Chapter 4
New Product Development and the Challenges of Internationalization

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ABSTRACT

The internationalization of firms has reached levels never seen before. As a consequence and in order to face the new competitive challenges of globalized markets, industrial small and medium-sized enterprises must be able to adapt to new organizational approaches, to innovate and to further develop their networks. Based on a case study, this chapter reviews the literature on internationalization and networks and addresses a less researched topic of supplier-clients relationships in the value chain referring to the importance of the networks, resources and collaborative new product development on the internationalization process of firms. The case reports a successful ex-small technical textile company that leveraged its competitive strategy based on technology-based paths and is thriving in both domestic and international markets.

INTRODUCTION

Given the increasing globalization process, the internationalization of firms has reached levels never achieved before. This is mainly due to the increased instability of the contextual environment where firms operate and to the increasing firm specialization around core competencies. As a consequence, firms have never witnessed so many competitive challenges as in today's global business world.

One consequence of the growing importance of internationalization of firms is their need to adapt to new organizational approaches in the relationship with their customers, especially with regard to industrial firms, given the importance of a proper relationship throughout the value chain.

Internationalization refers to the process of increasing involvement in international activities (Welch & Loustarinen, 1988). At firm level it is related to the export intensity of the firm and how it explores international markets. There are several

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theories that relate the export behavior with the internationalization process. However, two main strands stand out: one that advocates an evolutionary, sequential and linear model with growing international involvement (Johanson & Wiersdersheim-Paul, 1975; Bilkey & Tesar, 1977; Welch & Loustarinen, 1988) and a second strand that understands the internationalization process in terms of resource allocation, i.e., dependent on the strategic decision of allocation of company resources and their interaction with the environment (Reid, 1981, 1982; Aharoni, 1966).

Although the internationalization process has been one of the most studied areas in the field of international business (Aharoni, 1966; Johanson & Wiersdersheim-Paul, 1975; Bilkey & Tesar, 1977; Reid, 1982; Coviello & McAuley, 1999; Fillis, 2001), there are few studies (Holmlund & Kock, 1998; Moreira 2007) dedicated to the internationalization of suppliers throughout the supply chain considering the supplier-client relationship. In this way, set in a context of supplier-client relationship, the role of the client is represented by a multinational company and the supplier by a Portuguese company with strong research and development (R&D) competences, in which the relationship is analyzed from a relational perspective based on the new product development capabilities of the Portuguese supplier firm. Accordingly, the aim of this chapter is to examine to what extent the internationalization of suppliers is conditioned by this inter-organizational relationship.

The contribution of this study stems from the analysis of the internationalization of a firm (supplier) taking into account the conditions and opportunities that their multinational client in the automotive industry represents. So, not only Holmlund and Kock (1996, 1998) studies are complemented, as new empirical perspectives that analyze the entry into international markets through industrial relations in the country of origin of the supplier firm are provided, which has not been explored previously.

The document is structured in six sections. After the introduction, the second section covers the two main strands of the internationalization process and the various dimensions related to internationalization strategies. Equally important is that the supplier-client relationship, which in this internationalization process will be examined from the resource-based theory point of view, where the new product development process of the supplier firm plays an important role in the relationship with its multinational client. The third section reviews the literature on supplier-client relationship and its importance in the supply chain. This relationship is followed from an interactive approach and highlights the evolving nature of new product development, logistics and R&D as key elements that frame long-term commitments. In the fourth section the research methodology is addressed, while in section five a case study pertaining to internationalization through the development of new products is presented. Finally, section six finalizes this chapter with a summary of the main conclusions and challenges.

INTERNATIONALIZATION

As a consequence of the globalization process, the internationalization of companies is a complex phenomenon framed by a growing business specialization and by increased instability of the company's external context (Dicken, 2011). It is related with the process of increasing involvement in international activities (Welch & Loustarinen, 1988), with the firm export intensity and with how international markets are exploited (Moreira, 2004).

The classical theories of the internationalization of firms are essentially based on the explanation of why multinational companies emerged (Moreira, 2009a) where the life cycle theory (Vernon, 1966) and theories based on imperfect markets (Hymer, 1976; Kindleberger, 1969; Caves, 1971; Knickerbroker, 1973; Buckley & Casson,

1976) play a major role. However, their focus on countries and multinational players jeopardize their explanatory power, especially when small firms are involved.

In order to find more complete explanations for the growing international involvement of small and medium-sized firms, it is necessary to follow more contemporary approaches.

There are several major strands explaining the internationalization process: one that defends an evolutionary, sequential, linear model with a growing international evolution, known as Uppsala model (Johanson & Wierdersheim-Paul, 1975; Bilkey & Tesar, 1977), another that addresses the internationalization process from the point of view of the resources and their interaction with the environment (Aharoni, 1966; Reid, 1982; Barney, 1991) and finally a third one, the network-based view of the firm (Håkansson, 1982, Håkansson & Johanson, 1992), where the relationships between the parties in the market play a crucial role. However, there are other strands that explain innovation-based internationalization (Morgan & Katsikeas, 1997) or rapid internationalization processes (Oviatt & McDougall, 1994).

The Uppsala model argues that firms follow a sequential path in their international operations. Basically, it is possible to identify four stages that differ regarding the company degree of involvement in the market (Johanson & Wiedersheim-Paul, 1975; Johanson & Vahlne, 1977): no regular export activities, exports through agents, sales through wholly owned subsidiary and international production subsidiaries. The degree of risk and commitment of resources increase as the internationalization process progresses.

In addition to the sequence of steps that reflects entry modes and performance, new international markets orientation involves strategic decisions and performance patterns in terms of the sequence of chosen markets at a given time.

The network approach (Johanson & Mattsson, 1988) argues that the internationalization of a company is the result of the development of (internal and external) network relations with individuals and/or firms who have resources and experience/knowledge. Within networks, the access to information and knowledge is faster and less expensive. This approach began in the marketing of industrial goods (Håkansson, 1982; Håkansson & Johanson, 1992) where the emphasis is on interaction among firms. According to Johanson and Mattsson (1988), networks of (internal and external) relationships in foreign markets play an important role. The external network is the result of the subsidiary relationship with business partners such as suppliers and research institutions among others (Andersson, Forsgren, & Holm, 2002). The internal network is the result of the relationships among subsidiaries (Bjorkman & Forsgren, 2000). This explains why some firms do not often follow a sequential entry mode. As such, this theory brings new ways of understanding internationalization highlighting the relational perspective.

Johanson and Mattsson (1988) argue that production factors and competitive forces in highly internationalized industries create a wide pattern of entry opportunities. This diversity motivates firms to choose markets and entry strategies, which may be quite different from what is expected by the traditional Uppsala model. However, this will only be possible through the implementation of networks of relationships in new markets where firms will operate. As such, relationships can be used as entry modes in other networks.

The network theory argues that the degree of internationalization of a company focuses not only on the resources allocated across borders, but also on the networks degree of internationalization in which the company operates. According to Andersson and Johanson (1997), internationalization is no longer a matter of shifting production abroad; it shall be understood as the exploitation of cross-border potential relationships.

The way companies are managed plays a key role in the internationalization of the firm (Reid, 1981; Leonidou, Katsikeas, & Piercy, 1998). In industrial markets, traditional factors such as firm

size, government incentives and multilingualism have lost their powerful influence. In fact, factors like technology mastery (Burgel & Murray, 2000), knowledge and networks (Coviello & Munro, 1997), entrepreneurial orientation (Ibeh & Young, 2001) and sociocultural background (Leonidou & Katsikeas, 1996) have been growing in importance in recent studies on internationalization.

However, the internationalization process of small and medium-sized enterprises (SMEs) still depends on the following main dimensions (Young, Hamill, Wheeler, & Davies, 1989; Moreira, 2004): type of products and activities; international modes of entry and operation; types of markets; internal competencies; the ability to manage cooperative relationships; financial constraints; and organizational structure. Simões (1996) argues that the analysis of internationalization process must combine the firm international projection with its endogenous capacities.

As SMEs resources are usually very limited, established relationships with their clients can be a form of resource acquisition and international penetration (Neergaard, 1998). Moreira (2007) found that when industrial SMEs interact with their multinational clients, SMEs managed to evolve in those external networks. However, there are differences in the results achieved between more developed industries, such as automotive and electronics industries, and less developed ones, as the footwear industry. Despite those differences, Moreira (2007) argues that the evolutionary perspective in the supply chain is not only very important for SMEs but also that relationships across firms depend on the intensity of the commitment of the client firm.

Although Leonidou (1995) defends that internationalization significantly affects business operations dynamics, Moreira (2007), based on the examination of SMEs as suppliers, claim that in an inter-firm relationship process, especially in the business-to-business (B2B) market, industrial operations are important in the SMEs internationalization process. Thus, it is important to know what factors influence the internationalization growing process and to what extent multinationals, as clients, are important in the evolution of SMEs in external networks.

The number and depth of relationships increase among clients, suppliers, distributors and competitors as firms internationalize (Johanson & Mattsson, 1988). This occurs in three different ways (Johanson & Mattsson, 1988): firstly, building relationships with companies in new countries (international expansion); secondly, increasing commitment in international networks (international penetration), and finally integrating their position in networks in several various countries (international integration).

Following the network perspective, Holmlund and Kock (1996) emphasize the existing unequal relationship in the supply chain, where suppliers (usually small firms) are dominated by clients (usually large companies). In a subsequent study, Holmlund and Kock (1998) also point that, despite some relational progression between suppliers and buyers, the supplier relationship and internationalization evolutionary patterns depend on the client.

As the article discusses the relationship between an industrial SME and its large multinational client, it is important to refer that the internationalization process is associated with the conditions and opportunities that multinational clients represent, and the performance achieved by the firm in this relationship. Accordingly, it was decided to embrace the resource-based view (RBV) of the firm (Penrose, 1959; Barney, 1991; Aharoni, 1966; Reid, 1982) although the sequential model (Johanson & Wierdersheim-Paul, 1975) also has an important role. This decision was based on the following factors:

- The supplier performance depends on obtaining internal and external resources. The former are related with the supplier internal competencies, and the latter with collaborative advantages (Ebers, 1997).

Table 1. The network model of internationalization

		Market Level Internationalization	
		Low	High
Firm Level Internationalization	Low	Early Starter	Late Starter
	High	Lonely International	International Among Others

Source: Johanson and Mattsson (1988).

- The client imposes its client some market imperfections, as well as means and opportunities that are not normally available to the latter (Moreira, 2007).
- There is a social relationship between both types of firms (Oliver, 1990; Easton & Araújo, 1992).

NETWORK-BASED VIEW OF INTERNATIONALIZATION

As mentioned before, companies competing in industrial markets take part in interorganizational networks. The range of opportunities and constraints the firm faces influences the firm strategy, in accordance with the firm's position in the network (Johanson & Mattsson, 1988). Thus, the internationalization process depends on the firm position in the network and on the associated relationships with other firms on the international network. As such, the more profound the relationships are, the greater their involvement in international markets, which depends on the control of the resources in international activities, which is associated with the way the firm manages and internalizes the knowledge generated in international markets (Axelsson & Johanson, 1992).

Johanson and Mattsson (1988) contend that a highly internationalized firm enjoys strong direct relationships with foreign network actors. Furthermore, being positioned within a foreign internationalized network, allows the firm to develop relationships that can lead to further linkages with other actors (Axelsson & Johanson, 1992; Johanson & Vahlne, 1992).

Clearly, the development of the internationalization process is influenced by several factors (Johanson & Mattsson, 1988; Axelsson & Johanson, 1992): the firm and market level of internationalization; the partner level of internationalization; and the network level of internationalization. Thus, according to Johanson and Mattsson (1988), one can characterize the firm internationalization typology, as shown in Table 1, in four different situations: the Early Starter, the Late Starter, the Lonely International and the International among Others.

The Early Starter firm possesses a low degree of internationalization, the same occurring with the network the firm belongs to (Johanson & Mattsson, 1988). Also, the level of internationalization suggests that it possesses only weak channels with foreign networks. The relationships that the Early Starter has within the international network are considered important for the accumulation of knowledge. The Early Starter's lack of current activities involving foreign actors, either directly or indirectly, deters the acquisition and internalization of knowledge. Moreover, the weak position of Early Starters in the network further limits the available knowledge resources. As a consequence, knowledge feedback direct from foreign markets to the Early Starter is limited as the firm has hardly any experience operating in foreign markets and has weak relationships with international firms.

One of the main advantages of Lonely International firms is their high degree of internationalization, which provides them with greater levels of experiential knowledge in international markets. As the firm might be present in various relationships, the firm taps into knowledge resources from several partners. The main disadvantage of the Lonely International firm resides in an internationally inexperienced network.

The Late Starter is characterized by a low level of commitment and activity in international markets and low levels of international experience. On the other hand, it has some direct international relationships. As a consequence, it is generally argued that the Late Starter enjoys a knowledge advantage *vis-à-vis* the Early Starter as it is more committed to international operations and acquires knowledge from an international wider network (Holm, Eriksson, & Johansson, 1996). As a consequence, the participation in international networks gives the Late Starter a valuable experience to develop and coordinate its position in a foreign market. The level of experiential knowledge residing in the Late Starter's network should have a positive influence on the firm's own level of experiential knowledge. When comparing the Late Starter and the Lonely International, the situation might be arguable. On one hand, due to the advantage of being a more highly internationalized firm, the Lonely International might exhibit higher levels of internationalization knowledge and foreign institutional knowledge relative to the Late Starter, but on the other hand due to the disadvantage of not residing in a highly internationalized network it might exhibit a lower level of foreign business knowledge relative to the Late Starter. As a consequence, the knowledge internalized by the firm will be the consequence of its capability to keep abreast of a range of developments the firm has as a result of international opportunities taken.

The International among Others enjoys a high degree of internationalization (Johanson & Mattsson, 1988). Although it has established and developed positions and resources in foreign markets, like the Lonely International, the International among Others also has a highly internationalized macro-position, which provides it with higher levels of experiential knowledge when compared with the Lonely International. Its participation in a highly internationalized environment forged the International among Others with the capabilities to co-ordinate and integrate market positions in international networks. Accordingly, the International among Others exhibits high levels of foreign institutional knowledge and foreign business knowledge *vis-à-vis* the other three firm types. Nonetheless, due to the high number of interdependencies with other firms and environments, obstacles faced by International Among Others are also likely to appear.

IMPORTANCE OF INTERORGANIZATIONAL RELATIONSHIPS IN THE SUPPLY CHAIN

Macaulay (1963) was among the first to mention that the most important aspects in interorganizational relationships were not explicitly mentioned on the contracts signed between the two parties, but in informal aspects of the effective "relationship" between the parties are hardly known.

The interactive approach, developed by Håkansson (1982) and Håkansson and Johanson (1992) in the Industrial Marketing and Purchasing (IMP) Group based on the observation of the relationship between clients (large business groups) and their suppliers in industrial environments, has concluded that the most important factors affecting the supplier-client relationship are the accumulated technology, structure and size of the company. One of the greatest advantages of this interactive approach lies in the way the resources are organized in the business network.

According to Ring and Van de Ven (1992), numerous firms begin to engage in interorganizational relationships due to the rise of emerging

technologies and competitive pressures. It is essential that in highly competitive environments, as is the case of the automotive industry, interorganizational relational forms are used to address new markets and to gain economies of scale (Moreira, 2007). In conclusion, as it is almost impossible to maintain intense relationships with a large number of suppliers, cooperative strategies come into play.

Lamming (1993) was among the pioneers in the study of vertical inter-organizational relationships. He verified that they not only have a cumulative and evolving nature, but also they depend on the participation and on the atmosphere that affects the interaction between the two partners. On the other hand, Dyer's (1996) contribution regarding the supplier-client relationship is important: he showed that product quality, new product time to market, inventory costs and profitability of both (supplier and client) were affected by the way both companies interrelated. As a result, the main benefits of a supplier-client relationship are (Lamming, 1993; Dyer, 1996):

- A supplier can easily access partner's technology;
- Long-term competitive advantages are generated, e.g., greater market share, faster product development times, improved product quality and lower product costs;
- Short-term improvements are easily generated e.g., productivity increases, lower inventories and improved quality control;
- Lower research and development, production and distribution costs;
- Lower financial risks in joint investments;
- Long-term commitment is encouraged.

The concept of business networks comprise a set of intertwined relationships among firms (Håkansson & Johanson, 1992). As a consequence of those relationships, the network effect is more powerful than the sum of the effects of all dyadic relationships of the companies involved in the network. For the analysis of business networks it is necessary to consider actors, activities and resources, all of them interrelated throughout the network structure (Håkansson, 1982).

The basic structure of networks is composed of activities, actors and resources. For all purposes, actors perform activities and/or control resources. They may be individuals or firms, and may belong to different organizational levels. Actors are characterized by performing and controlling activities, developing relationships with several network actors. Actor may belong to stronger or weaker networks, in terms of relationships. Among the several actors of the business network there may be technical, knowledge-based, strategic, socio-economical or legal ties.

Resources are the means used by network actors to perform network activities, and the main reason for the activities to take place, regardless of their type. Resources are heterogeneous for the vast majority of network firms. Finally, activities are various possible ways to transform and/or use network resources. Activities take place when one or more actors combine, develop, exchange or create resources through the use of other resources. There are two types of activities: transformation and transfer activities. The former occur when resources undergo any change. The latter occur when the control of resources are transferred from one actor to another.

Collaborative new product development (CNPD) is an important competitive tool for business success (Griffin, 1997; Moreira, 2005a, 2005b), especially when there are collaborative relationships between companies throughout the value chain. These findings are in tune with the work of Deschamps and Nayak (1995) that argues that the CNDP is important in identifying consumer needs, satisfying customers and innovating products.

Dealing with the development of new products is somewhat controversial, since the outcomes can be analyzed from a product, project or firm perspective. Ernst (2002) mentions some methodological problems in assessing new product

development outcomes and features five key success factors capable of influencing those outcomes, namely: the development process, the organization of the new product development (NPD) process, the corporate culture, the top management commitment and performance and the new product development strategy.

Collaborative approaches have recently received increasing attention due to growing global competition and technological complexity (Roy, Sivakumar, & Wilkinson, 2004). However, when NPD is embedded in a collaborative approach, the traditional lack of relational perspective might be called into question since the competitiveness of the various companies in the value chain affects all actors differently, due to its nonlinear and interactive nature (Oke, Prajogo, & Jayaram, 2013; Henke & Zhan, 2010).

Moreira (2005a, 2005b) found that in the supplier-client relationship suppliers have been investing in improving their competitive position investing in cost reduction activities, product quality management and logistics activities, which is reflected the operations improvement. However, the issue in CNPD perspectives is on improving relational strategies of both firms as joint actions between producers and suppliers in order to increase mutual trust, commitment and information sharing.

A collaborative relationship will only take place when both partners jointly choose highly competitive and relational priorities. Thus, Moreira (2005a, 2005b) concludes that in this type of approach, the inter-organizational relationship embraces collaborative strategies that depend on a double dynamic involving the two actors in the value chain and the active involvement of the supplier, who must attempt to improve their position in CNPD process, in order to gain the credibility of their clients.

The main problem of inter-organizational relationships is the progressive integration of some key suppliers in the business model of the client, which implies a commitment between the parties involved and the implementation of collaborative approaches in which suppliers and clients complement their competitive advantages in the supply chain (Oke et al., 2013; Henke & Zhan, 2010; Schiele, 2006). Within this relational perspective, the strategic alignment of suppliers and clients in terms of innovation is very important (Oke et al., 2013).

Clearly, innovation and CNPD need to be understood as the outcome of a joint supplier-client relationship (Schiele, 2006) where:

- The supplier has the competences and capabilities to develop new products or to introduce changes on existing ones when working in close collaboration with its clients;
- The supplier is willing to share key technological information with its clients for the success of the supplier-client joint products/projects;
- The client is committed with its supplier to work on CNPD processes;
- The supplier and client have relational capabilities and are willing to support and improve each other in long-term cooperative NPD processes.

METHODOLOGICAL ASPECTS

In order to address the complexity of the research question, we chose a descriptive approach based on a case study, as proposed by Yin (1984). The case study methodology is an empirical approach that investigates a contemporary phenomenon within its real-life context; when the boundaries between the phenomenon and context are not clearly evident; and in which multiple sources of evidence are used (Yin, 1984). The case studies are a way to obtain knowledge about a complex topic and check the already investigated previously, being appropriate in investigating industrial networks due to the complexity and dynamism

that limit the application of positivist studies (Easton, Wilkinson & Georgieva, 1997). This form of research has been used over the years and the various disciplines and social scientists resort to this form of qualitative research to analyze real-world situations in order to obtain a basis for the application of ideas or theories.

Based on this assumption, it was important to find a case where it was possible to analyze the implementation of an internationalization strategy, taking as starting point the supplier-client relationships, the theory of networks, the resource-based view and the impact of R&D in NPD. This case study draws on a company from the technical textile industry which operates in the B2B market, namely in the automotive and footwear industry supply.

Due to confidentiality reasons, it is not possible to disclose the name of the company. As such, ALFA is going to be used through the text when referring to the firm. ALFA was founded in 1992 in the North of, Portugal and has competences in the production of technical textiles. The analysis of the case will generate knowledge about the organizational and technological profile of the company and especially, on the importance of its relationships, mainly on the automotive sector. The research question is related with how the supplier-client relationships of ALFA leveraged its internationalization process based on their R&D skills in NPD.

Following the methodology suggested by Yin (2004), collecting data on case studies must allow the "triangulation", i.e., to obtain data from multiple sources in order to establish evidence or prove facts. The investigation was based on semi-structured interviews. This allows a deep understanding of the company's evolution, skills and strategies adopted throughout time, furthermore, secondary data was collected from the company's webpage, newspaper articles and internal reports as complementary information. Three semi-structured interviews and a tour on the company's facilities were conducted. These interviews allowed the characterization of the relationships between the company and its clients, as well as an overview on the process of internationalization of ALFA. After the interviews, data and results were validated by the company. This case study aims to contribute to the knowledge on how the supplier-client relationships and NPD facilitate the process of internationalization of an SME through an empirical study.

CASE STUDY

Contextual Perspectives

The textile industry can be characterized by its complexity and high number of actors throughout the supply chain, ranging from the chemical industry, the recycling, fashion and the processing of textiles for nonconventional applications, i.e., the technical textiles (EURATEX, 2004) among others. A technical textile can be defined as textile fibers, materials and support materials based on technical rather than on aesthetical criteria, even though, in specific markets such as work wear or sports equipment, both criteria are used. Technical textiles have to meet a number of requirements such as lightness, resistance, reinforcement, filtration, conductivity, insulation, flexibility, absorption and so on.

The nature of the fibers, the choice of the manufacturing techniques and the finishing processes allow manufacturers to offer a wide range of textile solutions meeting mechanical or protective properties, suitable to the customer's specific needs. Thus, the technical definition is not related with the raw material, fibers or technology, but rather with the end-use of the product itself.

For further clarification, Messe Frankfurt, the world's leading trade fair of techtextiles, identified 12 majors markets: agrotech (agriculture, forestry, and fishing), buildtech (building and construction), clothtech (functional components of shoes and clothing), geotech (geotextiles and civil engineering), hometech (components of furniture, floor

coverings), indutech (filtration and other products used in industry), medtech (hygiene and medical), mobiltech (transport construction, equipment and furnishing), oekotech (environmental protection), packtech (packaging and storage), protech (personal and property protection), sporttech (sports and leisure). As regards to market volumes, the mobiltech (14.5%), indutech (11.2%), hometech (17.3%) and clothtech (10.6%) have the higher market share respectively (European Economic and Social Committee, 2013).

According to EURATEX (2011), the market for textiles and clothing in Europe reached a turnover of 171.2 billion Euros due to its 187 000 businesses and employed near 1.8 million workers. Nevertheless, the average size of firms is still small, about 13 employees on textiles and 9 in clothing companies, reason why most of the trades are held within the European Union (EU) internal market (European Economic and Social Committee, 2013). The technical textiles industry in the EU represent about 30% of total turnover in textiles (excluding clothing), or 30 billion Euros, reaching greater market shares in some state members like Germany, Austria and France with 50%, 45% and 40% respectively (EURATEX, 2011). The countries with the largest volume of exports of technical textiles are Germany, Italy, France, the United Kingdom and Belgium, representing 60% of total EU exports (European Economic and Social Committee, 2013). Moreover, the countries whose technical textiles represent the largest share of its textile exports (excluding clothing) are Finland, Denmark, Sweden, Czech Republic and Hungary (European Economic and Social Committee, 2013). Between 2000 and 2010, the sector grew 22% (excluding the consumption of fiberglass). The technical textiles industry is however undergoing significant change due to the growing importance of new applications for health, sport, leisure and aviation. It also goes through a radical shift from traditional technologies (e.g., knitting, weaving, braiding) to newer ones (e.g., composites or nonwoven technologies).

In the Portuguese context, the textile industry generates a turnover of about 6.120 million euros (3.5% of European value) with about 7000 companies operating in all sub-sectors of the textile and clothing industry, mostly SMEs (ATP, 2010). Geographically, companies are located mainly in the northern region of Portugal and also in the Lisbon and Tejo Valley region (ATP, 2010). According to Merino and Neto (2008), the number of technical textile companies in Portugal is close to 70 and account for a turnover of 400 million Euros, corresponding to 6% of the production volume of textiles and clothing.

Firm Perspective

This case study focuses on ALFA's supplier-client relationships in the technical textiles for the automotive industry.

ALFA was founded with the purpose of producing textiles for footwear components. The company started with a foam gluing machine, seven employees and the processes of bonding for coatings and linings for footwear components. The 1990s were a period of challenges and opportunities for ALFA, as the textile and footwear industries in Portugal faced the shock of economic liberalization and the entry in the European market. The increase of the international competition led to an increase of unemployment.

Foreign direct investment (FDI) in Portugal in the 90s managed to attract important investments, namely the Autoeuropa Ford–Volkswagen factory in Palmela in 1995 and the reinvestment on General Motors (GM) in Azambuja. Furthermore, public policy was able to develop and boost the supply chain for automotive components (Moreira & Carvalho, 2012).

These two projects were largely responsible for the creation of a whole group of companies which supplied parts for engines, transmissions, brakes, electrical components, textiles for car interiors and therefore created opportunities for textile companies. At the same time, cars began

to have a higher incorporation of textiles such as carpets, door panels, pillars and ceilings. Most materials inside the car's cockpit needed to be glued with foam, the type of technology ALFA mastered and which could be used to stick coatings of textile materials for automotive components.

Although initially oriented towards the footwear industry, ALFA hereby was able to yield from the opportunities generated by the external environment. The industrial nature of the area where the company was settled and where important suppliers to the automotive sector were located, led ALFA to refocus on the supply of the automotive industry.

ALFA was geographically remote from the main Portuguese textile cluster; nevertheless, the company's facilities were nearby the largest footwear business networks, and especially, the automotive network. Thus, the company decides to grow strategically in those two industrial areas and focus their investments in technological innovation in order to increase their expertise and specialization level. ALFA takes advantage of its proximity to the automotive cluster to start supplying the so-called Tier 1 and Tier 2 companies, which in turn supply the big automotive Original Equipment Manufacturers (OEMs) throughout Europe.

In the early 2000s, the company starts its supplying activity to the automotive industry and begins a process of modernization of human capital and technological innovation to take on the new challenges demanded by the automotive supply chain. As a result of these new strategies, ALFA obtains the ISO9001 certification in 2004. In 2005, aiming to add production capacity for supplying the automotive industry, ALFA introduces new cutting technologies, allowing the production of other types of components such as door panels or similar products, rather than just bonding textiles. In 2006, ALFA starts its internationalization process by setting up a factory abroad. At the time, the company did not held the organizational structure and capacity resources to support a full-owned international activity; thus, a partnership with a company specialized in the production of car seat covers was established. This partnership was complementary since both companies produced for the automotive market, although in different positions in the supply chain. The success of this process led to the establishment of a new partnership in the same country in 2009.

Throughout time, ALFA has introduced several technological innovations processes such as hot melt, currently the most advanced technology in the field of lamination. Even though most of the investment done was focused on the automotive industry, the technology mastery paved the way for ALFA to diffuse it into other end products. As such, the pervasive effects of its inward generated knowledge have been used to deploy ALFA's competences in end products or adjacent industries, as is the case of childcare or clothing components. In 2011, the company had seven business units with industrial and commercial activities supplying not only the automotive industry, but also the railways, nautical, textiles and footwear retail industries. Clearly, the technology mastery paid off.

ALFA can be defined as a major player in the technical textiles for competitive markets and modern and urban lifestyles. Due to their laminating technologies like foaming, spraying and hot melt, complemented by cutting and sewing processes, ALFA is able to supply the automotive, footwear, child care and clothing industries. Currently, the automotive sector holds 83% of the company's total production, while the remaining sectors weight 17% of the ALFA's businesses. The company supplies coatings for headrests, seats, armrests, door panels, roofs, dashboards, materials for the gear panel and so on. Most of the ALFA's production still has the national market (69%) as geographical destination, although exports have been steadily increasing in the last years. Nowadays, besides its headquarters in Portugal where ALFA controls the processes of sales, cutting, sewing, laminating, design and R&D, ALFA also holds commercial activities in Spain, Germany, Turkey, a laminating plant in Romania and a logistic platform and laminating and cutting activities in Poland.

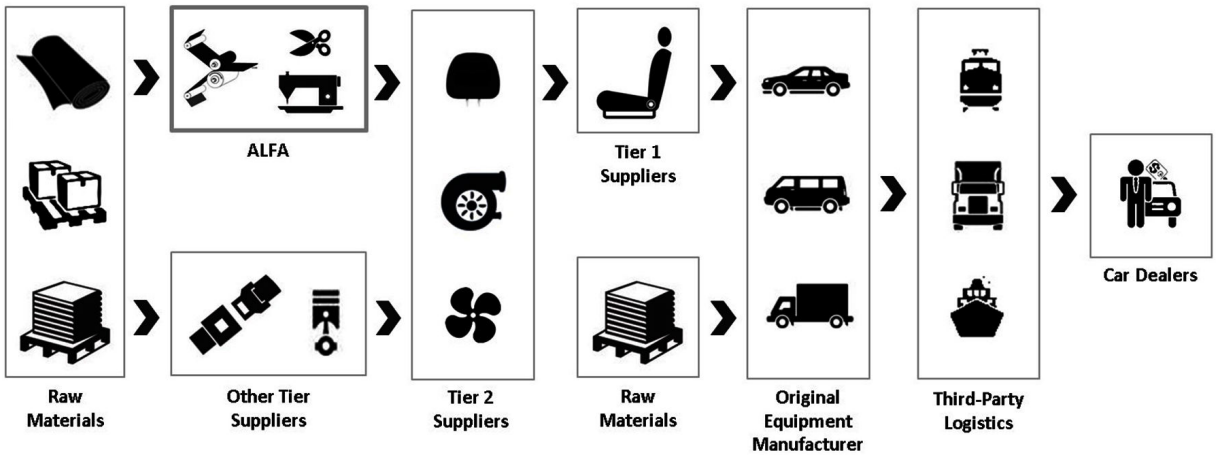
ALFA's strategic choices, as well as its commitment to supplying the automotive industry worked together as a game changer for the company to turn from an initially family business into an established, successful multinational company.

The technical textiles supply chain has a high degree of complexity. Briefly, the technical textile supply chain is based on the transformation of raw materials, fibers or yarns into textiles involving applications in the clothing market, household market and technical market. ALFA produces textiles for technical applications, i.e., technical textiles, controlling three processes and three sub-processes in the textile supply chain. The first process is the lamination through three sub processes: foaming, hot melt and spraying; the second and third processes are cutting and sewing, which can be seen as complementary to the first one. ALFA produces complex composites, i.e., a composite structure of two or more materials to improve the technical characteristics and product quality according to the applications they are intended to provide.

The technical textiles supply chain for the automotive industry follows a specific path. First, fibers are transformed into yarns by a spinning process and then into structures by a weaving, non-weaving or junction process, which is the first manufacturing stage. Then, the structures are laminated through one of the three sub processes controlled by ALFA, foaming, hot melt or spraying. A laminated fabric consists of two or more layers, usually a textile fabric bonded to foam or other component layers. After lamination, the structures are cut or sewn if required, allowing its modeling.

The automotive industry was one of the main responsible for major changes in the organization and optimization of the supply chain and its influence on the technical textiles were no exception. In addition to a strategy focused on technology and product design, textile producers were required to rapidly incorporate management practices such as just-in-time (JIT), total quality management (TQM), total productive maintenance, visual stream mapping or lean thinking, among others. As such, they needed to be not only product driven, but also process and organizational driven to remain competitive. This need was due to the fact that major OEMs have become global players in a highly competitive market, forcing their suppliers to follow the same trends.

Figure 1. Automotive supply chain and ALFA's positioning



The automotive supply chain can be split in three levels. In the first level is the so-called Tier 1, which directly supplies OEMs, working closely and in cooperation with them in the development and production of systems or modules. On the second level are designated Tier 2, which supply directly to Tier 1s but not directly to the OEMs. In the third level are the Other Tiers, which supply materials such as glass, aluminum, technical textiles directly to Tier 1s, Tier 2s and eventually OEMs. Figure 1 presents a simplified representation of the automotive supply chain and ALFA's position as Other Tier.

Within the automotive supply chain, ALFA is positioned as Other Tiers, supplying technical textiles for future modeling to Tier 1s and Tier 2s. For a better understanding, ALFA's main customer, called BETA, can be considered as Tier 1 or Tier 2, depending on the type of product supplied to OEMs. The initial relationship between ALFA and BETA on the automotive industry was mostly vertical.

ALFA's motivation towards the automotive industry was triggered by the geographical proximity to some of its clients, installed in the same region. Besides the geographical proximity in its relationship with BETA, the technological gap was also small, i.e., ALFA and BETA developed a close supplier-client relationship based on

1. The advantage resulting from the proximity of their facilities, and
2. The common share of strong technological culture and the relatively similar economic, political and legal contexts.

Despite the stimulating environment for a closer relationship between supplier and client, the highly vertical structure of the automotive supply chain kept a hierarchical relationship, i.e., ALFA held its position as contract manufacturer (CM). Within this business context, ALFA remained as a manufacturing unit supplying their clients based solely on the specifications provided by them, without any involvement in the product development, as this task was conducted by OEMs and Tier 1s (BETA) exclusively. A contract manufacturer relationship is based merely on the transaction and allows the client, BETA, to obtain greater cost savings, a higher specialization in the processes and a focus on their own core competences; nevertheless, this approach entails risks. For clients, this type of relationship results in a lack of control over the products, eventual problems with intellectual property (IP) and an inability to prevent their suppliers to leak some knowledge to competitors. Therefore, in order to decrease risks, it is vital both companies develop a trust-based relationship with each other.

ALFA's main obstacle was its position in the supply chain as Other Tier, operating only under specifications and without any kind of relationship or interaction with its client, BETA or the OEM regarding product design, NPD and materials choices and processes. ALFA's process of internationalization and growth only addressed the optimization of its manufacturing capacity and costs reduction. However, ALFA's strategic path was about to change.

First, it decides to innovate on production processes. The company makes a strong investment in the control of the various lamination processes, including the most advanced technology in the area, the hot melt. Additionally, it installs the cutting and sewing processes, which were previously performed in downstream activities of the value chain. This first step was crucial to ALFA as the control of a larger number of processes enabled the company to develop a new range of products, for both the automotive industry and the footwear and clothing industries, benefiting from the expertise and synergies among these products. This means that the applicability of the technical textile technologies had pervasive effects on product knowledge and technologies of several business areas. Second, ALFA makes a strong investment in R&D activities which alongside with a greater control on the number of processes, allows the

company to offer other kinds of products and most importantly, with distinctive features from those of competition. These two steps increased ALFA competitiveness to continue providing its customers due to increased manufacturing capabilities, and also to propose new products to its clients resulting from its process enhanced competences and its novel R&D capabilities.

This is an important step in the ALFA-BETA supplier-client relationship, since it is no longer based on a basic supplying under the conjecture that ALFA manufactured under BETA's specification. Due to some of its enhanced process competences and its innovation capabilities, ALFA is now able to design and develop new products and solutions, thus adding an important upstream component to its relationship with BETA, changing its nature. Clearly, the relationship between ALFA and BETA progresses from a transactional perspective into a relational one. The supplier-client relationship in the supply chain between ALFA and BETA is not only based on an incremental innovation perspective from ALFA's point of view due to its upgraded capacity to develop new products and making upgrading changes on the existing portfolio, but also on ALFA's increased capacity to develop new solutions to BETA's demands. On the other hand, BETA witnessed ALFA's supplier relational capability and willingness to support and improve their innovation-based supplier-client relationship.

Third, in order to establish stronger relationships with their customers and create partnerships, ALFA develops a set of actions. According to ALFA's CEOs "in order to supply competitive markets, it is strategic for us to add value through technology and industrial flexibility, but also through the synergies between the capacity to innovate and the strategic alliances with customers and research centers". These actions are based on three pillars: new businesses, new ideas and new customers. Workshops with ALFA's clients and partners are undertaken in order to promote thematic discussions and identify new businesses. New partnerships with universities research centers are establish in order to challenge students to create customer oriented new ideas with industrial applications. Finally, a new communication approach is adopted to attract new customers. The outcome of the first two initiatives, i.e., the workshops with customers and partners together with ALFA's R&D department, processes control, innovation capabilities and the initiatives developed with universities research centers allowed ALFA to engage into CNPD with BETA.

ALFA and BETA's strategic behavior changed to a partnership-like relationship, they share knowledge and technology to co-operatively create innovative products and processes to support each other's competitive advantages. Moreover, ALFA is involved in early stages of new product development process, jointly with BETA and certain OEMs, in what concerns to technical textiles incorporated in door panels, head rests, armrests, roofs, dashboard and ceilings. As a consequence, ALFA evolved from a passive player perspective producing according to specifications to a new one in which develops new products and solutions. Finally, it managed to evolve to a major player perspective developing brand new solutions since the concept/design state, working in partnership with BETA.

On the other hand, BETA also made important competitive moves in the supply chain. In its relationship with ALFA it managed to closely work in earlier stages of new product development process, which not only led to a relational perspective, but also, and perhaps more importantly, to a closer relationship with its OEM client. Working together with ALFA was very fruitful for BETA as it managed to keep abreast of advanced technological knowledge of technical textiles. Moreover, this good relationship sparked a virtuous cycle upstream in the supply chain with ALFA, which led to faster new product development cycles, cheaper new product development costs and faster time to market. Furthermore, it was this advantage that led BETA to a closer relationship which its OEM client, which encompassed BETA an important competitive advantage.

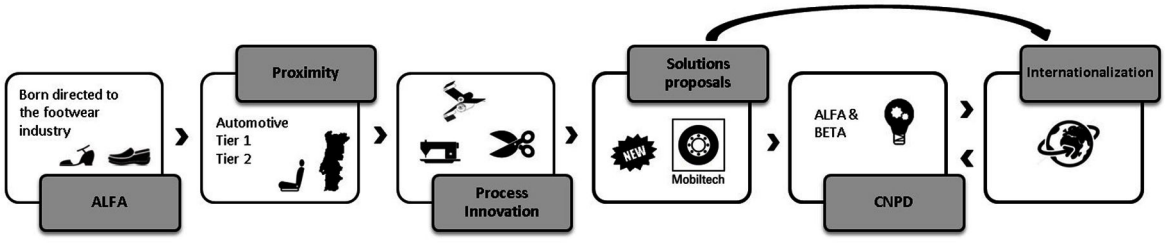
It is worth mentioning that what started as technological innovation strategy for ALFA, progressed into a relational supplier-client perspective between ALFA and BETA. As OEMs increased demands put pressure on BETA's performance, it was a deeper and earlier new product development involvement that sparked ALFA-BETA relationships. Moreover it was ALFA-BETA successful relationships that managed to pave the way so that BETA can improve its relationship with its OEMs clients. As can be seen, the strategic alignment in the supply chain is an important element to properly manage the supply chain. Innovation-based partnerships can play a key role in those partnerships, creating a more intertwined and interdependent relationship where win-win relationships can work for all players involved.

ALFA's new positioning is no longer one of a subcontracted supplier, but one of a business partner, able to participate in NPD processes and providing innovative solutions to its customers. In a CNPD and B2B context where ALFA and BETA now act as partners, trust and commitment play a key role for the relationship to succeed. Trust can be understood as the belief that the other party will behave in the benefit of joint interests, while commitment is the investment or desire to continue in a certain relationship. It is obvious that to reach a win-win relational perspective it must be based on trust in which adversarial, transactional perspectives must be abandoned. In such a way, long-term perspectives must be deployed superseding short-term, transactional approaches. For that to occur, suppliers and clients need to work together based on trust and showing natural commitment in the relationship. If they fail to do that, both will fall in a win-lose relationship, where none of the parties will be dissatisfied.

The abovementioned factors, i.e., the geographical and technological proximity to the customer, the focus and control over more processes, the investment in R&D activities as well as the development of new solutions to its customers allowed ALFA to change the vertical nature of the relationship into a relational, where all players win. The situation described and the decisions taken by ALFA's management allowed the company to build trust and commitment based relationships where the company is seen as a business partner, having the opportunity to enter in the development of new products early on not only due to their skills, but mainly due to the relationships with their customers. Moreover, its reinforced relational perspective with BETA underpinned a new strategic alignment between BETA and its OEM clients. Figure 2 offers a schematic overview of the stages underwent by ALFA towards its internationalization.

In the automotive industry, ALFA still holds relationships with Tier 1 and Tier 2s customers; however, new opportunities have been created for the company in the technical textile mobiltech market, namely the development of new products for OEMs in the railway, nautical and aeronautic sectors.

Figure 2. ALFA's development stages towards internationalization



In the ALFA case, the relation between internationalization and technological development can be approached according to two perspectives. The first is related with the company strategic choice to deepen its technology mastery and to internationalize through partnerships with other companies. The second is related with the relational strategy throughout the value chain. The first strategic option of the company to further develop their technological skills in technical textiles and not in greenfield investments abroad was a strategic commitment of the company, which had long-term consequences as it allowed ALFA to deepen its technological specialization first and market diversification later, supplying particularly the following industries: automotive, railway, nautical and footwear textiles. The tradeoff was positive for ALFA, had it invested in industrial facilities abroad, it would have focused on production/industrial processes to succeed and not on technical textiles technology-based products.

The second strategic option, regarding the strengthening of the relationship with BETA in the value chain is also important and perhaps more crucial, as not only strengthened the collaborative strategy based on a new product development capabilities, but also paved the way for a deeper downstream relational strategy in the supply chain between BETA and its OEM clients. As a consequence, ALFA has benefitted from the strategic alignment in the supply chain as it is now more involved than ever with BETA's new demands from their OEM clients. As a result from its new product development technical success in the automotive chain, ALFA has managed to focus, on one hand, on its strong technical product innovation capabilities to open new windows of opportunities based on the context with international clients it has been working with, and on the other hand, as new products are developed and industrialized, ALFA has managed to specialize its production in Portugal as well as abroad according to market requirements and ALFA's production capacities in close cooperation with their international partners abroad.

ALFA was set up oriented to supplying the footwear industry. However, as a result of public investment policies in the 90s and the geographical proximity with some companies in the automotive industry, it became an integral part of its supply chain. The company was thus obliged to adopt the standard procedures in the industry, nevertheless, it was its manufacturing skills, its ability to deploy new technological processes and the establishment of relationships based on trust and commitment that allowed the company to be seen as a strategic partner. Those changes were essential for the survival of a small player that without these skills would hardly remain competitive.

ALFA's position is synthesized in Table 2.

CONCLUSION

The internationalization process of firms has been explained over time using various theories, from the "old" cost advantage from Adam Smith, to the more traditional approaches like the Porter's diamond (Porter, 1989), the eclectic paradigm (Dunning, 1980), the Uppsala model, and sometimes a combination of several theories. According to Crick and Spence (2005), a single theory is not sufficient to explain the process of internationalization and strategies adopted by a company. Based on this perspective and in other theories used to justify some of the dimensions of an internationalization process, this chapter has focused on the theory of networks, the RBV and CNPD to describe the internationalization of a company in the technical textiles industry.

Awuah, Gebrekidan and Osarenkhoe (2011) argue that the internationalization process occurs in an interactive environment that is established by a network of companies that include local and external actors. The interaction of these actors in networks can help companies acquire activities, resources and the information necessary to engage in internationalization processes (Awuah et al., 2011).

Table 2. Synthesis of the case study

	ALFA
Number of employees	240 employees.
Type of products for the automotive sector	Technical textiles for assembly in the headrest, seat, armrest, door panel, pillar, headliner, sun visor, instrument panel, gear shift gaiter.
Type of products for the other sectors	Technical textiles for footwear, childcare and clothing industries.
Certifications granted	ISO9001 ISO/TS 16949
Exports (%)	31% (2012)
International profile	Multinational company.
International mode of entry	Strategic alliance.
Trust	High level of trust with main clients in the automotive supply chain.
Commitment	High level of commitment with clients based on relational, long-term relationships built basically on strong technological innovation.
Importance of network	Very important. Networks allowed the company to strategically focus on the automotive industry. CNPD activities with clients led to alignment strategies in downstream activities in the value chain. Internationalization process initiated through a strategic alliance. International markets and sites are fed through products developed locally
Main resources	Human capital, factories, R&D department.
Main activities	Laminating processes, foaming, hot melt and spraying, cutting and sewing.
Influence of the client in the market selection	High. The client and the automotive industry have a strong influence on the market choice due to the strong pressures OEMs exert on its suppliers in order to maximize efficiency throughout the supply chain. Near 83% of sales volume is supplied to the automotive industry.
Product development	On an initial stage ALFA operated as CM only. Due to its process innovation, R&D investment and CNPD, the company is now able to originally design and manufacture (ODM) and propose products to its clients, being able to participate in new product developments in the concept/design stage.
Factors that strengthen the relationship	Geographic proximity and close technological distance with its main clients. Long-term relationships. Strong R&D and CNPD activities increased the level of strength, trust and commitment between the company and its clients.
Internationalization future perspective	Continue the internationalization pattern in order to meet the automotive supply chain demands. Internationalization based on opportunities from OEMs contacts. Deploy new international markets in the mobiltech market, i.e., aeronautics, nautical and railway, benefiting from a technology diversification strategy. Internationalization based on other market opportunities in technical textiles major markets as own brand/exports.

A company cannot be understood as an "island" or an isolated entity; instead, it should be seen as part of a whole and integrated in a network of industrial relations. The network theory draws the attention to the importance of the interfaces that a company develops through business relationships. Håkansson and Snehota (2006) claim this view has consequences for the strategy and the management process of a business.

The traditional strategy paradigm assumes organizations as separate entities investing in resources in order to gain market position. Instead, the network approach is based on the assumption that organizations are connected in networks where resources and information flow among actors, making organizations simultaneously cooperative and competitive in a relationship that goes beyond

a mere legal or contractual link. According to Gulati, Nohria and Zaheer (2000) the outcomes of organizations are determined by their unique features but also by the network structure to which they belong.

The internationalization model based on networks developed by Johanson and Mattsson (1998) seeks to explain the internationalization process of a company taking into account its environment as a network or market. Based on this model, organizations are embedded in a network and its internationalization process is influenced by it.

In the examined case study, ALFA changed from its initial orientation towards the footwear to the automotive industry due to geographic and technological proximity with companies that were part of the automotive supply chain. According to Johanson and Mattsson (1988) typology, ALFA could be understood as a Late Starter. Positioning is defined based on two main elements, the degree of internationalization of a company, and the degree of internationalization of the market (Johanson & Mattsson, 1988). ALFA began as a family and SME company without any experience or international activity, joining a network with a high degree of internationalization where its competitors and its partners were already established at an international level. Johanson and Mattsson (1988) warn for the weakened market position of firms in these situations compared to its competitors and the difficulty of building a network. However, it must be noted that the typology proposed by Johanson and Mattsson (1988) considers the level of internationalization as a variable and ALFA opted for a technology strategy that led to a better relationship value chain. Clearly, ALFA invested first on technological process innovation and later on R&D as a way to establish itself in its network and more importantly, to develop strong relationships based on trust and commitment with their customers. Moreover, as ALFA is strongly focused in supplying the automotive industry, its international market percentages are marginal as its main client is a multinational firm (BETA) with its foothold in Portugal. As a consequence, ALFA's international accounts are overshadowed by its concentration in the auto industry.

The RBV relies on explaining performance differences between firms based on the value created by the uniqueness of resources and capabilities which allow a competitive advantage and above average returns. The fundamental principle of the RBV is the identification of the company's key resources. In order for resources to be sustainable and encompass a long-term competitive advantage, they must provide value, be rare, inimitable and difficult to replace. Makadok (2001) focuses on the distinction between capabilities and resources by defining the first as "a special type of resource, specifically an organizationally embedded non-transferable firm-specific resource whose purpose is to improve the productivity of the other resources possessed by the firm". Thus, the concept of resources goes beyond the ones controlled by a firm into the unique and non-imitable way an organization is able to manage those resources to create value.

Through its investment in state of the art lamination processes, together with the complementary cutting and sewing activities, ALFA was able to develop a greater manufacturing control and to offer a greater value to its customers. Nevertheless, it was its focus on intangible resources as R&D that allowed ALFA to offer its clients innovative products and change its paradigm from a "mere" supplier into a strategic partner with competences to innovate and to participate in new product development processes.

This interaction process led to the development of trust and commitment in the supplier-client relationship since the efforts developed by ALFA clearly indicated the company wanted to be a partner with its client. The new positioning allowed ALFA to engage in CNPD with BETA, being an important determinant in the internationalization process. According to Gulati et al. (2000), networks suffer changes over time because of the internal context of the network but also due to exogenous factors.

A network can be seen as a structure in permanent change, in which the actors, the resources and the activities dynamically related with each other as actors try to gain power and change its positioning throughout the value chain through the acquisition of new resources of interacting with other actors. In our days, very hierarchical supplying networks based solely on transactions might not represent the most efficient form of organization. Thus, the better the relationships between the various actors, the greater the competitive advantage for the companies, and the higher the difficulties for competitors to replicate those resources and relationships. As Moreira (2009b) demonstrated, the supplier-client relationships generate results only when the relationships are established in an atmosphere of cooperation, trust and interdependence as in the case study discussed.

Finally, it is possible to conclude that if supplier-client relationships are important in leveraging the internationalization processes, technology-based strategies are important vehicles for firms to deploy their strategies. Being part of a network is not an easy task in globally competitive markets as is the case of the automotive industry. Moreover, CNPD play an important role in industrial firms as networks. In the abovementioned case, it is possible to conclude that CNPD processes not only leveraged ALFA's relationship in the value chain with BETA, but also opened a new window of opportunity in international networks and markets.

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KEY TERMS AND DEFINITIONS

B2B: Commercial transactions between two or more companies.

Collaborative New Product Development: A process where two or more companies engage in a collaborative strategy to bring new products to the market. Normally, only firms that engage in trust-based relationships are able and willing to get involved in collaborative new product development.

Commitment: Investment and effort spent in order to continue on a relationship.

Industrial Networks: A cluster of relationships between two or more companies. Normally, they require actors, to perform activities in which resources might be collaboratively used.

Internationalization: A strategy in which a company performs business activities outside its domestic market. Following a networked perspective, the internationalization process occurs in interactive environments where a well-established network of companies includes local and external actors searching win-win relationships.

Supplier-Client Relationships: Business relationship in which one company is involved in a business relationship in the supply chain with other firm, involving the provision of raw materials, components, spare parts, products or services. Normally this type of relationship is celebrated between two firms to abandon adversarial, transaction-based involvements and to embrace on a partnership-like involvement.

Supply Chain: The supply chain involves all the companies or organizations, people and resources involving management of upstream and downstream value-added flows of materials, final goods, and related information among suppliers, company, resellers, and final consumers.

Technical Textiles: Textiles whose purpose is mainly functional rather than aesthetic.

Trust: The belief that in an existing relationship an actor will act and behave in the benefit of both parties.