal relationships. According to Yin (2001), this logic does not apply to descriptive or exploratory studies which did not attempt to make casual propositions.

External validity addresses the problem of whether the findings of a study can be generalized beyond the immediate case study. To assure external validity, the research protocol was used to conduct the six investigated cases, assuring the path to identify the logic of replication. The number of cases investigated was defined when the collected data started to present similar results or contrasting results for foreseeable reasons only.

The use of the research protocol was also important to assure the reliability of the research. An important aspect related to reliability is the necessity to make the declaration of the interviewer and the analysis of the researcher clear (Flick, 2009a). The transcription of the interviews and the use of NVivo® as a tool to create a database with different sources of information enabled us to assure the reliability during the investigation.

To increase the rigor in the use of qualitative data, it is necessary to ensure the quality criteria of the data, namely: its credibility (internal validity), transferability (external validity), dependability (reliability), and confirmability (objectivity) (Shah and Corley, 2006). After the development of a theory, it is necessary to evaluate the theory. According to Bacharach (1989), a theory must be evaluated based on two criteria. The first question is its falsifiability, which determines when a theory was constructed such that it can be refuted. The second question pertains to the usefulness of the theory, which refers to the degree of usefulness of a theory with respect to its ability to explain and predict events. In addition to evaluating the components of a theory, it is also necessary to evaluate its conceptual coherence through its connectivity and transformation ability. Connectivity refers to the ability of a theory to fill identified gaps between previous theories. The transformation ability demonstrates the power of a theory to generate the need for revision of previous theories.

3.6 Research procedures

After the presentation of the research method of this thesis, it is necessary to present the methodology employed by the study. The methodology represents the path taken by the researcher for the development of the thesis. Figure 18 presents a view of this process,

and the following sections will explain each phase. Although Figure 30 presents a linear process, feedback movements occurred during the research process. Until the preparation of the data collection was completed, several visits to the literature review were necessary, as topics that were not under investigation the first time needed to be integrated into the study. During the data collection, the development of the pilot-case enabled a review of the research tool based on the empirical results and the literature review. The other cases were investigated and the data analysis also conducted reviews in the theoretical review as a method to better extract conclusions at the end of the study. The data collection also included the conversations with the industry association. The revision of propositions and detailed design parameters may require the investigator to determine the body of knowledge in research areas not considered previously, thereby iterating back to the review of the research question. To do so, the researcher must have the mental flexibility to alter interview or information-sourcing tactics as necessary (Stuart et al, 2002).

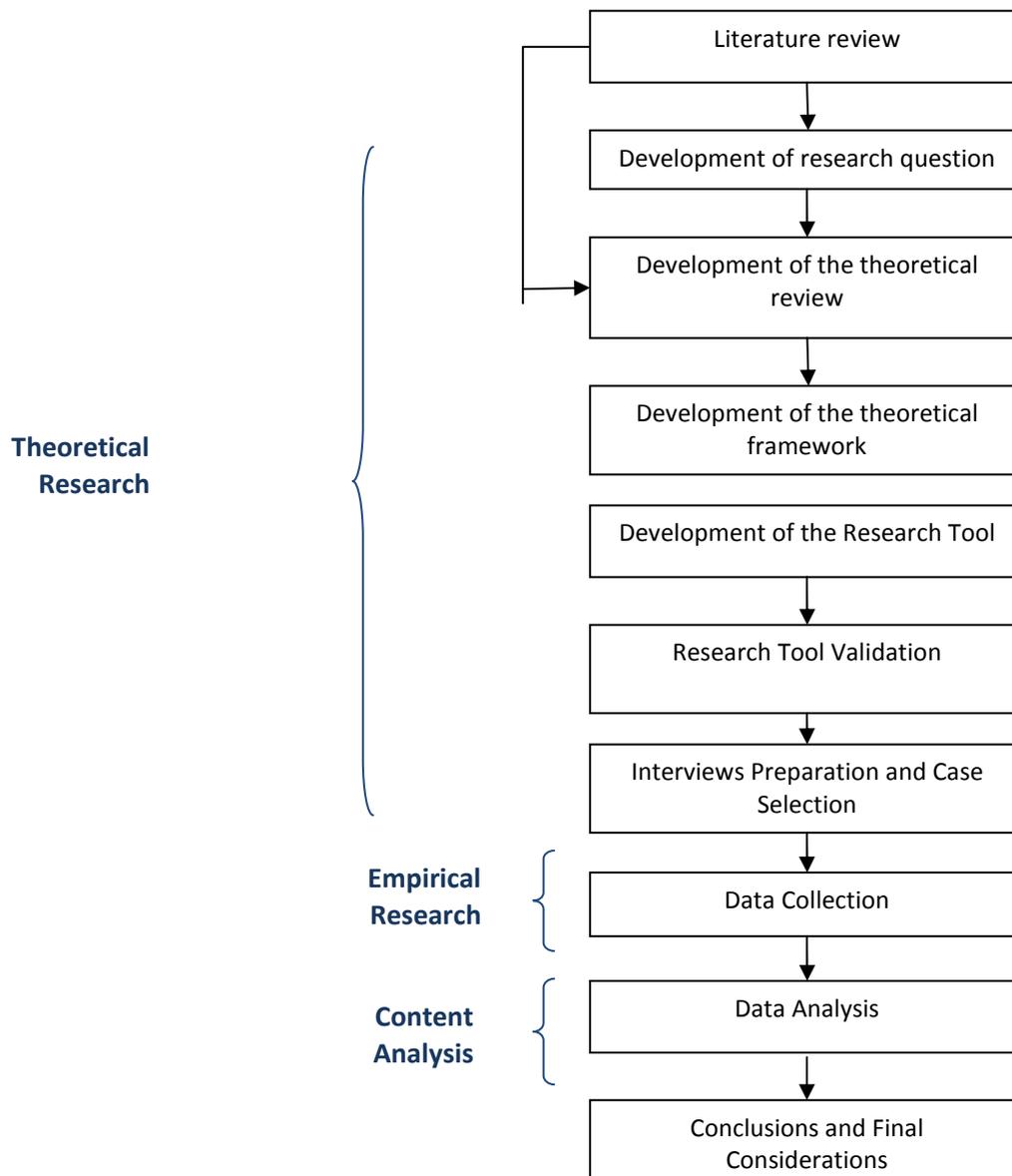


Figure 18 – Methodology

The steps of the method will be explained in the sequence.

3.6.1 Literature review

The first stage of this thesis consisted of building a theoretical review based on secondary data such as journals, periodicals, books and websites. The first objective of this

approach was the identification of research opportunities on the selected theme. These gaps were used for the construction of the research problem of this thesis.

This same review was used as the foundation for the development of the theoretical framework, as will be explained in the sequence. This review was also used for the analysis of the empirical data and the final considerations.

3.6.2 Construction of the Theoretical Framework

The theoretical framework was developed through the analysis of the literature review and was used to conduct the empirical investigation. During the development process of the framework, the purpose was to investigate the previous findings in depth to determine what must be investigated in the context of the emerging countries and their companies.

Conceptual coherence was used as a criteria of theory evaluation. Bacharach (1989) highlights that there are two qualitative dimensions to describe this “fit”. The first is the connectivity, which is related to the ability of a new theory to bridge the gap between two or more different theories, thus explaining something between the domains of the previous theories. The second is its transformational capacity, related to its capacity to cause preexisting theories to be reevaluated in a new light. The study also sought to meet Weick’s (1979) proposed three criteria for evaluation of a theory: simplicity, as it must be easy to understand or apply; accuracy, as it must present conformity to the truth; and generalizability, as it must be possible to extend it to other domains.

3.6.3 Construction of the Research Tool and Preparation of the Interviews

The development of the research tool was based on the theory investigation and the proposed framework.

The research protocol was validated by two specialists before conducting the interviews. The first specialist was a professional with experience in global marketing in developed and emerging countries. This specialist was selected based on his professional experience in both developed and emerging countries, including the fact that he has already worked for companies in both groups of countries. The purpose of this validation was related to comprehension of the questions and the context of emerging countries in strategic purposes. The second specialist was a sourcing professional in a global company from a developed country with experience with the sourcing process in developed and emerging

countries. This second validation was focused on comprehension of the questions and the analysis of their ability to capture the aspects the researcher wants to investigate. The use of the second specialist was also important to assure that the answers would not be repetitive to better elaborate the interviewing process. Because of these validations, some modifications of the research protocol were made to the questions and to the order of the questions.

The conduction of interviews is a process that can be pursued with different degrees of flexibility. This study was developed with in-depth semi-structured interviews, in which the interviewer had a questionnaire to follow but, at the same time, had flexibility to add or skip some questions, if the interviewer believed that this was the best way to access all the required information.

This type of interview requires the interviewer to be better prepared and to have a deep knowledge about the phenomenon under study. As all the interviews were conducted by the author of this thesis, this type of interview was selected as the best way to associate rigor to thoroughly investigate the subject following the previous findings and adding flexibility to introduce new aspects in each dimension. This selection did not change the importance of the development of strong questionnaires that assured that all the key aspects would be investigated.

3.6.4 Case Selection

The definition of the number of companies to be investigated is an important aspect of case-based research. Eisenhardt (1989) argues that four to ten useable sites are necessary for case research, depending on the number of critical casual variables proposed.

The first approach of the researcher to the industry sector occurred on August 2011 in a meeting with representatives of the industry and the state of Rio Grande do Sul government, when the industry association, ABINEE⁵, presented their interest in developing improvements in the global sourcing process of their associate companies. As the researcher was in attendance at this meeting, another meeting was scheduled just with the researcher and ABINEE to discuss the potential synergy of this research and the interest of the association.

A second meeting was scheduled, in September 2011, when the research objectives were presented to the local Director of ABINEE and two advisors of the entity.

⁵ Associação Brasileira da Indústria Elétrica e Eletrônica – ABINEE, Brazilian Association of Electrical and Electronic Industry

Ideas on their global sourcing project were also presented and it was visualized that this doctoral research could be an opportunity to improve ABINEE's project through the analysis of the global sourcing strategy that the companies of the industry in Rio Grande do Sul are adopting.

A set of potential companies to be investigated was selected by ABINEE. The goal was to identify the companies that were more advanced in their international sourcing approach. ABINEE sent an email presenting the research and asking the top managers of these companies if they could collaborate in the research. Six companies were investigated. The definition of the number of cases was made based on replication logic – when the researcher started to find similar results, a literal replication, and contrasting results only for predictable reasons, a theoretical replication – the researcher assumes that he had determined the appropriate number of cases for our research.

It is possible to affirm that the companies investigated here were selected for convenience. According to Barrat, Choi and Li (2011), in this situation, the cases are selected out of convenience of the researchers, for example geographical proximity and a relationship network that allow the researcher to collect the necessary data.

3.6.5 Data Collection

The data collection occurred between September 2011 and January 2012. After received the agreement of each company, an interview with the top manager or other person of the company indicated by him was scheduled. To define who were the appropriate individuals to answer the questions, some e-mails and phone calls were exchanged with the companies. The interviews were scheduled and details of the respondents can be viewed in Figure 19. It is important to highlight that when there were two respondents at Companies 3 and 4 and they were interviewed together. At Company 5, two separate interviews were conducted, and the duration indicated is the sum of these two interviewees.

Case	Position of the interviewee	Years working for the company	Duration of the interviews
Company 1	Owner / Director	Since foundation	2 h 33 min
Company 2	Sourcing Coordinator	17 years	2 h 23 min
Company 3	Owner / Director	Since foundation	1 h 51 min
	Director	Less than one year	
Company 4	Manager	13 years	2 h 19 min
	Supervisor	10 years	
Company 5	Controller	14 years	2 h 25 min
	Manager	14 years	
Company 6	Owner / Director	12 years	2 h 10 min

Figure 19 – Cases and respondents

Company 1 represents the pilot case study. After the first investigation, the research protocol was analyzed again and some changes were made to assure a better data collecting process. The data from the pilot case were used in the final analysis because the findings of this individual research do not commit the global analysis of the data, respecting replication logic.

All the interviews occurred on the company site, and the audio was recorded with the authorization of the interviewees. The duration of the interviews presented correspond to the recorded time of the conversation. It is important to relay that the companies agreed to participate if their identity was kept confidential, and the presentation of the companies was focused on the sourcing strategy and activities, not the company history and strategy.

3.6.6 Data analysis

According to Stuart et al (2002, p. 427), “much of the important data come from analyzing and interpreting what individuals are trying to say (...) Interpreting qualitative information is, to a great extent, a challenge of making sense from chaos”.

Barrat, Choi and Li (2011, p. 331) argue that the “biggest challenge behind data analysis is to demonstrate the objectivity of the process through which the data and field notes are developed into conclusions”. To assure objectivity, these authors recommend that it is first necessary to develop a within-case analysis, where a single case description is offered and the emerging constructs and their relationships are delineated. A second step is the cross-case analysis, when the detailed case write-ups are compared, and the emerging patterns are contrasted.

The data were submitted to content analysis with the support of NVivo®. The codification process was conducted using NVivo® based on the theoretical framework. A set of important aspects that must be analyzed according to each dimension was identified in the transcription of the interview. Although the questions were separated according to the research guidelines, during the interviews, the information provided for each question could be related to other research guidelines, and this codification process was important to assure the best use of the information. The transcription was read and analyzed three times to assure that the codification process captured all the information. After that, the codification report with the text separated by nodes was analyzed, and some adjustments were made to assure the consistency of the information generated by the data.

The use of NVivo® was important for the researchers to organize the information and assure the correct use of the data in the research process. The database that was developed with the software can be considered as a method to reduce the fragility of the case-based study related to the fact that the data are analyzed in an intuitive way in a qualitative study.

3.6.7 Review, conclusions and final considerations

Stuart et al (2002) present a five-step case-based research and dissemination process: (1) definition of the research question, (2) instrument development, (3) data gathering, (4) data analysis, and (5) dissemination. The innovativeness of this model relies on the dissemination step. Dissemination is related to the presentation of the data, including the use of graphical tools and also with the presentation of the results for the audience.

During the research process, there was a concern to present several parts of the study to a qualified audience to validate it. The first important aspect was related to the validation of the theoretical framework. The first effort developed to do so was the presentation of the theoretical framework at the Doctoral Consortium of the Brazilian National Association of Graduate and Research in Management (Associação Nacional de Pós-Graduação Pesquisa em Administração – ANPAD) in 2010. The discussion of the research question and the framework in the consortium was important to redefine some of the aspects of the research. Based on the critiques received during this consortium and on the literature review, the study was re-designed during the first semester of 2011 when the researcher was a visiting student at the Fox School of Business at Temple University. A second presentation of the research framework was presented for colleagues and professors as the final activity of the discipline of Theory of International Business and Multinational Firms. A second review was

transformed into the theoretical framework based on the contributions. During this review, the data started to be collected and reviews were also conducted into the previous stages of the research. As a result, a paper was written, submitted and approved at the 2012 Annual Conference of The Business Association of Latin American Studies. With this third presentation of the theoretical framework, the process of validation of the theoretical framework was concluded, and the cross-case analysis began.

Case studies do not rely on inferential statistics. They rely on logical extrapolation (analytical or theoretical generalization) to where the findings might apply, and researchers can judge whether particular findings would be valid in other circumstances (Stuart et al, 2002).

The research report should represent the evidentiary base with summaries, tables, charts and selected examples, indicating the link between these items and the evidentiary base. Stuart et al. (2002) argues that the reduction of the massive amount of data to charts and tables may make it difficult to convince the reader that each item in any visual instrument properly represents the raw data. To assure this accurate representation, it is important to present the chain of evidence (from raw data to summary) for a portion of the overall data and then attempt to convince the reader that the rest of the data was handled similarly.

The next chapter presents the description of the industry sector and the within-case analysis.

4 DESCRIPTION OF THE INVESTIGATED COMPANIES

This Chapter presents a description of the investigated companies in this research. Before describing the companies, it is important to understand their industry sector. Respecting this logic, the next section presents the electrical and electronic industries in Brazil and will be followed by a description of this industry sector in Rio Grande do Sul State, as the companies investigated are from this State. Then, in sequence, the companies will be described. This description will focus on the global sourcing process. It is not our purpose to investigate the entire company, and this method is also a way to preserve the companies' identities. The description is concluded with an analysis of the GS level of each company.

4.1 The Electrical and Electronic Industry

The electrical and electronic industry in Brazil is divided into eight segments: (1) industrial automation, (2) electrical and electronic components, (3) industrial equipment, (4) generation, transmission and distribution of electrical energy, (5) computers, (6) electrical installation material, (7) telecommunications, and (8) household appliances.

The industry sector sales in 2010 were R\$ 124.3 billion, representing a growth of 11,27% compared with 2009. Examining the historic series of its indicators, it is possible to verify that from 2003 to 2010, the industry sector grew, except in 2009, which may reflect an impact of the 2008 international economic crisis, and consequently, the growth rate of 2010 may be a result of the pent-up demand from 2008. Analyzing the information from 2003 to 2004, the industry sector increased 27,70%; from 2004 to 2005, the industry sector increased 13,71%; from 2005 to 2006, the industry sector increased 12,18%; from 2006 to 2007, the industry sector increased 7,30 %; from 2007 to 2008, the industry sector increased 10,21%; and from 2008 to 2009, the industry sector decreased 4,15%. Figure 20 presents more information about the industry indicators, including sales, employees, sales per employee, and investment. The main information presented here is the trade balance of this industry: there was an increase of 516% from 2003 to 2010.

Indicators	2003	2004	2005	2006	2007	2008	2009	2010
Sales (R\$ billion)	63.9	81.6	92.8	104.1	111.7	123.1	111.8	124.4
Sales (USD billion)	20.8	27.9	38.1	47.8	57.3	67.0	56.1	70.7
Employees (thousand)	122.6	132.9	133.1	142.9	156.1	161.9	159.8	174.7
Sales per employee (USD thousand)	169.9	209.9	286.6	334.6	367.3	413.8	350.8	404.8
Investments on fixed assets (percentage of sales)	3%	3%	3%	3%	3%	4%	3%	3%
Investments on fixed assets (R\$ billion)	2.0	2.4	3.1	3.2	3.5	4.9	3.1	3.6
Exports (USD FOB million)	4.771	5.344	7.767	9.249	9.300	9.891	7.486	7.619
Imports (USD FOB million)	10.048	12.667	15.135	19.705	24.053	32.035	24.953	34.882
Trade balance (USD FOB million)	-5.277	-7.323	-7.368	-10.456	-14.753	-22.144	-17.468	-27.263
Total foreign trade (USD FOB million)	14.819	18.011	22.902	28.902	33.353	41.926	32.439	42.501
Exports/Sales (%)	22.9	19.2	20.4	19.3	16.2	14.8	13.4	10.8
Imports/Internal market of final goods (%)	21.7	18.3	15.9	17.4	18.5	20.5	20.4	21.6
Exports/Total Brazilian exports (%)	6.5	5.5	6.6	6.7	5.8	5.0	4.9	3.8
Imports/Total Brazilian imports (%)	20.8	20.2	20.6	21.6	19.9	18.5	19.6	19.2

Figure 20 – General Electrical and Electronics Industry Indicators. Source: ABINEE (2012).

The total sales in 2011 achieved R\$ 138.1 billion, representing an increase of 11% compared with 2010 (Figure 21). According to the association, these results are under expectation as at the end of 2010, they projected a growth of 13% for the period. ABINEE informed us that the main difficulties noted by the companies, which affected their performance, were the valuation of the Real and the global economic crisis.

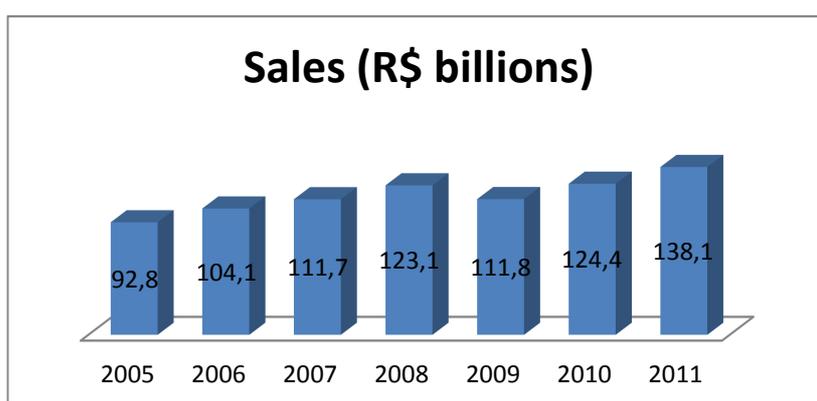


Figure 21 – Industry sector sales. Source: ABINEE (2012).

Figure 22 represents the historical series of the industry sales divided into its sectors from 2003 to 2010 in R\$ million.

Areas	2003	2004	2005	2006	2007	2008	2009	2010
Industrial Automation (R\$ million)	1,721	2,090	2,330	2,708	3,097	3,446	2,943	3,237
Electrical and Electronic Components (R\$ million)	6,876	8,697	8,653	9,409	10,150	9,500	8,263	9,502
Industrial Equipment (R\$ million)	8,426	10,319	11,814	13,322	15,541	18,369	15,003	18,754
Generation, transmission and distribution of electrical energy (R\$ million)	4,449	5,581	6,557	9,169	10,599	11,919	10,604	12,089
Computers (R\$ million)	16,701	20,624	24,437	29,418	31,441	35,278	35,278	39,864
Electrical installation material (R\$ million)	4,593	5,947	6,392	6,755	7,646	8,323	7,954	8,909
Telecommunications (R\$ million)	8,760	13,006	16,451	16,742	17,465	21,546	18,367	16,714
Household appliances (R\$ million)	12,421	15,338	16,180	16,560	15,773	14,710	13,427	15,307
Total (R\$ million)	63,948	81,601	92,814	104,083	111,711	123,092	111,839	124,376

Figure 22 – Sales of Electrical and Electronics Industry by Area (R\$ million). Source: ABINEE (2012).

Figure 23 presents this information in USD million.

Areas	2003	2004	2005	2006	2007	2008	2009	2010
Industrial Automation (USD million)	560	715	957	1,244	1,589	1,876	1,475	1,840
Electrical and Electronic Components (USD million)	2,239	2,973	3,555	4,322	5,209	5,170	4,142	5,402
Industrial Equipment (USD million)	2,743	3,527	4,853	6,119	7,977	9,997	7,521	10,662
Generation, transmission and distribution of electrical energy (USD million)	1,449	1,907	2,694	4,212	5,440	6,487	5,316	6,873
Computers (USD million)	5,438	7,049	10,039	13,512	16,138	19,199	17,684	22,663
Electrical installation material (USD million)	1,495	2,033	2,626	3,103	3,924	4,529	3,987	5,065
Telecommunications (USD million)	2,852	4,445	6,759	7,690	8,964	11,726	9,207	9,502
Household appliances (USD million)	4,044	5,242	6,647	7,607	8,096	8,005	6,731	8,702
Total (USD million)	20,820	27,891	38,131	47,808	57,338	66,989	56,062	70,708

Figure 23 – Sales of Electrical and Electronics Industry by Area (USD million). Source: ABINEE (2012).

Another important aspect to consider in the industry sector analysis is the amount of exports. As observed in Figure 24, in 2009 and 2010, there was a decrease in exports after a period of export increase (2003-2008).

Areas	2003	2004	2005	2006	2007	2008	2009	2010
Industrial Automation (USD FOB million)	76.5	114.4	143.7	238.9	280.3	314.2	267.4	329.4
Electrical and Electronic Components (USD FOB million)	1,760.0	1,992.8	2,286.0	2,708.4	3,151.1	3,304.3	2,539.9	2,804.6
Industrial Equipment (USD FOB million)	362.8	475.9	640.4	917.8	1,012.8	1,141.2	893.8	1,049.1
Generation, transmission and distribution of electrical energy (USD FOB million)	165.0	274.7	334.6	515.8	657.2	864.9	837.0	734.0
Computers (USD FOB million)	193.5	263.3	387.0	411.0	337.8	312.6	272.5	206.6
Electrical installation material (USD FOB million)	150.7	202.8	228.6	308.2	288.5	325.5	255.5	308.0
Telecommunications (USD FOB million)	1,333.9	1,142.00	2,832.3	3,114.5	2,491.5	2,539.7	1,701.1	1,338.1
Household appliances (USD FOB million)	728.7	878.4	914.4	1,034.6	1,080.7	1,088.5	718.5	849.4
Total (USD FOB million)	4,771.0	5,344.2	7,767.0	9,249.1	9,299.8	9,890.8	7,485.6	7,619.3

Figure 24 – Exports of Electrical and Electronics Products by Area (USD FOB million). Source: ABINEE (2012).

It is also possible to examine the performance of exports by trade blocks. Figure 25 presents the data from 2003 to 2010. A comparison between 2003 and 2010 highlights the reduction of the penetration into the U.S. market and the increase of ALADI as a market for the Brazilian products, especially Argentina.

Regions	2003 (Part %)	2007 (Part %)	2008 (Part %)	2009 (Part %)	2010 (Part %)
United States	45.4	20.0	18.0	17.0	14.1
Aladi (Total)	29.0	53.2	52.9	52.9	57.1
Argentina	10.6	22.8	25.6	25.6	28.4
Others from Aladi	17.9	30.4	27.3	27.3	28.8
European Union	12.1	11.5	11.4	11.4	12.4
Asia (Total)	4.7	3.7	6.2	6.2	5.4
China	1.7	1.1	2.3	2.3	2.0
Others from Asia	3.0	2.6	3.9	3.9	3.4
Others countries	9.3	11.6	12.5	12.5	11
Total	100	100	100	100	100

Figure 25 – Electrical and Electronics export by Trade Blocs (USD FOB million). Source: ABINEE (2012).

Figure 26 presents the main electrical and electronics products exported from 2005 to 2010.

Products	2005	2006	2007	2008	2009	2010
Mobile phones	2,408.9	2,664.7	2,085.0	2,207.2	1,423.8	1,007.3
Electronics for automotive use	552,6	630,7	716,0	790,0	588,7	766,9
Hermetic motors compressor	549.2	643.0	704.3	644.1	489.1	644.6
Components for industrial equipment	426.1	616.4	885.6	1,048.9	742.3	562.5
Motors and generators	348.6	431.6	567.9	655.2	505.4	547.2
Transformers	133.0	202.1	326.7	443.2	479.6	378.1
Refrigerators	253.3	278.5	292.2	281.3	175.4	202.4
Measuring instruments	88.5	151.4	177.5	204.1	177.6	200,5
Motor generator group	91.1	190.5	93.7	125.9	68.5	173.1
Components for computers	104.4	98.6	149.3	148.2	145.7	169.1

Figure 26 – Brazil main electrical and electronics exported products (USD FOB million). Source: ABINEE (2012).

It is important to highlight that the export share in the industry sector sales has been in decline since 2005 (Figure 27), which indicates that there has been a growth in the internal market that is supporting the companies' development in addition to this reduction of exports.

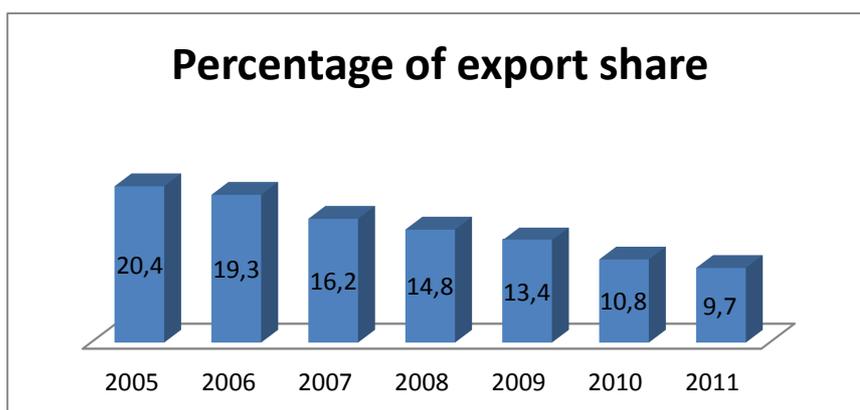


Figure 27 – Export share on industry sales. Source: ABINEE (2012).

Considering the industry sector imports, except in 2008, the total amount has increased from 2003 to 2010 (Figure 28). Dividing the exports by area, it is possible to realize that 53% of the imports are both electrical and electronic components. This number helps us to understand the dependence of the industry sector of raw materials and components from suppliers from abroad.

Areas	2003	2004	2005	2006	2007	2008	2009	2010
Industrial Automation (USD FOB million)	707.8	870.4	828.8	1,325.6	1,757.4	2,275.8	2,015.7	2,528.2
Electrical and Electronic Components (USD FOB million)	5,734.6	7,825.8	9,617.2	11,909.8	13,647.9	17,824.9	12,922.3	18,248.2
Industrial Equipment (USD FOB million)	1,287.1	894.7	949.9	1,518.5	1,892.1	2,806.3	2,723.3	4,023.4
Generation, transmission and distribution of electrical energy (USD FOB million)	221.1	224.3	223.0	310.2	388.3	498.2	495.7	531.9
Computers (USD FOB million)	656.8	778.1	1,017.5	1,399.7	1,883.3	2,242.3	1,762.9	2,404.5
Electrical installation material (USD FOB million)	449.4	585.6	569.7	651.6	755.6	1,043.8	874.4	1,409.7
Telecommunications (USD FOB million)	605.0	923.7	1,093.5	1,234.5	2,020.9	3,203.2	2,331.9	2,867.1
Household appliances (USD FOB million)	386.0	564.7	835.5	1,354.9	1,707.5	2,140.3	1,826.4	2,869.0
Total (USD FOB million)	10,047.9	12,667.3	15,135.0	19,704.9	24,053.0	32,034.7	24,953.2	34,882.0

Figure 28 – Imports of electrical and electronics products by area (USD FOB million). Source: ABINEE (2012).

The performance of imports by trade blocks can also be identified. Figure 29 presents the data from 2003 to 2010. A comparison between 2003 and 2010 highlights the increase of China as a supplier market and the decline of the U.S.

Regions	2003 (Part %)	2007 (Part %)	2008 (Part %)	2009 (Part %)	2010 (Part %)
United States	26.5	14.1	12.7	12.7	11.4
Aladi (Total)	3.2	3.1	3.6	3.3	3.3
Argentina	1.4	1.1	1.0	0.9	0.9
Others from Aladi	1.8	2.0	2.6	2.3	2.4
European Union	23.6	18.3	17.9	19.1	17.3
Asia (Total)	42.3	61.2	62.5	60.7	63.5
China	9.9	27.9	30.6	31.4	34.7
Others from Asia	32.4	33.3	31.9	29.3	28.8
Others countries	4.4	3.3	3.4	4.3	4.6
Total	100	100	100	100	100

Figure 29 – Electrical and Electronics import by Trade Blocs (USD FOB million). Source: ABINEE (2012).

Figure 30 presents the main electrical and electronics imported products from 2005 to 2010.

Products	2005	2006	2007	2008	2009	2010
Components for telecommunications	1,744.8	2,420.3	2,649.4	3,878.7	2,473.8	4,533.3
Semiconductors	2,904.2	3,332.5	3,423.3	4,040.7	3,293.4	4,464.1
Components for computers	1,597.8	2,177.5	3,088.5	4,043.4	2,733.8	3,350.5
Measuring instruments	592.6	796.5	975.3	1,280.3	1,074.1	1,304.2
Electronic for automotive use	648.3	657.1	884.6	1,261.1	983.1	1,264.0
Motor-generator group	24.2	131.8	95.7	243.8	549.0	1,008.4
Components for industrial equipment	498.4	620.3	627.1	832.3	665.5	869.1
Electrical medical equipment	89.5	377.4	480.5	607.6	579.8	804.8
Data processing machines	358.6	409.5	431.6	598.5	499.4	761.1
Passive components	372.1	488.5	494.1	599.0	428.9	601.5

Figure 30 – Brazil main electrical and electronics imported products (USD FOB million). Source: ABINEE (2012).

It is important to highlight that the import share in the industry sector sales has been increasing since 2005, and according to ABINEE's forecast of 2011 performance, it will decline 0,1 % (Figure 31).

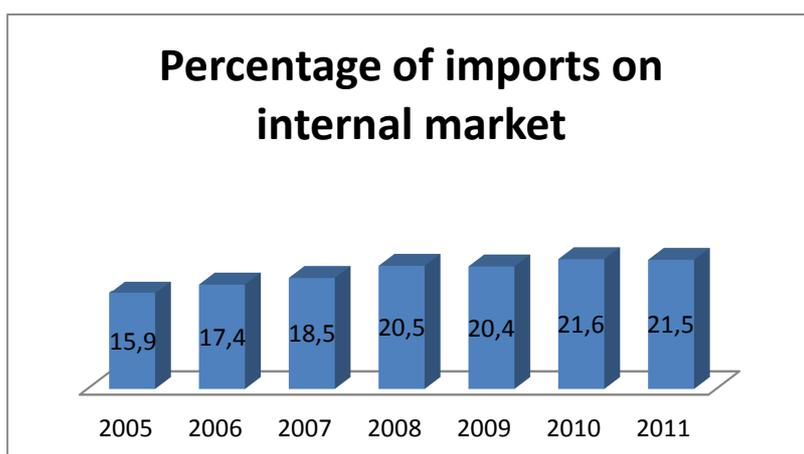


Figure 31 – Import share on industry sales. Source: ABINEE (2012).

The trade balance has a deficit that represents the dependence of the industry sector companies on imports. Figure 32 presents the trade balance deficit. The trade balance represents the difference between exports and imports, and a negative value represents a deficit: the industry is importing more than it is exporting. This industry shows an increase in this difference, representing a great dependency on imports.

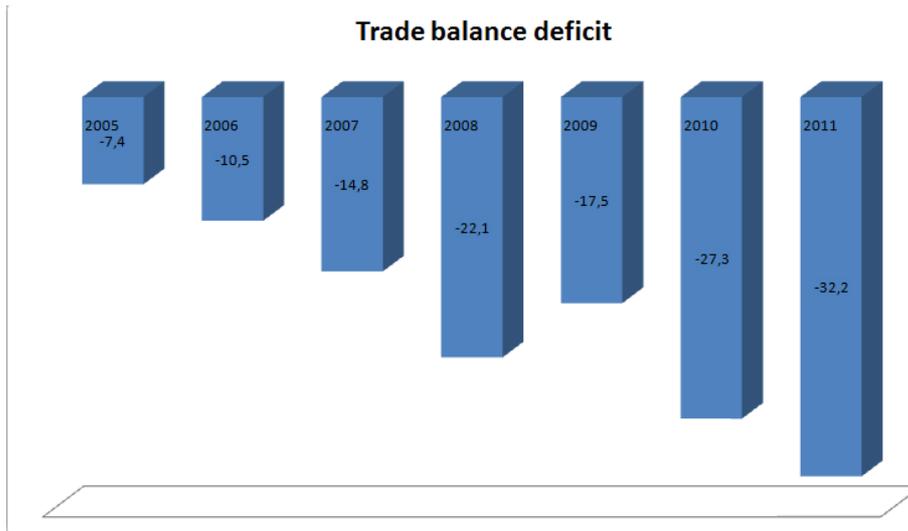


Figure 32 – Trade Balance Deficit. Source: ABINEE (2012).

These economic overviews of the electrical and electronic industry in Brazil led us to an investigation of this industry sector in Rio Grande do Sul State.

4.2 The Electrical and Electronic Industry in Rio Grande do Sul State

The electrical and electronic industry in Rio Grande do Sul State is strongly related to the creation of the “*Lei de Informática*”, representing an opportunity for investments in these areas that lead to, as a result, the development of start-ups from university professors through the approach of universities and research centers to private companies. Favorable conditions for investments and R&D, combined with an entrepreneurial behavior, led to the development of the industry in this State.

According to an investigation conducted by ABINEE in Rio Grande do Sul, in 2011, there were 198 companies located in the State. Most of these companies are located in the axis region from Porto Alegre to Novo Hamburgo (70%), 14% were located in Caxias do Sul, and the remaining were spread along the geographic territory of the State.

The sales of the industry sector companies in 2011 achieved R\$ 4.622 million. Figure 33 presents the industry sales from 2007 to 2011.

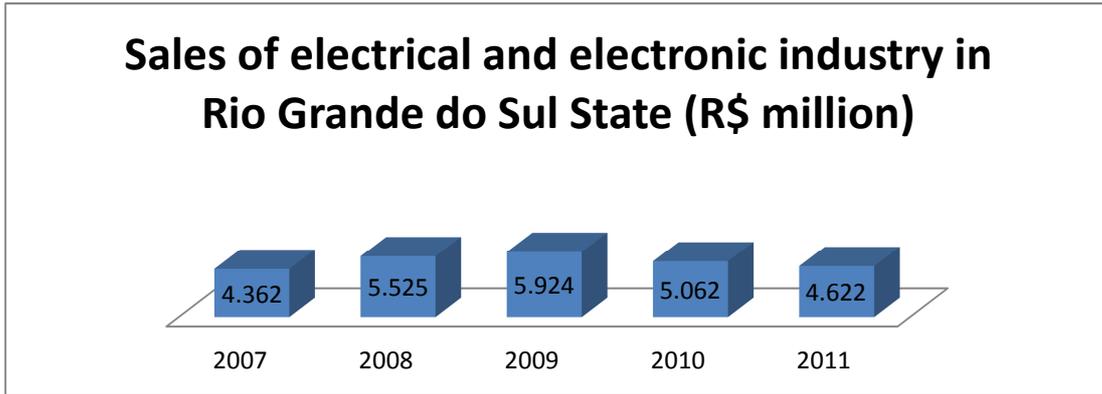


Figure 33 – Sales of electrical and electronic industry in Rio Grande do Sul State. Source: ABINEE (2012).

After this overview of the electrical and electronic industry in Rio Grande do Sul State, a description of the investigated cases in this research is presented in the next section.

4.3 Description of the investigated cases

Figure 34 presents a brief description of the cases, including the industry segment, decade of foundation, size of the company, location of the manufacturing facilities and the decade of the operations' beginning, location of other facilities (i.e., commercial, distribution center...) and the year of operations' beginning, typology of purchase items (components and/or finished products), percentage of sourcing made abroad (compared with total purchased), percentage of intra-company sourcing made abroad, countries of supply, and countries of export.

	Company 1	Company 2	Company 3	Company 4	Company 5	Company 6
Industry:	Lights and building control	Lights and building control	Electrical and electronic components	Electrical and electronic components	Electrical and electronic components	Telecommunications
Decade of foundation:	1980s	1980s	1990s	1980s	1990s	1990s
Size of the Company:	1 - 99 employees	1 - 99 employees	1 - 99 employees	250 - 499 employees	100 - 249 employees	100 - 249 employees
Sales (2010):	20 - 50 R\$ million	Less than R\$ 10 million	10 - 20 million	100 - 150 R\$ million	20 - 50 R\$ million	10 - 20 R\$ million
Location of the manufacturing facilities/Decade of operations' beginning:	Porto Alegre - 1980s	Porto Alegre - 1980s	Porto Alegre - 1980s	Porto Alegre - 1980s São Leopoldo - 2000s	Caxias do Sul - 1990s	São Leopoldo - 2000s
Location of other facilities (commercial, distribution center...)/Year of operations' beginning:	None	None	None	Purchase Office - Germany - 2008	None	Commercial - São Paulo/SP/Brazil 0 2008 Purchase Office - China-2010
Typology of purchase items (components, finished products...):	Components and finished products	Components and finished products	Components	Components and finished products	Components	Components and finished products
% sourcing made abroad (compared with total purchased):	2007 - 2% 2008 - 5% 2009 - 10% 2010 - 15% 2011 - 20%	2007 - none 2008 - 5,40% 2009 - 5,94% 2010 - 6,81% 2011 - 7,80 %	2007 - 30% 2008 - 50% 2009 - 60% 2010 - 60% 2011 - 70%	2007 - 37% 2008 - 46% 2009 - 39% 2010 - 36% 2011 - 35%	2007 - 12,57% 2008 - 15,99% 2009 - 29,38% 2010 - 39,05% 2011 - 60,79%	2007 - 5% 2008 - 5% 2009 - 5% 2010 - 5% 2011 - 5%
% intra-company sourcing made abroad:	None	None	None	1%	None	5%
Countries of supply:	China Taiwan Hong Kong Germany	China Canada United States	United States China India	United States China Germany	China United States	United States China Taiwan
Countries of export:	Uruguay Paraguay Bolivia Argentina Canada	Uruguay Argentina Colombia Chile Peru	Germany, Argentina, Canada, China, Colombia, USA, France, India, Italy, Mexico, Poland, Czech Republic	Latin America (not specified by the company)	Mexico, Colombia, Ecuador, Bolivia, Chile, Uruguay, Argentina	Argentina, Uruguay, Bolivia, Costa Rica, EUA, Australia, Mozambique, Iran, Peru, Chile, Mexico

Figure 34 – Description of the cases

It is interesting that these companies have some similarities. They were founded in the 1980s and the 1990s. They present a tendency to supply from emerging and developed countries at the same time, and as exporters, they have a more focused presence in Latin America.

The companies agreed to participate if their identities were not released, and the presentation of the companies was focused on the sourcing strategy and activities, not on the company history and strategy. Following this, the next section presents descriptions of the sourcing strategies of the cases.

4.4 Description of the companies

This section presents the sourcing strategies adopted by the cases investigated in this study. First, the GS strategies of the companies are presented separately and after this presentation, an analysis of their GS level is made.

4.4.1 Company 1

The creation of Company 1 is related to an innovative product developed by its owners. The search for innovation was not only related to the product but also to the business model. The company is focused on its core competence. The products are more expensive than Asian similar ones. To be competitive, the company focused on customized products, even those sold under a customer's brand. The company decentralized the manufacturing process with the engagement of suppliers located closer to the company's site and is still using this approach with global suppliers. The company used to manufacture products in the suppliers' units, performing the quality control, packing, expedition and shipping at home. Inside Brazil, they are changing this strategy because of logistics cost; however, the relationship with suppliers is still an important aspect of the company's strategy. The company realized that they are more than an industry – they had developed distribution that must be used with complementary products. These products are searched for in international markets and represent 20% of the company's sales.

The approach to international suppliers began more than 10 years ago with a first business mission promoted by the industry association. Since then, the managers travel to

Asia every year to visit fairs and suppliers' units. Potential suppliers are also identified at the international fairs inside Brazil when they come to expose and visit.

The adoption of a strategic view of sourcing was a consequence of the company's growth. As it moved from being a small company to a middle size company, the managers realized that the benefits to small companies were reduced. At the same time, the established competitors started to treat the company as an equal and the consequence could be failure or being sold to bigger companies. As the owners were entrepreneurs and were committed to the company, they realized that to maintain the growth rate they had over the years, they would have to search for new opportunities, and as they had developed a consolidated brand image and market chains, they could explore this path to become even bigger. The difficulty was the need to maintain the demand to invest in the development of new products, including R&D and an infrastructure to manufacture. The use of international suppliers could reduce the time to introduce new products to the market. However, they could not sell the same products that others competitors could find abroad. With this focus, Company 1 started to import products and perform reverse engineering at the company's site to develop improvements. From this process, the company identified parts that could be changed for items for which they already had certified global suppliers. Company 1 started requesting their direct supplier to use a component from a supplier identified and certified by Company 1. A part of these components was developed specifically for the company, which assured more competition from others players. This strategy started to be implemented three years ago, and the biggest challenges were related to cultural aspects. Most of the suppliers are from Asia, and these suppliers had difficulty understanding the balance of quality and cost that the company demanded.

The inclusion of new products from Chinese suppliers into the company's product portfolio can represent a risk for the company, as they may not be well accepted by the company's customer. To reduce the risks of customer's rejection to these products, the company developed a second brand, which is used to introduce products into the company's market. As the products are accepted, the company starts selling these items with the company's brand.

A new step in this strategy occurred while the data were being collected in 2011 as the company was waiting for the first batch of a product that was 100% developed by the company, including the design, molding and injection tooling, and produced by an Asian supplier. The company considered that this was the result of the adoption of cooperation with the supplier. The company created entry barriers selling quality products and developing distribution chains that allowed them to adopt risk strategies. The transfer of knowledge, as in

this case, is treated as a very risky operation. To avoid the transfer of knowledge, the company established agreements with the suppliers to assure that if they sell the products to the company's competitors, they will sell for a larger price. The other strategy was to separate the software part of the product, where a supplier introduces the software into the component in one country and ships them for assembly by another supplier.

4.4.2 Company 2

The foundation of Company 2 is directly related to the development of new products and innovation through research based on new technologies and products. Thus, the need to source abroad was always a part of the daily operations. Today, Company 2 sources primarily components but also finished products. The components are sourced abroad, and for some products, the company sends them and other components purchased locally to a third company responsible for the assembly of the products. Company 2 is focused on the development of the product and after it is assembled, testing it.

The focus on development and sourcing, instead of on the manufacturing process, was a decision of the company to be more focused on the activities that they realized could add more value to their business model.

The intense effort in development leads to the need of not just standard components but also customized ones. The search for new suppliers is the responsibility of the innovation area, even though sales, engineering and sourcing also collaborate in this process.

A focus on cost control appears to be the essence of the sourcing area and the efforts to look forward to new suppliers is based on visits to fairs, and a structure of relationship management with global suppliers does not exist. However, the company realizes the need for establishing a closer relationship with its global suppliers.

4.4.3 Company 3

The company started to source abroad 10 years ago as a way to introduce electrical and electronic components that were not manufactured in Brazil. The company was first based on the use of local suppliers as they were closer, represent less logistic difficulties and accepted small orders. As some products do not have a local manufacturer, they were imported by the company's suppliers. Over the years, the difference between the cost of local

purchase and imports was reduced, and a strategic approach was viewed as an opportunity for the company to reduce costs.

As the company did not have expertise in global sourcing and needed small orders, they started to negotiate with traders abroad that represent manufacturers and also with representatives of global suppliers in Brazil. This process promoted a change in the cash flow of the company as they were used to paying in advance, and the new suppliers requested pre-paid orders. To reduce this difference, they searched for local representatives that could visit the company and understand that, even though they were purchasing small orders, they were a solid company. Another approach that helped them was the purchase from a representative that already knew them, as they had acquired his company a few years ago.

New global suppliers were included in the company's portfolio after a trader attempted to approach the company and a Chinese supplier. This approach led the owner to visit that country for the first time. After that visit, the cultural barriers were reduced, and the company felt more "safe" to go abroad to search for opportunities. Part of this behavior happens to follow competitors, and the company is re-structuring its sourcing area to explore more options abroad. The company is starting to implement a strategic view for its sourcing decision process as keeps searching for components to be used in the assembly of products at the company's site.

4.4.4 Company 4

The globally sourced items of this company include electronic components and finished products. The finished products started to be imported with the company's label four years ago after adopting a strategic view of sourcing activities. The first motivation was the local cost and the source for more technological products. The first move was a trip of the managers to Asia where they found suppliers with products that could be supplied abroad instead of manufactured or purchased locally as an approach to improve technology and reduce costs and time to market, as sourcing abroad with a relationship with the suppliers was faster and less expensive than investing in R&D at the company.

The company has two units abroad. Each unit is responsible for sourcing support in its country – they negotiate the terms of purchase with the local suppliers, and the unit in Brazil is responsible for the logistic procedures.

Over the last few years, the company has been focusing on establishing partnerships with more advanced technology suppliers, changing from old suppliers abroad to

new ones. The company has also focused on the search for complementary products that could improve its competitiveness through the consolidation of the concept of “one stop shop⁶” at the company. The strategy of the company is to negotiate the conditions of its source with the suppliers for a year and based on the negotiated terms, the company places its orders.

This change in the concept of global sourcing in the company’s activities is conducted by the top managers (owners), and they are searching and negotiating with potential suppliers to establish partnerships. The negotiation with component suppliers is still being conducted by directors and managers.

The company also started to consider the importance of suppliers on the R&D project to assure the components that the new products will require have an appropriate cost and to introduce new components developed by the company’s suppliers in the development process. The company has a tradition of R&D and innovation, and the adoption of GS is being perceived as an opportunity to accelerate the innovation process based on the establishment of closer relationships with suppliers.

4.4.5 Company 5

Company 5 started to source abroad six years ago because of their market. To still be competitive, the company must reduce costs while maintaining quality. Some of the raw materials that the company was purchasing inside Brazil were made abroad, and the purchase from a representative or a distributor represented extra costs that could most likely be reduced by sourcing abroad. At this moment, the company was starting the development and production of a new product line to a new industrial sector that pushed these changes. The first effort to source globally was a standard item that could be potentially sourced from a set of suppliers.

At that time, the company started to structure an international sourcing area with the allocation of one employee that was studying international trade but had no experience in the area. To fill this gap, the company used a consulting company to support the first operations. The first process was difficult as the company did not have experience with this activity; however, with time and the learning process, the benefits began to be measurable.

⁶ One stop shop refers to a situation when the client can purchase multiple products from a single supplier.

An important part of this learning process was the visits to fairs and supplier sites in the Asian market annually for the last four years. A careful process of supplier selection was conducted by the company. In the first years, the sourcing area used internet databases to find new suppliers. Today, the sourcing area prefers to search for new opportunities at fairs – to actually “meet” the supplier. Annually, the company managers travel to Asia to visit fairs and both current and potential suppliers. An investigation of a set of characteristics of the suppliers, such as the year of foundation and its certifications, is also required before starting the purchase process.

The selection of new items to be sourced globally followed the criteria of amount and volume to enable logistics cost – always considering the items that most impacted the ABC curve. The beginning of the consolidation of loads in the following years led to lower volume items becoming viable for importation. The location – proximity of suppliers – became another criterion of analysis in the purchasing decision.

The imported goods are all raw materials – the company does not import finished products. The entire production is centralized at the company’s site. The only outsourced activity is support to the sales team. There is a strong connection between the engineering and the source departments – they work together in new product development to achieve quality and the target cost.

4.4.6 Company 6

Since the beginning of its activities, Company 6 has depended on international raw materials. The decision to import these materials instead of purchasing them locally with a strategic view was part of the company’s strategic plan since its establishment. Two years after the beginning of its operation, the managers made their first trip to Asia to visit fairs and suppliers. According to the company’s manager, there is a need to have this strategic view as they offer their products in a globalized market even inside Brazil, as many international competitors sell their products in Brazil, and there are no import barriers to them.

The company sources raw materials and finished products from abroad. The raw materials are used in the manufacturing of products that are developed by the company. These raw materials can be standard or customized inputs that were developed by Company 6.

Company 6 also has an agreement to be an exclusive representative of some products from two global companies. These finished products are imported and sold in the

Brazilian market with the brand of Company 6 – according to the company's manager, this is a method to fill in some gaps in the product line that they do not produce.

Company 6 has the manufacturing centralized in one unit. This company also has a R&D unit inside a university campus and a supply office in China. Commercial units are distributed around the Brazilian countryside. The supply office in China is responsible for the support of sourcing activities. The negotiation is made by the head office in Brazil, and the supply office manages the suppliers and the sourcing of new supply opportunities.

The centralization of the purchases from Asia helps to improve the gains that could be achieved through the consolidation of cargo. Another strategy adopted by Company 6 is the analysis of their potential to source directly from the manufacturer or to source from a distributor. When this company purchases small orders, they purchase from distributors that offers better conditions in different countries outside Brazil

4.5 Analysis of the GS level of the cases

The GS strategy was described in early sections, and it is possible to analyze at which stage of the GS approach the companies are based on the Trent and Monczka (2003) model. Level I represents the companies engaged only in domestic purchasing and will be not considered in this study, as only companies that source abroad were selected. Level II includes companies that are engaged in international purchasing as needed, such as when they do not have a local supplier or when the only source abroad to follow competitors. Level III includes companies that include international purchasing as part of their sourcing strategy, even though this purchasing is still perceived as a separate part of the source process. Levels II and III represent the international purchasing dimension of sourcing strategy. Levels IV and V represent the effective adoption of GS. Level IV represents the integration and coordination of GS across worldwide buying locations, and Level V represents the integration and coordination of GS with other functional groups. To reach Levels IV and V, companies that used to purchase internationally in general designate buyers that are traditionally focused on domestic markets to global markets, without differentiating between local and international markets; these companies use international units to support the activities of GS, consolidate the purchase needs of units to maximize margins on a global basis, improve the communication between the functional areas with sourcing, and establish efforts to obtain a proactive view of sourcing possibilities.

Analyzing this classification of sourcing strategy and the sourcing characteristics of the investigated companies, Companies 2 and 3 can be classified at the International Purchasing Level. Company 2 outsources based on cost and the inexistence of local suppliers, while Company 3 is starting to source more to follow competitors but is still focused on cost reduction. These companies do not have a strategic view of sourcing even though they realize that they need to have this type of approach and are working on the improvement of their sourcing strategy.

Companies 1, 4, 5 and 6 are adopting GS. Company 1 has a consolidated strategic approach, especially with (1) the involvement of other functional areas into the sourcing process and the manufacture of products abroad that are developed by their R&D department and (2) the use of different brands as a marketing strategy. Company 4 is adopting GS at an initial level; even though this company already has sourcing units abroad, the connection between other areas and even with the sourcing can be improved. Company 5 experienced a fast growth of its sourcing activities in the global market. This company revealed a strategic vision of this activity with the involvement of R&D and the sourcing area in the process of product development. Company 6 also has a consolidated strategic approach that is demonstrated by the existence of a supply office in China and the company's sourcing process for new opportunities.

The positioning of the companies can be viewed in Figure 35.

Classification of GS	Companies
International Purchasing	Company 2 Company 3
Global Sourcing	Company 1 Company 4 Company 5 Company 6

Figure 35 – GS classification of investigated companies

Based on this classification, this study will continue to investigate the GS aspects of Companies 1, 4, 5 and 6. This selection was important as the focus of this research is the adoption of GS. The framework developed in Chapter 2 will be used in the next chapter to conduct the cross-case analysis.

5 ANALYSIS OF THE GS ADOPTION

This chapter presents an investigation of the adoption of GS by the companies of interest through a theoretical framework analysis and a cross-case analysis.

5.1 The antecedents of GS

The antecedents of GS represent the movements that happen inside the companies that lead them to adopt GS and include their strategic orientation and organizational structure. The following sections present these aspects for Companies 1, 4, 5 and 6 through a within-case analysis.

5.1.1 Strategic orientation

According to Alguire, Frear and Metcalf (1994), companies can obtain comparative and competitive advantages through the adoption of GS. The international growth of companies and markets might have motivated the companies investigated in this study toward this adoption. The motivations that led these companies to adopt GS were investigated as the starting point of the theoretical framework.

Company 1 established a growth goal of 25% per year. Because this company is playing in a competitive market, its directors looked for more supply opportunities, such as purchasing products that are not available in their markets but could be sold in the same distribution channel. According to an interviewee, “To manufacture a product in Brazil, I need a bigger **investment** compared with purchasing it from China (...) the investment that I could be doing in R&D and production, including equipment, tools and matrices, I don’t need to do anymore (...) I start sourcing using that amount to be able to sell these products **faster**.”

Another motivation to adopt GS is related to the **delivery lead time**. In comparing the development of injection machinery by a Brazilian supplier to a Chinese supplier, the Brazilian company takes approximately 90 days for the development step, whereas a Chinese supplier takes only 25 days. Although this comparison does not consider the production and the delivery lead times, the reduction of time acquired during the development step is an example of the differences in the total lead times.

According to the interviewee, “we will pull the demand (...) we became a national reference and the international market is also looking at us.” Additionally, to stay competitive, companies must use **new technologies** that can be achieved in the global supply market: “worldwide electronics – every 6 months we have a new microcontroller.”

Company 1 is also changing its concept of local, international and global companies. According to an interviewee, “I can manufacture here, or anywhere else – it is a strategy decision.” This strategic view includes the relationship with the **expansion of consumer markets**, expressed in light of the company’s view on the global manufacturing process, in which a supplier is used for finished goods as a means to export to more countries without transferring products through Brazil.

Considering the motivations of Company 1, we realize that cost reduction (comparative advantage) is important, but it is not what leads to the adoption of a GS strategy. Company 1 is motivated by competitive advantages, including the access to new technologies and delivery improvement (product related), the reduction of product development cycles (process related), and the establishment of a presence in the global market, in addition to the opportunity to sell to a specific market or country and the ability to react to a competitor’s practices (company marketing related). A motivation not previously identified in the literature review, and the perception of Company 4, is the potential for more diversified products using the same distribution channel already developed by the company.

To Company 4, cost reduction was the initial motivation to start sourcing globally, but it was not the only motivator. Company 4 went abroad looking for business opportunities, not just cost reduction. From the early years of the company, the founders looked for partnerships with suppliers that could supply with reduced prices and better technologies. The first supply partnership started with an Asian supplier that “had products with more **technology**, were **smaller** and had **better cost**,” according to the interviewee.

Even though the Asian supplier was able to fill this gap, the company also looked for other opportunities in more advanced countries. As a result, Company 4 established a partnership with a European company that had more **high-technology** applied products, with a higher price than Asian products, but were also more technologically advanced, which could ensure competitiveness.

Company 4 does not just purchase more high-technology products but also is using this acquisition as a means to learn about the products. “The technology from our supply (in a case of a component supplied abroad) is improving the technology of our product (developed at the company’s site in Brazil),” said the interviewee.

Another motivation was the development of the “**one stop shop**” concept. Company 4 realized that it could offer more to its customers and, in doing so, could obtain orders that it was losing due to its inability to supply all of the requested items. To fill this gap, Company 4 started to supply finished products, shipped by the suppliers with the label of Company 4. This situation created a new competitive scenario for Company 4 because it was able to compete with its suppliers, although the primary difference is the set of products that can be supplied together by Company 4.

According to the interviewee, “to make an investment and develop a new product, we will not reach the same cost (...) instead of looking to develop a new product, we join with another company and complete the portfolio with a new product.”

As a consequence of the development of Company 4, its business now requires more advanced products as inputs, which are not manufactured inside Brazil. “We have no choice; nowadays, the components we need do not have a domestic market in Brazil. They are only available in the international market.” This is also a consequence of the development of Company 4’s market: “our competitors are international.”

Considering the trajectory of Company 4, its business strategy began with sourcing from abroad to reduce the company’s costs (comparative advantage), but the use of international suppliers and the knowledge of these markets led the company to new motivations, which were related to competitive advantages. These advantages included access to new technologies (product related), anticipated material needs for new products in development (process related), and reactions to competitors’ practices (company marketing related). Just like Company 1, Company 4 perceived the possibility to offer more diversified products by using the same distribution channels already developed as its motivation to adopt GS.

Company 5 started to supply inputs from abroad based on its need for alternative supply sources. The manufacturing of a new product led Company 5 to identify the **inexistence of a supply market** in Brazil: a few companies were selling raw materials produced abroad. Company 5 started to look abroad for suppliers for this item and, consequently, extended the number of raw materials purchased abroad. This situation led Company 5 to analyze its potential to source other materials from abroad to be more competitive: “our clients are looking for cost reduction (...) The competition itself has forced us to seek other alternatives because we had to reduce prices to stay competitive.” A lack of the necessary raw materials exists in the Brazilian supplier market: “the market does not meet the sourcing needs of electrical and electronics companies.”

Gaining access to suppliers from other countries allowed the company to access more **technologies** before they arrived in the Brazilian market. “There were some items that we never think about using before we start sourcing globally.” Because the total quantity of each item was insufficient to reduce the total cost, Company 5 expanded the number of items by using a consolidated shipping process to ensure the total cost was reduced.

Company 5 also highlights the achievement of better **negotiation conditions**, especially in light of its follow-up process with the suppliers. According to the interviewee, global suppliers are more in tune with the needs of the customer.

The establishment of **presence in the global market** is another important aspect of Company 5’s strategy. Because the company frequently attends international fairs and visits international suppliers’ sites, Company 5 is becoming known in the suppliers market. Consequently, the interviewee presented a situation in which Company 5 needed extra time to make a payment, and the suppliers agreed to deliver the materials before the payment was received, even though the initial negotiation was that the transaction should be prepaid. The suppliers agreed to extend the payment deadline.

The final motivation for a GS strategy is related to obtaining the **opportunity to sell in a specific market or country**, which, in this case, is Brazil. The taxes to import finished goods are higher than the taxes to import raw materials, and the appropriated tax and engineering costs can ensure increased competitiveness to Company 5.

Even though Company 5 started sourcing globally due to the lack of local suppliers, its strategy is now motivated by competitive advantages, including the access to new technologies (product related), the establishment of alternative supply sources (supplier related), better negotiation conditions (process related), and the establishment of a presence in the global market, while seizing the opportunity to sell to a specific market or country (company marketing related).

To Company 6, the survival of the company was the first motivation to look for more competitiveness through sourcing. A few decades ago, there were 21 direct Brazilian competitors of Company 6; today, only 2 other companies manufacture the same kind of products. In this competitive environment, “[a]ll strategies that I (Company 6) can employ to ensure a little better competitiveness, I have to use. And supply is one of the most important.” Looking at their competitors’ products, Company 6 identified that their quality was similar; hence, the difference resided in the **cost**, which could be reduced by using a better sourcing process.

Even though the market structure and costs were the initial contributors to

Company 6's movement into GS, nonetheless Company 6 identified that, with global suppliers, it would have the opportunity to access more **technology** and to improve its **product portfolio** with the introduction of more products (purchased as finished goods), thereby completing its portfolio. The purchase of finished goods is an opportunity that can be explored by relying on the already developed distribution channels available to Company 6, which can be used for importing finished goods.

Increased numbers of technology products, when sourced globally, represent the opportunity for a company to offer new products and technologies faster than it could with product development; additionally, such an approach incorporates reduced development costs, which decrease the total cost. Global suppliers dilute the development cost on a global scale. In this way, looking abroad for new sourcing opportunities is a means to ensure scalability for Company 6 by introducing global products into its portfolio. This allows the company to improve its international presence by illustrating the importance of establishing **presence in global markets**.

Motivations related to cost reduction (comparative advantages) are important to Company 6, but this company also is motivated by competitive advantages such as access to new technologies (product related) and the establishment of presence in the global market (company marketing related). The possibility of offering more diversified products while using the same already developed distribution channels also is identified as a motivator for Company 6.

The four investigated cases present motivations related to comparative motivations (cost reduction) within the overall motivations that led them to source abroad; however, comparative motivations alone were not enough to adopt GS. All companies presented competitive advantages as motivating this effort. Figure 48 summarizes these motivations. Based on Monczka and Trent (1991), Bozarth, Handfield and Das (1998), Dornier et al. (2000), Cho and Kang (2001), Christopher (2002), Jin (2004), Agndal (2006), Harris (2006), Knudsen and Servais (2007) and Dutton (2008), a framework was developed to separate the comparative and competitive advantages that can be achieved through GS (presented in section 2.5.1.1). The competitive advantages identified in that framework (product related, supplier related, process related, and company market related) were used to analyze the cases. Because other motivations not previously identified in the literature review were also identified in the cases, a fifth line is included in Figure 36. Because the comparative motivations only refer to cost reduction, and this is not what represents the adoption of GS,

this motivation was not analyzed here. The focus on this analysis remains on the competitive motivations.

	Company 1	Company 4	Company 5	Company 6
Product related	Access to new technologies Delivery improvement	Access to new technologies	Access to new technologies	Access to new technologies
Supplier related			The establishment of alternative supply sources	
Process related	Reduction of the product development cycle	Anticipating the material needs for new products in development	Better negotiation conditions	
Company marketing related	The establishment of presence in the global market Obtaining the opportunity to sell to a specific market or country Reaction to competitors' practices	Reaction to competitors' practices	The establishment of presence in the global market Obtaining the opportunity to sell to a specific market or country	The establishment of presence in the global market
Other motivations	Offering more diversified products using the same distribution channels already developed by the company	Offering more diversified products using the same distribution channels already developed by the company		Offering more diversified products using the same distribution channels already developed by the company

Figure 36 – The motivation analysis

Access to new technologies is the most relevant motivation for the adoption of GS and can be related to the companies' market characteristics: the electrical and electronics industries represent a global market with global suppliers that conduct innovation on a global basis. Motivations related to technology improvements were highlighted by Quintens, Pauwells and Matthyssens (2006) as drivers of GS. Technology seeks to motivate GS; at the same time, if a company needs various technologies, these needs facilitate the adoption of GS. A new motivation that came out of the cases is the ability to offer more diversified products using the same distribution channels already developed by the companies. This motivation

shows that the investigated companies had developed their own distribution channels; to control them, the companies had to increase the number of distributed products by the introduction of finished products supplied from abroad. Better exploration of a company's distribution channel can ensure competitiveness with respect to global players (Porter, 1986). The motivation to become a global player was not clearly indicated by the interviewees but can be identified through data analysis. The companies have global competitors; simultaneously, the companies wish to increase their international participation through sales, essentially with export. This participation is broken by the necessity of scale and international presence. GS helps companies to overcome this weakness because establishing a presence in the global market was the second motivation commonly identified in the companies' behavior.

When requested to attribute a number between 0 (non-important) to 7 (very important) to a set of motivations for GS, the highest score (average of 6.5) was attributed to the anticipation of material needs for new products in development, the establishment of alternative supply sources, the establishment of presence in global markets, the introduction of supplier-based competition, and reductions in total acquisition costs. The average scores are presented in Figure 37. Trent and Monczka (2003) investigated the behavior of companies that adopt GS and identified that total cost reduction is not the most important motivation for the adoption of GS. However, this is the most important aspect for companies that only purchase internationally. The results presented here highlight that, for this group of companies, total acquisition cost reduction received the highest average score in comparison to the other motivations. Although the same scores were obtained, this study considers the fact that, for this set of companies, GS adoption was motivated by comparative and competitive advantages.

	Average score
The anticipation of the materials needed for new products in development	6.50
The establishment of alternative supply sources	6.50
The establishment of presence in the global market	6.50
The introduction of supplier-based competition	6.50
Total acquisition cost reduction	6.50
Access to advantages in the supply market	6.25
Access to new technologies	6.25
Increasing the number of available suppliers	6.00
Anticipating materials needed in case the demand changes	5.75
Better negotiating conditions	5.75
Quality improvement	5.75
Supplier reliability improvement	5.75
Product reliability improvement	5.50
Quality control improvement	5.50
The reduction of a product development cycle	5.50
Access advantages from supply's core competency	5.25
Obtaining the opportunity to sell to a specific market or country	5.25
Delivery improvement	4.75
The flexibility to change the input's features	4.75
The reaction to a competitor's practices	4.50
The incoming goods cost less in local currency (exchange rates)	4.25
Customer service improvement	4.00
Support to the company's own international operations	3.75
Meeting the supply constraints imposed by government	1.50
Offering global support for local products	1.25

Figure 37 – Motivation scores

The key motivations for the adoption of GS are **faster access to new technologies**, the **establishment of presence in the global market** and the **motivation to become a global player**.

Linder (1961) stated that the international trade in manufacturing differs among the primary products because it may represent the extension across national frontiers of a country's own network of economic activity. The motivations identified in the presented cases confirm this notion because these companies consider their markets to be global and consider the opportunities abroad to be clear extensions of their home markets.

Another aspect identified in international trade theory is the fact that GS is not induced by price conditions; that is, other forces orient the company's behavior (Vernon, 1974), such as a "follow the leader" strategy. These companies are following the strategies developed by other companies that have already sought opportunities abroad. Vernon (1979)

affirmed that companies are “acutely myopic” because their managers tend to be stimulated by the needs and opportunities of the market closest at hand, i.e., the home market, not the global market. The author indicated that the primary reasons for GS were based on home markets but the adoption of GS was motivated by the opportunities identified in the global market, such as the technology that can be accessed overseas.

The affirmation of Rugman (1980) that the activities of global companies are better explained by the theory of internalization rather than by the theory of internationalization is an interesting point of view for understanding these companies and their international behavior. Buckley and Carson (1976) affirmed that the internalization of knowledge in the global market represents an opportunity to visualize how a company can grow by exploring the various opportunities present in different countries; to achieve a final product in a given development process, units from around the world may be involved. The investigated companies presented behaviors that confirm that the knowledge acquired through international exposure improves the adoption of GS. In part, this improvement is a consequence of the development of relationships with suppliers in the global markets. The contributions of Dunning (1995) and Rugman and Verbeke (2003) also highlighted this aspect.

Bartlett and Ghoshal (2000) stated that many companies attempt to enter the international market by investing at the bottom of the value curve, and some fail because they continue to stay there. To survive and grow in global markets, companies must know how to learn from the constant flow of new demand, opportunities, and challenges that international competition brings. To understand how the investigated companies act in global markets and whether they are learning and are improving their performance based on the knowledge absorbed through GS, the organizational structure was investigated.

5.1.2 Organization Structure

Analysis of organizational structure is essential to understanding how companies prepare themselves for strategy adoption (Lima, 2004). The decisions related to configuration and coordination are key dimensions of an internationalization strategy (Porter, 1986a). A third element has been included to investigate the organizational structure, i.e., information. This element was added because it allows us to understand how a process flows through the organizational structure.

Decisions related to the **centralization versus decentralization** of sourcing activities represent an expressive aspect of the knowledge developed with respect to GS, as noted in Arnold (1989), Monczka and Trent (1991) Trent and Monczka (1998, 2003, 2003a), Arnold (1999) and Trautmann, Bals and Hartmann (2009). The investigated companies have centralized manufacturing processes with their production units only located in Brazil. Only Company 4 and Company 5 have units abroad, both of which are related to the companies' sourcing activities. The decisions related to sourcing activities are **centralized** in all companies. The foreign unit of Company 4 is responsible for negotiations with the local suppliers as well as the shipping process. The foreign unit receives the order details from the unit in Brazil. For Company 4, that unit helps reduce the cultural distance between the home and the host countries, in particular, because some of the suppliers in the host country are strategic to Company 4. The importance of this unit is related to the image of Brazilian companies in the global market, and after a few years of Brazilian development, this importance decreases: "the negotiation from Brazilian companies is becoming more notorious," said the interviewee from Company 4. This unit has direct contact with the top-management board and the sourcing area.

The overseas unit of Company 6 is responsible for monitoring the sourcing opportunities and supporting the sourcing activities. The overseas unit does not have a direct connection to the sourcing process, unless Company 6's sourcing department has a problem with the activities of the overseas unit. According to Company 6, it is important to monitor the Asian market because new technologies are introduced every day. This unit has direct contact with the top-management board.

Based on the empirical information, the tendency toward centralization was identified in the company structures when adopting GS. Matthyssens and Faes (apud Arnold, 1999) argue that centralization can provide greater bargaining power and can generate economies of scale with the uniformity of demands. A global view of supply may lead to better acquisition, which can result from better knowledge of the market. Finally, centralization allows for the efficient use of procurement skills with the simultaneous reduction of administrative activities and operational costs. Our findings confirm that the centralization tendency, as presented by Schmitz and Knorring (2001), occurs as a consequence of the increased number of supplier alternatives.

According to Quintes, Pauwells and Matthyssens (2006), a high degree of centralization and coordination ensures better results in the generation of value through the activities of international supply. Additionally, the internal organization of the company for

the development of GS may provide greater opportunities to achieve the desired advantages. To better understand coordination, the **interaction with other functional areas** was investigated.

Company 1 uses a structure that aligns product development and sourcing because they work in the same macro area, while new developments are conducted by members of the inter-functional group. To standardize the materials, sourcing receives the orders from production planning or sales and places the orders with the suppliers. For new products, the **engineering** department must search the suppliers and then give input on the approval process. The sourcing area can support this activity and starts supplier negotiations after the product has been approved; then, the production process begins.

Company 4 has two different interaction processes between its sourcing areas and other units. For standard products, R&D defines the component and the sourcing unit has the autonomy to conduct the process with the supplier. For customized products, the R&D unit is in charge of the decision-making. When a new product is under development, the **R&D** unit starts to look for opportunities: the professionals go abroad looking for opportunities and the feasibility to work with them. The decision to use a specific new supplier is made by the R&D unit. The decisions related to the new product are made at weekly meetings with the participation of the sourcing area, which works to reduce costs and ensures that the product will be marketable with respect to costs. According to the interviewees, there are two weaknesses in Company 4's interactions: (1) the industrial areas are not close enough to R&D, and the product project may not be "producible." (2) The interaction of sourcing and sales is not well established, and the information concerning the market does not flow backward easily to the sourcing decision process.

The **engineering** department at Company 6 is responsible for the identification of the materials that will be used in its new products. The department searches for suppliers, requests samples and analyzes the operation's feasibility (market, costs and time). The sourcing area can support the searching process, but product development is all conducted by the engineering area. After development, the sourcing area becomes involved in the process, i.e., after production has been defined and the material orders are placed.

Company 1, Company 4 and Company 6 present their interactions with the areas responsible for the development of new products (engineering and R&D) but with limitations in the decision-making process, which may be related to difficulties in the negotiation step. Company 5 employs the most interactive process of sourcing with other functional areas. The search for new suppliers and materials is made by the **engineering** area in conjunction with

the sourcing unit. Both areas visit international fairs and the suppliers' sites, and there is a more clear and interactive flow of information between the areas. Sourcing also has a closer relationship with the **sales** area, which allows sourcing to have access to more information for planning long-term negotiations with global suppliers.

According to Gelderman and Semeijn (2006), attention is needed in the management of internal and external interfaces as well as in the management of suppliers in various markets, which increases the complexity of organizational management. The main studies related to this aspect focus on the structure of MNCs and the relationship between units. The investigated companies are not MNCs, so it was not possible to investigate and compare these findings.

It is important to identify the **formalization** of the interaction previously presented. The four companies are concerned with the formalization of the activities and the reduction of dependency to one professional. Company 1's interviewee highlights that it is important to formalize the costs related to the time spent searching for new suppliers into the cost structure of the development process. "We allocate hours and control them (...) they are costs too." The interaction is formalized in Company 4 through weekly meetings with the production area but still lacks interaction with R&D. Company 5 and Company 6 also report the need to utilize a process that is formalized better: they present better interaction processes, although they are primarily informal. It is important to highlight that formalization is usually conducted based on ISO standards (Company 5 and Company 6) but it does not ensure the need for a GS approach.

It was identified by Hartmann, Trautmann and Jahn (2008) that, with respect to formalization, companies must focus on the definitions of governance as well as standards, processes and controls. Governance and standards include the establishment of manuals, codes of conduct and the definition of competence. Processes are understood as the responsibilities of each company (headquarter and subsidiaries). Controls are the indicators and methods used to monitor and compare the efficiency of the units. These three aspects can serve as guidelines for the investigated companies to improve their formalization of GS activities.

While globalization and its standardization pressures and process efficiency favor centralization, the need for customization and responsiveness leads to more decentralization and the dispersal of activities in different countries (Hartmann, Trautmann and Jahns, 2009). Balance is required, and according to Trent and Monczka (2003), companies that adopt GS

will realize that a centralized procurement structure is more important than simply making international purchases.

In addition to the difficulty associated with analyzing the interactions among sourcing units, the interactions between sourcing and other functional areas was investigated. The **close relationship between R&D and engineering** is viewed as an opportunity to increase the benefits of GS, but these processes must be **formalized** as a means to transfer knowledge between areas and professionals. These two activities can be considered key aspects for the organizational structure of GS. Figure 38 summarizes the tendencies identified from the investigated aspects.

Investigated aspect	Tendency
Centralization <i>versus</i> decentralization	Centralization
Interaction with other functional areas	Stronger between engineering and R&D Weaker with Sales
Formalization	Formal and informal

Figure 38 – Key aspects of the organizational structure

The next aspect investigated was related to the **availability of resources for establishing and managing GS**. The first was the **firm's features**. The first aspect cited by Company 1 is the company's **entrepreneurial posture**. "Compared with other companies from the same industry, we were pioneers in sourcing abroad," said the interviewee. Pioneering leads the company to achieve competitiveness based on the ability to perform GS, avoiding the intermediary companies in their supply chain, such as the distributors located in Brazil.

Company 4 and Company 6 share the same feature, **entrepreneurship**. Company 4 also includes **innovation** as their main characteristic. The exposure to global suppliers is forcing the company to improve their process to be able to introduce more innovative products into their market.

Company 5's interviewee highlights the company's **global mindset** and the importance to "have a broad knowledge (...) know the world is changing, and start to act globally, or you will be outside the market." Another aspect of success is the internal structure: interaction occurs between the areas to develop new products and find new sourcing opportunities to increase competitiveness.

A theoretical investigation highlights that each company's primary aspect with respect to GS is size. According to Arnold (1989), big companies seem to have more resources available, while small companies usually are more predisposed to flexibility. This aspect was not identified in the investigation. The focus here relies on a firm's behavior, not on its physical structure.

The second aspect investigated is the **industry's characteristics**. Company 1's interviewee highlights this aspect, as the company is medium-sized and considers its supply strategy to be central for company development. The interviewee notes that when the company was small, it could purchase from a distributor located in Brazil, but because it grew, it can now be competitive only if it looks abroad for the original suppliers. This happened because the company's industry is global: "the evolution at the electronic area is huge – what leads us to the need to be aware of new technologies and suppliers." **Innovation** was identified as essential to the industry; however, innovation can be a facilitator or a complication. To Company 4, the need for innovation necessitates that the company must use inputs that may not be accepted by the market, which can increase its risks.

Company 5 and Company 6 bring up the **geographic concentration** of companies that attract suppliers to be closer to them because they facilitate the approach of a larger number of potential clients to the supplier units. Company 5 also considers the concern related to the **deindustrialization process** to be an important aspect with respect to its industry's characteristics: "there is a fear related to deindustrialization in Brazil, as a consequence of the development of Asian markets." Company 5 considers that the industry must be aware of this movement and must make efforts to ensure that local competitiveness is retained.

According to Trent and Monczka (2003), companies that engage in GS are larger and more likely to have multi-regional or global competitors in comparison to companies that make international purchases. The same situation was observed for these companies' industries: global competitors exist in their local markets, and they have a global basis of suppliers, which leads them to be more open to global strategies.

The third aspect is **top-management support**. Company 1 makes an effort for the top-management level to support GS because **negotiation** is primarily conducted by the company's owners. The same behavior is identified at Company 4, Company 5 and Company 6. At Company 4, the owners and directors define the suppliers as partners. The sourcing areas place the order and manage the operational process. At Company 4, the top-management support is also identified in the need for **internal articulation between areas**. For example, the interviewee highlights situations in which a difficulty is encountered in

sourcing a component at the target price; hence, the need to change some aspect of the developed product arises.

Company 5 is the only company that presents an **indicator** related to global sourcing, local sourcing *versus* global sourcing. The total amount that must be supplied from abroad is defined by the top management, and the sourcing area works to ensure that it is met.

Company 6 highlights the importance of alignment between the top management and the engineering areas to identify the supply opportunities abroad. The contained knowledge in the product development area supports the decisions made by the managers, and the presence of the CEO during negotiation processes with vendors represents the deeper involvement of the buyers from the vendor's point of view.

Our findings support the theoretical identification that the support of top management facilitates GS; although the support does not necessarily lead the companies to GS, it eases the implementation of GS (Arnold, 1989, and Quintens, Pauwels and Matthyssens, 2006). Trent and Monczka (2003) identified that strategy development by companies engaged in GS is more important to their executive management than it is at companies that engage in international purchasing. The findings did not make this kind of comparison possible here, but it was determined that the executive top management is directly related to GS pursuits.

The findings presented above are also related to the fourth aspect investigated, the organizational **level of decision-making**. Decisions related to the establishment of a relationship with a supplier are performed by the top management, while operational decisions are made by the sourcing areas in the four investigated companies.

The final investigated aspect is the **internal articulation between areas**. The four companies identified the necessity for the **establishment of a closer relationship between the areas of sourcing, engineering, R&D and sales**. This internal articulation was perceived to be less strong at Company 4; this could be related to company size, as Company 4 is the biggest company in the sample. The interviewee argues that the articulation is based on the behavior of the people, not on company standards. The same motivation, individual behavior, was realized at the other companies but not highlighted as a weak aspect. To Company 5, the personal dialogue between the collaborators of different areas is perceived in daily activities, and it leads to a more integrated company management. The interaction with the technical areas allows the sourcing team to conduct the sourcing process better at Company 6. To this company, there exists a closer relationship among the professional areas during the

development of a product and its supply chain; however, when a current product and sourcing process is established, the frequency of interaction is reduced for that item.

The findings related to the industry characteristics are summarized in Figure 39.

	Company 1	Company 4	Company 5	Company 6
Firm's features	Entrepreneurial posture	Entrepreneurship Innovation	Global mindset	Entrepreneurial posture
Industry's characteristics	Innovation	Innovation	Geographic concentration Movements against the deindustrialization process	Geographic concentration
Top-management support	The presence of top managers is key in the negotiation step	The presence of top managers is key in the negotiation step	The presence of top managers is key in the negotiation step	The presence of top managers is key in the negotiation step
Organizational level of decision making	Strategic decisions – top management Operation decisions – sourcing area	Strategic decisions – top management Operation decisions – sourcing area	Strategic decisions – top management Operation decisions – sourcing area	Strategic decisions – top management Operation decisions – sourcing area
Internal articulation between areas	Closer relationship between the areas: sourcing, engineering, R&D and, to a lesser degree, sales	Closer relationship between the areas: sourcing, engineering, R&D and, to a lesser degree, sales	Closer relationship between the areas: sourcing, engineering, R&D and, to a lesser degree, sales	Closer relationship between the areas: sourcing, engineering, R&D and, to a lesser degree, sales

Figure 39 – Key aspects of the organizational structure – Part 1

The next aspect is related to the **presence of the purchasing company in the supply country**. Only Company 4 and Company 6 have an **established presence in the supplier country**. Company 4 has two sourcing offices: one is located in the U.S., and the other is located in Germany. These two units are related to supplier management and negotiations with local suppliers. The establishment of these units was motivated by the necessity to reduce the cultural distance between the company and the suppliers and to establish better sourcing conditions, even though they are not responsible for the operational process because it is carried out by the sourcing unit in Brazil.

The sourcing unit of Company 6 is located in China and is responsible for supporting the sourcing negotiations made by the sourcing area, which is located in Brazil, and for monitoring the potential suppliers. The overseas unit helps the company to identify the suitability of a supplier, which is a current problem identified by companies in Asian markets.

The unit is also responsible for verifying the technical aspects of products and assuring the quality level of the shipped items. If a shipped item has quality problems, Company 6 will only identify the problem during the delivery process in Brazil, which occurs a long time after shipping. To reduce this risk, the unit “has a strategic function. It must almost be an evaluator of raw material, the company (supplier) (...) It has more of a technical function than a commercial one.”

The companies without sourcing units abroad look for other ways to establish a presence in the supplier market. Company 1 reports that it uses a **trading company** to support its activities, especially when working with new markets. Company 1 uses the knowledge of the trading company regarding the suppliers located in the specific countries or specific products. The same behavior was identified for Company 5.

Figure 40 summarizes the findings related to the establishment of the presence of the purchasing company in the supplier country.

	Company 1	Company 4	Company 5	Company 6
The structure of purchaser presence in the supplier relationship	The use of a trading company when necessary	Sourcing unit – USA Sourcing unit – Germany	The use of a trading company when necessary	Sourcing unit – China
Motivations related to the presence of the purchaser in the supplier market	Access to the trading company’s knowledge	Supplier relationship management Negotiation	Access to the trading company’s knowledge	Support sourcing negotiations made by the sourcing area located in Brazil Monitor the potential suppliers
Relations with centralization vs. decentralization	-	Decentralized negotiation process	-	Centralized negotiation process

Figure 40 – Key aspects of the organizational structure – Part 2

The results obtained from the empirical research support the arguments of Harris (2006), for whom the presence of a buying company in the location of the supplier can happen in different ways, representing a continuum of involvement of the buyer. Contracts with trading companies, as observed for Companies 1 and 5, are used to broker the negotiations between the buying companies and the supplying companies. These companies use the trading company to access knowledge of the supply market. Companies 4 and 6 already have International Purchase Offices (IPOs). Mulani (2008) indicated that these offices are usually

responsible for the identification of corporate guidelines for directing the activities of the IPO, the identification of unit coordinators, the focus on supporting top-down strategies, setting aggressive but realistic targets, the maximization of transparency through communication with operations, and an emphasis on continuous training to reinforce corporate goals. From Companies 4 and 6, it was identified that focusing on the maximization of transparency through communication within operations is present in these units, but they were also focused on the identification of new sourcing opportunities. Harris (2006) highlighted the importance of maintaining the focus of these units in an integrated manner with the corporation. It was not possible to identify the difficulties faced by the companies in keeping their operations integrated because the IPOs are considered support units with respect to the Brazilian sites.

Increasing sourcing activities motivate companies to be closer to their suppliers. Although this presence can be related to different responsibilities, it is also related to the intensification of international activities and the effort to ensure competitiveness based on GS activities.

The next dimension of this analysis includes the opportunities related to GS.

5.2 Opportunities

The opportunities for companies to adopt GS can be considered moderators when GS strategies are investigated. The first aspect analyzed was the **tools used to search, select and monitor supply markets**. At Company 1, the aspects related to the supply and sourcing environments are monitored by **visits to supply countries** and **participation in international fairs**. This process is focused on the identification of “product tendencies,” even though the company does not necessarily have a structured interface for this effort nor is it required by the customer. The continuous search for suppliers is made using the **Internet**. Company 5 and Company 6 use the same strategies. Company 5 highlights that the use of the Internet is more dependent on access to search websites, such as B2B, Global Sourcing and Alibaba, during their first years of global sourcing; after, the knowledge and networks developed reduced the use of search websites. Company 4 searches for new suppliers by participating in international fairs and using the Internet; visits to the suppliers’ countries were not highlighted by this company.

The second aspect was the **supply markets environmental analysis**. Company 1 is focused on “new products and the technologies that are coming up. We have to focus on what is being done abroad because they have a global market perspective. There are a lot of

things that we are not worried about yet, but overseas they are focusing on them at the product and component level.” Company 5 presents a different perspective for the same aspect: they analyze the supplier company and the country variables, such as currency exchange rate and international policies.

Aspects related to the **customer requirement analysis process and interface with sourcing** were investigated for the companies. Company 1’s interviewee highlighted that the company’s structure is based on a holistic view that ensures integration between the various areas; as a result, the customers’ requirements are introduced to the whole company. Company 4 states that the sourcing area lacks an interface with the customers’ requirement because the sales areas are more connected to the production area, not sourcing. This gap is reduced with weekly product meetings that include the participation of both areas. Company 5 and Company 6 present a well-established communication process between areas that ensure the inclusion of the customers’ requirements into sourcing activities.

Figure 41 summarizes the findings related to the moderator factor opportunities for the adoption of GS.

	Company 1	Company 4	Company 5	Company 6
Tools used to search, select and monitor supply markets	Visits to supply countries Participation in international fairs Internet	Participation in international fairs Internet	Visits to supply countries Participation in international fairs Internet	Visits to supply countries Participation in international fairs Internet
Supply markets environmental analysis aspects	Products and components of new technologies	-	Supplier company characteristics Currency exchange and international policies (suppliers’ country characteristics)	-
Information sharing process	The development of an accurate information sharing process	-	-	-
Customer requirement analysis process and interface with sourcing	A well-established communication process between areas	Communication process between areas with a few weaknesses	A well-established communication process between areas	A well-established communication process between areas

Figure 41 – Key aspects of the opportunities

To Matthyssens, Quintens and Faes (2003), the main factor used to identify GS opportunities is the existence of an interface with the other functional areas. This was identified for the four companies as the visits to global suppliers and the participation in international fairs, including representatives from the engineering and/or R&D areas.

Zeng (2003) supports the notion that an opportunity analysis must be a part of a GS strategy that is planned by the company's top management; additionally, the top management will guide the next steps. Matthyssens, Quintens and Faes (2003) argue that a GS program must have some key features for its development, such as market and supplier research (including e-information) and audit programs, knowledge availability and experience exchange, the development of specific supply structures (pilot projects, coordination efforts and matrix like category buying structures), the determination of the right transaction solutions with more complicated logistics (including transaction links), the development of detailed partnership blueprints, and positioning as a reliable partner for value/technology. The investigated companies do not present a formal process for opportunity analysis. Only aspects such as products and new component technologies, the characteristics of the supply company characteristics, and currency exchange and international policies (suppliers' country characteristics) were identified in this process. This lack of formal process was identified as a weakness of the opportunity identification process.

While the investigation of the inputs' features is supported based on the interaction with the technical areas (engineering and R&D), and the investigation of the supplier company is supported by the visits to international fairs and suppliers' sites, the investigation of the sourcing environment was not identified as an established process in these companies.

The third framework dimension, the process of GS, is analyzed in the following.

5.3 Process of GS

The analysis of the GS process begins with an investigation of the supplier's management. To understand how this activity is conducted in the investigated companies, the first investigated aspect was the **supplier's selection**. All companies highlighted the importance of international fairs as a means to identify potential suppliers and to maintain the relationships with current suppliers in addition to the proximity of the R&D and engineering areas for the analysis of potential suppliers.

Company 1 highlighted the fact that it requires customized products that must be in accordance with Brazilian regulations, which led the company to a more complicated process for supplier selection because the supplier must understand their needs and work in accordance with them. The homologation process is performed based on the product's attributes, not those of the supplying company.

Company 4 is focused on the selection process. The potential suppliers are contacted, and usually, two orders are made so that the suppliers can be evaluated. According to the results of this evaluation (delivery and quality), a potential supplier can become a current supplier.

Company 5 presents the location and the history of the supplier as important aspects of consideration in supplier selection. Location is important because the company usually works by load consolidation, and the proximity of the current suppliers can represent an opportunity to include the new supplier into the logistical strategy of the company. The history of the supplier is analyzed by Company 5, in particular, with respect to how long the supplier has existed "because with the growth of China a lot of new companies start up," says the Company's interviewee. Placing orders with older companies is a way to ensure supplier reliability.

Company 5 is also focused on the cost analysis. According to the interviewee, Company 5 interacts with suppliers with very different prices. The company orders samples and then analyzes them, comparing the cost. The company has found a correlation that the average price typically possesses the expected quality. This experience has become standard for the company: the company focuses on average prices to avoid taking risks with bad quality products.

Company 6 notes that the existence of a large number of suppliers may not be good for the company. They argue that, until the quality of a supplier (product, delivery and relationship) has been identified, a lot of time can be lost on that process. As a result, they focus on already selected suppliers even though new suppliers must always be evaluated.

This consideration of Company 6 leads us to an investigation of the **supplier development** process. The supplier management process already absorbed the global dimension of the supplier market, and the involvement of suppliers in new product development happens at all four companies. The Company 1 interviewee indicated the company is aware of the interfaces of its areas with the supplier, such as that with the engineering department. Company 4 highlights that it has worked with some suppliers for more than ten years, making the supplier development process a continuous process to keep

these relationships. For Company 5, cultural distance makes this process more complicated and generates the need to dedicate more time to supplier development. Company 6 notes that the ability to develop a supplier faster than a competitor allows the company to launch innovation in their market faster. However, to achieve that innovation, it is necessary to maintain an open communication process between the technical areas of the two companies.

With respect to indicators, Company 1 uses “supplier performance” as a major indicator for all suppliers. The components of the supplier’s performance evaluation were not detailed by the company. Company 6 presents three indicators, including delivery time, product rejection and costs. Only Company 5 uses an indicator specifically related to GS, the “percentage source abroad.” Company 5 started by importing raw materials and has had the strategic orientation to increase this indicator based on sourcing more complex items.

A third aspect to be investigated in the process of GS is the **management of the supplier relationship**. Company 1 states that cultural distance can lead to difficulties in the relationships with the suppliers. Differences in products, according to the specifications of Company 1, are made based on the relationship developed during the time in which the company works with the suppliers. This relationship is also very important to ensure competitiveness when products are being developed in conjunction. Company 1 works with its suppliers to ensure that the results of joint development projects will not be sold at the same price to other competitors. The company endeavors to obtain a reduced price for at least two years. Company 1 also considers that in the establishment of a relationship with an overseas supplier, it is important to ensure quality and delivery performance because working closely with suppliers is a way to observe the purchase company.

Company 4 believes that the relationship with a supplier must be developed over time. The production scale of Company 4 and that of other similar companies are not attractive for global suppliers. A way to overcome this barrier is to negotiate with transparency and ethical focus when relationship building. “In the beginning of every year we make an annual forecast. We always act very transparent with the suppliers. These estimates are not contracts and may increase or decrease. This is clear and transparent at the beginning of the negotiations with the suppliers.” As a result, Company 4 realized that its suppliers put more effort into their relationship.

Company 5 believes that the continuity of visiting the overseas suppliers is one way to maintain the relationship with them. Another aspect of the relationship is to clarify the purchasing market regulations and to establish procedures that must be clearly informed to suppliers with the support of the purchasing company.

Company 6 agrees with the necessity to maintain close communications to ensure the maintenance of supplier flow. The interviewee states that during 2011, their orders abroad decreased because the suppliers reduced their production based on the prediction of a global crisis. Although Company 6 wanted to order more from some suppliers, the suppliers could not deliver the placed orders.

Figure 54 presents a summary of the findings related to supplier management.

	Company 1	Company 4	Company 5	Company 6
Supplier selection	Focus on understanding the company's needs by the suppliers – Relationship building process Product attributes	Two orders for performance evaluation (delivery and quality)	Localization History of the supplier (year of foundation) Average price	Quality (product, delivery and relationship)
Supplier development	Product development with suppliers	Product development with suppliers	Product development with suppliers	Product development with suppliers
Indicators	Not well specified	-	Percentage sourced abroad	Delivery time Product rejection Costs
Supplier relationship management	Reduction of the cultural distance Close communication Protecting intellectual property from competitors	Close communication	Close communication Visits to supplier sites The establishment of procedures	Close communication

Figure 42 – Key aspects of the GS process

These findings allow us to understand the involvement of suppliers in new product development. Now, it is necessary to investigate the differences in the use of local and global suppliers.

The biggest **difference between local and global suppliers** is **scale**. The need to change scale leads to GS so that a company can source from international suppliers. The use of international suppliers can be a replication of the local supplier practices, based on the increased total quantity purchased when searching for larger suppliers and a reduction of the intermediate companies in existence between the manufacturer and the supply companies.

This aspect is highlighted by Company 1. Company 4 states that if they find a local supplier with the same quality and cost, then they prefer to source locally; however, they usually are not able to identify competitive local suppliers. As a result, they must manage **cultural distance** to achieve the desired benefits when dealing with global suppliers.

The use of global suppliers often follows a strategy that maintains 50% of the total purchase on the local level, but it is also related to the capacity of the suppliers to attend to Company 1's demand characteristics, such as the delivery of customized products. The preference for local suppliers, as in the argument previously presented by Company 4, is also related to this dimension.

Based on a literature review of the management models of suppliers (Grieco, 1995, Cebi and Bayraktar, 2003), Kamath and Liker, 1994, and Simchi-Levi, Kaminsky and Simchi-Levi, 2003), a focus on the distinction between local and global suppliers as a means to differentiate the management process was not identified. Given that this concern was identified in our empirical findings, we highlight an important discrepancy between this theory and the practices of the companies presented here.

The four dimensions proposed by Bozarth, Handfield and Das (1998) to evaluate suppliers, including the exchange of information, multiple sources of supply, formalization of the relationship, and informal relationships, were identified to be present at these companies. The close communication desired by the companies represents a means to manage suppliers. The relationship aspect was also identified as very important to the companies, even though they face difficulties as a consequence of the cultural distance between them and their suppliers. Following the presentation by Knudsen and Servais (2007), it was identified that the development of a relationship with a supplier is more important in international purchases than national.

Our findings are also consistent with that of Ghauri, Tarnovskaya and Leg (2008), who note that it is important to develop interpersonal relationships with transparency and that employee turnover leads to the loss of efficiency during this process. In the investigated companies, personal involvement with the global suppliers was identified to be important and is usually conducted by the top managers.

The purchasing process is investigated in the next section.

5.3.1 The purchase process

Analysis of the purchasing process is related to the investigation of the **input features** and how they are considered in this process. There is a consensus that the items ordered from abroad must be considered **strategic** by the companies because of the risks and complexity associated with this process. Prior to the classification of an item as strategic, all companies presented the specific characteristics of their inputs that make the items more complex as a result of overseas purchasing.

Company 1 considers all imported materials to be strategic. Company 4 has the same orientation, and as a result, a disconnect between supply and R&D is manifested: “(R&D) is worried with the item, independent of its country of origin.” Based on its R&D needs, the supply area does a cost analysis to verify if the product can be supplied. This analysis includes a verification of the shipping place to check whether it can be consolidated with other products supplied by Company 4. Company 5 complements the idea of Company 4’s interviewee, affirming that “a small quantity is not worth importing. Our first focus is the quantity.” Company 6 highlights that the deadline must also be considered because the global transactions used require longer distances and delivery times.

Even though attention is given to quantity, place of shipping and delivery time, all companies reiterate that the most important aspect is to ensure the needs of the R&D and engineering units when supplying the requested item. The sourcing area must be integrated by looking for better process negotiation conditions and providing cost control.

To understand how the companies classified their inputs as strategic, the **use of a purchase portfolio** was investigated. Company 1 developed its own portfolio focused on the identification at the moment orders are placed. As previously presented, all imported inputs are considered strategic to Company 1. The purchase portfolio used by Company 5 considers the amount as the main variable for classification. Special attention is given to imported inputs that do not have an alternative supply. Company 6 uses the ABC curve with value and supply characteristics as the main variables for input classification. Company 4 does not have a purchase portfolio. They stated that they use an intuitive control to analyze the necessity to treat inputs as strategic. Efforts are being carried out to develop a purchased materials portfolio, and they believe that the use of one will improve the company’s planning.

The findings are summarized in Figure 43.

	Company 1	Company 4	Company 5	Company 6
Input features	Imported items are strategic	Importance of the item and cost analysis	Importance of the item and quantity analysis	Importance of the item and delivery time analysis
Use of a purchasing portfolio	Yes Variables: not identified	No	Yes Variables: input value	Yes Variables: input value and supply characteristics

Figure 43 – Key aspects of the GS process – Part 1

The findings of Smith (1999), Gelderman and Semeijn (2006) and Trautmann, Balls and Hartmann (2009) emphasize the weakness of purchase portfolios because they traditionally do not consider the various supply countries. In the investigated cases, it was identified that as a consequence of the absence of a model to make this differentiation, all imported inputs become strategic, even though they may not necessarily be strategic based on their features.

It is interesting to note that the empirical findings do not support the affirmations of Alguire, Frear and Metacalf (1994), to whom GS may not be effective for companies whose products experience frequent design changes and whose production volumes are low. These companies face difficulties based on their low volumes; however, these authors indicate that GS is a means to impart faster changes in products when the company can access the suppliers' technology, thereby reducing development costs and time. The dimensions of Smith's (1999) model were used to understand the relationship between the input features and changes related with GS; it was identified that a high rate of change is seen as positive with respect to GS, instead of negative, as the original model proposed.

Next, with respect to the investigation of the purchasing process, the **sourcing teams and their qualification** were investigated. This analysis started with an investigation of the knowledge and skills possessed by the professionals.

The necessity of qualified personnel, reinforced by continuous training, is a very important aspect in the adoption of GS for all investigated companies. At Company 1, the professionals must have knowledge of "different languages" as well as "technical" and "negotiation skills". Company 4 also highlights "languages (English specific)" and "technical skills," but the interviewee indicated that the purchasers usually have negotiation skills but not technical; this lack creates a gap in the company's performance during negotiations with the suppliers. Company 5 agrees with Company 4 and adds that the knowledge of "different languages" brings with it the knowledge of "different cultures," which also facilitates GS.

Company 6 considers the importance of “negotiation” and “international trade” skills, the second of which is used to increase the efficiency of the GS process.

The existence of training and benefits programs was also investigated. The study of languages is 100% supported by Company 1, while undergraduate and graduate courses are 50% paid. Company 6 supports 50% of undergraduate, graduate and language courses. Company 6 also has an extra 10% reduction if the courses are completed at a university that has an agreement with the business park where Company 6 is located. Company 5 does not have a structured program, even though it considers continuous training to be very important.

Company 4 does not have a formal training and benefits program. Some collaborators take English classes that are sponsored by the company, but this support is not part of a formal program. The company is planning to start a training program for competency development based on the identification of gaps in knowledge and abilities.

Sourcing team empowerment also was investigated. The four investigated companies stated that the empowerment of the sourcing team is related to the communication channels inside the company, such as the opportunity to talk directly with the engineer responsible for a project or the availability of the full directory when a decision must be made faster. The focus of empowerment is the reduction of negotiating time by solving problems faster. All companies noted that changing the suppliers is not allowed by the sourcing professionals without agreement from the responsible R&D and engineering units.

Figure 44 summarizes the findings related to the sourcing teams and their qualifications. Continuous training was identified as an important aspect of keeping companies competitive by realizing sourcing activities in better ways. The knowledge of different languages was also presented as a basic expectation for being a global company.

	Company 1	Company 4	Company 5	Company 6
Professional's knowledge and skills	Language skills Technical skills Negation skills	Language skills (English) Technical skills	Language skills (English) Technical skills	Negotiation skills International trade skills
Training and benefits programs	Languages (100% supported) Undergraduate and graduate (50% supported)	Under development	Support not pre-defined	Languages, undergraduate and graduate (50% supported)
Empowerment	Negotiation aspects in accordance with technical area	Negotiation aspects in accordance with technical area	Negotiation aspects in accordance with technical area	Negotiation aspects in accordance with technical area

Figure 44 – Key aspects of the GS process – Part 2

Trent and Monczka (2003a) identified that professionals with knowledge and skills are the most important success indicator for GS. Based on the empirical research of these emerging country's companies, the same concerns were also identified, in particular, issues related to language and technical skills. The focus on training and benefits programs was identified but was related to improvements of professional knowledge and skills. Mulani (2008) presented that the focus must be broad and should include the development of the personal career, but this focus was not identified at these companies.

In the sequence of the purchasing process investigation, the **communication tools and platforms** used were studied next. The availability of communication tools was the first topic asked. For opportunity sourcing, the results of this research demonstrated that companies use the Internet as the main tool and then move to information management within the companies. All companies indicated that they use ERP (Enterprise Resources Planning) to support their activities, including the links between materials planning and the engineering and/or commercial area.

According to the interviewee from Company 1, “when you are developing a product there is the specification, the detailed scope and the experience with the things that did not work,” which is maintained in the database and is directly related to the engineering area. Company 4 uses historical information to plan their sourcing efforts to identify the consumption of inputs as a phase for planning the orders that will be placed. The Company 6 interviewee argues that “without this tool, with three thousand items, it is impossible to work.”

The communication and information flows with the suppliers were also investigated. Companies 4 and 5 argue that they keep an open line of communication and information flow based on annual forecasts. Both companies believe that this is the way to ensure the delivery of items and to build and maintain their relationships with suppliers. Company 1 and Company 4 do not share their annual forecasts with suppliers. Company 1 brings up the fact that the international exposure of the company makes it more prepared to establish this flow and to identify issues.

With respect to information accuracy, all companies presented arguments related to its importance, but they did not present a formal process related to verifying the accuracy of information.

However, the learning process related to GS was highlighted by the companies, and formal structures were developed to support this process at Company 1, Company 4 and Company 6. The first effort related to the learning process is the documentation of GS activities. Even when the company does not have a formal process supported by software, the changes are recorded as well as the details of the process.

Company 1 stated that they developed a database of suppliers and items in the engineering area to support new product development projects: “when you are dealing with product development, we have the scope of the product, the tests and what did wrong.” Company 4 is focused on the transfer of knowledge to its teams. Through meetings and training conducted by team members, Company 4 creates a culture in which knowledge transfer is part of the company process. Company 6 notes the importance of international certifications, like ISO, to push knowledge transfer process.

Company 5 does not have a developed process for building a learning culture. The interviewee argues that it happens because GS has been conducted by the same person since the beginning of their international efforts. Figure 45 summarizes these findings.

	Company 1	Company 4	Company 5	Company 6
The availability of communication tools	The use of software to support sourcing decisions	The use of software to support sourcing decisions	The use of software to support sourcing decisions	The use of software to support sourcing decisions
Communication and information flows	As necessary	Shared annual forecast	Shared annual forecast	As necessary
Information accuracy	Non-structured process	Non-structured process	Non-structured process	Non-structured process
Learning process	Structured process	Structured process	Non-structured process	Structured process

Figure 45 – Key aspects of the GS process – Part 3

The use of a wider array of communication tools as a characteristic of the companies that adopt GS is identified by Trent and Monczka (2003); however, it was not identified in the companies investigated here. Instead, the companies presented a preoccupation with information flow and its management process, although they lack a formal process to take over it. Additionally, these companies present some of the capabilities suggested by Wilding and Braithwaite (2007) as necessary for the proper management of communication and information flow, in particular, the clear identification of products. The unique flow of information, the visibility of the entire supply chain and a consistent and updated information platform that manages the entire chain visibility were not identified at the companies. As a consequence of the non-structured processes, the learning process may be non-effective because part of the process may not be monitored in the integrated system. This may increase the difficulties and risks associated with GS. These aspects lead to the next dimension of the investigation framework and are analyzed later.

5.4 Difficulties and risks

Difficulties and risks are imminent in GS, and it is important to understand how companies deal with them. The potential losses that may occur when a company adopts GS can be visualized in two groups. The first group comprehends the risks associated with its adoption, and the second group comprehends the barriers to GS. This investigation was started with the first group by considering the risks to be negative aspects of GS, which can be reflected in the buying company. This investigation starts with an analysis of how these companies **analyze their global environment**.

Company 1 believes that cultural aspects are relevant to GS but experience has reduced their consideration of this aspect as a risk. They also point out that it is important to analyze governmental aspects even though their industry does not encounter any commercial barriers. Company 4 is also worried about cultural differences, which can be reduced through the centralization of GS operations by employing a few collaborators with international expertise. Company 4 also focuses on the analysis of logistical aspects, the supplier's antecedents and systematic import. Company 5 presents a different focus, namely, exchange rates and the image of the supplier country from the global perspective. To obtain accurate information, Company 5 works closely with its suppliers to absorb more knowledge of the supplier's country.

These variables are considered in the **trade-off analysis** that results in supply decision-making. Company 1 considers that the experience of dealing with international suppliers brings the knowledge necessary to conduct a trade-off analysis. The interviewee presented a situation in which the company developed a new product with a supplier from abroad. Company 1 does not control whether the technology will be or will not be shared with other players. They analyzed the costs and the time of development and concluded that it would be significantly more expensive and time consuming to pursue development with local suppliers. As a result, they chose to pursue development with an international supplier and to negotiate with them, based on their relationship, the corresponding confidentiality terms. "The risk is inherent to the activity (...) We seek to determine what it is worth the risk or not. (...) We are helping our supplier to develop (a product that he can sell to others) but if we do not do it, we are not going to be able to offer the product in the market. (...) We give the consumer the conditions needed to have a better product."

To analyze the barriers to GS, the barriers first must be conceptualized as the aspects that make the adoption of GS more difficult with respect to the buying company. This investigation also lets us understand that the **barrier analysis process** is not formalized in the companies during the development phases. As Company 4's interviewee affirms, "I think this is still a weak point, especially in the new products. I think we could participate more in the initial phases to make an assessment along with R&D at the moment they are setting the supplier and not just analyze the negotiation and logistics aspects."

Company 4 highlights the difficulty associated with having a team available to go abroad, participating in international fairs and visiting suppliers, along with participation in daily activities. Company 6 noted that they are not concerned with performing environmental analyses because they do not have local suppliers; instead, they have to learn how to play in

the global market. This affirmation from Company 6 is related to the development of alternative sourcing opportunities.

The Company 1 interviewee affirms that even if Company 1 cannot find a supplier with the same quality standard, they try to have at least one already developed (approved inputs) so that the company will be prepared in case supply difficulties are encountered. If possible, the company develops a supplier in Brazil; however, because most of their suppliers do not have competitors in Brazil, the second supplier tends to be from abroad.

Company 4 argues that in the case of co-developed projects, it is very difficult to obtain an alternative supplier. They faced a situation in which the chosen supplier decided not to keep the negotiated conditions during the second year of supply. They did not have an alternative supplier for that input and were forced to agree to the new conditions. As a result, they have continued using that supplier but have informed the R&D area of their obligation to maintain the target cost even though the supplier has requested that they consider it in new development projects.

Company 5 presents an example of the importance of having alternative suppliers. Some of the inputs that they source from abroad are supplied by distributors because the main manufacturers only sell larger amounts than Company 5 actually needs. The company tried to source from distributors in Asia and had several quality problems. After, the company purchased from North American distributors without problems.

The **balance between local and international sourcing** was also investigated for the companies. The reduced number of available suppliers in the local country makes the search for this kind of balance more difficult. Although the companies confirm the importance of having alternative suppliers, they do not place an emphasis on having them in the local market.

This situation represents a risk for all companies, and because the inputs are provided by suppliers from abroad, with longer delivery times and customer clearance procedures, the importance of managing the risks of GS is increased.

Company 1 considers inputs that have an alternative local supplier differently than inputs that do not when analyzing the risks related to costs. If there are no local suppliers, Company 1 must continue importing; however, in situations such as this, all competitors face the same problem. If the company has a local supplier, it must re-start the cost analysis process to identify the better source option. As a result, the focus of Company 1 relies on the management of the risks related to increasing total cost and, consequently, the loss of competitiveness in their market.

In addition to the focus on costs, Company 4 is also focused on managing the supplier relationship. The first effort performed to avoid this risk is a visit to the suppliers' sites to identify whether they have the necessary structure to be a solid supplier. They also try to develop a close relationship with the supplier using an open channel of communication to keep the supplier informed regarding Company 4's needs. The quantity sourced by Company 4 also makes the company dissimilar to other global players, which leads to difficulties when dealing with suppliers because of their reduced source amount.

Even though Company 4 identifies these actions as reductions of **risk** in its GS operations, the interviewees indicated that the lack of a formal GS strategy is a limitation for risk reduction in their operations, especially when they are dealing with a supplier for which there is no alternative.

Company 5 is focused on supplier relationship management with respect to products and services suppliers. To reduce its risks, Company 5 tries to maintain an open communication channel with its suppliers; to avoid problems with incorrect information, they have a process for double-checking information and documents. The same focus was presented by Company 6. This company uses its sourcing office abroad to reduce cultural distances and improve its relationship with the suppliers.

Figure 46 summarizes the findings related to the management of risks and GS.

	Company 1	Company 4	Company 5	Company 6
Environmental analysis and trade-off analysis	Culture Governmental barriers	Culture Logistics Supplier's antecedents Import systematic	Exchange rate Image of supplier country	-
The development of alternative sourcing opportunities	Alternative supplier as a main policy (especially from abroad)	Alternative supplier when possible	Alternative supplier when possible	Alternative supplier when possible
Balance between local and global sourcing	Reduced local suppliers	Reduced local suppliers Customized items	Reduced local suppliers	Reduced local suppliers
Risk management	Focus on cost control	Focus on cost control Focus on supplier relationship management	Focus on supplier relationship management	Focus on supplier relationship management

Figure 46 – Key aspects of the difficulties and risks of GS

The literature review allows the identification of a set of potential risks that is associated with the adoption of GS, including the possibility of a decrease in the company's agility and flexibility, an increase in the distance, cost and number of intermediaries in the supply chain, maintenance of its analytical focus on specific source operations instead of the complete process, which can reduce the company's ability to analyze the situation, the possibility of an increase in the total costs, the failure of logistical support, and difficulties in dealing with cultural differences, regulations and country uncertainty (Levy, 1995, Bozarth, Handfield and Das, 1998, Cho and Kang, 2001, Zeng and Rosseti, 2003, Christopher, Peck and Towill, 2006, Butter and Linse, 2008, Steinle and Schiele, 2008). For the investigated companies, it was identified that of all the difficulties incurred while dealing with cultural differences and various countries, uncertainty is the main risk identified.

Cho and Kanh (2001) indicated that companies with a low level of experience in GS perceive cultural differences (language barriers, different customs and different business practices) to be more challenging than do companies with high or medium levels of experience. It was not identified whether more experience in terms of time with GS could reduce these risks. For the investigated companies, a better relationship with the suppliers and

better management of the relationship with them can reduce the risks associated with these differences.

The investigated companies perceived fewer problems in logistics (inventory management, border-crossing procedures and transportation delays) when they have a low percentage of imports in comparison with companies that rely on a medium or large percentage of imports, confirming the findings of Cho and Kanh (2001). For example, Company 6 has the smallest percentage of imports and presents fewer problems in comparison with the other companies investigated.

To reduce the risks associated with cultural diversity, each company is working to improve its efforts with respect to the management of supplier relationships. However, efforts toward dealing with the countries' uncertainty were not well identified.

The investigated companies perceived the importance of incorporating the analysis process into earlier stages of the purchasing opportunity analysis and supplier development to avoid risks and ensure results. The results obtained based on the adoption of GS are analyzed in the next section.

Using the five dimensions defined by Quintes, Pauwels and Matthyssens (2006) and the division of the barriers into internal and external, as proposed by Alguire, Frear and Metclaf (1994), the main barriers for these companies were identified and are presented in Figure 47.

	Product	Company/ management	Network	Industry/ competition	Environment
Internal	Limited production volume (low purchase volumes) Different product standards (customized products)	Lack of the resources needed for GS (qualified professionals) Accurate demand forecast (sales fluctuation)	Sourcing requirements (low stocks)	-	-
External	Delivery delays (suppliers)	-	Finding qualified suppliers	Intensity of competition (local and global)	Adverse economic environment Language and cultural differences

Figure 47 – Barriers to GS

The final dimension of analysis investigates the results achieved through the adoption of GS, as analyzed below.

5.5 Results

The use of GS as a main strategy focuses on the achievement of competitive advantages. Company 1 presents, as a result of the use of GS, the knowledge that it is developing regarding the global market, where the company is “learning and using the expertise we have to compete together (with suppliers) and not compete (alone).” This knowledge also has allowed the company to develop a strategy that includes the allocation of different steps of the production process to different countries. This strategy ensures faster product development, access to new technologies and the development of a process that protects the company’s product from imitators.

Company 4, Company 5 and Company 6 also presented cases in which the time of a product development process was reduced because of the partnership established with global suppliers. Company 5 affirms that “it is very interesting what happens because when you start sourcing globally you open your company technologically and commercially, you open your company to a very large number of suppliers and technologies.”

Company 6 highlighted the fact that, throughout the past few years, most similar companies have gone out of business and relates their survival to the ability to source globally better.

The results indicate challenges that these companies must be prepared to overcome. Company 1 is dealing with the development of the abilities necessary to take advantage of what the global market can offer, for example, purchasing new finished products to reverse engineer and identifying the components and suppliers needed to develop better products. Their second challenge is related to the management of their relationships with suppliers to ensure better inputs, commercial terms and delivery time, while simultaneously protecting the company. When Company 1 develops a new product with a supplier, it is sharing strategic information. The confidentiality of this information may not be kept by the supplier; to avoid risks, Company 1 must develop stronger relationships with its suppliers and their respective cultures.

The global market brings new challenges. Company 1 highlighted the fact that there is a new movement of Asian companies, especially in China, that have begun the

process of becoming established in Brazil. One of their strategies is to buy local companies. To be competitive in Brazil, the ability to deal with bad infrastructure conditions and commercial barriers to export for countries like Argentina is required. Local companies deal with these problems with a reduced structure in comparison to many Asian companies that may start local operations in the future.

Company 4 noted that their biggest challenge in adopting GS is the difficulty associated with placing orders to global suppliers because the company lacks a high and continuous volume (amount and quantity) of orders. “This is the big break that we're trying to get. To have (competitive) costs you must have volume - and how will you have cost if you do not have volume? Then, when you get more export orders, you begin to export; therefore, you will have volume. Increasingly, you will have a more attractive cost. You can work more on quality, you know, but it is essential that the machine begins to spin. So that's what we had already developed, and the suppliers are prepared. Now we have to get the result, and you start to spin this whole machine.” The same challenge is faced by Company 6 because they “are not in the size where they can order (from global suppliers) (...) A supplier that has no scale hardly ever has good prices.”

Another challenge presented by Company 4 is how to deal with long lead-times; as a consequence, large stockpiles can develop while the technology changes. Company 4's products are directly related to innovation. If Company 4 identifies an opportunity for improvement in a product that generates the need for modification in a component, then it must consider the possible stockpile of old inputs, which is often bigger when dealing with international supplies than with local.

Company 5 considers that the ability to overcome cultural differences in relationships with suppliers is a consequence of the knowledge developed from global exposure: “some things we learned after years (of global exposure)”.

Company 6's interviewee argues that “challenges are permanent (...) Just like the technologies change, the components change. The search for new components is continuous, as the old ones became obsolete. This is a permanent work.”

The findings related to the results achieved with the adoption of GS are summarized in Figure 48. The results achieved by these companies and the challenges they are facing are related to the learning process that led these companies to develop their abilities, which hopefully will continue to supply these companies with the advantages that can be obtained from global market. The knowledge of suppliers and their countries is one reason that these companies are prepared to achieve competitive advantages with GS,

followed by their experiences with the new supplier sourcing process and the flexibility and agility that the companies have been required to develop to negotiate with these global companies.

	Company 1	Company 4	Company 5	Company 6
Results and benefits	Global knowledge Faster product development Access to new technologies The development of a more complex strategy	Faster product development	Faster product development Access to new technologies Access to new suppliers	Faster product development
Challenges	The development of the abilities to compete for the advantages that the global market offers Overcoming cultural differences in relationships	The development of the abilities to compete for the advantages that the global market offers	The development of the abilities to compete for the advantages that the global market offers Overcoming cultural differences in relationships	The development of the abilities to compete for the advantages that the global market offers

Figure 48 – The results achieved through GS

Faster product development was also identified as one of the main results of the adoption of GS, according to Trent and Monczka (2003). However, this is not viewed as an end result. These companies are learning through these results, and the knowledge absorbed by them can be seen as another result achieved through GS, as highlighted by Mulani (2008): supplier involvement presents a possibility to absorb knowledge, to leverage capabilities, to maximize contracts and to reduce total costs on continuing basis.

It was also necessary to thoroughly investigate the performance of the selected companies. Because a competitive advantage can be identified through the observation of higher performance in comparison with the performance in the company's industry, we analyzed the total revenue of the national industry, the regional industry and the selected companies. To protect the investigated companies and to be able to compare the data, we calculated the average percentage of the four companies. Figure 49 presents these results.

	National industry average revenue	Regional industry average revenue	Studied companies average revenue
2007-2008	10.21 %	26.66 %	34.62 %
2008-2009	-4.15 %	7.77 %	13.86%
2009-2010	11.27 %	-14.55 %	10.27%
2010-2011	8.46 %	-8.7 %	28.26 %

Figure 49 – The average revenues of the companies studied

As Figure 49 shows, these companies have achieved a competitive advantage in the last 5 years: they are growing more than national and regional industries, with the exception of the 2009-2010 comparison against the national industry. This study is not able to confirm that this advantage is a consequence of the adoption of GS.

By investigating these companies through this theoretical framework, the researcher was able to analyze how these companies, which are from an emerging country, are adopting GS. Although this was a qualitative case study with results that cannot be used to make an inference for all of the companies from emerging countries that adopt GS, it was possible to analyze the adoption of GS, which was the main objective of this research. The next chapter presents the conclusions and a discussion of these findings.

6 CONCLUSION AND DISCUSSION

The development of this research was based on the fundamental idea that GS is a strategy that can be adopted by companies to achieve a competitive advantage; however, how it is adopted by companies from emerging countries may differ from the methods employed by companies from developed countries. To conduct this research, a theoretical framework was developed based on previous literature related to GS, which was based on the experience of companies from developed countries. Emerging companies were always conceptualized as suppliers.

Considering the experiences of the investigated companies, they adopted GS because they were motivated by gaining faster access to new technologies, establishing a presence in global markets and becoming global players. These three motivations indicate that opportunities to achieve competitive advantages are the main reasons to adopt GS, although total cost reduction was also identified as a relevant factor by the companies. The focus on cost reduction is presented as a necessity rather than as a motivation to implement a strategy because the examined companies only use international suppliers for some inputs.

This research focuses on companies that directly import inputs and also adopt a strategic orientation for this process: GS. The adoption of GS was conceived as a way to address dependency and transform the need to import into an opportunity to become more competitive relative to local competitors. Essentially, GS represents a way to improve innovation in the selected companies through faster product development and the introduction of more products into their distribution channels. In the examined cases, GS is presented as a way to integrate innovation activities (product, logistics, materials, and suppliers).

The research findings contradict those of Alguire, Frear and Metacalf (1994), for whom GS may not be an effective method for companies whose products are subject to design changes and whose production volumes are low. The need for faster innovation is one of the motivations identified in the examined cases and the possibility of improving innovation through the global supplier base contributes to the establishment of a competitive advantage through the reduction of development costs and time. Another benefit achieved by these companies that has not been identified in the literature is the importance of joint development and the absorption of knowledge from the supplier base. The examined companies are not using a broader base of suppliers to implement their strategies but are rather using their suppliers to develop their market strategies. This confirms the assumption of this research that

the strength of GS depends on the relationships that companies develop with their suppliers and the strategic form in which all sourcing activities are managed. As a result, the findings confirm the considerations of Chen, Paulraj and Lado (2004), who determined that competitive advantages can be achieved by enabling companies to more quickly form close working relationships with a limited number of suppliers. This approach promotes open communication among supply chain partners and facilitates the development of long-term strategic relationships that are oriented toward achieving mutual gains.

However, the investigated companies are facing some difficulties in achieving the beneficial results of GS. The main difficulty identified by the environmental analysis relates to cultural differences. To avoid dependency on a supplier, all the studied companies identified alternative suppliers, either abroad or in the local market, even though having local suppliers is decreasing as a main focus of all the investigated companies. Difficulty in dealing with the uncertainty is a factor that was identified by the interviewed companies. Better relationships with suppliers and better relationship management were identified as ways to reduce the risks associated with these differences.

The previous findings related to GS indicated a tendency toward centralization as companies increase their involvement with GS activities (Matthyssens and Faed apud Arnold, 1999, Schmitz and Knorrninga, 2001, Trent and Monczka, 1998, 2003, 2003a). The same tendency was identified in these emerging companies, but they were involved in IPOs during earlier stages of their sourcing internationalization efforts. Although they still have centralized development and production structures, two of the investigated companies engaged in IPOs to support GS. One of the reasons that these two companies engaged in IPOs first may be related to the strategic orientation of their top management teams. No specific factors were related to this effort that could be compared with the others.

IPOs do not only affect the sourcing area but are also important with regard to the interactions of other functional areas with those related to suppliers, such as development and engineering.

Interactions with functional areas, which represent an important aspect of GS according to Quintens Pauwells and Matthyssens (2006), were identified for the examined cases but the formalization of procedures is still not well-established. This must be improved in the examined companies because a part of the procedures and experiences still represent tacit knowledge. This situation leads to dependency on the people involved in these activities, placing companies at risk if difficulties in accessing this knowledge arise. A proposed model to guide the configuration of GS was presented by Hartmann, Trautmann and Jahn (2008),

who state that with respect to formalization, companies should focus on the definition of governance, standards, processes and controls. The investigated companies do not exhibit well-defined processes, and this fact may be related to cultural factors and the fact that they are still being managed by the owners. Further investigation is necessary to understand this relation in greater depth.

The main differences in terms of organizational structure were identified when the firms' features were investigated. Having an entrepreneurial approach was identified as the main characteristic that leads companies to adopt GS. Previous findings about GS identified firm size, the inferior position of the purchasing area and company structure as critical aspects (Arnold, 1989, Quintens Pauwells and Matthysens, 2006, Harris, 2006, Knudsen and Servais, 2007). There were no previous studies that focused on the entrepreneurial approach. This characteristic is also related to top-management support, as identified in the investigated cases. The examined companies are managed by their owners and GS has partially been conducted by them. This characteristic of the companies also sets them apart from the previous subjects of GS research, which were mostly MNCs managed by professional executives.

The findings presented in the previous paragraph reveal that most of the operations of the examined companies are centered on the individual level. This indicates a challenge related to the need to develop stronger structures that could support the development of these companies. The focus needs to change from the individual to the company. Improvements related to knowledge management must be made to support growth.

An interesting aspect identified in the examined cases is the impact of their industry on their decisions to adopt GS. The need for innovation has already been identified as a motivation for GS but is not directly related to organizational structure. The influence of the industry could be related to the fact that the investigated sector in general and the investigated companies in particular were strongly committed to investing in R&D. A consequence of the need for innovation is the geographical concentration of suppliers from abroad, defined based on the localization of clusters of the most innovative suppliers.

The choice by the investigated companies to use suppliers from abroad that are located in the host country was not related to support, customer service or cultural aspects. The investigated companies prefer to supply from abroad and wish to use local suppliers as a way of balancing their operations, reducing the risks related to GS in terms of bringing materials from abroad, such as logistical and currency exchange risks.

It is important to comprehensively investigate other differences that these emerging companies exhibited relative to previous findings. Participation in international fairs as a way of identifying potential suppliers was identified as a main strategy in the examined cases. Geographical proximity to suppliers complements the importance attributed to IPOs. The examined emerging companies felt the need to be close to their suppliers to facilitate processes, thereby reducing potential risks related to the development process and the management of the supplier relationship. There were concerns regarding cultural distance, which contradicts the findings of Trent and Monczka (2003a). The authors found that cultural compatibility with global suppliers is the second least important critical success factor. In fact, IPO support is presented in the same study by Trent and Monczka (2003a) as the fifth least important critical success factor. The importance attributed to cultural distance was an important aspect identified in this research.

The management models of suppliers identified in studies such as Grieco (1995), Cebi and Bayraktar (2003), Kamath and Liker (1994) and Simchi-Levi, Kaminsky and Simchi-Levi (2003) do not exhibit a focus on the distinction between local and global suppliers as a way of differentiating among management processes. In the investigated cases, we identified concerns regarding the introduction of this aspect into management models.

In reference to purchase portfolios, it was found that the examined companies use different portfolios but they all consider all imported items to be strategic, even though their analysis matrices may not classify them as such. This point was also identified as a weakness of the purchase portfolios during the data analysis based on the findings of Smith (1999), Gelderman and Semejin (2006) and Trautmann, Balls and Hartmann (2009).

With regard to the sourcing team members and their qualifications, no main differences were identified between the investigated companies from an emerging country and the previous findings. The only identified difference was the lack of focus on the development of personal careers, as highlighted by Mulani (2008) and which may depend upon company size.

With regard to the GS process, the final investigated aspect was the use of communication tools, especially ERP. A difference was identified with the previous findings: the investigated companies do not use a wide array of communication tools, as found by Trent and Monczka (2003) among other companies adopting GS. The use of the internet and its tools are found to be the necessary tools for the companies. Rather than representing a distinction between both types of companies, this may indicate that the evolution of the Internet may have made it sufficient to fulfill company needs.

6.1 Theory Implications

The investigation of the theoretical implications must begin by analyzing the internationalization processes of emerging companies. Internationalization theories have not reached a consensus regarding the internationalization of companies from emerging countries and their findings could reflect a macro-environment that is very different from today's.

According to the assumptions of theory building, especially the work of Bacharach (1989), the development of a theory requires the development of constructs that are linked with each other through propositions. These constructs cannot be measured and are represented by variables that are related through propositions. Hypotheses and variables are ways to test already developed constructs. Previous findings about GS are more related through the investigation of hypotheses and variables. Less is known about the constructs that could support a GS theory. Gammeltof, Barnard and Madhock (2010) highlight that emerging and developing economies constitute a diverse population of countries; generalizations across these countries should only be made with the utmost caution. Therefore, this research does not intend to generalize concepts from one country or a set of developing countries; instead, our purpose is to develop a framework that can be used to understand GS within emerging companies. Consequently, the framework developed through the empirical investigation in this research could be presented as the first theoretical contribution of this study.

As noted in the literature review, the concept of GS is focused on the competitive advantages that can be achieved through its adoption. The referenced articles focus on using GS to reduce costs. The results of this research imply that GS is related to technological innovation and reductions in product development time and time to market. Innovation can also result from access to a supplier's technology and may not be related only to new products but could involve the potential development of the company as a whole because of the possibility to learn from suppliers. This can be presented as a theoretical gap achieved through the empirical research. Innovation has become a trendy topic in the last decade but less is known about innovation and GS. Our results identify the connection between these topics but more investigation is necessary because this study was limited to a set of companies that adopted GS without comparing them to companies that engage in international sourcing. Considering the theoretical framework, innovation must be included as an aspect to be investigated as a competitive advantage.

With regard to the internationalization process of the investigated companies, it was found that they are moving towards being not only manufactures but also distributors in the Brazilian market. The production outsourcing process is identified in companies operating in several industrial sectors, such as footwear, which is not as technology-intensive as the electric and electronics industry. The presence of this movement in an industry that is based on technology in terms of the maintenance or development of products or their components is a new aspect of internalization studies. This finding represents the potential identification of a gap in the previous theory through empirical research.

Based on the literature review of the management models of suppliers (Grieco, 1995, Cebi and Bayraktar, 2003), Kamath and Liker, 1994, and Simchi-Levi, Kaminsky and Simchi-Levi, 2003), a focus on distinguishing between local and global suppliers as a way of differentiating management processes was not identified. This concern is identified in the empirical findings is an important distinction between the theory and the practices of companies from an emerging country. Late movers in the global market used to replicate local strategies, and in observing the investigated companies, it is possible to affirm that they could have achieved better results by adopting GS because they began doing so a few years ago. If we consider the companies that are engaged in international sourcing, it is not possible to affirm that they will achieve the same results, especially with regard to the ability to innovate through the supply base. This conclusion creates the need to analyze what can be recommended to companies that adopt GS. The main contribution to these companies is the identification of the key success factors in each dimension of the theoretical framework. These aspects can be the focus of the management process to begin adopting GS for firms that are similar to those that were investigated here. Companies from different industrial sectors or emerging countries can use it as a reference for the points that must be carefully managed in their sourcing strategy definition and execution processes.

6.2 Practical Implications

In 2007, Fleury and Fleury had already noted that theories that had previously been developed with regard global companies do not apply to companies from emerging countries that were latecomers to the global environment. One reason that was identified by the authors is that emerging companies had grown in markets that were protected from international competition. This was the situation of the investigated firms. The electrical and electronics industry in Brazil was protected for a long time and governmental policies

supported its development beginning in the 1980s. This protection allowed companies to make investments in R&D, establish relationships with research centers and build competencies related to managing distribution channels inside the Brazilian market.

The opening of the Brazilian market in the 1990s happened in a moment when national companies had the ability to understand the dynamics of global markets, including suppliers and competitors. They had also already been exposed to international market because some of them were already exporters and most of them depended on imported raw materials. Some companies purchased locally from distributors and others were already importing inputs and raw materials – mostly from international distributors.

The entry of international competitors into the Brazilian market alerted the local companies to the importance of improving their competitive advantages. One of their advantages involved the distribution channels, but they needed to remain competitive in terms of cost and quality to maintain their position in this domain. To do so, these companies had to improve their sourcing abilities, moving from an international purchasing to a global sourcing strategy. These companies therefore studied their markets and identified better sourcing opportunities based on a combination of alternatives that could maximize the benefits and reduce the risks of having a global base.

Another advantage was their ability to develop new products as a consequence of their R&D and engineering skills. To improve this competency, the examined companies began establishing relationships with their suppliers, thereby (1) gaining faster access to technology that the suppliers were developing and (2) jointly developing technology. As a result, they were able to introduce new products faster and with reduced development costs.

These efforts were sufficient to ensure their survival until now, but the openness of the Brazilian market is pushing companies to move forward. The investigated companies can be considered medium-sized companies in the Brazilian context but are small compared to global companies. Although these companies are positioned as leaders, the introduction of global players into the Brazilian market is putting them in a situation in which they have to choose between maintaining the same size and market strategy, competing in niches, or growing and competing directly with global players.

The employed strategies of these companies show that they have chosen the second option; to grow, they need to function at the appropriate scale in terms of sourcing and sales. The scale for sourcing is needed because most of their suppliers are global players and only accept orders with minimum amounts that may be greater than the investigated companies are currently sourcing. As a result, these companies need to source from

distributors, which may increase costs. To increase the sourced amounts, these companies need to increase their sales, and the Brazilian market may not be large enough for this; therefore, they may need to increase their exports.

In assessing this situation, it is possible to understand that the adoption of GS may represent not only a strategy to internationalize the early activities of the supply chain but also an opportunity to become more competitive and internationalized in the future. The production of finished goods by suppliers from abroad also represents the efforts of these companies to increase their production and, consequently, their sales. Improved conditions and an increase in globally sourced products could help these companies grow not only in the Brazilian market but also abroad.

The challenge shifts to managing relationships with suppliers to support growth without increasing the risks associated with GS. As identified in the research, the examined companies had already realized that relationships were important in supporting sourcing strategies. To become close with their suppliers, they engaged in IPOs.

However, whereas the relationship management aspect is being developed, scale remains a challenge for those companies. Alternatives with regard to cooperation with other companies to increase sourced amounts can be investigated as a way to overcome this barrier, thereby increasing the total value and amount of purchased goods or improving R&D efforts.

Schimitz and Knoringa (2001) identified the presence of buying groups when analyzing the footwear industry. Their findings showed that companies from this industry used to exchange information among each other. In addition, the possibility of establishing buying groups in this sector was not perceived as being difficult to develop. The main reason for this consideration is that the types of materials purchased abroad (raw material or finished goods) differ significantly among firms. The possibility of developing products nationally and producing them internationally is a goal for only some companies and this goal changed the approach to GS.

6.3 Study Limitations and Future Research Directions

There is a distinct lack of studies regarding GS-related theory. Previous published articles related to GS use TCA as their main theory. TCA can explain sourcing strategies but cannot differentiate between local and global aspects, especially when the adoption of GS becomes a way to increase the internationalization of a company, as was realized in the

investigated cases. The use of both TCA and internationalization theories was therefore necessary to fill this gap.

GS or sourcing alone does not represent a theory; they can be seen, however, as established knowledge that needs to be analyzed further to build a theory. The effort to build a theoretical framework that could explain why and how companies adopt GS and the consequences of this strategy represents a simple effort to begin identifying the connections in the existing knowledge. This research does not aim to create a theory of GS but attempts to highlight the need for deeper investigation into this subject.

The empirical findings of the research led to the conclusion that the use of the Resource-Based View may be applicable to GS studies.

The proposed theoretical framework was tested with only four cases and deeper investigation is necessary. The results presented here cannot be generalized, but can be used for comparisons with results from other companies from Brazil or other emerging countries.

The fact that the four cases come from the same industry is a limitation of this research. This industry depends greatly on global suppliers. If this research had been conducted on an industry that has competitive local suppliers, the findings could have been very different, which indicates the need for investigations based on different conditions and industries.

Another limitation of the empirical investigation is the fact that the examined cases are not MNCs. They do not have a global base and it was not possible to investigate the configurations of activities among different sourcing departments in this research. Another opportunity for future research is the investigation of companies from another emerging country and the comparison of results.

One of the main limitations of this research is the focus on the electrical and electronic industry in the state of Rio Grande do Sul. This industry is characterized by a lack of suppliers manufacturing in Brazil, which led to the development of a dependency on imported products that may be direct or indirect. The lack of local suppliers reduces the opportunities to develop different sourcing strategies and must be viewed as a characteristic of the investigated industrial sector. The results could be different in other sectors.

The topic of trust was not closely examined in this research but it seems to be an essential element of GS. Trust can be developed through interpersonal relationships over time. This research found that personal involvement with global suppliers is important and is usually conducted by top managers. The impact of these relations on the development of trust requires a deeper investigation.

One of the interviewees highlighted that the risks related to GS, especially with regard to knowledge transfer, are inherent and the development of trust can be a way to reduce them. Companies run this risk because conducting GS and joint development with suppliers is a way to offer some products to their clients because they would not be able to develop them at the same quality and cost by themselves.

Whereas the necessity of relationship development was identified in the empirical investigation, information accuracy was identified as having a weak importance. In the four examined cases, a non-structured process is used to ensure information accuracy. This lack of structure may lead to a reduction in the benefits of GS and its impact may be investigated in another research comparing companies that use structured processes with those that do not.

According to Matthyssens, Quintens and Faes (2003), the main factor for identifying GS opportunities is interfacing with other functional areas. This focus was identified in the four examined companies because visits to global suppliers and participation in international fairs included representatives from the engineering and/or R&D areas. However, this integration could be enhanced if it were supported by more structured communication, in accordance with the previous paragraph, which highlighted the need for more investment in the establishment of a structured process to ensure information accuracy.

The achieved competitive advantages were identified based on the qualitative perceptions of the companies. Our effort to use revenue to quantify these advantages was also limited because this measure represents total company sales but does not consider costs. Profit could be another indicator used in this analysis but was not available for use in this research to compare the investigated companies with the average of the industrial sector. In addition, profit must also be viewed as a complex indicator because it may be impacted by a company's investments. The profitability of each product seems to be a better measure for this analysis.

When examining the empirical findings of this research, the link between sourcing and export strategies needs to be analyzed in more depth. The possibility of improving a company's global position based on its sourcing decisions was identified as an advancement opportunity, but this idea requires further investigation.

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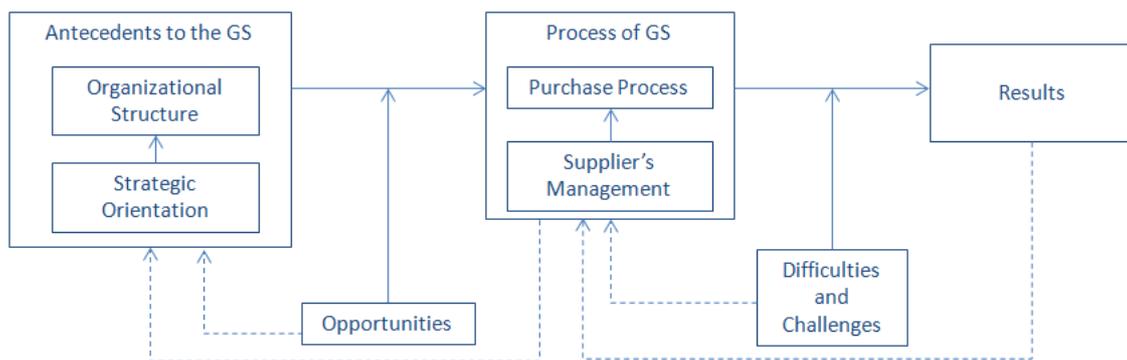
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APPENDIX 1 – RESEARCH PROTOCOL

To whom it main concern,

My name is Moema Pereira Nunes and I am a Ph.D. student at UNISINOS – Universidade do Vale dos Rio dos Sinos, São Leopoldo, RS, Brazil.

I'm developing my Ph.D. research with the advisory of Prof. Junico Antunes, and it has the name "Going abroad for new sourcing possibilities – The adoption of Strategic Global Sourcing (GS) by Emerging Companies". The purpose of this research is to investigate the adoption of GS by Brazilian Companies, and we are considering GS as the company's strategic orientation direction for the search and monitoring of global suppliers and its efficient management for integrating and coordinating activities related to the functional areas of business as well as units of local purchases of a set of related companies. The research is based on the theoretical framework presented below.



The first phase of the research was developed based on the literature. The second phase comprehends the developed of a case-based study. On order to conduct this second phase, a questionnaire was developed based on the literature review. This questionnaire is presented in the sequence. The first two blocks represent the description of the company and the respondent. After that, the questions related with the study subject are presented with each research guideline and the aspects that are going to be investigated in each one. I let this information in order to facilitate de validation of the questionnaire.

Some questions may appear repetitive as I'm presenting them separated by dimensions. In the data collection this separation will not exist and a unique questionnaire will be the research data collection tool. As I'll conduct all the interviews, this will be a flexible questionnaire and some questions may be added and/or excluded during the interviews in order to achieve the objectives of the research.

Thank you in advance for participate in my research.

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Description of the case:

Name of the company:

Industry:

Year of foundation:

Number of employees

Sales (last five year):

Location of the manufacturing facilities/Year of operations' beginning:

Location of other facilities (commercial, distributional center...)/Year of operations' beginning:

Typology of purchase items (components, finished products...):

% sourcing made abroad (last five years):

% intra-company sourcing made abroad (last five years)

Countries of supply:

Company profile (Brief description of the company):

Description of the respondent:

Name:

Occupation:

Time in the company and in the position:

Formation:

Research questions:

Dimension: Antecedents to GS / Strategic orientation

The adoption of GS is motivated by comparative and competitive advantages.

- When the firm decided to adopt GS?
- Which motivations lead the adoption of this strategy?
- How was the decision take process?
- Who (which areas) conducted this process?
- In a time-line, how the process happened? Which can be consider the critical points and why?

Considering the decision just to purchase items from abroad (adopting GS), please attribute a number between 0 (non-important) to 7 (very important) to this motivations for the abroad sourcing:							
	01	02	03	04	05	06	07
Access advantages from supply's core competence							
Access advantages from supply's market							
Access new technologies							
Anticipate material needs to new products in development							
Anticipate materials needs in case of demand changes							
Better negotiations conditions							
Customer service improvement							
Deliver improvement							
Establishment of alternative supply sources							
Establishment of presence in global market							

Flexibility to change the input's features							
Get the opportunity to sale to a specific market or country							
Incoming goods at a lower cost in local currency (exchange rates)							
Increase in the number of available supplier							
Introduce of competition on the supplier base							
Meet supply constraints imposed by government							
Offer global support to local products							
Product reliability improvement							
Quality improvement							
Quality control improvement							
React to competitor's practices							
Reduction of product development cycle							
Supplier reliability improvement							
Support to the company own international operations							
Total acquisition cost reduction							

Dimension: Antecedents to GS / Organizational

The centralization of GS activities is related with the potential synergy between units, and their supply needs.

Interaction with other functional areas

- How the relationship between the sourcing area and the other functional areas is configured? (Formal structure, sourcing work group, software...)
- How the relationship between the sourcing area and the other functional areas is coordinated?
- Is there any mechanism of interaction with other functional areas in order to source globally? How do they work?
- Does the firm have any mechanism of information's exchange with other functional areas?
- Does the firm have any mechanism of demand alignment with other functional areas? Product development, for example?

Interaction with other sourcing units

- How the relationship between the sourcing areas is configured? (Formal structure, sourcing work group, software...)
- How the relationship between the sourcing areas is coordinated?
- Is there any mechanism of interaction with other sourcing units in order to source globally? How do they work?
- Does the firm have any mechanism of information's exchange with other sourcing units?
- Does the firm have any mechanism of demand alignment with other sourcing units? Different product development, for example?

Centralization vs. decentralization

- Which activities does the firm centralize? Why these activities were centralized?
- If the firm used to make joint purchases, how they are made? (By whom, criteria...)
- How managers felt with the centralization of activities and their “lost” of control? (Especially with costs, as managers used to be careless about cost when the decisions are centralized)
- Which are the benefits realized with the centralization of sourcing activities (bargain power, economy of scale, administrative and operational costs)
- Which are the negative impacts of centralization of sourcing activities?
- Does the centralization of sourcing activities have an impact in the firm’s flexibility? (Degree of autonomy of each unit)
- Which activities does the firm decentralize? Why these activities were decentralized?
- Which are the benefits realized with the decentralization of sourcing activities (bargain power, economy of scale, administrative and operational costs)
- Which are the negative impacts of decentralization of sourcing activities?
- Does the decentralization of sourcing activities have an impact in the firm’s flexibility? (Degree of autonomy of each unit)
- Does the distribution of responsibilities between the sourcing units and the Headquarter reflect the distribution of knowledge and experience about the sourcing activity?

Formalization

- Which formalization process related with governance and standard (establishment of manual, codes of conduct...) does the firm adopt for sourcing?
- Which are the responsibilities of the Headquarter and the subsidiaries related with sourcing? How they were established? Are they formalized?
- Does the firm have established indicators and methods to monitor and compare efficiency in the units? Which one? How this evaluation process is conducted? Are they formalized or not?

Dimension: Antecedents to GS / Organizational Structure

The adoption of GS implies that the availability of resources for establishing and managing the activity is relative to the organization’s size and, the importance attributed to GS, including the top management support, and the industry features.

Firm’s features

- Which characteristics of the firm favor the adoption of GS?
- Do you believe the size of the firm contributes positively or negatively to the adoption of GS?
- Which resources were allocated by the firm to the adoption of GS? Were they enough? What else do you believe could be helpful to the adoption of GS?

Industry’s characteristics

- Which characteristics of the firm’s industry favor the adoption of GS?
- Which characteristics of the suppliers’ industry favor the adoption of GS?

- The existence of multi-regional or global competitors favors the adoption of GS?

Top-management support

- Does the adoption of GS supported by the top-management?
- How this support happens in daily operations?
- Do you believe that the top-management support leads the adoption of GS reducing the barriers? How?
- Do you believe that the top-management support facilitate the alignment between sourcing units? How?
- Do you believe that the top-management support facilitate the alignment between the functional areas? How?

Organizational level of decision making

Indicate the level on which these decisions are taken:					
	Corporate	Direction	Management	Coordination	Operational
Use of international suppliers					
Supplier's choice					
Allocation of the source in a unit of the company					

Internal articulation between areas

- Do you realize that there is an alignment between the strategic planning and the planning of sourcing function?

Indicate the degree of involvement of other functional areas on these activities: 0 (none) – 7 (very high)							
	1	2	3	4	5	6	7
Use of international suppliers							
Supplier's choice							
Allocation of the source in a unit of the company							

Dimension: Antecedents to GS / Organizational Structure

GS The presence of the purchase company in the supply country is motivated by the adoption of GS.

Motivations related with the presence of purchaser at the supplier market

Structure of purchaser presence at the supplier relationship

Relations with centralization vs. decentralization

- Do you believe that the presence of the buyer in the suppliers' market contribute to the success of GS?
- Do you believe that the adoption of GS leads to the establishment of some kind of presence of the buyer firm in the suppliers' market?
- Does your firm use trading companies to broker the negotiation with global suppliers?
- Which are the motivations to the use of a trading company?
- Does your firm have any kind of presence in the suppliers' country? If so, how is this presence? Which are the responsibilities of the unit in the supplier's country? And how is the relation with the sourcing units?
- Which are the motivations to establish this presence in the supplier's country?
- Which are the benefits of having this presence in the supplier's country?
- Which are the challenges to manage this presence in the supplier's country?

Dimension: Opportunities

The supply opportunity analysis process includes the investigation of the supplier company, the inputs, and the supply and sourcing environments, as well as customer requirements.

Tools to search, select and monitor supply markets

Supply's market environmental analyzing aspects

- Do you believe that the monitoring of suppliers' markets contribute to better sourcing activities?
- How the firm search for new suppliers' markets?
- Does the firm have tools to search, select and monitor supplier's markets? How do they work? Is this activity centralized or decentralized? How the knowledge is transfer for all sourcing units?
- Which variables the firm consider in the analysis of suppliers' markets? Why these variables were choose to be monitor?
- Which are the difficulties faced by the firm to monitor suppliers' markets?
- Is there any concern in the company about the continuously search for new suppliers?

Areas and units interfaces structure and process

Information sharing process

Learning process

- Do you believe that the proximity of sourcing areas with other functional areas in the company results in the identification of potential supply demands? How this contribution happens?
- Do you believe that the proximity of sourcing areas with other functional areas in the company results in the pro-active approach of sourcing area to search potential markets and suppliers? How this contribution happens?
- Are these processes structured?

- Does the firm have any established mechanism to transform the information obtained on these activities is knowledge that can be transfer?

Supplier development process

Variables of the opportunity analysis process

Customer's interface with sourcing

Customer requirement analysis process

- How the firm investigate a potential supplier and its inputs? Do you have a structured process?
- Which variables the firm investigates related with the supplier firm and the input to be purchase?
- How is the relationship with potential suppliers in order to investigate a potential relation?
- How is the source for new suppliers' firms?
- Is there a preoccupation about the suppliers' country? Which variables do the firm use to analyze related with suppliers' country?
- How about the suppliers' industry, is there any follow up of the suppliers' industry? Which variables are analyzed?
- Looking to the internal demands and the potential suppliers, how these needs and opportunities are connected? Is there any interface between other functional areas and the investigation of potential suppliers?
- How the requirements of the internal demands are assured in the process of new suppliers' source?
- How the current suppliers are followed up in relation with the current sourcing and potential sourcing opportunities?
- Is there a concern with the transparency of information related with demand and offer volatility between your firm and its suppliers?

Dimension: Process of GS / Supplier's management

The adoption of GS contributes to the involvement of suppliers into new product development as the units of the company and units areas are more related, but at the same time work with global suppliers can be more difficult comparing with local suppliers.

Supplier selection

Supplier development

Supplier relationship management

- Do you believe that the adoption of GS contributes to the involvement of suppliers into new product development as the units of the company and units' areas are more related?
- How is the approximation of the sourcing area, the area of new products development and the development of new suppliers?
- Do you believe that work with global suppliers can be more difficult comparing with local suppliers?
- When a new potential supplier is identified, how is the development process of this supplier? Is there a concern related with the development of a relationship with the new suppliers?
- Does the firm have any mechanism of integration used to approximate the sourcing area with other functional areas and the suppliers?

- Do you believe that the intra-departmental approach required by GS support a better relationship with suppliers on this

Dimension: Process of GS / Supplier's management

The choice to use foreign suppliers based on the purchaser country will be related with support, customer service, and cultural aspects related to the supplier management process.

Supplier selection

Supplier development

Supplier relationship management

- Does the offer of support by the supplier lead the firm to use local suppliers? Explain.
- Does the existence of a customer service by the supplier lead the firm to use local suppliers? Explain.
- Does the cultural aspect lead the firm to use local suppliers? Explain.
- When there are just global suppliers, how this potential challenges is management by the firm?

Motivations related with comparative advantages

Motivations related with competitive advantages

Supplier selection

- Which are the differences between work with local and global suppliers? (Positive and negative)
- When you have both options, which motivations lead the firm to use abroad suppliers instead of local suppliers?
- How is the process of select a supplier when there are options local, multi-regional or global? Who takes this decision? Is there a structured process?

Dimension: Process of GS / Purchase Process

The GS activity is oriented to inputs consider strategic for the company, and the other inputs should be included in the context of this strategy.

Input's features

- Do you think the product specifications (necessity of customization or standardization vs. rate of change of specification – low or high) are important aspects to be considered in the sourcing process? Does your firm consider them? How?
- Do you think that the product technology (level of product technology (low or high) vs. rate of change of technology (low or high)) is important aspects to be considered in the sourcing process? Does your firm consider them? How?
- Do you think the quality and process technology (risk of failure (low or high) vs. ease correction/tolerance (low or high)) are important aspects to be considered in the sourcing process? Does your firm consider them? How?
- Do you think the logistics and availability (product availability (specific locations only or widely available vs. criticality (low or high)) are important aspects to be considered in the sourcing process? Does your firm consider them? How?

- Do you think the criticality and volatility (criticality (low or high) vs. volatility (low or high)) are important aspects to be considered in the sourcing process? Does your firm consider them? How?
- Do you think that the costs (intrinsic product costs (low or high) vs. costs of delivery (low or high)) are important aspects to be considered in the sourcing process? Does your firm consider them? How?
- Do you think the suppliers' location (local vs. global) is an important aspect to be considered in the sourcing process? Does your firm consider them? How?

Use of purchase portfolios, variables, and its contribution

- Does the firm use a purchase portfolio to decide the importance of the inputs? Which one? How does it work?
- Which are the criteria considered in the purchase portfolio used by the firm?
- The use of the purchase portfolio help improves the internal coordination within business units? How?
- The use of the purchase portfolio help improves the coordination within sourcing units? How?
- The use of the purchase portfolio favors the centralization or the decentralization of the sourcing activities? Why?

Dimension: Process of GS / Purchase Process

The GS approach requires qualified personnel and continuously training of them in order to identify better opportunities and conduct efficient sourcing process.

Professional's knowledge and skills

- Related with human resources, how the sourcing area is organized?
- Which knowledge and skills do you believe are important for sourcing professionals?

Empowerment

- Do you believe the empowerment of the sourcing professionals contribute for their performance? How?
- Does your firm offer any program related with the empowerment of the sourcing professionals?

Training and benefits programs

- Do you believe the offer of training and benefits programs for the sourcing professionals contribute for their performance? How?
- Does your firm offer any training and benefits programs to the sourcing professionals?

Dimension: Process of GS / Purchase Process

The existence of communication tools and platforms are important to global supply management, including actual and potential suppliers, and actual and potential demands.

Availability of communication tools

- Does the firm have any information tool to support the sourcing activity? (Data bases, information management software, research web tools...)
- Do you believe these tools improve GS?
- Are they well used? Why?

Communication and information flows

- How is the communication between the functional areas?
- How is the communication between the sourcing units?
- Is there any infra-structure to support these communication flows?

Information accuracy

- Is there any concern in the company related with the information accuracy? How this issue is considered in the firms procedures?
- Do you believe that the level of transparency leads to a pro-active cooperation between the members of your supply chain?

Learning process

- Does your firm have any procedure to transform the information of experiences in knowledge that can be applied in other situations? If so, explain how. If no, do you think this could contribute to the success of the sourcing activity?

Dimension: Difficulties and risks

GS includes the management of risks, considering cultural and governmental diversities and its special characteristics.

Trade-off analysis

Environmental analysis

Risk management

Development of alternative sourcing opportunities

- Which are the risks of GS for your firm comparing with the use of only local suppliers?
- How your firm deal with these risks?
- Is there a structured process to management these risks and deal with problems in the sourcing process in order to transform the experience in knowledge, to use it and avoid problems in the future?
- Does your firm make an environmental analysis in order to monitor the suppliers' market and avoid risks? How this monitor is done?
- How the cultural diversity and the different government treatments for international business are considered in the analysis of a global opportunity for supply?
- How the currency exchanges, geo-politics and infrastructure risks associated with the supplier and its market are consider in the analysis of a global opportunity for supply?

- Does your firm worry about the development of alternative sourcing opportunities in order to avoid risks? How is this process?
- Do you believe that the increase of the supply base (from local to global) increases the complexity of organizational management? How?

Dimension: Difficulties and risks

The analysis of external barriers is important during the process of purchase opportunity analysis to avoid risks and ensure benefits.

Barriers analysis process

Balance between local and international sourcing

- Do you believe that the analysis of the external barriers is important during the process of sourcing opportunity analysis to avoid risks and ensure benefits?
- Does your firm have any procedure related to this kind of analysis?
- Related with tariffs and non-tariffs barriers, how they are included in the analysis of sourcing opportunities? In which moment are they considered?
- How the total cost of acquisition is considered in the analysis of a sourcing opportunity? In which moment are they considered?
- Considering that the risks are inherent to GS, how a firm can avoid them? Which strategies does your firm use?
- Do you believe that the balance between local and international sourcing is a viable strategy for nowadays?
- How does your firm deal with the currency exchange fluctuations? Is there any strategy related with this risk?

Dimension: Results

The adoption of GS leads to competitive advantage comparing with firms that purchase internationally.

- Which differences did the firm realize after adopting GS? (Results, benefits, challenges...)