

Managing product quality along the supply chain without a vertical integration: the illycaffè case study

Massimo Biotto, Alberto F. De Toni, Fabio Nonino
Department of Electrical, Management and Mechanical Engineering,
University of Udine, via delle Scienze 208, 33100 Udine, Italy
EMAIL: massimo.biotto@uniud.it , detoni@uniud.it, fabiononino@uniud.it

Abstract: Since many years in the coffee industry the quality has become a strategic competitive priority for many enterprises and a lever to the de-commoditization. The competition in the food industry requires the realization and the development of appropriate policies of quality management with sustainable costs through the implementation of innovative and well-integrated Supply Chain Management (SCM) practices. In fact, the SCM can give a sustainable competitive advantage improving the product/service quality performance. The paper proposes the analysis of the *illycaffè* Group, an exemplary case study of how a small-medium enterprise can compete and win in the espresso coffee market. It describes the pursue of the business strategy, based on the quality competitive priority, not only by integrating the quality management practices along its supply chain but, above all, by becoming the Supply Chain Coordinator through a systematic diffusion of the knowledge, the know-how and the culture in a learning network.

Keywords: Food Product Quality, Supply Chain Learning, Case study

Introduction

During the last thirty years, the coffee market has become extremely competitive. If at the beginning of the XX century the large amount of the production (between 75% and 90%) was a prerogative of Brazil [40], from 1962 to 1989 the coffee price and the export quota were regulated by the *International Coffee Agreement* (ICA), signed by the main producer and consumer countries. But from the '90s the market undergoes a deep change due mainly to a technological development and the entrance of new producer countries (e.g. Vietnam) and the exit of USA (the first consumer of the world) that broke the previous balances in the *International Coffee Organization* (ICO). The extra quota of the green coffee caused two effects in the market: (1) the price collapse and (2) the average quality reduction, due to the poor quality of some new entries and to the reduced investment capacity of the growers as effect to the loss of the influence on the market [45].

During the first half of the '90s, the power in the *Coffee Supply Chain*, that we can subdivide in five actors (growers, local traders, international traders, roasters and retailers), shifted downstream. The producers lost their bargaining power [55], while the international traders operated a vertical integration upstream with the local traders and the

growers [39] (made easier by the market liberalization) and sometimes also downstream by the acquisition of roasters. These ones took advantage of the oversupply of the green coffee by obtaining a lower purchase price with a crummy quality of the end product, but not perceived by the consumer [30].

From the end of the '90s, the winning strategy in the market has become the coffee de-commoditization both in the hotel, restaurant, and café (Ho.Re.Ca.) channel and both in the big retail. The most important roasters turned their efforts on the quality of the product perceived by the consumer suggesting the so-called "specialities", the coffee typologies that are not traditional industrial blends because of their high quality (like espresso coffee) or because of special flavouring and packaging [48] aiming at creation of a "consumer experience". In order to support this strategy, these companies implemented "branding" policies (e.g. Nestlé and Kraft) which fostered the diffusion of the coffee culture; in the case of coffee houses ownership, a successful strategy has been the creation of a "café atmosphere", as in the famous case of Starbucks. The small-medium sized Italian roasters, which historically has always offered the espresso speciality in their local market (and sometimes in the international one), operated without the financial resources to realize a full control and coordination of their own coffee supply chain. And this lack of control did not allow many of them obtaining the high profit margins for a size growth required to penetrate in the global market, as their main international competitors did. However there are some successful examples of Italian enterprises in the espresso coffee market; one of these is the *illycaffè* Group, universally recognized as an excellent and winning company. The paper illustrates how a small medium enterprise can compete and win in the market by implementing its own strategy, focused on the competitive priority of quality, in supply chain management consistent and integrated practices and in a diffusion of the knowledge, of the know-how and of the culture in the whole value chain, from the raw material producer to the consumer. The first part depicts the impact of supply chain management (SCM) in the quality management underlining the strengths and the opportunities. The second part describes the case study of *illycaffè* group focusing on its main quality management practices and its main activities of diffusion of knowledge, know-how and culture along the supply chain. In the last part these practices will be synthesized in a framework and the academic and managerial consequences will be discussed.

SCM and quality management

The *competitive priorities* can be defined as a set of tasks interconnected and consistently aligned with the business strategy. The problem to achieve the competitive priorities, in particular the quality one, using SCM practices is an issue of clear interest in the food industry; as a matter of fact, the food companies must adopt many practices of quality control among the actors of their supply network in order to avoid wrong processing and anomalies.

During the last twenty years the SCM gained a growing interest among managers and scholars [11] [12] [56] for the advantages and the better performances that the enterprises can obtain thanks to an adequate integration of their supply chain. And the term SCM refers to an integrated management of a network of entities, which begins with the suppliers of the suppliers (second tier suppliers) and ends with the customers of the customers (end customer) [37]. As described by Lambert and Cooper [36], the Global Supply Chain Forum prescribes that a successful SCM asks for a change in the management of the functions from an individual perspective to the integration of the activities inside the key processes of the supply chain. In accordance with this approach, the enterprises do not follow a given strategy in an opportunistic way despite the other components of the supply chain, but rather they tend to make the overall supply chain more competitive [49], adopting initiatives of collaboration, integration and transfer in order to obtain strategic advantages [8] [16] [28] [52].

The '80s registered a vertical realignment between the operations and the business strategy [25], while in the '90s they focalized mainly in the horizontal alignment between operations and processes [24]. In this last decade, instead, the interest moved on the integration between the internal processes with the external ones of the suppliers and the customers in a unique supply chain [22]. The SCM can give a sustainable competitive advantage improving the product/service performance and reducing the costs at the same time [15]. In this case the main operations, which have a strategic role in reaching the quality as a competitive priority, are the integrated logistics and the purchasing.

The high quality of the *product* and of the *service* at every level of the supply network through *integrated logistics* practices is recognized as an essential element to obtain a successful SCM [10] [27]. There is a direct relationship among the implementation of the quality management principles, enterprise operational performances and customer's satisfaction [1] [9] [13] [17]. The current literature support this point of view and a number of papers analyzed the quality management role in SCM (e.g. [23] [50] [57], in logistics (e.g. [2] [44] [58]) and in purchasing (e.g. [32] [34] [35] [51]). Increasing the *process quality* inside the whole supply chain takes to a cost reduction, to a better use of the resources and to a better processes efficiency [4]. As regards the *product quality*, it is the result of the actions of quality management applied to every link of the supply chain, therefore every member is responsible of the final

result [49] and, to reach an high quality, it is necessary to involve every actor of the supply chain [19] [21]. At the *purchasing* level the quality is generally measured as the ability from the supplier to supply reliable, lasting and consistent with the buyer's specifications inputs [13] [20] [53] [60]; moreover the quality is the main variable in the process of supplier's selection [18] [59] [61]. There are also empirical evidences suggesting that a higher integration between suppliers and customers allow obtaining higher advantages for both [2] [26] [38] [41] [43] [46] [54].

The coffee quality is deeply influenced both by *process factors*, due to the distinctive features of the product and related to the transformation activities at every link of the supply chain, and both by *logistic factors*, first of all the supply criticalities due to the geographical distance that separates the growers' countries from the coffee roaster.

The illycaffè case study

The *illycaffè* Group (*illy*), founded in 1933, operates in the espresso market and has more than 600 employees, 480 working in the headquarters in Trieste (Italy) and the others in the subsidiaries abroad. The manufacturing plant is located in the city of Trieste, where the coffee is processed and packaged after coming by sea from more than 15 countries localized mainly in south and central America, Africa and India. Few enterprises had the ability to increase profits and market share like *illy* keeping unchanged their own strategic direction; in fact *illy* has always focused its strategy on the high quality of the product and of the service to consumers with the aim to give the coffee an importance as far as possible from that of commodity, "dressing up" a product normally anonymous and making a de-commoditization. The research methodology used has been the case study, as defined by Yin [62] and McCutcheon and Meredith [42]. Data and information come from primary sources, semi-structured interviews to the quality, logistic and purchasing managers and from secondary sources, internal documents provided by the managers, the database and the company's website.

Illycaffè strategy

Illy created a balance between a clear strategic vision, defined at the corporate level, and the qualified business management, focused on very effective supply, logistics, production and distribution policies. These two levels, entrepreneurial and managerial, find a contact in the values of ethics, excellence and customers' centrality.

The competitive priority, on which the corporate strategy is based, is the high quality of the product and of the service offered to the consumer, translated into precise vision and mission. In fact the enterprise vision is: "*We seek to set a world benchmark for excellence and culture in the coffee business, as an innovative company developing the most desirable products and places of consumption, and as a result, to grow and become the global leader of the premium market segment*" and the mission is defined as: "*Through*

our enthusiasm, teamwork and values, we aim to delight people the world over who value the quality of life by offering the finest coffee nature can provide, and enhancing it with the most advanced technologies and the emotional and intellectual involvement which stems from seeking beauty in everything we do”.

Quality leadership in the espresso market

The espresso coffee sector in Italy is characterized by some medium-sized firms that own more than 50% of the market share, among which there is *illy*, and by many micro-enterprises. In the Italian market *illy* is one of the leader due to its market share, while in the international market, characterised by the presence of big players, its leadership is recognized for the high quality of the blend; so *illy* is the global leader of the premium market segment.

The company's success can be evaluated on the base of its turnover growth, 246 million euro in 2006 (+400% in the last 15 years). The *illy* Group distributes a unique espresso blend composed 100% by Arabica coffee in 130 countries through three strategic channels:

- Ho.Re.Ca (acronym of Hotel, Restaurant, Caf );
- Retail;
- Vendor/Serving machine.

The coffee supply chain

There are two main possible configurations of a *coffee supply chain*: the first is structured from the strategy of strong integration performed by the multinational companies, the second is fragmented in many specialized actors in a single node of the network (growers, local traders, international traders, roasters, retailers). The big multinational companies in the food industry follow the strategy of vertical integration to raise the profit margin and their control on part of the competitive environment and, at most, in the particular case of specialities, maintaining the quality of product requested by the market.

Illy bases the business strategy on the product and service quality, obtaining an evident competitive advantage in the espresso market, thanks to a careful management of its supply chain: from the supply of the green coffee and of the direct relationships with the growers to the distribution and the indirect relationships with the consumers; but without implementing the traditional vertical integration, anyhow impeded by the small dimensions of the firm. Thus, in this perspective, the strategic and operational management of the coffee supply chain achieved by *illy* (figure 1) has distinctive characteristics aligned with the business model of the enterprise.

Green coffee harvesting and purchasing

First of all a coffee of excellent quality needs a raw material, the green coffee, of high quality. The coffee is a plant which grows in the regions with a hot-humid or hot-temperate weather between the two Tropics, where a rainy season is followed by one with mild rains. Due to the characteristics

of the culture of the plant, the coffee growers are located in continents far from Italy: Africa, Asia and Latin America.

There are almost fifteen coffee species and a hundred of typologies, but for the production and consume, the more important species are the Robusta and the Arabic. The denomination of the Robusta specie comes from the resilience of the plant from parasites and illnesses. However this species produces coffee beans smaller with more caffeine and to a less intense flavouring; these characteristics conduct to a poor green coffee quality. Instead the Arabic species has a plant more delicate and sensible to the weather changes, which produces a coffee with a more intense and pleasant flavouring and more precious and well-appreciated. *Illy* produces a unique coffee blend with 100% high quality Arabic. However this strategic choice does not guarantee the quality of the espresso in the cup, because the coffee beans can undergo quality variations from the harvesting phase along the whole supply chain. For this reason *illy* implements a set of technical, social and cultural practices at every level of supply chain, avoiding a vertical integration.

Obtaining a high quality of green coffee without the direct control of the growers is possible only through a severe selection of the suppliers. Therefore, in the last years *illy* began some initiatives in the green coffee grower's countries in order to select and motivate them (almost 4000 in *illy* database) to enhance their production quality. *Illy* has instituted an award for the better Brazilian green coffee growers, the “Premio Brasil de Qualidade do Caf  Para Espresso”, with the aim of a diffusion of a culture of a coffee of excellence; the prize born to overcome the problem of the poor quality of green coffee in Brazil, which is the main worldwide producer and exporter but with the higher percentages of rejected batches. As a consequence the growers auto-activate themselves in the research of a qualitative improvement of their own product, particularly collaborating among themselves and transferring their know-how. *Illy* fosters this *cross-cultural fertilization* phenomenon and imports, transfers and shares practices and know-how developed in other countries (*cross fertilization of knowledge*). Moreover *illy* guarantees a premium-price three times higher than the price in the New York coffee Stock Exchange to the best growers (also the ones not awarded!) which demonstrate to obtain the requested quality standard.

Following the success of the initiative, a second phase of this evolving path has accelerated. The knowledge and the know-how accumulated by the enterprise, coming from many years of experience and a continuous research and development, has been exported to the coffee growers (especially in Brazil and India) through academic courses (University of Coffee). The aim is to teach both the best techniques and technologies of harvesting and post-harvesting and both the business management. An example of the effect of this knowledge sharing already manifested itself in the first phase of coffee processing: the cherry harvesting from the plant. There are two main ways to harvest: the *picking* and the *stripping*. The first is the hand

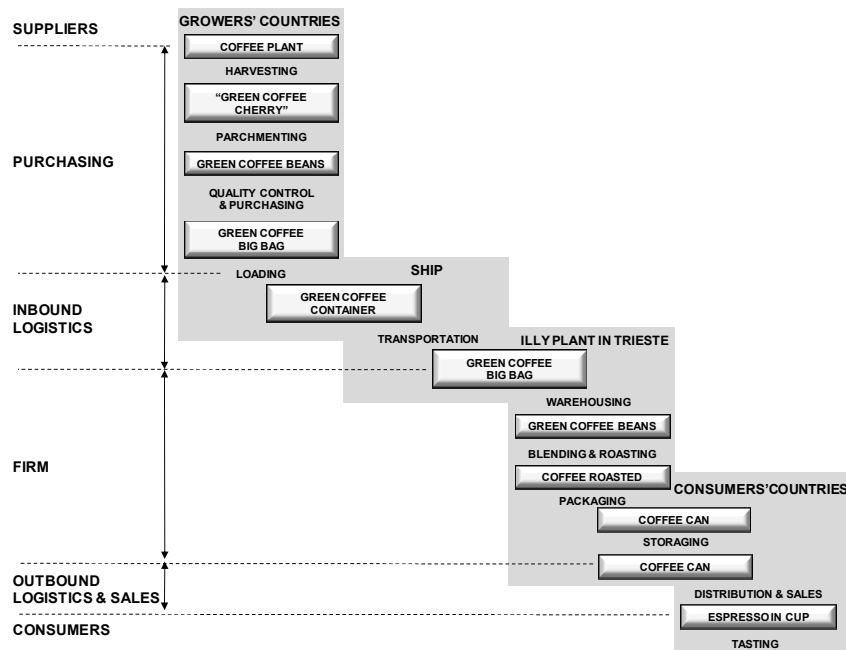


Figure 1 – The illy's Coffee Supply Chain

picking of the sole mature cherries from the branches of the coffee tree, guaranteeing a higher quality of the harvest. The second refers to the mechanized and manual picking of every cherry on the branch, not depending from its maturity, so the harvesting is more efficient in terms of time and cost, but with a lower quality. Thanks to the cultural diffusion and the knowledge sharing practices, *illy* technicians have been able to push the 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 some processing phases, are divided from the rest of the cherry, dehydrated and send to the market. In this phase the grower's technicians, trained by *illy*, pick the first sample, called "offer sample", from batches that can be potentially bought by the enterprise and send them to the analysis laboratories, which either do a first screening or a final evaluation on the sample acceptance, and so on the corresponding batch. The laboratories with only screening function, are located in the growers' countries and are not owned by the Italian company, so they have the limited responsibility of the sample pre-selection, based on *illy*'s evaluation criteria and parameters. The commissioned laboratories for the samples' final evaluation have instead a higher responsibility and are either owned (the laboratory in Trieste) or operate a permanent collaboration with *illy* (the laboratory in Brazil). As there is the approval of the offer sample from one of these two laboratories, *illy* signs the supply contract with the growers.

Green coffee transport to illy plant in Trieste

As the contract is signed, the green coffee is transported under the grower responsibility from the plantation to the dock where *illy* takes a second sample, called "shipping sample", from every single batch to do a test as the previous one. If there is a complete matching between the beans and

shipping samples, the batch obtains the shipping authorization. The loading in the ship represents the transfer of property from the grower to *illy*.

Owing to the main characteristics of green coffee beans (flavouring and the possibility of degradation), the transport by sea is very critical for the final coffee quality because it can influence its degeneration in two ways:

- through container pollution caused for example by water perfusions, light or rests of other flavouring products (e.g. cardamom) from the previous transport;
- through the position of the container on the ship due to the proximity to containers with flavouring products or the position over deck; in fact the shipping lead time of about 3-4 weeks, of which 2 near the equator, brings the green coffee to thermal shock, making it "woody" during the tasting.

Although during the transport *illy* does not have the charge control, it shares its knowledge about the criticalities on transport effect with the shipping companies (diffusion of the awareness) in order to safeguard itself from container type, its position and the lead time.

From a technological point of view, *illy* start the adoption of bags in plastic material containing 1 green coffee ton for the mechanical movement, called "big-bag". The advantages obtained are:

- reduction of personnel costs;
- materials handling less onerous for the human healthy (not anymore 60kg lots manual weightlifting);
- higher efficiency in materials handling speed;
- better thermal insulation from humidity and temperature changes, which permits a better product preservation during the transport.

Storage, transformation and packaging

As arrived in Trieste seaport, *illy* controls the charge with the third and last quality test. After the green coffee passed

all the three quality tests, it is stored in a suitable warehouse for a period from 7 to 12 months. For this reason *illy* has acquired an area of 60.000 m² near the Trieste port where all its logistic activities are carried out. From the technological point of view, it was necessary to build a warehouse with a high rate of insulation, cleanness, steady temperature (T=15°C) and humidity (50%) which allows both a storage period of 12 months (versus 7 of the previous warehouse) and a reduction of 50% of the coffee beans faultiness.

While the green coffee gets off to blending, roasting, cooling and milling phases, it is submitted to innovative technical solutions for quality (as for example the process of the cooling of the air and pressurization of the coffee under nitrogen). The more critical phase is the blend preparation because, also if the Arabic coffee batches have heterogeneous characteristics (as well if arriving from the same grower), the coffee has to answer to the “one blend, one brand” motto to reach a high quality due to a clear *illy* strategic choice. For this reason, during this phase, there is a further and last test of only tasting nature. The diffusion of the coffee culture also inside the firm has been carried out by the organizing of three years internal tasting courses (versus a duration of only 3/6 weeks for similar courses organized by others). As a consequence *illy* has a high number of “*internal*” experts involved in the tasting.

In the final phases of packaging the quality of coffee is supported by the so-called “active packaging”, the introduction of nitrogen under-pressure inside peculiar metal cans, which have three main objectives:

- image: the fashion silver design of the can is soon noticed in the supermarket shelf;
- quality preservation: the techniques and the materials used for the packaging protect the properties of the coffee from the atmospheric agents for a longer time;
- quality improvement: during the first two months after the packaging under nitrogen, there is a sensible improvement of the product qualitative characteristics.

Then, the coffee cans are stored in the warehouse both in Trieste and in the main commercial subsidiaries for about three months. In the other 100 countries the local retailer stores them. The real engine of this diffusion of knowledge, know-how and culture about the coffee is the *illy*'s efforts to deepen and to create a better comprehension of the product and production processes. In regards to this, the company has promoted many research and development projects in collaboration with Italian and international universities. For example some projects are focused on the relationship among taste, perception and genetics in order to find how coffee features arise from the gene.

Distribution

The two channels on which *illy* focuses its major efforts are the Ho.Re.Ca. (with a great attention to the café owners needs) and the retail, which require different modalities given by the specific needs of their customer. The Ho.Re.Ca. channel is characterized by the selling network and the

capillarity of the service offered. Therefore the *illy* strategy, beside 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 term of payment and commodate for use of coffee machines. To satisfy the need efficient and reliable deliveries, *illy* chooses an express courier also if the solution is more expensive; nevertheless this choice allows the knowledge sharing on the criticalities to guarantee the service level requested by the customer. The retailers' requests are very different. *Illy* uses retailer distributors who offer a tailored and less expensive service than the express courier. In fact:

- the express courier delivers in 24 hours, but the delivery speed is not a prerogative of the retailers being the arrival of the material scheduled in 3-4 days from the order confirmation;
- the multi-product truck arrives to the multi-product retailer warehouse and so the customer obtains logistic-operative advantages in the management of a less number of trucks;
- the decrease of one third of the costs compared to the express courier permits the economic compensation.

At last *illy* operates not only the typical branding strategy but also a diffusion of the culture of the coffee at downstream network level. The quality of the coffee is in fact due, on the enterprise's opinion, for a 50% to the blend quality and of the transformation/packaging processes and for the rest 50% to the way the drink is prepared and consumed. In fact the consumer perceived quality is due to objective factors as, for example, the water used, the cleanness of the cup, the ability of using the espresso machine, the flavours in the consumer mouth and to perception factors as, for example, personnel kindness, and environment reception. If some factors can be checked and managed by the café owner, others depend on the consumer. There are three initiatives that *illy* implements in order the café owner and the consumer understand the product quality:

- *Illy* specialized technicians visit the cafés in order to teach to the owners “the art” of doing a good coffee and also the importance of kindness and professionalism to satisfy the consumer;
- the university of the coffee, developed not only for the café owners, but also for everyone interested in deepen the knowledge of the coffee world;
- “Espressamente *illy*”, a café concept created by *illy* in order to produce a particular atmosphere where consumers could have a pleasant “experience”.

Discussion

The figure 2 synthesizes the practices implemented by *illy* in a framework which illustrates the supply chain management areas (purchasing, inbound logistics, firm, distribution and sales) and the managerial levels (quality management, knowledge/know-how, cultural diffusion) where the company operates to achieve its strategic purpose: the product and the service quality.

		SCM AREA				
		PURCHASING	INBOUND LOGISTICS	PLANT	OUTBOUND LOGISTICS	SALES
ILLY'S PRACTICES	ACTOR INVOLVED	<ul style="list-style-type: none"> GREEN COFFEE GROWERS ILLY LABORATORIES LOCAL LABORATORIES ILLY TECHNICIANS 	<ul style="list-style-type: none"> SHIPPING COMPANIES 	<ul style="list-style-type: none"> EMPLOYEES LABORATORIES TECHNICIANS 	<ul style="list-style-type: none"> EXPRESS COURIER THIRD PARTIES LOGISTIC 	<ul style="list-style-type: none"> HO.RE.CA. CUSTOMERS RETAIL CUSTOMERS ILLY TECHNICIANS CONSUMERS
	QUALITY MANAGEMENT	<ul style="list-style-type: none"> GROWERS SELECTION GREEN COFFEE SELECTION AND QUALITY CONTROL PREMIUM PRICE 	<ul style="list-style-type: none"> BIG BAG ADOPTION CONTAINER FEATURES 	<ul style="list-style-type: none"> GREEN COFFEE QUALITY CONTROL TEMPERATURE AND HUMIDITY CONTROL BLENDING AND ROASTING ACTIVE PACKAGING 	<ul style="list-style-type: none"> DISTRIBUTION STRATEGY ALIGNMENT TO THE CUSTOMER NEEDS 	<ul style="list-style-type: none"> ESPRESSO MACHINE SET-UP
	KNOWLEDGE / KNOW - HOW	<ul style="list-style-type: none"> TRAINING AND EDUCATION TO GROWERS TECHNICAL ASSISTANCE TO GROWERS CROSS-FERTILIZATION OF KNOWLEDGE 	<ul style="list-style-type: none"> CRITICALITIES SHARING WITH SHIPPING COMPANIES 	<ul style="list-style-type: none"> RESEARCH & DEVELOPMENT ON PRODUCT AND PRODUCTION PROCESSES 	<ul style="list-style-type: none"> CRITICALITIES SHARING WITH EXPRESS COURIER 	<ul style="list-style-type: none"> TRAINING AND EDUCATION TO BARMAN TECHNICAL ASSISTANCE TO BARMAN
	CULTURAL DIFFUSION	<ul style="list-style-type: none"> FOSTERING OF THE CROSS-CULTURAL FERTILIZATION BRAZIL COFFEE AWARD UNIVERSITY OF COFFEE 		<ul style="list-style-type: none"> COURSE OF TASTING 		<ul style="list-style-type: none"> UNIVERSITY OF COFFEE 'ESPRESSAMENTO E ILLY' COFFEE HOUSE

Figure 2 – The illy’s practices for SCM coordination and quality assurance

Quality management along the supply chain

As highlighted in the first part of the paper, many researches has already proved how the whole 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, in particular in the espresso coffee market. Consequently it is necessary to implement quality management practices at every link of the supply chain, from the producer (in our case green coffee grower) to the consumer. However to efficiently and effectively manage the quality is necessary to control and to coordinate the entire supply chain. The small-medium enterprises have great problems in obtaining this control due to the practical unfeasibility of a vertical integration; moreover, in the coffee sector, this situation is sharpened by the geographical distances, the numerousness of potential suppliers and the barriers created by the international traders. The *illy* case study demonstrated how a small-medium enterprise can overcome the criticalities describe above by becoming a Supply Chain Coordinator (SCC) and by controlling the quality at every link through the adoption of quality management practices and a systematic application of knowledge to the whole supply chain.

Knowledge and know-how diffusion towards a supply chain learning

A new raising approach in literature is the so-called Supply Chain Learning (SCL). Bessant and Francis [6] pointed out the necessity to focalized the research not only in the intra-organizational learning but also in the inter-organizational learning because as potential lever for competitive advantage of the small-medium enterprises. Subsequently Bessant *et al.* [7] demonstrated that the competitive performance of the value stream depends upon learning and development of the whole system, not just the leading players and provided empirical evidences of the benefits of the SCL at both individual firm and also inter-firm-level. For the SCC, the coordinating or central firms which takes the lead, benefits are in terms of increase of sales, improvement in the quality and in the delivery time of materials leading to

cost savings and cost reductions. Benefits for first-tier and second-tier supplier are in terms of increasing profit margins, saving cost and product quality improvements. The authors underlined that “making SCL happen is not easy, especially as we move beyond the initial set-up phase” [7, p. 178] as there is the necessity of a strong commitment to long-term sustainability and development of learning [29]. Kaplinsky and Fitter [30] already studied the *illy* Group as an exemplar case of “systematic application of knowledge in the value chain”, but without deepen the research on cultural diffusion made by the company along the supply network.

Cultural diffusion towards a supply chain learning

The SCL is characterized by a voluntary and participative nature [31], and it proceeds most effectively when a leading partner acts as supply chain coordinator ensuring that a process o learning occurs through the chain. Nevertheless this requires a strong effort and a high use of resources of the SCC, as the sustaining of the learning processes should be maintained due to the many risk of failure. Among the factors enabling SCL there are trust and strong efforts by the SCC while, for instance, low cost culture creates destructive preconceptions or cultural differences among companies and within the parts of the same companies can block the SCL. Consequently a diffusion of a shared culture may sustain the SCL (figure 3).

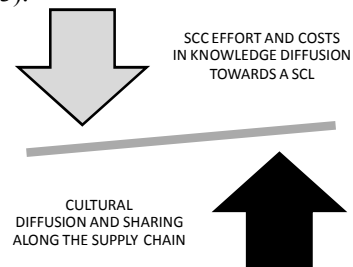


Figure 3 – The impact of cultural diffusion and sharing along the SC on SCC effort and costs

As a matter of fact Krause *et al.* [33] demonstrated the benefit of the SCL in terms of buyers performance

improvements when there is a buying firms' perception of shared values and goals with key suppliers.

Figure 4 underlines the relationships among the cultural diffusion and sharing for the coordination of the supply chain towards an improvement of product and service quality in the *illy* case. As 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 raw material to the quality of the product perceived by consumer. The effect of cultural diffusion is to mitigate the *illy* effort in maintaining a continuous improvement because it creates an emergent behaviour in the different actors that self-aligns their activity to *illy* vision. For example the Brazil award has created a cross-cultural fertilization, a knowledge transfer among the growers to reach the *illy* quality standard and self-selection (growers with poor quality decide themselves to not propose green coffee batches). Moreover if adaptive learning is the "doing what we do better", the *illy* cultural strategy created a real generative learning, defined by Bessant and Buckingham [5] as the ability to step back and reframe the problem. All these events helped to improve and self-sustain the knowledge diffusion performed by *illy*.

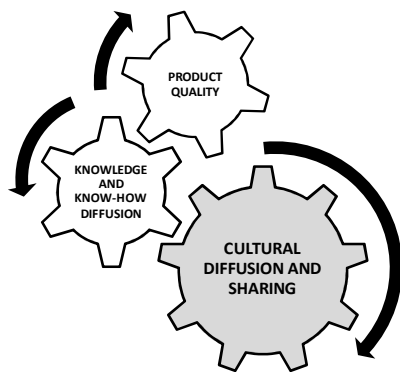


Figure 4 – Effect of *illy*'s practices to product quality

The *illycaffè* case study contributes to the literature on the quality management and on SCM suggesting that a small-medium enterprise can compete and win in the market by integrating the quality management practices along its supply chain and, above all, by becoming the SCC through a systematic diffusion of the knowledge, the know-how and the culture to the whole value chain.

If the internal and external quality management practices and the cultural diffusion in the downstream network are typical of the espresso coffee sector, an extension to the whole supply chain provides a persuading explanation of the success of *illy* and the reason of its ability to carefully coordinate the chain, ability not owned by enterprises with the same dimension. The Group has chosen to directly address the grower bypassing the international traders and managing the upstream activities. This choice has been feasible only because the enterprise owned a deep knowledge of the product and of the process. As matter of fact the diffusion of the knowledge, the know-how and the culture performed through many initiatives (guidance on

picking modalities, "Premio Brasil de Qualidade do Café Para Espresso" in Brazil, university of the coffee foundation,...) allowed the emergence of virtuous behaviours among green coffee growers supplier self-selection, giving a considerable improvement of the offered quality. In the relationships with the ship enterprises and with the express couriers, the diffusion of the know-how is translated in a sharing of the awareness that guarantees an indirect insurance of the quality. But it is within the walls of the firm that the knowledge, the know-how and the culture initially originate, develop and diffuse; these can become sources of competitive advantage and of supply chain coordination only through a constant renewal of them, as demonstrated by the several activities of research and development and marketing performed by *illy*.

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Background of Authors

Massimo Biotto is currently a Ph.D. student in Managerial Engineering at the University of Padua. He received a Master's Degree in Managerial Engineering from the University of Udine. His main research fields are related to strategy and operations management.

Alberto Felice De Toni is full professor of operations strategy at the University of Udine. He is dean of the faculty of engineering. His main research fields are related to manufacturing strategy, operations and supply chain management, performance measurement systems, innovation management, evolutionary and complexity management.

Fabio Nonino is currently a contract researcher at University of Udine. He received a Ph.D. in Managerial Engineering from University of Padua and a Master Degree's in Managerial Engineering from University of Udine. His main research fields are related to informal networks, operations management and project management.