DEMAND LED SUPPLY CHAIN MANAGEMENT IN THE UK FASHION INDUSTRY

Prof. Ron Masson, Laura Iosif , June Fernie, Grant MacKerron

Napier University, Edinburgh, Craighouse Campus, EH10 5LG, UK

1. Introduction

In its 'National Strategy for the UK Textile and Clothing Industry' (DTI, 2000), the Department of Trade and Industry describes the clothing and textile sector as substantially contributing to the UK economy, adding £7 billion of value annually. According to UK Trade & Investment, the clothing and knitwear sectors are worth about £8.1 billion, with 7.500 companies employing around 180.000 people. Clothing alone has sales of £6.6 billion and exports £2.2 billion.

However, the industry is currently facing the greatest challenge in its history (DTI, 2000). For the past few years, the UK clothing sector has been confronted with decreasing production (£4,932 billion in 2001 compared to £5,938 billion in 2000) and a massive fall in employment by 53% (2001 compared to 1973), while the UK consumer expenditures on clothing are increasing (£35 billion in 2001 compared to £33.7 billion in 2000). Low labour cost suppliers are securing an increasingly large share of world markets, state aids in a number of overseas countries are distorting competition and sourcing patterns on the UK High Street are changing (CAPITAB Trust, 2001).

Consumer spending patterns are also changing and demand volatility is at its highest, customers constantly asking for more frequent innovation, greater exclusivity, more choice and better service. In order to survive in this increasingly dynamic, complex, diverse and competitive business environment, clothing retailers have to react more speedily, while at the same time avoiding the penalties associated with increasingly changing demand patterns (Lowson, 1998). Short lead times, short runs, quick response and flexible manufacturing are required, all used at a supply pipeline level (Forza and Vinelly, 1996).

2. The UK Apparel Retailing

The UK apparel market is characterised by the dominance of 4 chain store groups (Marks and Spencer, Arcadia Group, Next Retail and Matalan), which accounted for 33.3% of clothing retailers' sales in 2002 (Mintel Report). The fastest growing retailers, however, are smaller chains of specialist clothing retailers (Oasis, New Look, River Island, TopShop). According to National Statistics, sales through specialist clothing retailers in the UK stood at £26,050m excluding VAT during 2002, a 20.1% increase in real terms over 1998. Their success has been widely associated in the literature with their increasing ability to offer fashionable items at reasonable prices. As such, our research objective is to identify what are the strategies employed by these companies in order to adapt to the above mentioned market pressures.

3. Research Approach and Scope

Our research aims to investigate how companies in the clothing sector manage to service the demands of speed and efficiency whilst responding with flexibility to demand fluctuations.

Four UK specialist clothing retailers were involved in this study, chosen from the top 10 leading clothing specialists, in terms of market share. A case study methodology was chosen, each case based on an in-depth interview with a senior supply chain executive, as this methodology limits preconceptions and imposes no bounds.

An initial literature review revealed that controlling uncertainty in customer demand, manufacturing processes and supplier performance is the most critical factor for effective SCM in the clothing industry (i.e. Kilduff, 2000). Retailers' success in the market place depends on their ability to identify and monitor demand on a real time basis and then manage a flexible supply chain that allows them to adapt to changes in demand and promptly dispatch the right product to the point of sale. Identifying the market needs (*'getting the product right'*) is essential, but in order to achieve a high speed to market a supply chain able to deliver the product in a timely manner is required (*'getting the response time right'*). A supply chain cannot penetrate a new market segment due to its inability to change production or supplies to meet the new demands. Finally, market opportunities can be missed when customer orders with short order lead times could not be met (Christopher and Lee, 2001).

Flint (2004) states that an increased level of information exchanges and collaboration between the different actors in the chain for quick response systems is essential. Processes that rapidly and continuously generate and exchange market intelligence about what customers value, how those value perceptions are changing anywhere it occurs throughout the global supply chain and the effect it has on the production process must exist. Collaborative relationships or partnerships are described as preferential situations and as beneficial to all parties involved (Lamming, 1996). They facilitate the synchronisation of the supply chain through information accuracy, visibility and accessibility and this could bring a dramatic reduction in the total system inventory while simultaneously improving responsiveness to demand (Christopher and Lee, 2001).

However, previous studies reported that feedback 'from apparel manufacturers and fabric suppliers to date shows a clear need for greater co-operation between the two sectors of the industry' (Haines, 1990), while Banning (1994) stated that the relationship between the manufacturer and retailer for the past thirty years has been largely a matter of 'dog eat dog'. Jones (2002) considers that this has been the result of the diversity of customers that retailers are facing, increase in marketing channels used and competitors faced, together with an increased globalisation of the industry. Due to the relaxation of the import quotas and tariffs, retailers have now access to a much larger supplier base, offering not only low labour costs, but also a highly skilled work force and proximity to the main textile manufacturers. At one end of the supply chain, the industry is dominated by large, powerful high-street retailers and at the other end by mass producing, high quality textile manufacturers. The garment manufacturing sector of the industry, producing clothing items from textiles for the retailers, consists of large numbers of small companies with a limited amount of power (Warner, 2001).

As such, starting with the premise that the UK clothing retailers manage to successfully survive in a highly volatile environment, exposed to high risks, while not engaging in strategic alliances with their suppliers, our case studies aim to identify what is the supply chain management best practice in this sector. Further research intends to measure the impact that the identified best practices have on the overall performance of a supply chain.

4. SCM in the Fashion Industry

Previous surveys of the sector (i.e. Tdctrade) revealed that clothing shoppers currently comprise those who are willing to pay higher prices for more stylish and fashionable clothing and those who demand value products at bargain prices. As a result, the UK retail groups that we interviewed revealed that they have adopted a dual system of sourcing, which enables them to source basic lines (core product) from mass production companies, adopting a make-to-stock chain structure, while using smaller, more flexible firms for fashion lines, thus a quick response, make-to-order chain structure. The optimum balance of global and domestic sourcing is significant to their profitability (Jin, 2004).

Each product category requires a distinctly different Supply Chain Management strategy (i.e. lean or agile). Each of these strategies will have 2 different functions: a physical function (that includes converting raw materials into finished goods and transporting them along the supply chain) and a market mediation function (whose purpose is ensuring that the variety of products reaching the marketplace matches what consumers want to buy (Fisher, 1997). For each of the two possible strategies, the 2 functions will have a different level of importance.

The two product-market combinations, corresponding to the lean and agile strategies, have different characteristics and must be recognised separately and not be coordinated in some mixed form (Meijboom, 1999).

4.1 Lean and Agile Supply Chain Management

Leanness means developing a value stream to eliminate all waste, including time, and to enable a level schedule. It involves identifying all non-value adding activities in the development and production within the entire logistics network, extending to and including the customer, as waste and eliminates them (Naylor et al., 1999). The 'market winner' (Christopher and Towill, 2000) in this case is cost, while the market qualifiers are quality, lead-time and service level. Functional products with predictable demand are the ones that benefit most from 'physically efficient', lean supply chain operating structures.

The key characteristic of an agile organisation is flexibility. As defined by Naylor et al (1997), it means using market knowledge and a virtual corporation to exploit profitable opportunities in a volatile marketplace. When service and customer value enhancement are prime requirements for market winning, then the likelihood is that agility will become the critical dimension (Christopher and Towill, 2000). Its main driving force is change (Yusuf et al, 1999). Innovative products demand 'market responsive', agile supply chain processes that are focused on speed and flexibility rather than cost.

The ability of matching supply more closely with demand, it terms of both response time and product range - the agility of the supply chain - is essential in the fashion sector, as the volatile unpredictable demand has to be met more precisely.

4.2. 'The Creative Journey'

This agile process begins with identifying the 'product range'. This is firmly rooted in the culture of the companies in the sector, to the point where the time and events which regulate the normal functioning of the chain (trade fairs, exhibitions, presentation of collections) are firmly established (Forza and Vinelli, 1997). Once the customer has been properly 'defined', down to age, ambitions, financial independence, designer preferences, social network, etc., the 'creative journey' begins, 9-12 months before the season. Main trends, colours and fabric forecasts are investigated and directional markets and key suppliers are chosen. Sample collections are created and the feedback received helps to draw a 'focused view' in which the must-have fashions, new colours, directional trends and profit blocks are in place. From eight weeks before the season onwards the system has to allow ongoing changes to trends, colours, style updates and refreshed ranges.

Information technologies, such as bar codes and EDI (Electronic Data Interchange) allow the tracking of customer demand in real time. The real time sales information permits retailers to place frequent ongoing replenishment orders. As a result, manufacturers compete not only on the basis of price, but also on their ability to meet rapid replenishment requirements by retailers (Jin, 2004). As Vitzhum (2001) stated agility in the fashion business also includes the ability to quickly cancel production lines that do not sell and start new ones, avoid markdowns but also missed opportunities, operate with small stockrooms and lower inventory holding costs.

4.3. A Dual Sourcing Strategy

In order to increase their market responsiveness, retailers pre-commit the minimum of their production before the season. The greater the pre-committed production percentage in the overall product range, the less agile and fashionable the retailer will be. The growing interest in the Inditex commitment model generated from the fact that Zara commits only 50-60% of its range before the season starts, meaning that it does not have to pre-commit to trends until it sees evidence of customer response (Flanagan, 2005). Central to this issue is the way the retailer manages to handle risks.

In order to operate efficiently such a supply chain, most of the retailers interviewed use a dual system of sourcing. The production of functional, core products, characterised by low demand variability and long lead times, is committed long before the season starts. Economies of scale are easier to achieve in this case and this facilitates the development of core supplier relations and integration of IT systems with the key suppliers. The system of globalisation works best in this case, as large volumes of standardised product are being ordered months in advance and the long delivery lead time is being counterbalanced by the low labour costs (Oxborrow, 1999). Manufacturers respond to electronic or manual orders by delivering goods held in stock on a 'call-off' basis. The receipt of sales information enables manufacturers to balance the volume of finished goods held in stock against the economies of achieving bulk production of forward ordered lines. As such, the retailers are pushing costs and risks associated with inventory holding downstream. The preferred supplying countries are mostly in the Far East. Close proximity between garment manufacturers and fabric suppliers is preferred, in an attempt to reduce transportation costs and time wastage.

However agility is difficult to achieve as far as global sourcing is concerned. Garments with high fashion content have to reach the customer as soon as a new trend has been identified, or the market opportunity will be lost. They are characterised by a short product life cycle, with a shelf life as short as 2-3 weeks before being subject to discounts and

markdowns. In this case priority is given to supplier's proximity to market and its system flexibility and responsiveness. Eastern European suppliers and UK sources are preferred for their speed of response, capability to make specific delivery arrangements and the quality of service provided.

4.4. Supplier Selection

The most important elements in the supplier selection decisions seem to be the proximity to fabric manufacturers, the financial ability to purchase fabric and trim and control finishing processes, good infrastructure and logistical know-how, willingness to invest in dedicated, trained teams with strong communication skills, highly skilled, fast pattern cutting and sampling and happy to pre-book production space. 'Full-package' companies, able to purchase the fabrics and trims and organise their production networks are preferred. However, the 'lohn' system is also used, in which the retailer purchases the fabric and trims for their overseas suppliers.

If in the case of functional, core products low production and delivery cost and high quality (the case of Far East manufacturers) seem to be the market qualifiers, for 'fast fashion' garments system speed and flexibility seem to be the key (the case of Eastern European and UK suppliers). The UK sources have an advantage for the speed of response, capability to make specific delivery arrangements and the quality of service provided. However, due to the fact that most of them are SMEs and the textile industry in UK is almost non-existent, they seem to be valuable only for the supply and replenishment of trial orders, or styles where late sourcing decisions were required in order to avoid holding large volumes of highly priced goods. They are also perceived as highly innovative production systems.

4.5. Postponement and Decoupling in the Fashion Supply Chains

We stated before that if in the past retailers were the apparel manufacturers' main customers, they are now increasingly becoming their competitors and control the whole supply chain (Gereffi, 1999). This is illustrated by the increasing level of service that they managed to impose over their garment suppliers. In order to save cost and time at the point of sale, more and more services are moved down the supply chain. For example, manufacturers are increasingly requested to present goods floor-ready, bar-coded and priced. Deliveries to individual stores, ratio-packed cross docking are also growing, and together these practices enable the retailer to save time and space on the warehousing and pre-retailing of goods. To quote one of our interviewee, 'the more you can push downstream, the cheaper it is'. Oxborrow (1999) states that it is possible that the UK suppliers are disadvantaged by being expected to supply these services with little recompense and within the agreed price per unit, when specialist processing companies are developing to supply similar added-value to imported goods at additional expense to the retailer or importer.

The positioning of the information and material decoupling points and the use of postponement in order to commit closer to the season are essential elements in the creation of an agile supply chain. The four case studies provided solid evidence that the one that controls the positioning of these two decoupling points is also the retailer. In the case of core products, a make-to-stock, call-off strategy is adopted, in which, based on forecasts, the retailer places a long lead-time, high volume order. In order to reduce its own level of inventory holding, small initial orders are expected, supported by frequent and rapid replenishment of goods that sell well. An increased pressure to fulfil orders on a weekly

basis is evident. Corroborated with an increased pressure on the manufacturer to buy the fabric, this gives a clear image of the manufacturer becoming the main stock holding point in the supply chain, carrying all the risks and costs associated with this.

In the case of highly fashionable items, a more flexible and responsive supply chain is required. One of the first strategies adopted in the clothing sector in order to increase product variety was the finishing of goods supplied in the 'greige' state (undyed fabric). Pioneered by Benetton, this innovative technology allows dyeing made-up garments and relies, most of the time, on EDI systems in order to communicate sales information and generate precise colour and finishing treatments on a Quick Response basis. In this case, the dyer acts as the stock-holding facility, warehousing finished goods ready for call-off, finishing and delivery to stores. This practice, allowing companies to postpone the final product configuration in an attempt to offer a better match to customer demands, was met in all the companies that participated in our research.

In addition, as procurement times for yarns and textiles are much longer, there is evidence of manufacturing fashionable items from fabrics held in stock, thus eliminating the need for sourcing and awaiting delivery of materials while design decisions are made on a 'just-in-time' basis.

The most common practice, though, appears to be the pre-booking of supplier's production capacity. When the button for going ahead with the production is pushed by the retailer, the garment supplier buys the fabric and starts producing the garments either on a make-to-stock or JIT basis. In either case the manufacturer is, again, the main stock-holding actor, following clearly pre-defined patterns of replenishment. If statistics show that retail stock turnover has increased significantly from 4.8 times per year in 1976 to 8 times per year in 1996 (Business Monitor), this is most likely to have happened at the expense of increasing manufacturers' finished stock holding.

4.6. The Use of Intermediaries

The apparel industry is a prototypical buyer-driven commodity chain, characterised by highly competitive, locally owned and globally dispersed production systems in which large retailers and branded marketers play the pivotal role in setting up decentralised production networks in a variety of exporting countries, typically located in the Third World. In these chains profits derive mainly not from scale, volume and technological advances as in producer-driven chains, but rather from unique combinations of high-value market research, design, sales, marketing and financial services (Gereffi, 1999).

As new trends are identified, the retailer has to reconfigure the whole production network in order to meet the new product requirements. 'Creative tension' between suppliers and continuous injection of outside ideas through the adoption of new suppliers are also essential to its format. Most of the time production will be placed in a mix of countries with various strengths, such as short-lead times, low costs, product quality, or, up to January 2005, most-favourable trade agreements. For most of the retailers, developing a world-wide sourcing operation is not always cost-effective, so the common norm is the use of third parties (import or export agencies), the so called 'indirect sourcing'. Even though there are strong arguments for direct sourcing, such as facilitating the creation of strategic partnerships based on trust and collaboration, shared risks and benefits, in a supply network that needs to be rapidly reconfigurable this is neither efficient nor effective. Intermediaries, most of them former apparel manufacturers in developed countries, are used to improve communication between buyers and sellers, acting as a hub (Popp, 2000).

The advantages of using these local subcontractors are obvious. They have technical expertise, are much more knowledgeable about the local market, offer sourcing and most often logistics services and can overcome cultural and linguistic barriers. Due to the industry's structure (small CMT – cut, make and trim - units that can cause quality problems) most often the garment manufacturers need intensive monitoring to ensure that a fashionable item is completed on time and meets a specified quality standard and this is another service that the intermediaries will provide. Hong Kong based intermediaries such as Li and Fung, who employs over 6,000 staff in over 35 countries and territories and is in contact with over 7,000 countries, can provide coverage of regions or technologies a retailer's own staff may not be able to touch (Flanagan, 2005).

However, they can be viewed as a potential barrier to a greater transparency in supply chains because they act as a source of information asymmetry. They can also raise unnecessary costs and frequently constitute a non-value adding activity (Popp, 2000).

Clearly, for fashionable items there are advantages in having local intermediaries but for functional products direct sourcing offers much greater benefits and seems to be the norm for the companies that formed our case studies.

5. Conclusions

The increasing use of global outsourcing and the high demand volatility are two of the main characteristics of the UK clothing industry, but are increasingly becoming the defining characteristics of other labour intensive fast moving consumer goods industries. As such, in order to minimise the penalties associated with a slow response to changing consumer demands, these sectors are highly appropriate for the adoption of SCM operative strategies. The lean strategy, with its focus on waste elimination, is mainly used for functional products, with a predictable demand pattern and a long life-cycle. In the case of innovative items, agile strategies are much more appropriate, as reacting speedily to a volatile demand is the key to success. Our case studies in the UK clothing sector revealed that the use of a dual system of sourcing, product postponement, the ability to reconfigure the entire supply network and the use of local intermediaries are some of the practices that allow the retailers to achieve the required speed to market. The main findings contradict main agile supply chain management theory streams which argue that the more turbulent the environment and the more uncertain the decision making, the greater the need for strong supply chain relationships (e.g. Flint, 1999).At the same time we confirmed Iacovou et al. (1995)'s findings that if only the dominant partner (the retailer in our case) drives supply chain optimisation decisions, this can create an asymmetrical distribution of information, inventory and, ultimately, bargaining power between the partners.

References:

1. Banning, W., 1994, 'The Manufacturing and Retailer Conflict', World Manufacturing Clothier, vol.75, pp.44-45.
2. CAPITB Trust, March 2001, 'Sector Workforce Development Plan for the Clothing Industry'.
3. Christopher, M. and Towill, D.R., 2000, 'Supply Chain Migration from Lean and Functional to Agile and Customized', Supply Chain Management: An International Journal, vol.5, no.4, pp.206-213.

4. Christopher, M. and Lee, H., 2001, 'Supply Chain Confidence – The Key to Effective Supply Chains through Improved Visibility and Reliability', Global Trade Management, Vastera, Inc.
5. Department of Trade and Industry, 'A National Strategy for the UK Textile and Clothing Industry', 2000.
6. Fisher, M.L., 1997, 'What Is the Right Supply Chain for Your Product?', Harvard Business Review, 105-16.
7. Flanagan, M., 2005, 'How Retailers Source Apparel', Just-Style, January, ABI/INFORM Global.
8. Flint, D., 2004, 'Strategic Marketing in Global Supply Chains: Four Challenges', Industrial Marketing Management, vol.33, pp.45-50.
9. Forza, C. and Vinelli, A., 1996, 'An Analytical Framework for the Change of the Apparel Design Processes Towards Quick Response', International Journal of Clothing Science and Technology, vol.8, no.4, pp.28-43.
10. Forza, C. and Vinelli, A., 1997, 'Quick Response in the Textile-Apparel Industry and the Support of Information Technologies', Integrated Manufacturing Systems, vol.8, no.3, pp.125-136.
11. Gereffi, G., 1999, 'International Trade and Industrial Upgrading in the Apparel Commodity Chain', Journal of International Economics, vol.48, pp.37-70.
12. Haines, P., 1990, 'Improving the Link Between Fabric Suppliers and Garment Manufacturers', Clothing Technology Centre, 11.
13. Iacovou, C.L., Benbasat, I., Dexter, A,S., 1995, 'Electronic Data Interchange and Small Organisations: Adoption and Impact of Technology', MIS Quarterly, vol.19, issue4, pp.465-485.
14. Jin, B., 2004, 'Achieving an Optimal Global versus Domestic Sourcing Balance under Demand Uncertainty', International Journal of Operations & Production Management', vol.24, no.12, pp.1292-1305.
15. Jones, R., 2002, 'The Apparel Industry', Prentice Hall.
16. Kildurf, P., 2000, 'Evolving Strategies, Structures and Relationships in Complex and Turbulent Business Environments', Journal of Textile and Apparel, Technology and Management, vol.1, issue 1.
17. Lowson, R.H., 1999, 'The Impact of Quick Response in the Textile and Clothing Industry', PhD Thesis, Cardiff University.
18. Meijboom, B., 1999, 'Production-to-Order and International Operations', International Journal of Operations & Production Management, vol.19, no.5/6, pp.602-619.
19. Mintel, Special Report, 'The UK Clothing Market', 2002.
20. Naylor, J.B., Naim, M.M., Berry, D., 1997, 'Leagility: Interfacing the Lean and Agile Manufacturing Paradigm in the Total Supply Chain', International Journal of Production Economics, vol.62, pp.107-118.
21. Oxborrow, L., 1999, 'Beyond Needles and Thread: Changing Supply Chains in the UK', report in publishing.
22. Popp, A., 2000, 'Swamped in Information but Starved of Data: Information and Intermediaries in Clothing Supply Chains', Supply Chain Management: An International Journal, vol.5, no.3, pp.151-161.
23. Vitzhum, C., 2001, 'Just-in-Time Fashion: Spanish Retailer Zara Makes Low Cost Lines in Weeks by Running Its Own Show', Wall Street Journal (Eastern Edition), 18 May, p.B1.
24. Yusuf, Y., Sarhadi, M., Gunasekaran, A., 1999, 'Agile Manufacturing: The Drivers, Concepts and Attributes', International Journal of Production Economics, vol.62, pp.33-43.
25. Warner, S., 2001, 'The Textile and Clothing Industry in the EU: A Survey', Enterprise Papers, June2.

26. www.trade.uktradeinvest.gov.uk (UK Trade & Investment web page)
27. www.statistics.gov.uk (National Statistics Web Page)