



Approaches to supply chain logistics integration in the textile/clothing sector: an exploratory study in the Region of Campania

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Abstract

Given its potential to reduce lead times and total costs of operations, increase delivery speed, responsiveness and flexibility, and ultimately customer satisfaction, supply chain logistics integration can help to improve the competitiveness of the Italian textile and clothing (T/C) firms. However, few research works on supply chain management in general, and few studies on logistics integration in particular have focused their attention on this sector. This paper analyses the approaches to supply chain logistics integration adopted by T/C companies located in the Region of Campania (Southern Italy) through a qualitative approach based on case studies. The preliminary findings of the study highlight that the prevailing approach to supply chain logistics integration is limited to functional boundaries within the firm.

Keywords: Supply chain logistics integration; Textile and clothing; Region of Campania.

Introduction

In the past years, European textile and clothing (hereinafter referred to as T/C) manufacturers have been facing unprecedented competitive pressures generated by the increasing globalisation trend, the process of trade liberalisation and the decline in international consumption. To cope with these pressures, the industry out-sourced operations with a lower value-added and re-engineered activities resorting to a higher use of quick response and more general applications of computer-aided techniques for design, cutting and finishing (Taplin and Winterton, 1997; Stengg, 2001). Despite these efforts, the increasing penetration of imports from low-wage newly industrialized countries makes competition on price more aggressive and the higher market volatility drives T/C manufacturers to get additional efficiency from extant production systems (Taplin, 2006).

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Notwithstanding its unique profile in the international scenario, also the Italian T/C industry has been subject to the tensions affecting this sector in other advanced industrialized countries. In the four-year period 2002-2005, T/C turnover in Italy declined by round 7 % and exports recorded a negative trend, leading to an over 10 % reduction in trade balance surplus (Smi-Ati, 2006). Despite the economic slowdown, the Italian T/C industry has maintained its leading position in the European scenario. Many manufacturers have been at the forefront of industrial upgrading, striving to compete on design, quality and fashionability, thus remaining in high value-added market segments. They also focused on rapid product innovation in order to enhance their brand power and offer “cutting edge” products that anticipate market trends (Burresti and Guercini, 2003).

While thanks to its creativity and product quality the Italian T/C industry has been able to maintain its competitive advantage vis-à-vis the rest of the world (Saviolo, Testa, 2000; Guercini, 2004), the rising complexity of the competitive scenario requires additional efforts aimed at optimising and integrating operations along the supply chain. Specifically, the major challenge that firms of this sector are facing is to meet the requirements of high quality products, minimal lead times and high flexibility while meeting a consumers' demand characterised by high levels of volatility (Vona, 2003; Galli e Brun, 2004; Boscacci, Lucca and Maggi, 2005). As Italian T/C companies are confronted with the need to focus on style and quality - while improving their operations so as to reduce lead times and achieve high flexibility - effective supply chain management (SCM) and supply chain logistics integration become increasingly critical factors. The integration of logistics activities amongst the supply chain members can significantly support Italian T/C firms' efforts to face the constantly changing competitive scenario, allowing for its potential to reduce redundancy and duplication costs, improve delivery times, responsiveness and flexibility and, ultimately, customer satisfaction (Stank et al., 2001). The supply chain logistics integration can potentially play an even more crucial role for the competitiveness of Italian T/C firms, given the high proportion of small-sized companies in the sector and the increased internationalisation of sub-contracting practices (Guercini, 2004), which combine to generate highly fragmented supply chains and, consequently, a higher logistical demand.

Given this scenario, this paper analyses the approaches to supply chain logistics integration adopted by the T/C companies of the Region of Campania. This paper is sub-divided as follows. In the first section, the concept of supply chain logistics integration is introduced, analysing the essential features of logistics process integration within the supply chain management. The integration of logistics activities along the supply chain is identified as a crucial leverage to achieve a higher performance. An overview of the structure of the T/C sector in the Region of Campania is then provided to better describe the area investigated. The methodology applied in this study is then illustrated and the preliminary findings of the research work are presented. Finally, in the last section the authors draw some conclusions and implications that might be useful for further research.

Supply chain logistics integration

In the past decade, literature and practice focused their attention on the integrated management of supply chain processes, also referred to as Supply Chain Management (SCM). The conventional wisdom in most supply chain management literature is that “the more integration - the better the performance of the supply chain” (Bagchi and Skjoett-Larsen, 2005). Indeed, the major assumption behind the SCM concept is that there is an economic rationale in integrating and coordinating activities and processes carried out in sequence (Christopher, 1992; Hakansson and Persson, 2004).

In this respect, the logistics function plays a key role. Logistics has been traditionally defined as the process of planning, implementing and controlling the efficient flow and storage of goods, services and related information from the point of origin to the point of consumption in order to meet customers’ requirements (Council of Logistics Management, 1998). Given its “boundary-spamming” nature, logistics can be used as a vehicle for cross-functional integration (Morash et al., 1996) as well as for coordination and integration of activities along the chain (Langley and Holcomb, 1992; Bowersox and Closs, 1996; Min and Keebler, 2001). Overall, in the SCM literature there is general agreement that competitive supply chains employ well-integrated logistical processes (Stank et al., 2001).

The traditional approach of logistics integration focused on functional boundaries within a firm (Bowersox and Daugherty, 1987), whereas a more recent approach of logistics integration expands the scope of integration across firm boundaries along the entire supply chain (McGinnis and Kohn, 1990; Stock et al., 1998, 2000). In this respect, supply chain logistics integration is characterized by the integration of logistics activities across functional departments within the firm, as well as by the integration of the firm’s logistics activities with the logistics activities of other supply chain members (Stock et al., 1998). This notion of supply chain logistics integration reflects the growing importance of logistics as a coordinating mechanism amongst the actors of the supply chain and, ultimately, as a source of customer value and competitive advantage (Chen and Paulraj, 2004).

Research on the topic has provided evidence of an increased operational and/or organizational performance as result of the integration of logistics processes within and across firm’s boundaries. Larson (1994) reported a significant relationship between inter-organizational logistics integration and total costs reduction. Ellinger et al. (1997) provided empirical support for the relationship between integrated management of logistics activities and customer service performance. Stock et al. (1998, 2000) found high levels of internal and external logistics integration to be crucial for improving the performance of firms in extended manufacturing supply chains. Empirical evidence supporting the link between logistics integration and superior operating performance has been also provided by Bowersox et al. (1999) and Stank et al. (2001).

However, research works on supply chain management in general (Bruce, Daly and Towers, 2004) and studies on logistics integration in particular have usually neglected this sector.

The textile/clothing sector in the Region of Campania: an overview

The notable dimension of the Italian T/C sector is still an element that distinguishes Italy from other European countries with high labour costs (Stengg, 2001; Guercini, 2004; Taplin, 2006). The T/C sector represents a substantial share of the Italian manufacturing industry (over 9 % of the turnover and 12% of the total employees working in this industry). These figures are considerably higher than EU average, accounting for 3.7 % of turnover and 7.2 % of employees in the manufacturing industry (Eurostat, 2003). The peculiarity of the Italian T/C sector within the European scenario is also due to a number of differences concerning the industrial organization of the manufacturing process and the structure of the apparel distribution channels (Guercini, 2004). With regard to the manufacturing process, a striking feature is the considerable number of Italian T/C firms, most of which are quite small and locally aggregated in industrial districts. As to the distribution channels, independent and traditional retailers cover the largest market share, whereas other European countries are characterized by an increasing predominance of large distribution chains and specialised chains.

Analysing the regional distribution of the Italian T/C industry, round 26% of the firms in this sector are based in Southern Italy. Campania is the second region, following Puglia, with 31% of the total T/C firms in this area (Consorzio Promos Ricerche, 2005). The profile of the T/C firms in the region reflects the specificities of the sector at the national level in terms of both industrial organization and distribution structure. The vast majority of T/C firms operating in the region are small and medium-sized enterprises (SMEs) locally aggregated in the five industrial districts ratified by the Campania region¹ (Grumo Nevano-Aversa, Calitri, Sant'Agata dei Goti, San Marco dei Cavoti and San Giuseppe Vesuviano). Moreover, as for the whole Italian T/C industry, the retail distribution of apparel in the region consists of independent retailers that, despite the recent decline of their market share, still hold a leading position within the total market of apparel consumption.

The region is characterized by a strong vocation for clothing, with over 80% of the firms in the sector focusing on apparel manufacturing (Table 1).

Table 1: Campania T/C sector – number of firms.

	2001		2005	
	No.	%	No.	%
Textile	864	18	1204	19
Clothing	3855	82	5224	81
Total	4719	100	6428	100

Source: Consorzio Promos Ricerche, 2005.

Specifically, apparel companies can be sub-divided into two main groups. The first group includes few companies with strong brands that are successfully positioned on the national and international markets and cover upper-class niche segments. The second

¹ It is worth noting, however, that in most cases the mechanisms of exchange, generation and reproduction of intangible resources (knowledge, trust) and the integrated set of social and economic relations that usually characterize the entrepreneurial approach in the industrial district do not fully work within these local systems. In this respect, the traditional economic notion of “industrial district” cannot be fully applied to the regional systems specialized in T/C (Izzo and Ricciardi, 2006).

group comprises the vast majority of very small firms typically specialised in single activities of the apparel manufacturing cycle (cutting, sewing, ironing, etc.) and acting as subcontractors for larger firms at the local or national level. As illustrated in Table 1, textile manufacturers are a small percentage of the T/C firms in the region; most of them are specialized in top quality products, such as fine fabrics for furnishings targeted to the end user market.

The complex and fragmented structure of the T/C pipeline in the region is illustrated in Figure 1.

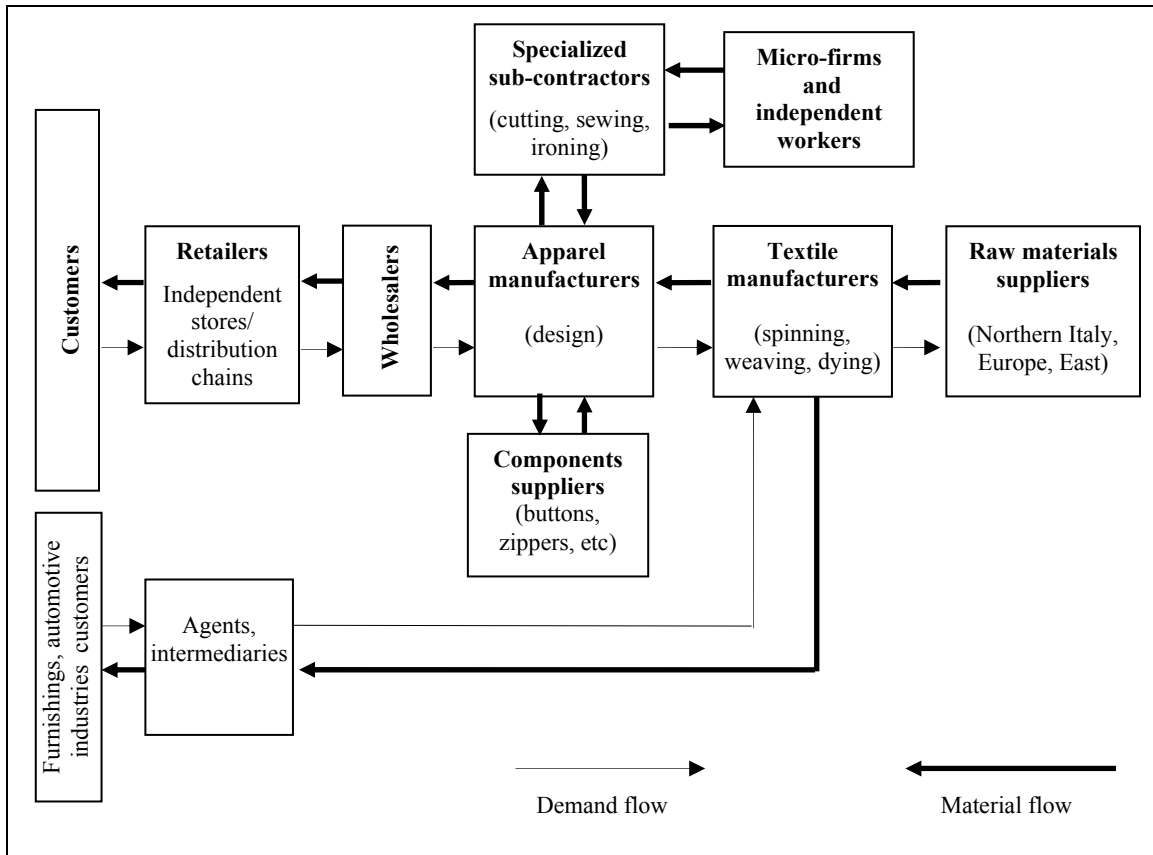


Figure 1: Campania textile/clothing pipeline.
Source: adapted from Izzo and Ricciardi (2006).

Research methodology

As already mentioned, the research was of an exploratory type being focused on an industry where few research works on supply chain logistics integration had been previously conducted. For this reason a qualitative approach was chosen, based on case studies. Indeed, the case method lends itself to early, exploratory investigations in areas where the variables are still unknown and the phenomenon is not fully understood (Meredith, 1998; Stuart et al., 2002). This approach gave us the necessary background to gain a first insight into the complex phenomenon of supply chain logistics integration in the T/C sector as a first step to outline questions and assumptions for a following study (Voss et al., 2002; Yin, 1994). Case studies were aimed at identifying and

comparing the approaches through which logistics integration (if any) is achieved from the perspective of T/C manufacturers.

The research work was sub-divided into three stages. In the first stage, loosely structured interviews with a range of industrial stakeholders, mainly belonging to the Campania T/C trade associations, were carried out to better identify questions and criteria for case selection. In particular, discussions with experts highlighted the need to exclude from the research the firms operating as subcontractors for larger T/C companies. Actually these firms have a low potential of logistics integration in the wider supply chain context and their priority seems to be reducing their dependency on larger companies by creating their brand identity. An initial list of potential firms to be included in the research work was then made including companies facing potentially relevant logistics demands also allowing for the international scope of their business. Case selection was based on companies' diversity in terms of manufacturing specialisation (clothing or fabrics), type of production (ready to wear or planned seasonal production) and critical success factors (cost or quality).

In the second stage, three case studies were conducted involving two apparel manufacturers and one fabric producer. A semi-structured interview guide was used to gather data on the following issues:

(1) General characteristics of the company (e.g. number of employees, type and range of products, markets served).

(2) General description of the company's supply chain in terms of activities, relationships and actors involved.

(3) Approach to logistics integration. In particular, based on the review of the relevant literature (e.g. Bowersox et al., 1999; Stank et al., 2001; Stock et al., 1998, 2000), the approach to supply chain logistics integration was captured and analysed in terms of:

(a) Internal logistics integration across its functional boundaries, denoted by the degree of interaction of logistics activities with other functional areas. Indications of internal integration include a number of features such as: organizational culture encouraging openness and teamwork; increased communication (electronic and interpersonal) between logistics and other departments; coordination of logistics activities with other departments through cross-functional work teams, procedures and performance standards/measures.

(b) External integration of logistics activities across the firm's boundaries, denoted by the degree of integration of the firm's logistics activities with the logistics activities of its suppliers and customers. External integration includes, for example: structural adjustment of logistics facilities and network; development of customer-specific logistics programs; organizational culture encouraging inter-firm collaboration (e.g. through a shared mental framework with customers and suppliers, sharing of strategic information with selected suppliers and/or customers); electronic and interpersonal communication with customers and suppliers (e.g. through the use of cross-organizational information systems, frequent formal meetings, frequent informal communication); coordination of logistics activities with operations carried out by customers and suppliers (e.g. through cross-enterprise work teams, cross-enterprise and overall supply chain performance standards and measures, shared rewards and risk systems).

As to data collection, the company's owners and the managers responsible for the strategic setup and daily operations of the logistics activities were interviewed. In

addition to the interviews, the company's documents and websites were analysed and used for data collection.

In the last stage, the research findings were analysed within and across the three case studies to draw some conclusions based upon the results obtained.

Preliminary findings

Three companies were investigated to understand the approaches to supply chain logistics integration adopted in the textile/clothing sector in the Region of Campania, namely two apparel manufacturers and a fabric producer. Although the sample size is small and the results may not have any statistical significance, these case studies might provide interesting insights into the topic under investigation.

Table 2 includes key information concerning the companies analysed and their logistics integration practices.

Company A

Company A is a small apparel manufacturer of women's wear for the ready to wear apparel mass market. The company is part of a group of three firms operating at different points of the textile and apparel chain, namely a fabric producer, an apparel manufacturer (company A) and a wholesale retailer respectively. The company's success primarily relies on cost efficiency that enables it to compete very aggressively on price in both the national and European market. The company's supply chain is illustrated in fig. 2.

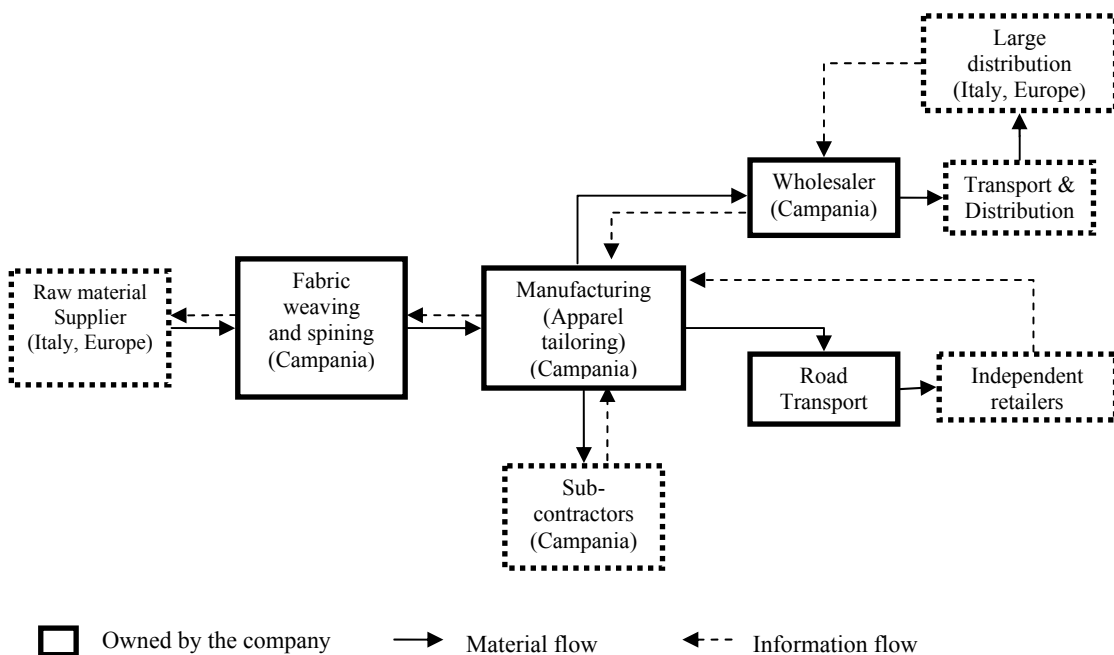


Figure 2: The supply chain of company A.

The company purchases most of its textile fabrics from the group's fabric producer and relies on the group's retailer for the wholesale of its products, which are mostly placed on the national market by large distribution firms. Manufacturing activities (cutting, sewing, ironing, etc.) are outsourced to a group of about ten local small sub-contractors with whom the company has established close, long-term partnerships; this enables it to achieve cost efficiency and production flexibility.

For better co-ordinating its operations with those performed by the other firms of the group, the company recently implemented structural adjustments of its logistics facilities. In particular, a large centralised warehouse was created to store fabrics and finished products. This facility is an integration interface for the logistics operations within the group as well as between the company and its suppliers (small sub-contractors). Integration of logistics activities is also facilitated by a close relationship with the sub-contractors that results in collaborative practices associated with the execution of manufacturing operations as well as with logistics issues. Actually, the collaboration between the company and its selected suppliers makes it possible to have a constant exchange of information related to production quality, schedules and delivery, thus enhancing coordination of operations.

As to transport and distribution of finished products, the company adopted two different procedures. Transport of products to large distribution chains is outsourced by the group's wholesaler to express couriers selected based upon the final destination and the logistical requirements of the consignments. The degree of satisfaction of these customers is monitored through a formal program based on monthly reports. By contrast, transport of finished products to independent retailers is carried out by company A with its own logistical resources so as to guarantee flexible deliveries.

Company B

Company B is a small premium brand manufacturer of men's wear and women's wear. Its brand is well known at the international level, with over 70% of its total sales absorbed by the European and U.S. markets. It is a young company in its sixth year of trading, with ten employees. The company strategy is to be viewed as one of the exclusive Italian brands in design, a modern company with a top-quality design profile. To this end, it heavily invests in design skills and has two full-time designer employees. Along with design, sourcing of materials is another critical area for the company's success, which significantly relies on the high quality and innovativeness of the textile fabrics used. Figure 3 illustrates the company's supply chain.

Most fabrics are purchased from Italian leader producers directly. Manufacturing of finished garments is outsourced to a group of about fifteen small local laboratories having stable relationships with the company. Recently, the company invested in a new computer system that makes it possible to track the development stage for each batch of fabrics and garments. Despite the availability of an advanced IT system, data/information sharing with the manufacturers still relies on traditional communication devices, such as telephone and fax. To speed up the process and increase its effectiveness, Company B is urging its suppliers to adopt and implement IT systems. Finished products are distributed in Western Europe and U.S. markets through Italian and foreign agents. Transport is totally outsourced based on short-term contracts with express couriers (such as DHL, TNT and Ambrosetti Group) selected by the

company on the basis of different geographical areas and the clients' specific logistics requirements.

The company's internal logistics integration is primarily denoted by the blurred distinction between logistics and other areas of the firms, by the high level of communication (both electronic and interpersonal) amongst the company staff.

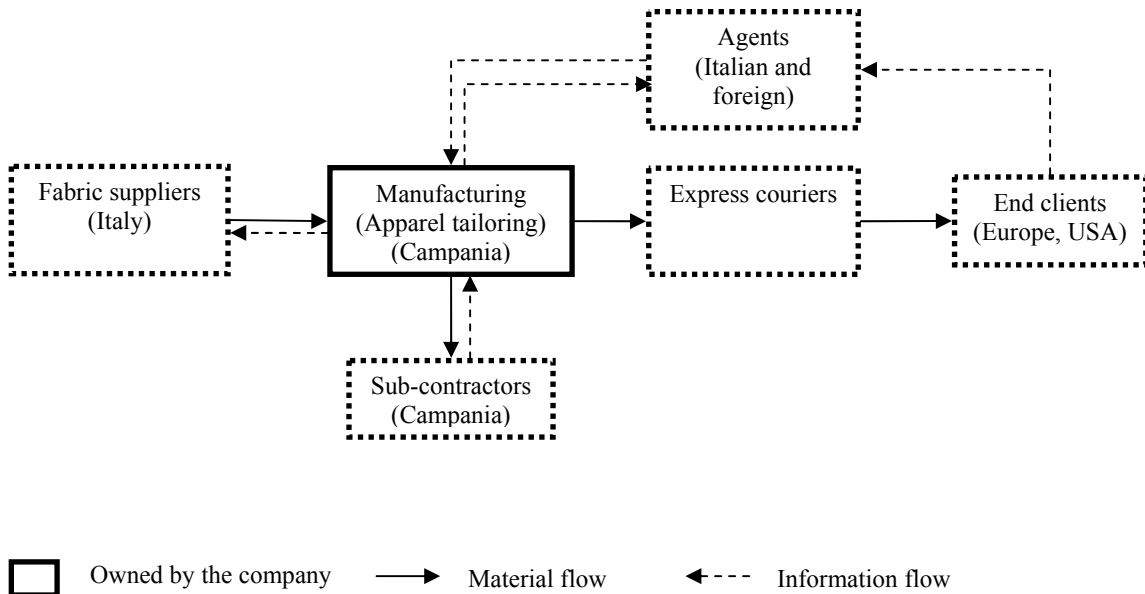


Figure 3: The supply chain of company B.

Coordination of logistics flows between the company and its suppliers (both raw materials and sub-contractors) is achieved through the centralised management of warehousing. Despite the possibility to plan these flows in advance (planned seasonal production), the deficiency of logistics facilities that characterises its sub-contractors forces the company to have a high stock of raw materials.

Company C

Company C is specialised in producing fabrics for furnishings. It has a long-established tradition (dating back to 1885) and employs over 200 people. The company's critical success factors are design and high quality of products that in the past decade enabled it to increase its market share at worldwide level. Following the increase in competition, the company made its major efforts to strengthen its brand reputation as a way to protect itself against cheaper products; it invested in R&D to develop top quality, innovative fabrics. Its final market is mainly an international market (Europe, U.S.A and Arab Countries) while the national market accounts only for 30% of its total sales. The company's supply chain (fig. 4) shows a quite linear structure due to the low number of external actors involved in the processes.

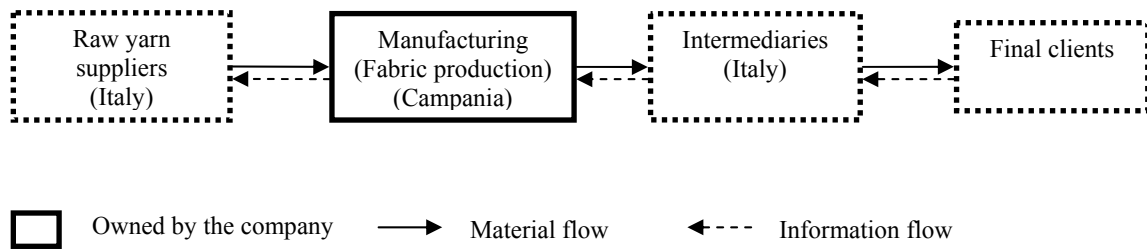


Figure 4: The supply chain of company C.

The company purchases raw yarns from few Italian high profile suppliers with which it has established long-term partnerships. Production is totally carried out in-house by highly skilled personnel so as to guarantee a high quality level, while distribution is carried out by a group of about forty Italian specialised intermediaries. Transport is totally outsourced to express couriers.

Table 2: Approaches to supply chain logistics integration adopted by the firms investigated.

	<i>Company A</i>	<i>Company B</i>	<i>Company C</i>
Firm's characteristics			
Product	Women's wear	Women's wear, Men's wear	Fabrics for furnishings
Production	Ready to wear production	Planned seasonal production	Planned seasonal production
Market	Italy, Europe	Europe, USA	Europe, USA, Italy
Critical success factors	<ul style="list-style-type: none"> • Cost leadership 	<ul style="list-style-type: none"> • High quality design • Innovativeness of the fabrics used 	<ul style="list-style-type: none"> • Brand reputation • High quality products • High quality design
Main features of the supply chain	<ul style="list-style-type: none"> • Vertical integration • Outsourcing of low value-added manufacturing activities to small sub-contractors 	<ul style="list-style-type: none"> • Outsourcing of low value-added manufacturing activities to small sub-contractors • Distribution through agents 	<ul style="list-style-type: none"> • Direct sourcing of raw materials from few Italian suppliers • Production totally performed in-house • Distribution through intermediaries
Logistics integration			
Internal	<ul style="list-style-type: none"> • Single centralised warehouse for fabrics and finished products 	<ul style="list-style-type: none"> • Enterprise information system 	<ul style="list-style-type: none"> • Enterprise information system • Cross-functional work team
External with suppliers	<ul style="list-style-type: none"> • Centralised warehouse 	<ul style="list-style-type: none"> • Centralised warehouse 	<ul style="list-style-type: none"> • Long-term partnerships
External with customers	<ul style="list-style-type: none"> • In house transport of finished products to independent retailers 		

An Enterprise information system (ERP) guarantees the coordination of logistics activities amongst the firms' departments. However, the company has recently set up a cross-functional work team charged with developing and implementing a formal

procedure to facilitate information sharing and reporting amongst the various departments. By contrast, external integration can be found in the management of upstream flows only, coordinated through long-term partnerships with few and selected raw materials suppliers responsible for the transportation of raw yarns to the company site. The close relationship with these suppliers guarantees both frequent, on time and reliable deliveries and a good level of flexibility associated with the demand variability.

Conclusions

Given the crucial role that might be played by supply chain logistics integration for the competitiveness of T/C firms, this paper aims at providing an insight into the approaches to logistics integration through a multiple case analysis of T/C companies based in the Region of Campania (Southern Italy).

Based upon the findings of the research work, the companies investigated seem to be oriented towards an internal logistics integration. Such an integration is differently achieved through a centralised warehouse for raw materials and finished products, electronic and interpersonal communication amongst the firm's staff and cross-functional work teams. This is likely to be relevant as far as the achievement of supply chain logistics integration is concerned in that the relevant literature reckons intra-company integration to be a pre-requirement for inter-company integration. Actually, one of the major obstacles to fully integrating materials and information flows across the supply chain lies in the inadequacy of the internal management systems of the individual firms - e.g. fragmentation in information flows, lack of integration amongst different company's departments/functions, low level of rationalisation and standardisation in operational processes (Hamblin and Groves, 1995; Forza et al., 2000; Simchi-Levi et al., 2000, Romano, 2003). However, findings provide little evidence for external logistics integration, which in the firms investigated appears to be limited to the upstream flows in the supply chain (i.e. involvement of raw materials and finished products suppliers in planning and organizing logistics activities).

In summary, the cross-case analysis highlights that the prevailing approach to supply chain logistics is limited to functional boundaries within the firm regardless of the specific characteristics of the companies. This apparently leads to question the importance of the type of production – ready to wear versus planned seasonal production - and market orientation of the firm - basically price versus quality - as variables that might have an impact on the extent of the supply chain logistics integration. In this respect, efforts to collect data on a large sample of firms should be made - including the perspectives of other actors within the supply chain (especially retailers - to support more exhaustive and final conclusions as to the status of supply chain logistics integration in the sector.

References

- Bagchi, P. K. and Skjoett-Larsen, T. (2005) "Supply chain integration: a European survey", *International Journal of Logistics Management*, 16 (2) pp. 275-294.
- Boscacci, F., Lucca, D. and Maggi, E. (2005) *I servizi di logistica per la competitività della filiera italiana della moda*, Politecnico di Milano, Isfort, available at: <http://www.isfort.it/>
- Bowersox, D. J. and Closs, D. J. (1996) *Logistical management: The integrated supply chain process*, McGraw-Hill, New York.
- Bowersox, D. J. and Daugherty, P. J. (1987) "Emerging patterns of logistical organization" *Journal of Business Logistics*, 8 (1), pp. 46-60.
- Bowersox, D. J., Closs, D. J. and Stank, T. P. (1999) *21st Century Logistics: Making Supply Chain Integration a Reality*, Council of Logistics Management, Oak Brook, IL.
- Bruce, M., Daly, L. and Towers, N. (2004) "Lean or agile. A solution for supply chain management in the textiles and clothing industry?" *International Journal of Operations & Production Management*, 24 (2), pp. 151-170.
- Burresi, A. and Guercini, S. (2003) "Nuovi attori e integrazione di funzioni nel marketing strategico della distribuzione", Proceedings from the International Conference "Marketing trends in Europe", Venice, 28-29 November.
- Chen, I. J. and Paulraj, A. (2004) "Understanding supply chain management: critical research and a theoretical framework" *International Journal of Production Research*, 42 (1), pp. 131-163.
- Christopher, M. (1992) *Logistics and supply chain management*, Pitman Publishing, London.
- Consorzio Promos Ricerche (2005) *Import-export in Campania*, Assessorato all'Agricoltura ed alle Attività Produttive della Regione Campania.
- Council of Logistics Management (1998) retrieved from the World Wide Web: www.clm1.org/
- Ellinger, A. E., Daugherty, P. J. and Gustin, C. M. (1997) "The relationship between integrated logistics and customer service" *Transportation Research - Part E*, 33 (2), pp. 129-138.
- Eurostat (2003), available at: <http://europa.eu.int/comm/enterprise/textile/statistic.htm>
- Forza, C., Romano, P. and Vinelli, A. (2000) "Information technology for managing the textile apparel chain. Current use, shortcomings and development directions" *International Journal of Logistics: Research and Applications*, 3 (3), pp. 227-243.
- Galli, B. and Brun, A. (2004) "Un approccio per migliorare i processi logistici nel settore tessile" *Logistica Management*, January-February, pp. 75-84.
- Guercini, S. (2004) "International competitive change and strategic behaviour of Italian textile-apparel firms" *Journal of Fashion Marketing & Management*, 8 (3), pp. 320-339.
- Hakansson, H. and Persson, G. (2004) "Supply Chain Management: The Logic of Supply Chains and Networks" *International Journal of Logistics Management*, 15 (1), pp. 11-26.
- Hamblin, D. and Groves, G. (1995) "Managing advanced manufacturing technology in the clothing industry" *The Journal of Clothing Technology and Management*, 12 (2), pp. 1-12.
- Izzo, F. and Ricciardi, A. (2006) *Relazioni di cooperazione e reti di imprese. Il caso della Campania*, Franco Angeli, Milano.
- Langley, J. C. Jr. and Holcomb, M. C. (1992) "Creating customer logistics value" *Journal of Business Logistics*, 13 (2), pp. 1-27
- Larson, P. D. (1994), "An empirical study of inter-organizational functional integration and total costs" *Journal of Business Logistics*, 15 (1), pp. 153-169.
- McGinnis, M. A. and Kohn, J. W. (1990) "A factor analytic study of logistics strategy" *Journal of Business Logistics*, 11 (2), pp. 41-63.
- Meredith, J. (1998) "Building operations management theory through case and field research" *Journal of Operations Management*, 16 (4), pp. 441-454.
- Min, S. and Keebler, J. S. (2001) "The role of logistics in the supply chain", In: Mentzer, J.T. (eds), *Supply Chain Management*, Sage Publications Inc., Newbury Park, CA.
- Morash, E. A., Droge, C. L. and Vickery, S. K. (1996) "Boundary spanning interfaces between logistics, production, marketing and new product development" *International Journal of Physical Distribution & Logistics Management*, 26 (8), pp. 43-62.
- Romano, P. (2003) "Coordination and integration mechanisms to manage logistics processes across supply networks" *Journal of Purchasing and Supply Management*, 9, pp. 119-134.

- Saviolo, S. and Testa, S. (2000) *Le imprese del sistema moda. Il management al servizio della creatività*, RCS Libri, Milano.
- Simchi-Levi, D., Kaminsky, P. and Simchi-Levi, E. (2000) *Designing and Managing the Supply Chain. Concepts, Strategies, and Case Studies*, Irwin McGraw-Hill, New York.
- Smi-Ati, Federazione Imprese Tessili e Moda Italiane (2006) *Il tessile-moda italiano nel 2005 e nei primi mesi del 2006*, available at: http://www.smi-ati.it/documenti/centrostudi/TA2006_aprile_def.pdf
- Stank, T. P., Keller, S. B. and Closs, D. J. (2001) "Performance benefits of supply chain logistical integration" *Transportation Journal*, Winter/Spring, pp. 32-46.
- Stengg, W. (2001) "The textile and clothing industry in the EU" *Enterprise Papers*, No. 2-2001, European Commission, Brussels.
- Stock, G. N., Greis, N. P. and Kasarda, J. D. (1998) "Logistics, strategy and structure: a conceptual framework" *International Journal of Operations & Production Management*, 18 (1), pp. 37-52.
- Stock, G. N., Greis, N. P. and Kasarda, J. D. (2000) "Enterprise logistics and supply chain structure: the role of fit" *Journal of Operations Management*, 18, pp. 531-547.
- Stuart, I., McCutcheon, D., Handfield, R., McLachlin, R. and Samson, D. (2002) "Effective case research in operations management: a process perspective" *Journal of Operations Management*, 20, pp. 419-433.
- Taplin, I. M. (2006) "Restructuring and reconfiguration. The EU textile and clothing industry adapts to change" *European Business Review*, 18 (3), pp. 172-186.
- Taplin, I. M. and Winterton, J. (Eds) (1997) *Rethinking Global Production*, Ashgate, Aldershot.
- Vona, R. (2003) "Marketing e produzione nel pronto-moda: il "modello" Zara", Proceedings of the International Conference "Marketing trends in Europe", Venice, 28-29 November.
- Voss, C., Tsiriktsis, N. and Frohlich, M. (2002) "Case research in operations management", *International Journal of Operations and Production Management*, 22 (2), pp. 195-219.
- Yin, R. (1994) *Case Study Research Design and Methods*, Sage Publications Inc., Newbury Park, CA.

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