Busta n. 1 (non estratta)

DANIELI Case Study

a) Theory

A.1 Types of International Sourcing (IS)

The internationalisation of procurement activities in China is a growing and complex phenomenon. There are three main types of sourcing that can be available:

- ‘‘Sourcing intermediated’’ by a third party at the purchaser-supplier interface;
- ‘‘Direct sourcing’’ in its different forms: with or without operational collaboration between the parties and with or without shareholding;
- ‘‘Sourcing imposed’’ by the need to legitimate the presence of an enterprise in China.

These types of sourcing differ with regard to several characteristics: the presence of governmental limitations regarding vendor selection, the presence and kinds of intermediation possible (third parties), the content of the customer-supplier interactions, the establishment of equity agreements between Western and Eastern parties and so forth.

The different types of sourcing may also coexist in one company because, for instance, a company can directly source certain products and rely on intermediaries for others.

“Imposed sourcing”, which is the main topic of this case study, represents just one of the possible conditions used by governments to tie up access to the local market. Other solutions adopted include a large variety of countertrade obligations, such as bartering, counter-purchasing and buy-back requirements. These types of obligations will be briefly described in this case study together with the main types of sourcing already mentioned.

Intermediated International Sourcing

Intermediated international sourcing refers to the presence of a third party between the two ends of a transaction (the supplier and buyer ends). There are two types of intermediation as follows:

- Traditional intermediation. In this case, the intermediary is an international wholesaler who buys products on the Chinese market and resells them in other markets. The profile of the intermediary is essentially commercial, even though the type of service provided requires the capacity to appropriately manage all of the variables connected to the international transfer of goods (logistics, customs obligations, etc.). The Western buyer is not directly visible, and consequently, that buyer’s interaction with the Eastern supplier is purely indirect. The goods purchased are usually standard. In fact, it is not advisable to use this form of supply to buy specific or complex products because there is no steady, direct relationship between the parties. The possibility of providing technical explanations or asking for a project and productive changes is indeed complicated by the intermediary’s typically playing a commercial role.

- International outsourcing of services: In this case, the intermediary provides a set of services: an analysis of the Chinese offering, the identification of potential suppliers, the definition of the agreement, quality checks, the screening of international carriers, and supplier monitoring.

Thanks to their experience and base of operations in the Chinese market, such intermediaries can select the most suitable information channels and screen supply opportunities. They can successfully manage the trading phase by controlling any opportunistic behaviour on the part of the Chinese party and, at the same time, clarify the advantages of the supply relationship.

As a matter of fact, the Western operator exploring the Chinese market is often bewildered by the various offers available, the surplus of information available and the unusual contractual style at play.

The use of outsourcing is linked to company size. SMEs rarely have suitable resources and expertise to autonomously manage a sourcing channel in China. In many respects, the intermediary acts as an international purchasing office for these companies.

Intermediation can be an effective and relatively safe way to test the Chinese market before deciding on direct sourcing.

The main disadvantages of this kind of sourcing are the intermediation costs and—as far as the traditional one is concerned—the difficulty (in some cases the impossibility) of interacting directly with the sources.

Direct Sourcing (DS)

Direct sourcing refers to sourcing with neither intermediation nor constraints connected with one's choice of supplier. On the basis of empirical evidence, it is possible to isolate these forms of direct sourcing:

- **Traditional DS**. The supply relationship occurs when there are no operational forms of integration between the parties. The western buyer turns to a local contact based on an approach that we could call 'pure market': the code is standard—i.e., it is available in the catalogue without specific adjustments (limited switching costs). Therefore, the risk of unreliability of supplies is limited. There are no particular quality control problems because these are repeated orders for standardised items. They are often carried out or completed by the buying plant. The western firm does not intend to guarantee long-term relationships: the relative ease of finding new sources suggests choosing the most favourable opportunity from time to time in the selected market or in other economical environments.
- **Collaborative DS**. In this case, the relationship provides for an operative 'collaboration' between the parties. There is abundant literature on forms and advantages of buyer–supplier collaboration. Briefly, this collaboration develops in the realm of design and production logistics and aims to join product development with better material-flow synchronisation. The foundation of these synergies is the awareness that competition does not depend exclusively on a single enterprise but rather relies on the whole chain or network in which it is placed. The supply unit, even if located offshore, becomes part of a production system that is internationally distributed but integrated and interconnected.

  These forms of collaboration sometimes go hand in hand with equity agreements—i.e., forms of capital participation. Among the types of enterprise that can be established in China (joint ventures, wholly foreign-owned enterprises, foreign-invested companies limited by shareholdings and, since 2005, wholly foreign-owned foreign trading companies), the solutions that are usually adopted are those of the joint venture and the wholly owned foreign enterprise (WOFE). In particular, WOFE has recently become the prevalent choice of foreign investors (China's Ministry of Foreign Trade & Economic Cooperation, 2009).

A.2 Imposed sourcing

This term refers to sourcing imposed as a condition of the sale of Western products on the Chinese market. The selection of suppliers is bound (through a list of suppliers imposed on the Western enterprise) by the client and (local or central) government when the contract is submitted for signing.

The reason for this sourcing typology can be located in the process of radical transformation undergone in the Chinese industrial system during the last 20 years. State-owned enterprises have gradually given way to private ones that are rapidly pursuing technological, organisational and managerial improvements that will allow them to work in a market economy regime. To promote a gradual transition, the Chinese state (or local administration) requires imposed sourcing in some ‘‘strategic’’ industries (usually connected to high-tech and engineer-to-order products). Moreover, ‘‘imposed sourcing’’ has the favourable effect (for the Chinese industrial system) of transferring know-how from leading Western companies to Chinese ones characterised by a technological and organisational profile that was anything but acceptable when they exited from the state regime. The almost 20-year-long systematic application of these obligations has enabled China to acquire key competences in some industries and, at the same time, improve the professional skills of its local labour force.

There are several important aspects of imposed sourcing. First of all, a buyer is required to have a diverse array of skills at a high level, including the following: negotiation capability (during the phase of negotiation with the customer, which is critical for all of the identified sourcing types but in this case includes specific complexities because the formalisation level of the transaction is higher than in other sourcing types and because it is governed by strict local regulations and subject to institutional control), the ability to coordinate the local supply network, and the capacity to transfer know-how and technology to the supplier (Western companies responsible for the whole product/project realisation must enable ‘‘imposed’’ suppliers to perform the work assigned to them). The latter activity is particularly critical in China.

Moreover, in ‘‘imposed sourcing’’, the Western company can be required to play the important and complex role of main contractor, providing leadership and supervision to the entire international supply network, because the local (Chinese) level of technology and organisation is usually low. Production control and scheduling activity, as well as flow progress, may require the Western company to assign its own staff to the suppliers to monitor their quality and time.

Imposed sourcing can take the form of Local Content Requirements (LCRs) or Direct/Indirect Offset Local Sourcing (DOLS or IOLS).

Local Content Requirements (LCRs) are government policies that are used in developing countries to regulate foreign direct investment. LCRs determine that firms selling a good in a country (the *host country*) must procure a defined part of intermediate inputs locally. The share of imposed local inputs usually ranges from 15 to 100 per cent (Qiu, Tao, 2001). Developing countries commonly use these policies to regulate foreign direct investment. However, in recent years, LCRs have become popular in industrialised countries as well. Some significant examples of LCR policies come from the automotive industry. In the nineties, the percentage of local inputs reached 60 per cent in Malaysia and 90 per cent in China.

Offset Local Sourcing (DOLS/IOLS) is a generic term for a broad range of industrial and commercial compensation practices required to sell high-cost and high-visibility items. Nowadays, at least 50 countries officially require offset agreements in the defence (e.g., fighter aircraft, helicopters and generic defence procurements) and infrastructural (e.g., commercial aircraft, telecommunication systems, steel production plants etc.) sectors. A number of other countries are planning to adopt these practices as well. In many other nations, offset requirements are applied on a strictly informal basis. This allows us to increase the number of the countries that commonly adopt these kinds of policies to around 180.

A basic classification of these agreements identifies a ‘direct offset’ and an ‘indirect offset’ modality. The former includes all of the compensatory activities that provide outputs that are directly related

to the product being sold. The latter is comprised of activities that are not related to that type of production.
Offset agreements often involve relevant technology transfer activity. A local industry may not be qualified to provide the goods required to accomplish its obligations. In that event, the seller must provide suitable assistance to guarantee the transfer of all of the necessary technologies and skills. Technology transfer can be performed via co-production, licensed production, subcontractor production or the establishment of research and development departments in the host country.

A.3 Other types of countertrade

The main countertrade forms described in academic writing are “bartering” (with “single bartering”, “switch trading” and “clearing arrangements” as sub-typologies of this form), “buy-back”, “counter-purchasing” and “offset” counter-trading. Table 1 summarises the main features of each form according to the relevant literature.

Table 11-1:Major forms of counter-trading: main features (based on the literature review)

	CURRENCY	COMPENSATORY ACTIVITY	TYPICAL AGREEMENT DURATION	NUMBER OF ACTORS INVOLVED	SUB-TYPOLOGIES
BARTERING	Typically not used	Purchase of products (not related to the primary transaction)	Short-term (a few weeks/months)	Typically two	Simple bartering Switch trading Clearing arrangements
BUYBACK (Industrial compensation)	Used	Purchase of products (related to the primary transaction)	Long-term (several years)	Typically two	-
COUNTERPUR. (Commercial compensation)	Used	Purchase of products (not related to the primary transaction)	Short-term (a few months/years)	Typically two	Advance purchase
OFFSET	Used	Activities that do not concern just the purchase of products	Long-term (several years)	From few units to several	-

Bartering typically involves short-term product exchanges without the use of money (Marin & Schnitzer, 2002). This is the only countertrade form that (without requiring the use of money) could solve problems related to the unavailability of foreign currency. Mutual needs regarding products

and services (with the same value) for both parties and a short timeline for the arrangement are amongst the characteristics that have limited the use of this solution during the last few decades.
Conversely, the other main forms of countertrade agreements ("buyback", "counter-purchasing", and "offset" agreements) have experienced expansion over time (US Department of Commerce, 2007).
In **buyback** agreements (which often concern turnkey contracts), the seller accepts that it must buy those of the customer's products that are produced at the plant or using the technology that it has supplied (Camino & Cardone, 1998; Mirus & Yeung, 1986). The link between the primary transaction (i.e., the plant) and the secondary one (i.e., the products produced by the plant) constitutes an important guarantee to the purchaser (Hennart & Anderson, 1993; Lecraw, 1989) that decreases the total transaction costs (Hennart, 1990).
Counter-purchasing differs from the previous methods because the products exchanged in the secondary transaction are not related to those associated with the primary one but are connected to other forms of production (Hennart & Anderson, 1993).
Finally, in offset agreements, the impositions on the seller consist of not only purchasing obligations (Table 1) but also various other compensatory activities (Hennart, 1989, 1990). This solution, originally applied almost exclusively in the defence sector, is nowadays widespread in non-military supplies as well and in agreements between private organisations. Offset arrangements frequently include government proposals (although they are not necessarily implemented by governments) that cover wide (sometimes social or environmental) policy objectives (Al-Suwaidi, 1993).
Given the secrecy surrounding counter-trading, it is quite difficult to evaluate its true economic relevance (Erridge & Zhabykenov, 1998; Lecraw, 1989; Liesch & Palia, 1997, 1999). The estimates provided in the literature are heterogeneous, ranging from 5% to 30% of the total value of international transactions (Forker, 1996; Hennart & Anderson, 1993). These estimates can give us a rough idea of the importance of the phenomenon.

b) The Case Study

B.1 Company profile

DANIELI is the worldwide leader in the design and construction of industrial systems for the iron and steel industry and for the non-ferrous metals sector. Founded in 1914, DANIELI began its engineering plant activity in 1955. Thanks to its acquisition of several firms, the company has achieved a worldwide leadership position in the construction and supply of systems for the production of steel.
The company's future strategy is to maintain its leadership position in the design and construction of *minimills* for 'long' and 'plan' products and to become the leading firm in furnace production.
The group is constituted by a number of divisions located in Italy, the Netherlands, Great Britain, Germany, Sweden, Thailand and the United States. The main centres are as follows:

- Buttrio, Italy (DANIELI headquarters),
- Olpe, Germany (DANIELI Fröhling),
- Smedjebacken, Sweden (DANIELI Morgårdshammar),
- Paris, France (DANIELI Rotelec),
- Pittsburgh, USA (DANIELI Corporation).
- Rayong, Thailand

Today, DANIELI exports nearly all of what it produces, employing approximately three thousand workers. The sales of the group for the year 2006 amounted to approximately two milliard Euros. High R&D investments are allowing DANIELI to strengthen its competitiveness in the global market.
To guarantee a high level of engineering reliability to its final customers, along with high quality levels and quick reaction times, the purchasing division of the company is continuously searching for qualified suppliers. DANIELI buys approximately nine hundred million euros worth of raw materials, components, equipments, auxiliary systems and services per year.
The firm's main supplying markets are Western Europe, Eastern Europe (mainly Czechoslovakia, Slovakia, Croatia, Slovenia and, occasionally, Romania and Ukraine), the USA, South America, and the Middle and Far East.
The firm purchases a wide variety of items from these countries, from components to complete system parts. The choice of international supply markets in this sector is dictated not only by cost considerations but also by possible contractual ties that link the sale of a product to the use of local supplies. Moreover, the offer is often more interesting if it is carried out (at least partially) thanks to the support of the local supply network (even if locally explicit ties are absent).
Approximately half of the system's total cost derives from the production of machines designed through DANIELI *know-how*. Of this 50%, 70% is made at the company facilities, with 30% is bought from international suppliers. The remaining 50% of the cost comes from the purchase of technical products, systems and services (e.g., motors, electric components, security systems, facilities and assembly). Thus, the purchasing function manages (on average) 65% of the total costs of a system.

B.2 Imposed Sourcing

As mentioned in section A.2, 'imposed sourcing' constraints may occur in several forms. The one tested by DANIELI can be compared with Direct Offset Local Sourcing (DOLS).
It frequently happens that the importer forces the Italian firm to purchase a certain portion of the components for the final product from local suppliers. Even if no formal offset contract is signed, under these circumstances, the firm is forced to solve problems that are extremely similar to those that emerge in the case of a real offset agreement. DANIELI is indeed obliged to configure a considerable part of its supply chain every time and to handle any problem related to this anomalous variability.
Sometimes these impositions are formalised as in the case of tender's documentations in India and Iran. In other contexts, such constraints arise from a verbal agreement between the parties. The analysis of the Chinese context is beyond a doubt a good starting point for understanding the main characteristics of this phenomenon. We will then proceed by analysing the presence of the Italian enterprise in the Chinese economic environment, after which we will describe the most important features of this practice.

The Chinese context. The sales of DANIELI in China represent approximately 20-25% of its turnover. The Chinese market is judged to be so "excellent" that among the fifty main orders carried out by DANIELI in 2002, twenty were in the *Far East*.
DANIELI began exploring the Chinese industrial context in 1979, and its first contract was signed in 1982. Since that year, the presence of the group in the Chinese market has grown without stopping: there have been one hundred fifty plans carried out by DANIELI in less than twenty years. This increasing trend in China is similar to that recorded for the whole group worldwide. In

fact, until the 1990s, the company worked almost exclusively in the market for “long products”. Its expansion into the segment for “plan products” has made DANIELI a worldwide-level company and at the same time allowed the firm to consolidate its presence in China.
The first purchases in China began in 1998 and are connected to the DANIELI supply of machinery with a low impact of the technology. The purchases were carried out in China for local customers. DANIELI begins to take the Chinese market into consideration, first of all for cost reasons (the average pay that Chinese skilled workers receive is lower than what Western ones are paid, amounting to perhaps 4,000 dollars per year) and then to test local productive capabilities.
The Chinese market is radically changing nowadays as strongly bureaucratic state companies, stimulated by the reforms that are transforming the country, are restructured.
The first supplies made by DANIELI in China were often disappointing, so the company had to rework some of the purchased items to adapt them to its standards. Besides the bureaucratic and state involvement in the local economic system, which sometimes allows the political system to “infiltrate” the firm management, another factor that encourages inefficiency exists in China: the local market is overfull with inner orders linked to events close at hand (Olympic Games of Beijing in 2008 and Shangai Expò in 2010).
Despite these limitations, DANIELI has continued its strategy of valorising production because China constitutes an important market for its actual and future business. This choice is supported by the progressive improvements that the Chinese suppliers have demonstrated from a qualitative point of view and the beneficial effects of the transfer of know-how by the European enterprises that have operated here for quite some time.
A rapid increase in the Chinese metallurgical sector has been recorded, with development rates decidedly higher than the average increase in the GDP. The gradual privatisation of the state companies operating in this sector has also multiplied the offer: if until a few years ago the government had assigned productions on the basis of economic planning, today customers can select local producers and stimulate competition among them.
The “imposed” use of local producers has always been systematically used by the Chinese government in “strategic sectors” like the metallurgical one. Local constructors therefore benefit from a protected market and from technology transfer coming from the most advanced western enterprises. At the same time, the Chinese government guarantees occupation locally.

Imposed local sourcing. The DOLS constraint is usually expressed as a percentage of the total cost of the plant. A certain portion of this obligation is accomplished by engaging local suppliers to conduct civil construction within the plant. The residual percentage is for various types of components. ‘Critic parts’, which require DANIELI’s exclusive technologies and know-how, are entirely produced in Italy and cannot be not included under the DOLS constraints.
The procedure used to fulfil the obligation entails the following phases:

1. The imposition of constraints. The customer specifies a list of possible local suppliers and the overall value of the components subject to DOLS constraints.

2. Task assignments. The customer empowers DANIELI to negotiate with local suppliers regarding the purchase of the components subject to DOLS conditions.

3. Negotiation. DANIELI negotiates directly with local suppliers. The final goal is to determine performance in terms of product quality, the price and the delivery time. The customer usually acknowledges a fee to DANIELI for the negotiation.

4. The purchase. The real purchase is formally accomplished by the final customer based on the conditions previously determined during the negotiation phase.

5. Performance monitoring and the settling of disputes. The overall responsibility for the plan involves intense activity on the part of DANIELI in supervising suppliers and monitoring their processes in depth. Consequently, DANIELI also holds the responsibility for quality control for the locally purchased components. The customer will have to settle any possible disputes with the suppliers.

In reference to the fifth step, it must be underlined that DANIELI entrusts all of its activity to its Chinese controllers. The Chinese staff is located near the suppliers and is coordinated by the representative office (RO). There are currently two ROs, one in Beijing (since 1983) and the other in Shanghai (since 2002). The Shanghai office was created to maintain a close and interactive relationship with the local operators in the area (the Chinese pole of the steel industry). The RO provides intensive assistance with sales, the management of orders and post-sales services.
Several possible rationales for imposing DOLS constraints come out from our empirical analysis, and there are a lot of differences depending on the geographic context we refer to. Among the most frequently adduced reasons we list the followings:

- Cost-driven motivations. The importer insists on having recourse to local suppliers because it hopes to obtain a considerable reduction in plant costs in this way.

- Political motivations. The imposed use of local suppliers is promoted by governments within strategic sectors to create a protected market for local manufacturers and to assure effective technology transfer from the most advanced foreign enterprises.

- Operational reasons. Based on customer necessity, the need arises to develop a local industrial network to obtain rapid access to after-sale service and assistance.

- Economic interests. The importer requires the purchase of components from local suppliers that he directly controls or from firms with whom he shares a certain economic interest.

B.2 Other types of countertrade

The analysis accomplished in collaboration with DANIELI executives allows one to identify a strong correlation between the use of compensatory agreements and some particular markets characterised by a widespread shortage of international currency. In past decades, the using of counter-trading techniques was definitely more frequent and occurred in many developing countries.
Although several studies (Mirus and Yeung, 1986; Hennart, 1989) have revealed a large variety of possible contexts for counter-trading, the anecdotal evidence collected during this study shows that compensatory agreements are primarily considered the way for clients to finance imports.

In the following paragraph, we will analyze in detail the implications of DANIELI for the counter-trading typology previously described.
The firm seems not to be involved in any bartering agreements. The large size of the transactions would necessary imply a huge quantity of counter-deliveries as payment for the exported plant. This would consequently cause serious problems in finding suitable markets for disposing of goods that are often unrelated to the firm's traditional economic environment.
The only example that showed deep similarities to a bartering agreement was a particular arrangement with an importer in Venezuela. In this situation, the Venezuelan government should have put at DANIELI's disposal a certain quantity of petroleum to guarantee suitable coverage in case the importer did not honour his payment obligations. In essence, the arrangement stated that DANIELI should have sold the turnkey plant in exchange for international currency. Therefore, if the importer had not been able to honour the payment, the Italian firms could have obtained a refund by taking possession of the oil reserve provided by the local government. Hence it is clear that if the importer hadn't been able to perform the monetary transaction, the arrangement would have become very close to traditional bartering: the Italian firm would sell a turnkey plant and accept petroleum as payment.
The agreement did not actually take place because of the impossibility of the Venezuelan government's providing such a guarantee in favour of a private operator. Consequently, DANIELI was forced to refuse the order.
If it is true that our investigation does not show the firm to be implicated in any counter-purchase contracts, but it is possible to detect a certain importance of arrangements strictly related to the buy-back method.
The situations that we refer to have occurred in the context of arrangements based on project finance modalities. Under these circumstances, the financing bank (also called the "project sponsor") usually asks DANIELI's client to sign an offtake agreement in advance. Based on this contract, the importer is forced to sell a part of the production that he will obtain with the purchased plant at a certain price and for a stated period (e.g., 5-10 years) to a predetermined third operator (usually an international trader). The bank's purpose is clearly to obtain greater guarantees regarding earnings from future sales. The creditor's attention is then shifted from the importer's general creditworthiness to the potential earnings of the investment. This entails a considerable advantage for the operators located in developing countries, which are well known because of their problems in obtaining credits.
As mentioned above, the dynamics of this situation closely resemble those involved in a buy-back agreement. The main difference can be found in the destination of counter-deliveries: the production obtained with the imported plant are not bought back by the exporter but instead are purchased by a third party. The similarities to buy-back are even more obvious if we consider that DANIELI is frequently forced by the project sponsor to take part in the research of the potential third party.
Nevertheless, we must specify that nowadays, the circumstances described are an exception to the rule. The positive trend in the steel market allowed operators to count on considerable economic availability, and consequently, they were able to make huge investments in traditional modalities (cash payment). A project finance solution combined with an offtake agreement can be an intensely complex arrangement to set up. Clients resort to this choice as a last resource when the lack of funds is an insurmountable obstacle. In the past, this kind of solution has been largely used in transactions with developing countries such as Egypt, Estonia and Bosnia.

Questions for students:

1. What are the peculiarities of “imposed” sourcing?
2. What are the critical activities?
3. What are the motivations for imposing these agreements?
4. One of the critical elements of DANIELI’s sourcing activity is quality control. Can you identify solutions for managing this critical activity?
5. What are the threats and opportunities associated with making countertrade agreements?

Busta n.2 (non estratta)

GREE Case Study

a) Theory

A.1 The choice of entry mode

Having decided to enter a foreign market, a multinational corporation (MNC) has to determine the appropriate mode for organizing its foreign business activities (Hill,C. W. L., P. Hwang and W. Kim, 1990). Firms entering foreign markets choose from different entry modes ranging from licensing and franchising, through exporting directly or through independent channels, to foreign direct investments (joint ventures, acquisitions, mergers, and wholly-owned new ventures) (Rasheed, 2005). Foreign market entry mode is defined as "an institutional arrangement that makes possible the entry of a company's products, technology, human skills, management, or other resources into a foreign country" (Root, 1987).There are several theory streams dealing with mode choice, the economic factors analysis, transaction cost analysis, the OLI model and behavioural theory:

- **Economic factors analysis**. Buckley & Casson(1981) theorized that the choice of entry mode depends on the demand and cost characteristics of each mode. In their model, the entry mode depends on the amount of fixed cost and variable cost associated with exporting or foreign production. The additional fixed costs involved in increasing home production to cater for exports are small. However, variable costs, including transportation costs and tariffs, will be high. Foreign production, by contrast, involves much larger fixed costs as it requires the acquisition of new production and distribution assets abroad. Variable costs, however, will be lower than for exporting because transportation and tariff costs are avoided. In these circumstances the most profitable mode will be determined by the level of demand. A low level of demand will not justify the fixed costs of foreign production, thus exporting will be optimal for small markets. Larger markets may justify the fixed costs required for foreign production. Buckley & Casson also suggested that firms will change entry mode over time if the foreign market grows. Firms will begin by exporting and switch to licensing and foreign production as market size increases.

- **Transaction cost analysis**. The dominant theory used to explain an MNE's establishment mode choice is transaction cost theory, which was proposed by Anderson and Gatignon (1986). The theory is based on transaction cost economics. Under the hypothesis that organizational structure and design are determined by minimizing transaction cost, they concluded that MNEs choose a specific mode of market entry which maximizes the long term risk-adjusted efficiency. The choice depends on four constructs that determine the optimal degree of control: transaction specific asset, external uncertainty, internal uncertainty, and free riding potential. Entry modes are assessed by the level of control. Wholly owned ventures, for example, are characterized by the highest level of control. Brouthers (2002) extended the TCA to institutional, cultural and transaction cost theory. He claimed that institutional factors refer to the conditions that undermine property rights and increase risks in exchange and that cultural factors tend to influence managerial costs and uncertainty evaluation in the target market. Through empirical

examination he concluded that firms which make their entry mode choice with this criterion are performing better than those which do not.

- **The OLI model**. The Ownership, Location and Internalization (OLI) theory was introduced by Dunning (1977). The OLI theory stated that entry mode decisions are determined by the composition of three sets of advantages as perceived by enterprises: a) Ownership advantages (i.e. advantages that are specific to the nature and the nationality of the owner), b) Internalization advantages (i.e. advantages arising from transferring ownership advantages across national boundaries within own the organization), and c) Location advantages (arising from the fact that different locations feature different resources, institutions and regulations affecting the revenue and the cost of production).The more OLI advantages a firm possesses the greater the propensity of adopting an entry mode with a high control level such as wholly owned venture. This model was updated by Dunning who argued that competitive advantages, market failure and collaboration, as well as dynamic environments should also be integrated into the model when decisions on international production are made (Dunning 1993, 1995, 1998, and 2000). The OLI model was widely applied to explain entry mode decisions.

- **Behavioural theory**. Uppsala School (Cavusgil, 1984; Johanson & Vahlne, 1990; Johanson & Wiedersheim-Paul, 1975) thought that the choice of entry mode depends on the enterprises' experience in international markets. They thought that enterprise will choose a gradually developed stage to avoid the uncertainty and reduce the operation risk. The knowledge of market is a very important force to pursue business opportunity and to internationalize, and an important way to reduce the uncertainty. This model posits that internationalization occurs in stages, commencing with irregular export activity. Businesses move from irregular exporting, through exporting via an independent agent, the use of a sales subsidiary to, eventually, full production in foreign markets. Progression through the stages is driven by experiential knowledge accumulation. Each stage calls for more commitment to international markets but enables firms to gain in knowledge, skill and confidence in foreign markets. Because the knowledge relates to the existing mode of operation, firms tend to move gradually, adopting new modes which make most use of past experience. After an enterprise has decided to invest abroad, they still have different choices, for example, they can choose licensing to a local manufacturer and build a local production facility. In the last circumstance, they should decide whether to acquire an existing one or to build a new facility. The behavioural theory approach emphasizes the decision maker's knowledge of particular markets and the perceptions, beliefs, opinions and attitudes born out of this knowledge (Erramilli & Rao, 1990). The more familiar the market, the more likely the firm will rely on its own resources to establish and operate the subsidiary. Firms with knowledge deficiencies, however, may try to acquire knowledge by teaming up with individuals and organizations that possess such knowledge. This means that they will show a greater tendency to license.

A.2 Location patterns and Determinants

When an enterprise decides to build a new foreign facility, it has to make the location choice. Vernon (1994) argued that "the location of most units of a multinational network, however, is reasonably compatible with their functions. Some are located as a result of straight forward least-cost calculations, aimed at minimizing the delivered cost of a product or service to a given market,

or the cost and quality of after-sale service in that market. In other cases, a subsidiary may be established in a particular location in order to take advantage of low-cost inputs such as labour or raw materials or unique inputs such as technology." Some researchers consider that location selection can be mainly summarized in four kinds: market seeker, resource seeker, production-efficiency seeker and technology or strategic asset seeker (Dunning, 1998):

- **Market seeker**. In virtually all cases, a necessary condition to establish a scale economy is that the market demand to be served is (or is expected to be) large enough for establishing an economic size plant. The size and growth of market have been found to be an important factor (Terpstra&Yu, 1988). Consequently, governments can influence location decisions by altering the demand conditions within their jurisdictions through taxation, industry regulation or the supply of infrastructure (Boddewyn & Brewer, 1994). In such cases, the motivations for market orientation are:

- *Jumping Trade Barriers*. Locating a plant in a foreign market is often motivated by a need to jump trade barriers to get access to the foreign market. As one example, Japanese automobile manufacturers in the 1980s substituted local production for imports in both the U. S. and Europe, because of actual and threatened import quotas. Still another example is foreign plants located in the north American Trade Area to meet 'local content' requirements and thereby benefit from reduced trade barriers available within the trade agreement area. It is a standard export contract that regulates rights and obligations of the respective parties with regard to the primary sale.

- *Enhancing cost competitiveness*. Lower delivered-to-the-customers cost savings can be achieved by locating in the market area, especially when transport costs are a significant component in the delivered-to-the-customers cost structure. Transport rates are usually based on both bulk and value of the transported product. This means that transport costs for finished product are generally greater than for the equivalent components. Also, tariffs are often lower on components than on finished products (Haigh,1989). Still another possibility for saving on transport costs is to purchase inputs from local suppliers (Eden, 1994).

- *Improved Customer Service*. Having a factory closer to both consumer and industrial markets can improve the company competitiveness by easily adapting products to the special characteristics of the local market and by providing better service and faster delivery.

- **Resource seeker**. Access to resources is the dominant factor in selecting the general area in minerals, forestry and agricultural processing industries. Just as Westney (1994) notes "the resource industries have their location logic." Such industries may have major savings in transport cost by locating near their source of resource inputs because of weight loss in processing. A substantial weight loss is also involved in processing other minerals, in producing newsprint from pulpwood, wine from gapes, cheese from milk, etc. In sugar beet refining, about 1/ 6 of the weight of sugar beets is retained in the extracted sugar (Bowersox, Donald J. 1978). In the case of agricultural products another reason for locating processing plants near the raw materials is the problem of perishable raw material.

- **Production-efficiency seeker**. Efficiency orientation pattern is also known as labour force orientation pattern. It can be characterized as follows: a) transport costs are low as a share of the product's value and, b) labour costs are relatively high as a share of total costs. Low transport cost means that the product can be delivered inexpensively to the market or as a component to another affiliated plant for further processing. And where low technology products, or selected stage of processing, can use or easily train low-skilled workers, a less developed country may be selected as the general area. It should be noted, however, that the criterion is not low wage but low labour costs per unit output. In other words, productivity is also an issue. Such products as shoes, apparel and certain electronic components fall into this pattern. Many developing countries set up export-processing zones to attract labour-oriented plants. Mexico, for example, has attracted a large amount of foreign direct investment through its Border Industry Program, which allows foreign firms to import components duty-free for further processing or assembly, charging export duties only on the value added when the finished products are exported.

- **Technology or strategic asset seeker**. Technology orientation enterprises often follow these steps: learning, set up research facilities, and then build their own production facilities in a foreign area. Herzog & Schlottmann (1991) reported that high technology firms made their location decision based on their ability to obtain and retain individuals with specific technical ability and engineering skills. And according to Peng(1995), technology learning explains much of the recent foreign direct investment in the U.S. As he documents, over the 1975-90 period European and Japanese MNEs have concentrated their U. S. foreign direct investments in those industries where the United States is technologically strong.

Every company may know what their main location determinant is. Those companies, however, should take other influencing factors into account. Buckley, Newbould, & Thurwell (1988) point to the importance of political stability and low country risk in location choice. Kim & Hwang(1992) emphasize the global strategic focus of MNEs. For example, a subsidiary may be established to act as a competitive scanning post in an otherwise unprofitable market or to check the cash flow of a potential global competitor. MacCarthy & WAtthirawong (2003) identified a comprehensive set of factors that may influence international location decisions: costs, infrastructure; labour characteristics; proximity to suppliers; proximity to markets/customers; proximity to parent company's facility; proximity to competition; quality of life; legal and regulatory framework; government and political factors; economic factors; social and cultural factors; characteristics of a specific location. Using a Delphi study, they reported the top five major factors that may strongly influence international location decisions generally were: costs, infrastructure, labour characteristics, government and political factors and economic factors. In the United Nations Conference on Trade and Development's World Investment Report 1998 (UNCTAD, 1998), it provided a multilateral framework to analyze host country determinants of Foreign Direct Investments (FDI) and divided the determinants into three groups: Policy framework for FDI, Economic determinants and Business facilitation. These determinants are presented in Table 1.1.
There are many host country factors involved in deciding where an FDI project should be located and it is often difficult to pinpoint the most decisive factor.
FDI policies consist of rules and regulations that are undertaken by foreign government aimed at governing the entry and operations of foreign investors, the standards of treatment accorded to them, and the functioning of the markets within which they operate. These policies can range from

outright prohibition of FDI entry to non-discrimination in the treatment of foreign and domestic firms -- and even preferential treatment of foreign firms

Table 1.1 Host Country Determinants of FDI

<table>
<tr><th colspan="5">HOST COUNTRY DETERMINANTS</th></tr>
<tr><th>I. Policy framework for FDI</th><th colspan="3">II. Economic determinants</th><th>III. Business facilitation</th></tr>
<tr><td rowspan="3">• economic, political and social stability
• rules regarding entry and operations
• standards of treatment of foreign affiliates
• policies on functioning and structure of markets (especially competition and M&A policies)
• international agreements on FDI
• privatization policy
• trade policy (tariffs and NTBs) and coherence of FDI and trade policies
• tax policy</td><td colspan="3">Type Of FDI classified by motives of TNCs</td><td rowspan="3">• investment promotion (including image building and investment-generating activities and investment-facilitation services)
• investment incentives
• hassle costs (related to corruption, administrative efficiency, etc.)
• social amenities (bilingual schools, quality of life, etc.)
• after-investment services</td></tr>
<tr><td>A. Market-seeking</td><td>B. Resource/ asset-seeking</td><td>C. Efficiency-seeking</td></tr>
<tr><td>• market size and per capita income
• market growth
• access to regional and global markets
•country-specific consumer preferences
• structure of markets</td><td>• raw materials
• low-cost unskilled labour
• skilled labour
• technological, innovatory and other created assets (e.g. brand names), including as embodied in individuals, firms and clusters
• physical infrastructure (ports, roads, power, telecommunication)</td><td>• investment promotion (including image building and investment-generating activities and investment-facilitation services)
• investment incentives
• hassle costs (related to corruption, administrative efficiency, etc.)
• social amenities (bilingual schools, quality of life, etc.)
• after-investment services</td></tr>
</table>

Source: UNCTAD (1998). World Investment Report 1998.

b) The Case Study

B.1 Company profile

GREE Electric Appliances, Inc. of Zhuhai, set up in 1991, is one of the largest specialized air conditioner enterprises that contain R&D, manufacture, sales and service in the world. From a small nameless window air conditioner factory with annual production of less than 20,000 units, Gree has now become a famous multinational enterprise with 4 manufacture bases in Zhuhai (China), Chongqing (China), Hefei (China) and Brazil, with a total of nearly 30,000 employees, annual production of air conditioners in excess of 20 million units, and annual production value of commercial air-conditioners (AC) in CNY of more than 5 billion (about US$ 645 million). Since 1995, Gree has had total sales of more than 50 million AC units and has earned nearly CNY 100 billion (about US$ 12.9 billion). In 2006, Gree produced in excess of 13 million units of household AC, and earned CNY 23.803 billion (about USD 3.06 billion), which made Gree the global sales leader for two consecutive years.

In 2007, Gree produced 16 million units, of which 10 million units were sold internally and the other 6 million units were exported. Gree has two different business modes: OEM (Original Equipment Manufacturing) and OBM (Original Brand Manufacturing). One-third of the exports were their OBM products. Gree's foreign markets are concentrated in America, Europe and Middle East; each of them captures 1/3 of its total foreign market. Fig.2.1 shows Gree's sales network.

Fig.2.1. Gree's sales network
Source: website of Gree (www.gree.com.cn)

Figure 2.2 and figure 2.3 below show Gree's annual overseas sales volume and its overseas sales percentage from 1999 to 2006.

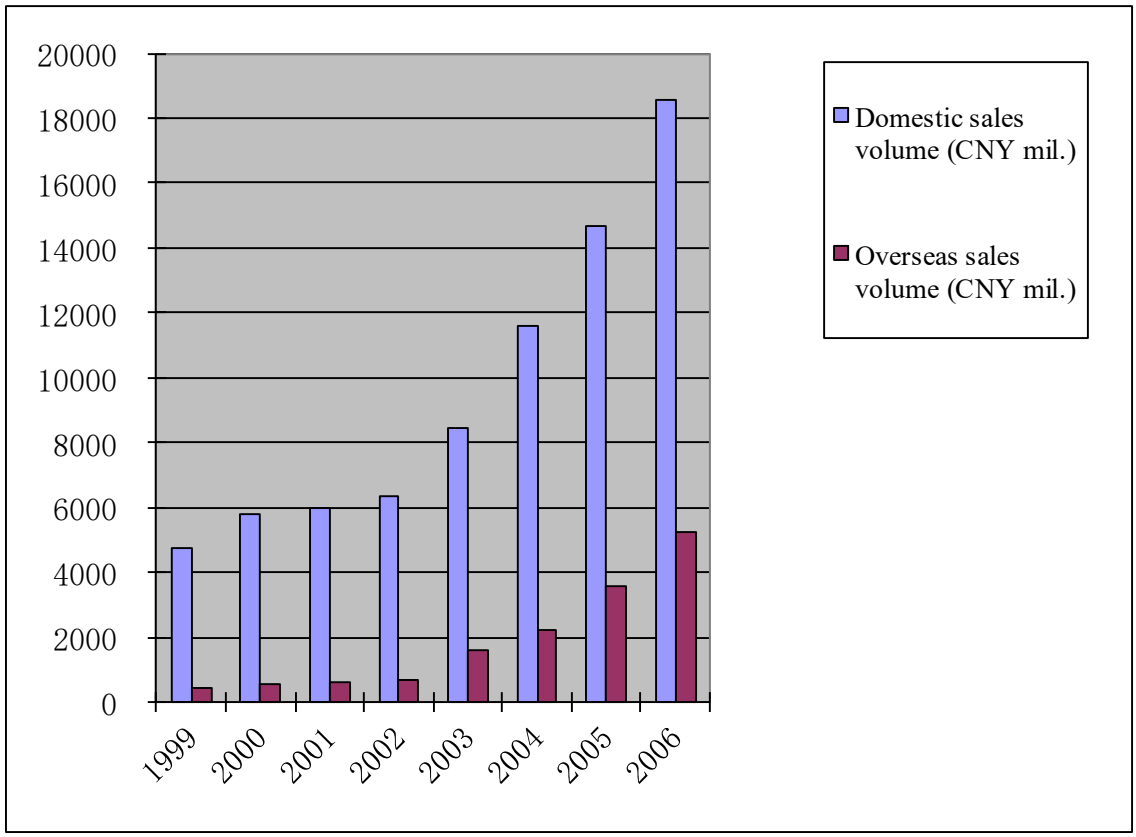

Figure 2.2. Gree's annual overseas sales volume (CNY mil.)
Source: website of Gree (www.gree.com.cn)

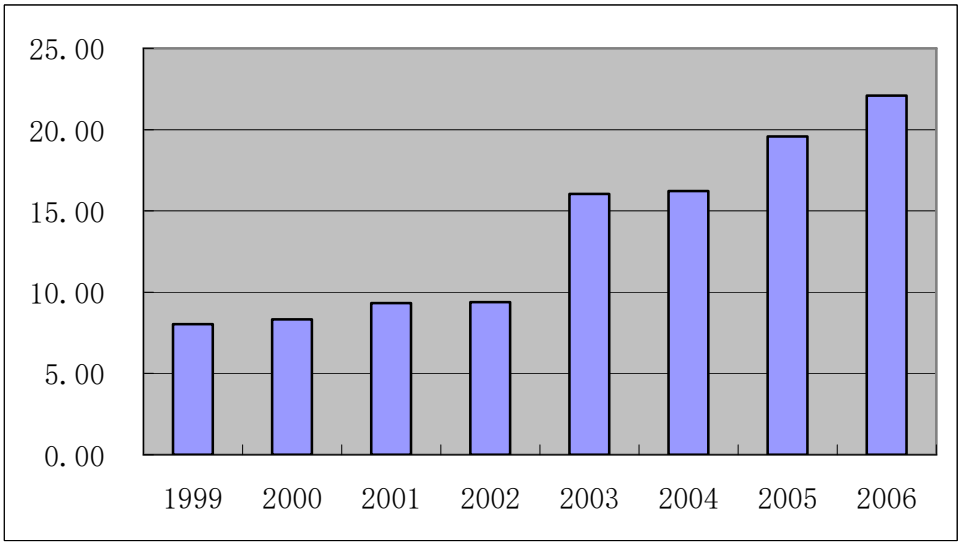

Figure 2.3 Gree's overseas sales percentage (%) on total sales
Source: website of Gree (www.gree.com.cn)

In 2000, Gree made the decision to invest 20 million US dollars to establish an AC production base which could produce 200,000 units each year. The base is located in a free trade port-Manaus in Brazilian Amazon state. Manaus is a city with more than 30 years' trade history. In August 2000, Gree signed the investment contract of "Gree Brazil Electric Equipment Co., Ltd.", and commissioned in June 6, 2001. Now, Gree Brazil reaches a capacity of 20,000 units per year, with which Gree Brazil became the second largest AC brand in Brazil. In 2004, Gree Brazil earned its first profit, CNY 25 million, and achieved 10 percent annual profit growth in three consecutive years. In 2004 and 2005, Gree Brazil won the highest level energy saving certification, "A-Class Energy Saving Labelling Certificate" and the award of "Stars of Saving" for two consecutive years in Brazil. Among the particpating international brands, there were only three brands that won the award. These were Gree (China), Carrier (US) and Whirlpool (US). In 2006, the company also received the prize of "Brazilian Most Satisfying Brand" from INBRAP. The prize is for promoting the outstanding and trustworthy brands in Brazilian market. Not only in Brazil, this prize also enjoys huge influence throughout South America. The previous awarded brands were mostly globally famous brands but never Chinese brands. However, from the public survey, Gree air conditions (ACs), with its steady management in the Brazilian market for 8 years and excellent reputation for quality and service, won over millions of consumers there.

B.2 Choice of Location: the case of Gree's Foreign Production

Gree air condition entered the Japanese market in 1993. In 1994, Gree got the CE certification of the EU, then entered the EU market. In October 1998, Gree air conditioning entered the Brazilian market, and sold 12,000 units in the first six months. In the next year, Gree sold about 100,000 units in Brazil. With these successes, Gree began to consider whether they should build a foreign production facility.

Brazil is the ninth economy in the world measured by Purchasing Power Parity with an adjusted GDP of US$ 1.4 trillion (World Bank data). In US dollars the 2003 GDP was 493 billion. With 180 million people, Brazil is the fifth country in population and one of the major expanding markets in the world. Its per capita income is above US$ 2,600. Adjusted by the purchasing power (about US$ 7,500), such income is higher than the average in Latin America, Eastern Europe and Central Asia. Brazil is a consumer driven society, the average consumption of durable goods is near the average of the major developing countries. Furthermore, the AC market demand was still upward. At that time, Brazilian market demand focused on window ACs, and it was too expensive for people to purchase.

Seasons in Brazil are the opposite of the Northern Hemisphere countries such as China, winter is June-September and summer November-March. Ninety percent of the country is within the tropical zone. On average, the temperature during summer ranges from 25 to 40°C (75~100°F), which is suitable for the sale of air conditioners. Further more, the complementary sales season can help Gree balance their production arrangements.
However, the Brazilian market was not a favourable market for Chinese export production. In order to protect its own industry, the Brazilian government increased its tariff to 17 percent for common products, and up to 20 percent on consumable dairy products. What's more, the law prescribed that the merchandise imported by ship must stipulate insurance with a Brazilian shipping insurance

company, and the insurance fee accounted for 1.5 percent of the total value which was far higher than the international average level. Finally, the total cost after tax was about 1.8~2 times the CIF (Cost Insurance and Freight) of the imported products.

At the same time, the Latin American continent is the farthest continent away from China. There were few shipping arrangements between Brazil and China, the general timetable is 45-60 days. Considering the time needed for customs declaration and shipping, the entire time of products from Zhuhai to the Brazilian market was 90 days. As the transport cycle was too long and there was uncertainty in the transportation process, when the air conditioners were shipped to the Brazilian market, the peak sales period had been missed, or the characteristic of local consumer demand had changed. All of these would ultimately affect Gree's market performance.

Actually, Brazil was a potential huge market; it accounts for three fifths of South American industrial production and integrates various economic groups, such as Mercosur. Brazil was an initiator of the South American Common Market-Mercosur which is the largest economic integration market in South America. The country's scientific and technological development, together with a dynamic and diversified industrial sector, is attractive to foreign enterprise: direct investment was in the region of US$ 20 billion/year on average, compared to US$ 2 billion/year last decade.

Brazil is one of the world's largest producers and exporters of raw and processed minerals. Apart from its major oil and gas reserves, the country's enormous mineral deposits include reserves of iron, bauxite, manganese, tin and gold. Brazil's manufacturing industry is the largest and most diverse in Latin America. In addition to traditional sectors, such as machine tools, electrical equipment and cars, several technologically advanced industries have developed during the past decade, two of the most significant of which are aircraft manufacturing and the production of telecommunications equipment.

To develop the western part, the Brazilian government carried a bill to build Manaus free port in 1957, and the port was enhanced to become a free trade area in 1967 (Fig. 2.4). Manaus Free Trade Area is the only integrated economic special district in Brazil, and even in all of Latin America. Although its highway and subway were not convenient, it had a wonderful sea-route that can serve 10,000 tons-class ships, and had the word largest floating dock.

Manaus free port had some different investment promotion policies. All the companies established in this area could get some incentive benefits. The Brazilian government conceded that all the products produced at Manus sold on the Brazilian market were free of industry tax, and that all the enterprises located at Manus would be free of income tax in the first ten years with 50 percent discounts in the next consecutive five years. What's more, the Manus government provided that all the foreign enterprises located in the city will be free of real estate tax, rubbish collection tax, local sanitation tax, maintenance tax for public properties and roads, and business license tax. Otherwise, if any investors purchased land for their factories, they just needed to pay a symbolic fee of 1 Brazilian real per square meter (about 1 US dollar at that time).
Considered the factors mentioned above, Gree made the decision to locate its first foreign production facility in Manaus in the Brazilian Amazon state.

Fig. 2.4 **Brazil and Manaus**
Source: Ministry of Commerce, The People's Republic of CHINA (http://english.mofcom.gov.cn/)

B.3 The problems Gree Brazil faced in its daily operation

Gree's success in founding its foreign facility in Brazil did not necessarily ensure success in foreign production. In its daily operation, Gree faced various problems such as the cultural conflict and administration puzzles.

As mentioned above, 90 percent of the country is within the tropical zone. The staff from China had to acclimatize to the weather first. Brazil is a Portuguese speaking country, but at that time none of those Chinese staff could speak Portuguese, so inconvenience emerged everywhere. "Language barriers and communication difficulties, the difficulties in getting used to Brazilian food, the tropical climate, totally different way of thinking, strong homesickness, and the annoying mosquitoes. After less than a month, I had had enough. But we all soldiered on," said Mr. Nie, a service manager who had worked in Brazil for six years. Thanks to the hard work of these Chinese employees, Gree Brazil started its production quickly.

Besides language differences, the Chinese managers also faced problems caused by cultural diversity. In Chinese enterprises, if it is necessary, managers can arrange workers to do different work as needed, but in Brazil it is unacceptable. For example, In Brazilian enterprises, if a production line was shut down due to materials shortage, the workers would be given a break, and not asked to clean the work shop like Chinese enterprises sometimes do. If the workers were obliged to do so, they had the right to sue their company. In the beginning, the Chinese managers

were inflexible about this problem, but at last they accepted and respected those customs. These behaviours helped Gree Brazil obtain the best production efficiency.

Corruption is a major obstacle to social development. Unfortunately, some Brazilian local government departments were bureaucratic and a little corrupt. In Gree Brazil's start-up period, Gree Brazil was troubled by this situation occasionally. For example, Gree Brazil needed a lot of air conditioner parts imported from China and sometimes they would make mistakes, for example, that kind of components was part A, but the packaging was written Part B mistakenly. This case was completely different with smuggling; in fact, they were two totally different issues. The local government departments, however, seized upon this mistake and then withheld more than 100 containers of products of Gree. They offered two solutions: privately, give officials 50,000 Reals, or through normal channels 150,000 Reals to the government. How to solve this dilemma? Managers of Gree thought that Gree would never stoop to bribery. The only way to solve this kind of problem was to do the right thing and not make a mistake. Only in this way could Gree win the market.

In addition to corruption, bureaucracy also was a major problem. Some of the laws and regulations in Brazil are rather different than other countries. As a foreign-owned enterprise, at first the managers didn't know them well. So, they suffered from these troubles. In the beginning, they could not grasp idea that companies in Brazil must raise the wages according to the annual inflation rate. Their failure to do so was objected to by labour union. Since then, Gree Brazil paid great attention to the management details. In fact, Brazil's tax framework is complicated; many enterprises are easily penalized for inadvertent "tax evasion". But GREE settled this problem very well. In 2006, the Manaus Inland Revenue Department audited Gree Brazil's past five years' account books. At last, they did not find a falsehood and had to give a thumbs-up of admiration.

In Gree Brazil's last five years of operation, the most intractable problem it experienced was the exchange rate crisis in 2002. Gree Brazil imports various kinds of parts to satisfy its production, and the products were sold in the Brazilian market. In this transformation process, their imports were counted in dollars and sales were counted in reals. 2002 was an election year for Brazil. Because of the uncertainty about the future of Brazilian policy, many foreign companies withdrew their funds from Brazil. Brazil, a country once deeply dependent on foreign capital, was suddenly at the centre of a whirlpool of financial turmoil, which broke out in all of South America. In the beginning of the year, reals went along with a significant depreciation, and this depreciation brought a heavy shock to Gree Brazil. The exchange rate between dollars and reals, in early 2002, was about 1:2.1, but in June, it jumped to 1:3.2. The two figures mean that reals got a devaluation of 35 percent in only a few months. On the one hand, the continued devaluation heightened the production cost of Gree Brazil. On the other, its selling prices, calculated in dollars, came down. Production lines were still running, and parts continued to be imported from China, so if the exchange rate kept declining, the product prices would even be below their transportation cost in a month. In this period, the exchange rate fluctuated more than 10%, even 20% each month. Constant devaluation was a fatal shock to every importer. Several famous air conditioner companies had stopped their sales in the Brazilian market. Obviously, to continue selling meant a huge loss, but to cut and run meant giving up the achievements gained. Stick it out or give up? In order to make an accurate decision, the managers calculated the gains and the exchange rate carefully. Finally, they came to the conclusion that the exchange rate1:4 is their turning point. So, they made the decision based on this point, below which they would stop, above which they would

keep on. The election ended on October 28, at that time the exchange rate fell to the warning line: 1:4. Facing this situation, Gree headquarters decided to give Gree Brazil another 30 million US dollars loss to keep expanding. Three months later, international investors began to accept the election result, and then currency exchange rates began to rise steadily. Gree Brazil used this opportunity to utilize its market share.

The distribution channel is a crucial factor to the success of foreign production. In 2002, Gree Brazil faced a crisis in their distribution channel. The crisis came from some unacceptable requests put forth by Gree Brazil's exclusive agents, who insisted on increasing the market selling price and reducing the manufacturer's price at the same time. Being a young company, Gree Brazil depended deeply on its agents, and it had little negotiation power. Gree Brazil had to agree with the agent's unreasonable request. However, a few days later, the agent came back and again requested price concessions. Those price concessions would hurt Gree Brazil's profits seriously. To resolve these issues as soon as possible, Gree decided to hire this agent. However, trouble came again. In the negotiation process, Gree found that their trademark in Brazilian market had been registered by the agent company. Gree, ultimately, had to offer a higher price to buy back the trademark and acquire the agent company. With this acquisition, Gree set up its own sales channels quickly, and rapidly continued to develop them.

Besides challenges from the social and cultural environment, Gree also faced many challenges in the Brazilian market. Brazil was a power-poor country, so the energy-saving concept in Brazil is sticky. In the Chinese market, an air conditioner's energy consumption was measured by five levels; the entry threshold was grade 5. In the Brazilian market, the standard level was higher; its entry threshold level is 2.8 which is equal to grade 4 in Chinese market. In this circumstance, Gree Brazil enhanced its advantages on R&D to meet the demand. Gree Brazil improved its product's energy consumption by 1 or 2 grades voluntarily. These efforts helped Gree Brazil achieve the best energy-saving products of the air conditioner industry for five consecutive years.

B4. Gree's Foreign Production Entry Mode

With the successful investment in Brazil, Gree was invited by many AC distributors in India, Turkey and other countries to invest in a local production facility. All of them offered many favourable investment terms. Gree, however, refused all these offers. Because GREE thought those emerging markets were risky markets, the local production mode, especially a sole-venture, is complex and consequently highly risky. Gree preferred to adopt some flexible strategies, such as cooperation and licensing manufacturing.

In March 2006, Gree launched another AC production foreign facility in Pakistan, which is one of the largest AC production base in Pakistan. The technology facilities needed were provided by Gree, but the facility was controlled by Digital World Pakistan (PVT) Ltd. Company (abbreviated to DWP), which is the largest professional AC vendor in Pakistan. The production base was located in Punjab, Lahore. The facility's annual production capacity is more than 100,000 units, and all the production's brand is GREE. But there is something different between Gree Pakistan and Gree Brazil. Gree Pakistan is totally funded by the DWP company and all the incomes were controlled by the DWP company; Gree do not enjoy any control rights and incomes, it is only responsible for providing production lines, equipments, parts and technical support. If the facility reached its design

capacity, Gree Pakistan would capture 15 percent of the market share in Pakistan and Gree Zhuhai, as a parts supplier, would get another 20 million US dollars from selling parts every year.

This kind of foreign market entry mode is licensing. Broadly, licensing is a type of non-equity entry mode, where a company in one country (the licensor) enters into a contractual agreement with a company or person in another country (the licensee) whereby the licensee is given the right to use something (e.g., know-how, manufacturing processes, brand name and facility design) owned by the licensor (Pan & Tse, 2000). In this case, control over operations and strategy is granted to the licensee in exchange for a lump-sum payment, a per-unit royalty fee, and a commitment to abide by any terms set out in the licensing contract, and the licensee bears the costs of building up and serving the foreign market (Hill,C. W. L., P. Hwang and W. Kim, 1990). Also, in the case of licensing entry mode, there is the risk that firm specific advantages in know-how will be expropriated by a licensing or joint venture partner (Hill and Kim, 1988).

Applying this kind of cooperation, GREE was able to share the large investments needed for the foreign production, accelerating return on investment through a more rapid turnover on the firm's assets, spreading of risks and cooped the competition with DWP. "We feel unfamiliar with Pakistan market," said Mr. Zhu, the chairman of the Gree's directorate, "however, as long as we invest in the same brand, Gree, we will harvest much a few years later if we succeed in the Pakistan market. We should develop step by step; we may buy the facility and make it the second foreign production facility of Gree. "

Questions:

1. What are the factors that should be taken into account when locating a company in a foreign market?
2. How did Gree Brazil deal with its operation challenges?
3. How do you think to treat the management puzzles Gree Brazil faced?
4. To serve the Pakistan market, which type of entry modes GREE should choose: licensing manufacturing or build a local production facility?

Busta n. 3 (estratta)

illycaffè Case Study

A. Theory

The term Supply Chain Management (SCM) refers to an integrated management of a network of entities that begins with the suppliers of the suppliers (second-tier suppliers) and ends with the customers of the customers (end customers) (Lee & Ng, 1997). During the last twenty years, the SCM has gained further attention because of the advantages and the better performance that businesses can obtain thanks to the adequate integration of their supply chain (Cooper *et al.*, 1997; Tan *et al.*, 1998; Croom *et al.*, 2000). The 1980s registered a vertical realignment between operations and business strategy (Hayes & Wheelwright, 1984), while in the 1990s, focus was mainly on the horizontal alignment between operations and processes (Ghoshal & Bartlett, 1995). In the last decade, interest has transitioned to the integration between internal and external supplier and customer processes in a unique supply chain (Frohlich & Westbrook, 2001). According to Christopher (1992), "Leading-edge companies are not companies against companies, but rather supply chain against supply chain". In fact, as described by Lambert and Cooper (2000), the Global Supply Chain Forum describes a successful SCM as demanding change in the management of functions: a move from an individual perspective to the integration of the activities associated with the key processes of the supply chain.

A.1 Government structures and relationships typologies in the supply chains

Williamson (1975) highlights that economic organisations do not operate in an environment of perfect competition. In fact, the environment has limited resources, and economic agents are characterised by bounded rationality and opportunism. These characteristics lead to the emergence of transaction costs, which should be considered in addition to operations costs in the economic analysis. The author argues that the variety of organisational forms originates from the quest for efficiency, which corresponds to the reduction of these costs (Figure 1).

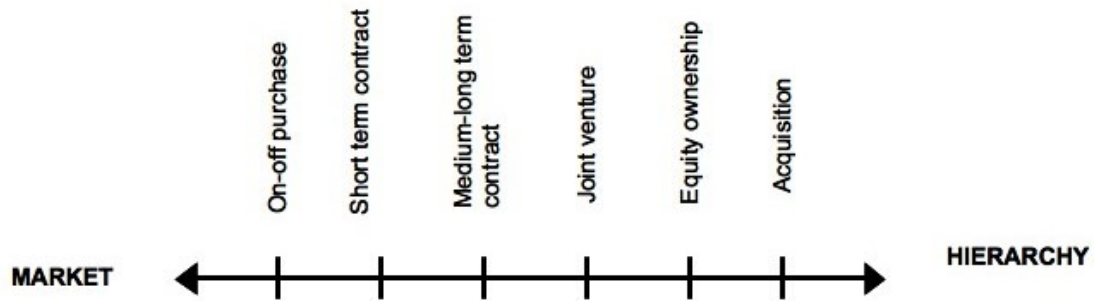

Figure 1: Classical government structures (Williamson, 1975)

Vertical integration (hierarchy) and supply from external sources (market) therefore represent the extremes of this wide spectrum of alternatives in which the management has to define its positioning and its consequent relational structure within the supply network.

As noted by Romano & Danese (2006), vertical integration means an extension of possession of the supply network by an organisation for two reasons:

1) To increase profit margins based on “make or buy” decisions to reduce logistics costs and eliminate the cost of purchase and possession of the customers’ or suppliers’ profit margin; and

2) To expand control over part of the competitive environment and thus limit the uncertainty associated with the trade relations between independent corporations.

In general, the decisions regarding vertical integration must define the following:

1) The direction of vertical integration: downstream to suppliers or upstream to customers;

2) The degree of integration: how much to integrate upstream or downstream; and

3) The balance between the vertically integrated activities: the amount of capacity of each stage that must be dedicated to the next.

Alongside this classical division, the transaction cost theory also considers hybrid forms: bilateral and trilateral government. In trilateral government, transaction is a relationship between market actors who maintain their autonomy and are assisted by bureaucratic mechanisms because the parties are unable to carry out comprehensive negotiations, delegating responsibility to a third party that acts as an arbitrator in resolving disputes and evaluating the results. What characterises the government's bilateral transactions, however, is the importance that the parties attach to the continuity of the relationship; the parties retain their legal autonomy, and it is unthinkable that they would readily accept any proposal for contract adjustment. Thus, they must create the conditions to ensure flexibility in trying to "expand the contractual relationship beyond its natural borders, creating a relationship of mutual trust" (Williamson, 1985).

The intermediate forms between hierarchy and market are joining or even replacing the traditional conflicting forms. There is also empirical evidence suggesting that a higher level of integration between suppliers and customers allows greater advantages for both (Stevens, 1989; Lee *et al.*, 1997; Metters, 1997; Narasimhan & Jayaram, 1998; Lummus *et al.* 1998; Anderson & Katz, 1998; Hines *et al.*, 1998). In accordance with this approach, the enterprises do not opportunistically follow a given strategy despite the other components of the supply chain. Rather, they tend to make the overall supply chain more competitive (Romano & Vinelli, 2001), adopting initiatives based on collaboration, integration and transfer to obtain strategic advantage (Scott & Westbrook, 1991; De Maio & Maggiore, 1992; Kanter, 1994; Bowersox *et al.* 2000).

The creation of collaborative relationships is a very complex process that requires an investment in resources that gradually increases in line with the increase in the intensity of the relationship and the number of players in the supply network with which it is established. The grid of relations between customers and suppliers (Figure 2) shows how, given the limited availability of natural resources available to businesses, they tend to implement a *rigorous partner selection process* and develop different kinds of relationships with those partners.

Figure 2: Customer-supplier relations grid (Scott & Westbrook, 1991)

De Maio and Maggiore (1992) propose a way to classify the relationship between customer and supplier based on two dimensions:

1) Operational integration, which describes the customer and the supplier as integrated in the management of orders, delivery, quality and, in general, all the logistical aspects related to the management and movement of materials;

2) Technological integration, which refers instead to how the customer and the supplier cooperate and exchange information during design and product development.

Combining the two dimensions with their levels of integration (high/low), the authors identify four types of supplier-customer relationships:

- The traditional relationship regulated by price;
- The JIT relationship, which is typical of those companies that have exceeded the traditional logic of supply to seek greater operational-logistics integration with suppliers. The characteristics of this relationship are as follows: the regularity of deliveries, small lots, high shipping frequency, quality, and continuous improvement;
- A technological alliance, suitable for producers/assemblers who require strong cooperation with suppliers to design components; and
- Co-makership, a type of relationship that includes all of the characteristics of JIT but in addition implies a high degree of technological integration, namely joint efforts to engage in product and production process co-design.

A.2 Partnership as an evolved customer-supplier relationship in the supply chains

In general terms, a "partnership" is an evolved type of customer-supplier relationship that is predominantly non-equity-based and characterised by the parties' mutual commitment to improve productivity and quality and then create competitive advantage. From among the numerous existing definitions in the literature, we report that of Lambert *et al.* (1996), which is particularly effective because it emphasises the need to personalise the relationship based on the characteristics and needs of the parties involved. They define the partnership as a tailored, packaged business relationship based on mutual trust, openness, and risk- and benefit-sharing, which lead to competitive advantage and result in a higher level of performance than companies could achieve individually.

Partnership may include a variety of configurations depending on the following:

- The processes involved;
- The degree of involvement of customer and supplier organisational structures; and
- The time horizon for the collaboration.

According to some authors, the term "partnership" should indicate only more evolved forms of customer-supplier relationships wherein collaboration involves many processes and organisations are so integrated that each is considered an extension of the other (Romano & Danese, 2006).

Cooper *et al.* (1997) use the bow tie and diamond analogy to represent the strong integration between organisations that is required by this type of partnership as opposed to the traditional (conflicting) way of managing customer/supplier relationships. According to the traditional (bow tie) approach, the only interaction between the companies takes place between purchasers and sellers. All information is transmitted through these two interfaces. According to the cooperative (diamond) approach, there are different interfaces between companies that allow the functions of customer and supplier to communicate with each other. The authors have identified four possible forms of cooperation for the implementation of supply chain management:

1. Dyadic relationships;
2. Channel integration;
3. Keiretsu; and
4. Analytical optimisation.

In the initial phase of implementation of supply chain management, the company generally seeks collaboration with members of the supply network who are directly in contact: namely, some first-level suppliers and customers. Collaboration will be expanded throughout the supply chain, which is thus integrated and managed dyad by dyad. This approach, called a dyadic relationship, is popular because it does not require coordination and central control, which may be difficult and expensive to implement. With channel integration, instead, one can identify a company that operates as a real leader of the supply network and plays a key role in determining the overall strategy of the network and involving stakeholders in adopting this type of strategy for the supply network. Unlike in the dyadic approach, the leader has significant and direct contact with many members of the supply network, even those belonging to the first-tier network. An example of a

channel integrator is that of Benetton, which coordinates the entire supply network from the production and supply of raw fibre to the sale of clothing (Camuffo *et al.*, 2001).

The need for a firm that takes on the role of integrator to implement supply chain management has been expressed by many scholars. Unfortunately, the authors have also noted that industrial history abounds with cases of companies that have used their position of leadership to obtain benefits at the expense of upstream and downstream actors.

Keiretsu is a Japanese word that identifies a "business society" with various levels, with a central company (leader) and suppliers divided into groups of first-tier suppliers, which directly serve the leader, and second-tier suppliers; groups of customers are structured in the same way. In keiretsu, cooperation is guaranteed via the leaders' possession of shares in the various players in the supply network. Integration is also implemented through horizontal links within each level (tier) of the supply network via a mechanism called *kyoryouku kai*, which literally means cooperative circle (Lamming, 1996). These cooperative circles can be seen as tools for communication, coordination and development and have been successful thanks to their implementation in the supplier network of Japanese automobile companies during the last ten years (Hines, 1994).

In addition, collaboration with analytical optimisation expects the existence of a supply network leader. This form of collaboration uses software and communication and data processing technologies to optimise the management of certain processes in the supply network.

A.3 Quality management and knowledge/know-how diffusion towards supply chain learning

It is fundamental to consider two more aspects to best develop SCM in organisations: *quality* and *knowledge* management in the supply network.

SCM can provide sustainable competitive advantage, improving product/service quality and reducing costs at the same time (Davis, 1993). In this case, the main operations, which have a strategic role in achieving quality (a competitive priority), are integrated logistics and purchasing. In fact, the high quality of the *product* and *service* at every level of the supply network—through, for example, *integrated logistics*—is recognised as essential to obtaining a successful SCM (Johnson & Wood, 1996; Choi & Rungtusanatham, 1999). There is a direct relationship between the implementation of quality management principles, firm operational performance and customer satisfaction (Anderson *et al.*, 1994; Choi & Eboch, 1998; Curkovic *et al.*, 2000; Dean & Bowen, 1994). The current literature supports this point of view, and a number of papers have analysed the role of quality management in SCM (e.g., Fynes & Voss, 2002; Salvador *et al.*, 2001; Tan *et al.*, 1999), in logistics (e.g. Anderson *et al.*, 1998; Millen *et al.*, 1999; Tracey, 1998) and in purchasing (e.g., Lambert *et al.*, 1998a, 1998b; Kotabe & Murray, 2004; Sánchez-Rodríguez *et al.*, 2004). Increasing *process quality* inside the whole supply chain leads to cost reduction, a better use of resources and better processes efficiency (Beamon & Ware, 1998). As regards *product quality*, it is the result of quality management actions as applied to every link in the supply chain, and therefore, every member is responsible for the final result (Romano & Vinelli, 2001). Correspondingly, to achieve high quality, it is necessary to involve every actor in the supply chain (Evans *et al.*, 1993; Forza *et al.*, 2000).

As regards knowledge, a new managerial approach is the so-called supply chain learning (SCL) method. Bessant and Francis (1999) point out the necessity of focusing research and managerial practices not only on intra-organisational learning but also on inter-organisational learning as a potential lever for competitive advantage among small-to-medium-sized enterprises. Subsequently,

Bessant *et al.* (2003) demonstrate that the competitive performance of the value stream depends on the learning and development of the whole system, not just that of the leading players, and provide empirical evidence of the benefits of SCL at both the individual firm and the inter-firm level. For the SCC, the coordinating or central firms that take the lead, benefits accrue in terms of an increase in sales and improvement in the quality and the delivery time for materials, which leads to cost savings and cost reductions. Benefits for first-tier and second-tier suppliers emerge in terms of increasing profit margins, decreasing costs and improvements in product quality. The authors underline that "making SCL happen is not easy, especially as we move beyond the initial set-up phase" (p. 178) as there is the necessity of a strong commitment to long-term sustainability and development of learning (Kaplinsky *et al.*, 1999).

SCL is of a voluntary and participative nature (Kaplinsky & Morris, 2001), and it proceeds most effectively when a leading partner acts as supply chain coordinator, ensuring that a learning process occurs throughout the chain. Nevertheless this requires a strong effort and a high use of SCC resources, as the learning processes should be sustained due to the many risks of failure. Among the factors enabling SCL are trust and strong efforts by the SCC— while, for instance, low-cost culture creates destructive preconceptions or cultural differences among companies and within parts of the same companies that can inhibit SCL. Consequently, the diffusion of a shared culture may sustain SCL. As a matter of fact, Krause *et al.* (2007) demonstrate the benefit of SCL in terms of buyer performance improvements when the buying firms perceive themselves as sharing values and goals with key suppliers.

B. Case Study

B.1 The evolution of the coffee industry

During the last thirty years, the coffee market has become extremely competitive. At the beginning of the XX century the majority of production (between 75% and 90%) was controlled by Brazil (Lucier, 1988). From 1962 to 1989, the *International Coffee Agreement* (ICA), signed by the main producer and consumer countries (Ponte, 2002), regulated coffee prices and export quotas. Beginning in the 1990s, the market underwent a profound change due mainly to technological development, the entrance of new producer countries (e.g., Vietnam) and the exit of the USA (the first world consumer), which broke the equilibrium previously established by the *International Coffee Organization* (ICO). The extra quota of green coffee in the market (above all, Arabic coffee) had two effects: (1) price collapse and (2) a reduction in average quality due to the poor quality of the products from some new actors like Vietnam (which was growing Robusta rather than Arabic coffee) and to the reduced investment capacity of the growers, which caused them to lose influence over the market (Muradian & Pelupessy, 2005).

There are almost fifteen coffee species and about a hundred typologies, but the Robusta and the Arabic strains are the more important species for production and consumption. The denomination of the Robusta species comes from the resistance of the plant to parasites and illnesses. However, this species produces coffee beans that are smaller, have more caffeine and have a less intense flavour, and these characteristics together create poor green coffee quality. In contrast, the Arabic species comes from a plant that is more delicate and sensible to the weather changes, and it produces coffee with a more intense and pleasant flavour.

During the first half of the 1990s, the power in the *coffee supply chain*—which we can subdivide into five groups of actors (growers, local traders, international traders, roasters and retailers)—

shifted downstream. The producers lost their bargaining power (Talbot, 1997), while the international traders engaged in vertical integration upstream with local traders and the growers (Losch, 1999) (which was made easier by market liberalisation) and sometimes also downstream via the acquisition of roasters. Traders took advantage of the oversupply of green coffee, obtaining a lower purchase price for an inferior end product whose lower quality would not be perceived by the consumer (Kaplinsky & Fitter, 2004).

Beginning in the end of the 1990s, the winning strategy in the market became coffee *de-commoditisation* in hotels, restaurants, and cafés (Ho.Re.Ca.) and in big retail. The most important roasters turned their efforts to the quality of the product as perceived by the consumer, suggesting so-called "specialities", the coffee types that are not traditional industrial blends because of their high quality (like espresso coffee) or because of their special flavouring and packaging (Ponte, 2002). In this way, they aimed for the creation of a "consumer experience". To support this strategy, these companies implemented "branding" policies (e.g., Nestlé and Kraft) that fostered the diffusion of the coffee culture. With regard to coffee house ownership, one successful strategy has been the creation of a "café atmosphere", as in the famous case of Starbucks.

The small-to-medium-sized Italian roasters, which have historically offered espresso as speciality in their local market (and sometimes in internationally), operated in a market that was intensely transformed by the events described above without the financial resources to realise full control over and the appropriate coordination of their own coffee supply chain. This lack of control did not allow many of them to obtain the high profit margins necessary for growth of the size required to penetrate the global market as their main international competitors did. However, there are some successful examples of Italian enterprises in the global espresso coffee market, one of which is the illycaffè Group (illy), universally recognised as an excellent and successful company. This case study illustrates how illy competes and wins in the market thanks to the exemplary implementation of its business strategy, which is focused on the competitive prioritisation of quality through consistent and integrated supply chain management practices. Illy's operational integration via a medium-to-long-term contract with customers and suppliers is sustained via an innovative approach: the diffusion of illy's knowledge, expertise and coffee quality culture along the entire value chain from the green coffee growers to the final consumers.

B.2 **Illycaffè Group**

The illycaffè Group (illy), established in 1933, operates in the espresso market and has more than 700 employees, with 480 working in the headquarters in Trieste (Italy) and the others in its subsidiaries abroad. The manufacturing plant is located in Trieste, where the coffee is processed and packaged after being shipped across the sea from more than 15 countries located mainly in South and Central America, Africa and India.

Few enterprises have the ability to increase profits and market share while maintaining their own strategic direction as illy has done; in fact, the company has always focused its strategy on high product quality and customer service with the aim of giving coffee a much greater importance than is normally associated with that commodity—"dressing up" a product that is normally anonymous and de-commoditising it (De Toni & Tracogna, 2005).

B.2.1 Illycaffè strategy in the espresso market

Illy has created a balance between a clear strategic vision, defined at the corporate level, and competent business management focused on very effective supply, logistics, production and distribution policies. These two levels, entrepreneurial and managerial, are connected in their focus on ethics, excellence and the centrality of the customer.

The competitive priority on which the corporate strategy is based is the high level of quality of the product and of the services offered to the consumer. In fact, the illy's vision is as follows: *"We aim to be the world reference for coffee culture and excellence. An innovative company offering the finest products in the best places, growing to become the high-end segment leader and creating superior stakeholder value."*

Likewise, its mission is this: *"Thanks to our enthusiasm, teamwork and values, we aim to delight people all over the world who value quality of life by offering the best possible coffee nature can provide, enhancing its perfection through the most innovative technologies, and inspiring emotional and intellectual involvement by seeking beauty in everything we do".*

It is fundamental to highlight the uniqueness of a particular strategic choice, illy's "one blend, one brand" philosophy: the company seeks to provide high-quality coffee that is identical all over the world at any time (Andriani & De Toni, 2008). Consequently, illy produces and distributes a unique, 100% high-quality Arabic coffee blend. The three pillars of illy's competitive strategy are as follows:

- The creation and development of a global identity for illy's brand as synonym for quality and excellence;
- A focus on the premium market segment;
- Differentiation based above all on the qualitative excellence of the coffee in every respect, which allows the consumer a unique experience.

B.2.2 Illy's leadership in the espresso market

The Italian espresso coffee market is dominated by medium-to-large-sized roasters that own more than 90% of the market share, one of which is illy, and by many micro-enterprises. illy is a leader in the Italian market thanks to its market share, while in the international market, characterised by the presence of large players, illy's brand is famous throughout the world for its high-quality espresso blend. Thus, illy is the global leader of the premium market segment.

The company's success can be evaluated based on its turnover growth, with 280 million euro in 2008 (+400% in the last 15 years). The illy Group distributes its unique espresso blend, composed 100% of Arabic coffee, in 130 countries through three strategic channels:

1) Ho.Re.Ca (hotels, restaurants, cafés);
2) Retail (large-scale retail and small-scale traditional retail markets); and
3) Vending machines

B.3 The illy coffee supply chain

There are different integration levels in a *coffee supply chain*, some characterised by strong integration performed by multinational companies and others fragmented with many specialised

network actors (growers, local traders, international traders, roasters, and retailers). The large multinational companies in the food industry use vertical integration to raise profit margins, increase their control of part of the competitive environment and especially (in the particular case of specialities) maintain the quality level of the product as requested by the market.

Illy bases its business strategy on product and service quality, obtaining an evident competitive advantage in the espresso market thanks to the careful management of its supply chain from the supply of green coffee and its direct relationships with the growers to distribution and its indirect relationships with consumers. However, it does this without implementing traditional vertical integration, which would be rendered less effective because of the small size of the firm. Thus, from this perspective, illy's strategic and operational management of the coffee supply chain (as in Figure 3) has distinctive characteristics that are aligned with its business model. However, this strategic choice does not guarantee the quality of the espresso in the cup because the coffee beans can undergo variations in quality from the harvesting phase through the entire supply chain. For this reason, illy has implemented a set of technical, social and cultural practices at every level of the coffee supply chain.

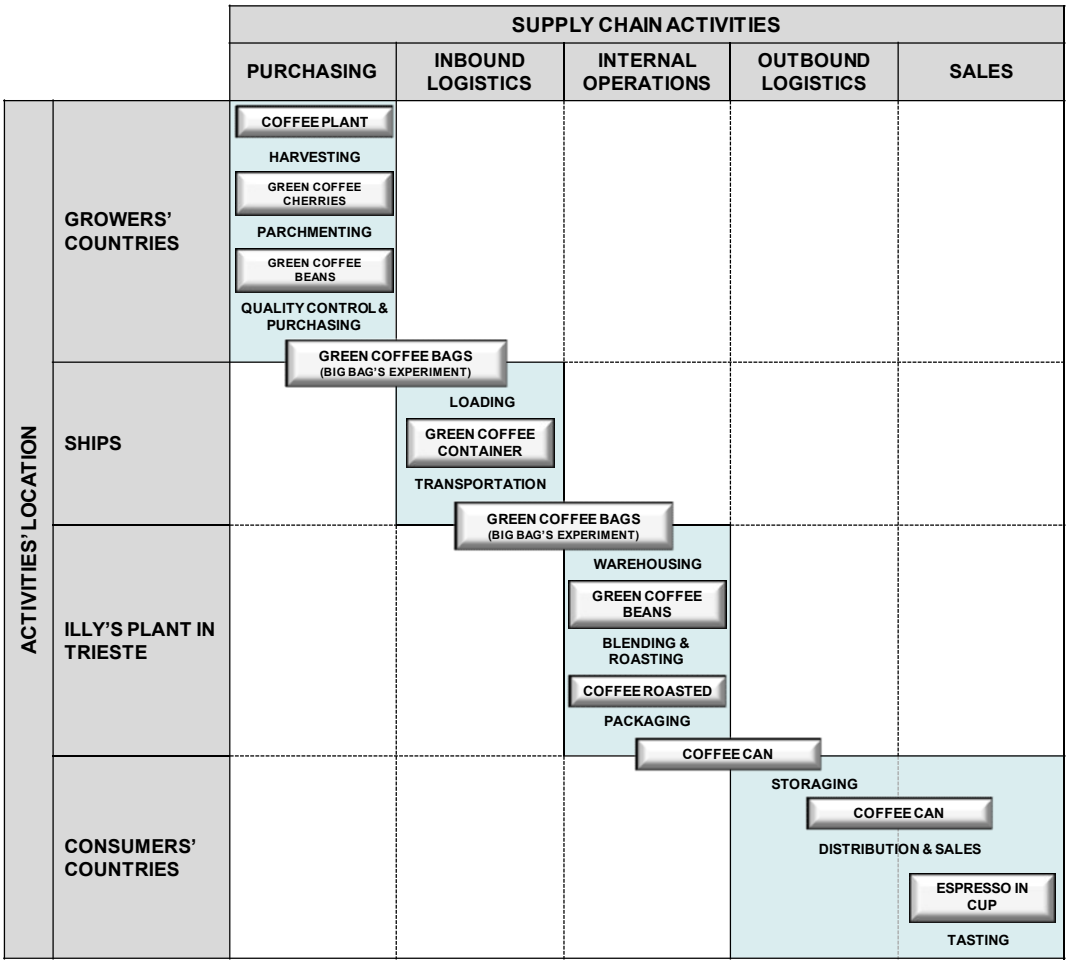

Figure 3: The illy's Coffee Supply Chain

B.3.1 Green coffee harvesting and purchasing

First of all, to produce coffee of excellent quality requires high-quality raw materials (or green coffee). Coffee grows in hot and humid or hot and temperate climates in the regions between the two Tropics, where rainy season follows mild rains. As a result, coffee growers are located in continents far from Italy: Africa, Asia and Latin America (Figure 4).

Only through the careful selection of suppliers is it possible to obtain high-quality green coffee without the growers' direct control. Therefore, in recent years, illy has begun some initiatives in green coffee-growing countries to select and motivate the growers (of which there are almost 4000 in the illy database) and enhance production quality.

In 1991, illy instituted an award for the best Brazilian green coffee growers, the "*Premio Brasil de Qualidade do Café Para Espresso*", with the aim of encouraging a culture of excellence in coffee growing; the prize was intended to combat the problem of poor-quality green coffee in Brazil, the main worldwide producer and exporter but also the country with the highest percentages of batches rejected by illy. As a result, the growers began to engage in research into improving the quality of their own product, collaborating among themselves and transferring knowledge. Illy fosters this phenomenon of *cross-cultural fertilisation* and imports, transfers and shares practices and expertise developed in other countries (the *cross-fertilisation of knowledge and expertise*).

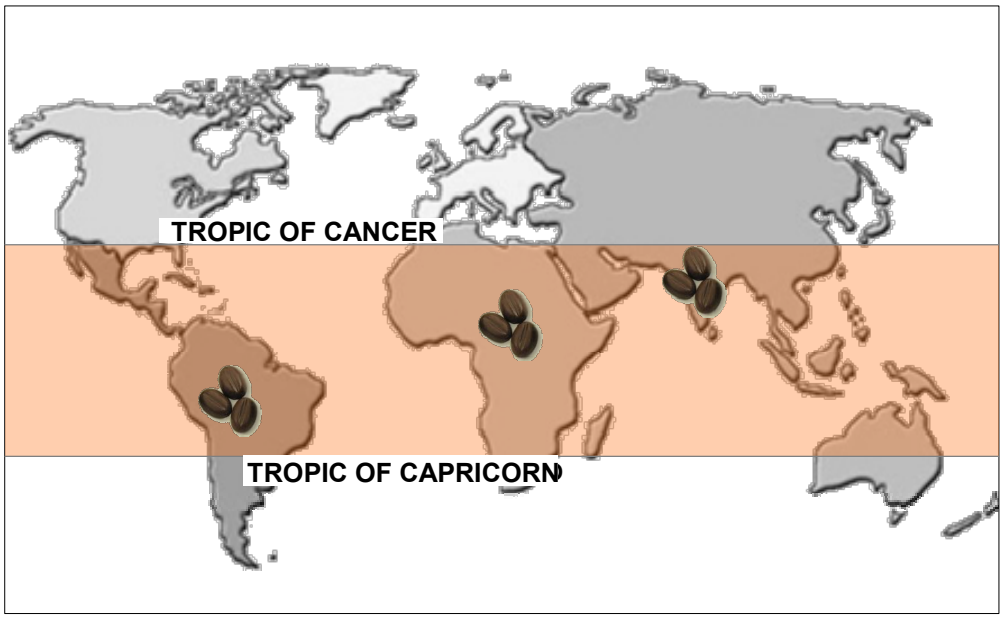

Figure 4: The regions of coffee growers

The knowledge and expertise transferred among the different growers allows them to reach illy's quality standards and, substantially, to *self-select*; growers with poor-quality products decide to not submit green coffee batches for the competition, reducing illy's efforts in terms of supplier selection. Moreover, illy guarantees for its best growers (even the ones not awarded prizes!) a premium price at least 30% higher than that in the New York Coffee Stock Exchange when they demonstrate that they have attained the requested level of quality.

The knowledge and the know-how accumulated by the enterprise, based on many years of experience and continuous research and development, has been transferred to the coffee growers

(especially in Brazil and India) through academic courses (*University of Coffee*). The aim is to teach the best techniques and technologies for harvesting and post-harvesting as well as business management. An example of the effect of this knowledge-sharing has already manifested itself in the first phase of coffee-processing: cherry harvesting from the plant. There are two main methods of harvesting: *picking* and *stripping*. The first is the process of hand-picking only the mature cherries from the branches of the coffee tree, guaranteeing a higher-quality harvest. The second method refers to the mechanised or manual picking of every cherry on the branch, not depending on its maturity, so that the harvesting process is more efficient in terms of time and cost but produces a lower-quality result. Thanks to cultural diffusion and to knowledge-sharing practices, illy technicians have been able to push their growers to adopt the picking technique.

After the harvest, as shown in Figure 1, the cherries are sent to "parchmenting" factories where the green coffee beans, after a processing phase, are divided from the rest of the cherry, dehydrated and send to the market. During this phase, the technicians, selected and trained by illy, pick the first sample (called the "offer sample") from batches that can be potentially bought by the firm and send them to the laboratories for analysis, which do either a preliminary screening or a final evaluation of the sample being submitted for acceptance and the corresponding batch. The laboratories fulfil only a screening function, are located in the growers' countries and are not owned by the Italian company, so they have limited responsibility for the sample pre-selection process, working from illy's evaluation criteria and parameters. The laboratories commissioned for the final evaluation of the samples instead have a greater degree of responsibility and are either owned by illy (like the laboratory in Trieste) or are engaged in a permanent collaboration with the company (the laboratory in Brazil). When the offer sample is approved by one of these two laboratories, illy signs the supply contract with the grower in question.

B.3.2 Green coffee transport to illy's plant

When the contract is signed, the green coffee is transported under the grower's supervision from the plantation to the dock, where illy takes a second sample, called the "shipping sample", from every single batch and tests it in the same manner as the previous sample was analysed. If there is a complete match between the beans and shipping samples, the batch obtains shipping authorisation. The process of loading the batch onto the ship represents the transfer of the property from the grower to illy.

Owing to the main characteristics of green coffee beans (their flavour and the possibility of degradation), the transportation process is critical for the quality of the final coffee because it can influence its degeneration in two ways:

- Through container pollution caused, for example, by water, light or the remnants of products with other flavours (e.g., cardamom) from the previous transport process; or
- Through the position of the container on the ship, including proximity to containers containing flavouring products or positioning over the deck; in fact, the shipping lead time of about 3-4 weeks, of which two are near the equator, exposes the green coffee to thermal shock, making it taste "woody".

Although illy does not have the control over the transport process, it shares its knowledge about these critical potential issues with the shipping companies (*diffusion of awareness*) to safeguard against from the potential negative effects of container type, container position and lead-time.

From a technological point of view, we should note that illy began the use of plastic bags containing one ton of green coffee that could be moved by machine. These are called “big bags”. The advantages of this innovation are as follows:

- The reduction of personnel costs;
- Materials handling is less onerous for a healthy individual (with no more than 60 kg of manual weightlifting required);
- Increased materials-handling speed; and
- Better thermal insulation from humidity and temperature changes, which permits better product preservation during the transport process.

B.3.3 Green coffee storage, transformation and packaging

Once the coffee has arrived at the Trieste seaport, illy conducts the third and last quality test. After the green coffee has passed all three quality tests, it is stored in a suitable warehouse for a period of 7 to 12 months. For this purpose, illy has acquired an area of 60,000 square metres near the Trieste port where all of its logistical activities are carried out. From the technological point of view, it was necessary to build a clean warehouse with a high rate of insulation and a steady temperature (T=15°C) and humidity level (50%); this allows both a storage period of 12 months (versus 7 months in the previous warehouse) and a reduction of 50% in the amount of faulty coffee beans discovered.

When the green coffee is dispatched for the blending, roasting, cooling and milling phases, it undergoes innovative technical processes that are meant to ensure quality (like, for example, the process of cooling the air and pressurising the coffee using nitrogen). The more critical phase is the blend preparation phase because if the Arabic coffee batches have heterogeneous characteristics (even if they arrive from the same grower), the coffee still has to meet the “one blend, one brand” requirement to be considered high-quality; this is a clear strategic priority of illy’s. For this reason, during this phase, there is an additional test carried out that only requires tasting the coffee. The firm has organised three years of internal tasting courses for this purposes (versus courses of a duration of only 3-6 weeks at other companies). As a result, illy has a high number of “*internal*” experts involved in the tasting process.

In the final packaging phases, the quality of the coffee is maintained via so-called “active packaging”, the introduction of nitrogen under pressure inside metal cans. This technique has three main objectives:

- Preserving quality: The techniques and materials used for the packaging protect the properties of the coffee from the atmospheric agents for a longer period of time;
- Quality improvement: During the first two months after packaging using nitrogen, there is a notable improvement in the product qualitative characteristics;
- Image: The fashionable silver design of the can is soon noticed on supermarket shelves.

Then, the coffee cans are stored in the warehouses both in Trieste and in the main commercial subsidiaries for about three months. In the other 100 countries, the local retailer stores them.

B.3.4. Coffee distribution and sales

The two channels on which illy focuses its major efforts are the Ho.Re.Ca. channel (with significant attention to the needs of café owners) and retail. These channels require different modalities based on the specific needs of the customer. The Ho.Re.Ca. channel is characterised by its selling network and the capillarity of the service offered. Therefore, the illy strategy, besides offering high-quality blends, is to assure a high level of service through a high rate of visits and deliveries, technical and commercial customer support, particular payment terms and accommodate for the use of coffee machines. To satisfy the need for efficient and reliable deliveries, illy chooses an express courier even if this method is more expensive; the choice allows for knowledge-sharing regarding the measures that the courier must take to guarantee the service level requested by the customer (*diffusion of awareness*). The retailers' requests are very different. Illy uses retailer distributors who offer a tailored and less expensive service than express couriers. For example,

- The express courier delivers the product in 24 hours, but delivery speed is not a priority of the retailer, so for them, the arrival of the material is scheduled for 3-4 days after order confirmation;
- The multi-product trucks arrive at the multi-product retailer warehouse, so the customer enjoys logistical and operational advantages in managing a smaller number of trucks;
- Costs decrease by one third compared to those charged by the express courier, thereby permitting economic compensation.

B.3.5. Coffee sales

Finally, illy not only employs a typical branding strategy but also diffuses the culture of its coffee on a downstream network level. In the opinion of the firm, the quality of the coffee is in fact due 50% to the blend quality and the transformation/packaging processes and 50% to the way in which the drink is prepared and consumed. In fact, consumer-perceived quality is partly a result of objective factors like, for example, the water used, the cleanliness of the cup, the ability to properly use the espresso machine, the flavours in the consumer's mouth. However, it is also partly a result of perceptual factors like, for example, the kindness of the personnel and environment reception. If some factors can be overseen by the café owner, others depend on the consumer. There are three initiatives that illy has implemented to help the customer (café owner) and the consumer understand product quality:

- illy's specialised technicians visit cafés to teach to their owners "the art" of making a good coffee and the importance of kindness and professionalism in satisfying the consumer;
- illy has developed the "coffee university", intended not only for the café owners but also for anyone else interested in deepening their knowledge of the coffee world;
- "Espressamente illy", a café concept created by illy, is intended to produce a particular atmosphere in which consumers can have a pleasant "experience".

C. Conclusion

Figure 5 synthesises the practices implemented by illy in a framework that illustrates the supply chain management areas (purchasing, inbound logistics, firm, distribution and sales) and

managerial levels (quality management, knowledge/know-how and cultural diffusion) where the company operates to achieve its strategic purpose: high product and the service quality.

			SUPPLY CHAIN ACTIVITIES				
			PURCHASING	INBOUND LOGISTICS	INTERNAL OPERATIONS	OUTBOUND LOGISTICS	SALES
LEVELS OF ACTION	QUALITY MANAGEMENT	PEOPLE IN CHARGE	• PURCHASING DEPARTMENT • ILLY LABORATORIES • LOCAL LABORATORIES • ILLY TECHNICIANS	• LOGISTICS DEPARTMENT • ILLY TECHNICIANS	• EMPLOYEES • LABORATORIES • TECHNICIANS	• LOGISTICS DEPARTMENT	• COMMERCIAL DEPARTMENT • ILLY TECHNICIANS
		ADRESSED TO	• GREEN COFFEE GROWERS	• SHIPPING COMPANIES	• PRODUCTION DEPARTMENT • PACKAGING DEPARTMENT	• EXPRESS COURRIER • SPECIFIC DISTRIBUTOR	• Ho.Re.Ca. CUSTOMERS
		PRACTICES	• GROWERS' SELECTION • GREEN COFFEE SELECTION AND QUALITY CONTROL • PREMIUM PRICE	• BIG BAG ADOPTION • CONTAINER FEATURES	• QUALITY CONTROL OF GREEN COFFEE • TEMPERATURE AND QUALITY CONTROL • BLRNDING & ROASTING • ACTIVE PACKAGING	• DISTRIBUTION STRATEGY ALIGNED WITH CUSTOMERS' NEEDS	• SET-UP ESPRESSO MACHINE
	KNOWLEDGE AND KNOW-HOW DIFFUSION	PEOPLE IN CHARGE	• PURCHASING DEPARTMENT • ILLY TECHNICIANS	• LOGISTICS DEPARTMENT • ILLY TECHNICIANS	• R&D DEPARTMENT	• LOGISTICS DEPARTMENT	• COMMERCIAL DEPARTMENT • ILLY TECHNICIANS
		ADRESSED TO	• GREEN COFFEE GROWERS	• SHIPPING COMPANIES	• R&D DEPARTMENT	• EXPRESS COURRIER	• Ho.Re.Ca. CUSTOMERS
		PRACTICES	• ADDESTRAMENTO E FORMAZIONE AI PRODUTTORI • ASSISTENZA TECNICA AI PRODUTTORI • CROSS FERTILIZATION DI CONOSCENZA E KNOW-HOW	• CRITICALITIES SHARING WITH SHIPPING COMPANIES	• R&D ABOUT PRODUCT AND PRODUCTION PROCESSES	• CRITICALITIES SHARING WITH EXPRESS COURRIER	• TRAINING AND EDUCATION TO BARMAN • TECHNICAL ASSISTANCE TO BARMAN
	CULTURE DIFFUSION	PEOPLE IN CHARGE	• PURCHASING DEPARTMENT • ILLY TECHNICIANS • ILLY'S UNIVERSITY OF COFFEE	• ILLY MANAGEMENT			• COMMERCIAL DEPARTMENT • ILLY'S UNIVERSITY OF COFFEE
		ADRESSED TO	• GREEN COFFEE GROWERS	• ILLY EMPLOYEES			• Ho.Re.Ca. CUSTOMERS • RETAIL CUSTOMERS • CONSUMERS
		PRATICHE	• CROSS-CULTURAL FERTILIZATION • BRAZIL COFFEE AWARD • UNIVERSITY OF COFFEE COURSES	• COURSES OF TASTING			• UNIVERSITY OF COFFEE COURSES • "ESPRESSAMENTE ILLY" COFFEE HOUSE

Figure 5: illy's practices for SCM coordination and quality assurance

C.1. Illy's quality management and knowledge/know-how diffusion along the supply chain

As highlighted in the first part of the chapter, many researchers have already proven how the overall integration of quality management practices along the supply chain has a positive effect on the quality of products and services. This topic is central in the food industry and particularly in the espresso coffee market. Consequently, it is necessary to implement quality management practices at every link in the supply chain from the producer (in our case, the green coffee grower) to the consumer. However, to manage quality efficiently and effectively, it is necessary to control and coordinate the entire supply chain.

The small-to-medium-sized enterprises encounter significant challenges in obtaining this type of control because of the practical unfeasibility of vertical integration. Moreover, in the coffee sector, this dynamic is heightened by geographical distances, the great number of potential suppliers and the barriers created by international traders. The illy case study shows how a small-to-medium-sized enterprise can overcome all of the issues above by becoming a *Supply Chain Coordinator* (SCC) and controlling quality at every link through the adoption of quality management practices and the systematic application of knowledge to the whole supply chain.

C.2. Cultural diffusion towards a supply chain learning

In section A, we pointed out the voluntary and participative nature of SCL and the need for a real effort and an extended use of resources in SCC, but we also noted how trust and the diffusion of a shared culture can sustain learning processes (figure 6).

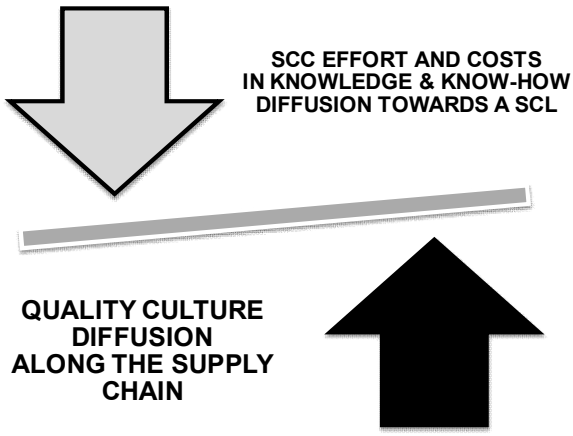

Figure 6: The impact of cultural diffusion and sharing along the SC on SCC effort and costs

In the illy case (Figure 7), the relationships of quality culture diffusion (even with non-essential suppliers) are fundamental for the coordination of the supply chain and the improvement of product and service quality. As a matter of fact, the cultural initiatives implemented by the company have a positive effect on quality output along the whole supply chain, from the quality of the raw material to the product quality perceived by the final consumer. Furthermore, the effect of cultural diffusion is to mitigate the illy effort to maintain continuous improvement because it creates emergent behaviour in the different actors that is self-aligned with the illy vision.

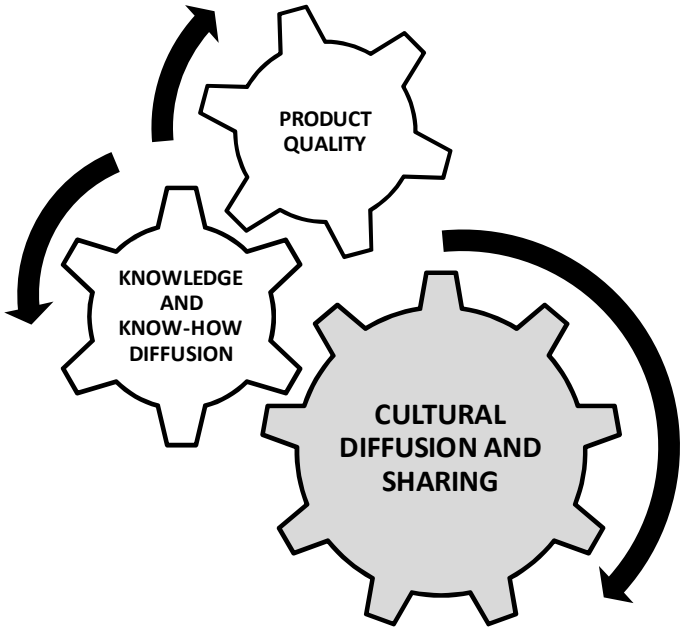

Figure 7: Effects of illy's knowledge, expertise and culture diffusion on product quality

During the last twenty years, illy exposed its entire supply chain to the knowledge, know-how and coffee quality culture developed inside the company in numerous countries (via the cross-fertilisation of knowledge and know-how) to obtain the best-quality coffee possible. Moreover, if adaptive learning is the "doing what we do better", the illy cultural strategy has created real generative learning, defined by Bessant and Buckingham (1993) as the ability to step back and

reframe the problem. All of these events have helped to improve and sustain the knowledge diffusion processes performed by illy from a SCL perspective.

C.3.Discussion

The group has chosen to directly address the grower, bypassing the international traders and managing upstream activities. This choice has been feasible only because the enterprise enjoys an in-depth knowledge of products and processes. As a matter of fact, the diffusion of knowledge, expertise and quality culture as performed through many initiatives (guidance regarding picking methods, the "Premio Brasil de Qualidade do Café Para Espresso" in Brazil, the foundation of the "coffee university," etc.) has allowed the emergence of virtuous behaviour among green coffee growers like supplier self-selection, thereby considerably improving coffee quality. In relationships with shipping firms and express couriers, the diffusion of expertise and the quality culture is translated into the sharing of awareness, which indirectly guarantees high quality.

However, it is within the walls of the firm that knowledge, expertise and a coffee quality culture originate, develop and are diffused; these can only become sources of company competitive advantage and supply chain coordination through their constant renewal. The real "engine" of this diffusion of knowledge, expertise and culture about coffee is illy's effort to deepen and create better comprehension of product and production processes. In this regard, the company has promoted many research and development projects in collaboration with Italian and international universities. For example, some projects are focused on the relationships between taste, perception and genetics, seeking to ascertain how's coffee features arise from its genes.
The key to illy's success can be found not only in its strategy of marketing an excellent coffee that is identical all over the world (summarised as the "one blend, one brand" philosophy) but also in the careful integration and coordination of quality management practices along the whole supply chain. This coordination allows illy to obtain very high standard product quality from the green coffee to the cup. If internal and external quality management practices and cultural diffusion in the downstream network are typical of the espresso coffee sector, its extension to the whole supply chain provides a persuasive and innovative explanation for the success of illy.

Questions:

1. What are the main possible integration levels of a coffee supply chain?
2. What are the main quality management practices implemented by illy?
3. What are the main (knowledge/know-how) practices implemented by illy?
4. What are the main cultural diffusion practices implemented by illy?
5. In the Williamson framework, what is the government structure performed by illy?