Weaving a New Strategy for the Textile / Apparel Supply Chain
By Deep Parekh

Many of us use the words 'textiles' and 'apparel' interchangeably, but the distinction between them is important for the points that we will discuss about these industries this month. The word 'textile', according to www.answers.com, refers to "material made mainly of natural or synthetic fibers. Modern textile products may be prepared from a number of combinations of fibers, yards, films, sheets, foams, furs, or leather. They are found in apparel, household and commercial furnishings, vehicles, and industrial products." The process by which the raw material, 'textiles', get converted to the finished product, 'apparel', requires "the cultivation or manufacture of fibers; the twisting of fibers into yarns (spinning); the interlacing (weaving) or interlooping (knitting) of yarns into cloth; and the finishing of cloth prior to sale."

Our focus this month is to analyze the textile and apparel industry, and provide you with some strategic insight and direction on where we see it going, and the corresponding logistics implications for Logistics Service Providers (LSP) of this industry vertical.

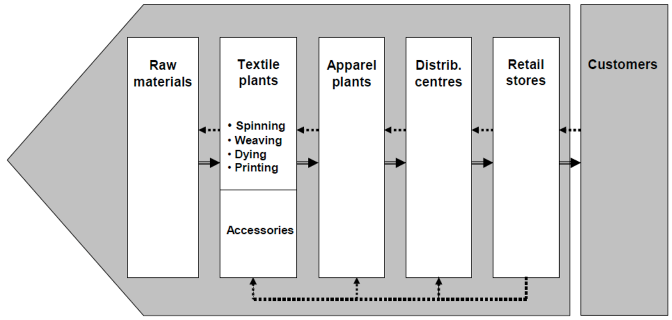
Industry Overview

The Textile and Apparel industries are truly global, and have historically been that way. They didn't call the road much travelled between China, India, and Central Asia the 'Silk Road' for nothing! Fine silks and fabrics were transported along this trans-continental route for thousands of years. The route extended from Java and China at one extreme, to Africa and Europe at the other, as we see in Figure 1 (www.wikipedia.com). Globally, Textiles are about a $250 billion business, and Apparel about $350 billion. In total, we have a $600 billion business, representing 2.5% of global merchandise value and 3.6% of global manufacturing value, a value significant enough not to be ignored. Just through these numbers, we see the margin implication in the middle, between the $250 billion spent on purchasing textiles, and the $350 billion that retail apparel sales bring in. This $100 billion margin is divided between the different players in the supply chain. The approximately 40% margin is divided between the textile manufacturers, the apparel manufacturers, and the retailers, but leans in favor of the apparel manufacturers, where most of the risk lies, as we will discuss below.

Since much of the success of the apparel industry is based on fashion czars, the industry is fairly fickle and short-term oriented. The last few decades have witnessed tremendous shifts in clothing design, materials, styles, and uses. We have seen the relative decline in the mass market of higher end natural textiles, a recent growth in engineered materials, and an even more recent boom in 'eco-friendly' materials (regardless of whether natural materials or recylced engineered materials). Further, we have also witnessed an explosion of styles, colors, shapes, designs of apparel, catering to fickle consumer behavior.

Overview of the Supply Chain

In order to develop a better understanding of the textile & apparel industry, let us review the structure and workings of the supply chain. As we see in Figure 2 (source: World Trade Organization), the flow of the supply chain is fairly standard, from the purchase and sourcing of raw materials (e.g. cotton, leather, polymers) globally, to the first step in the process, at the textile plants, where spinning, weaving, dying, printing processes are implemented, and perhaps accessories are created. Further processing happens at the apparel plants, where (as per our earlier definition) textiles are converted to apparel. From there on, it is not unlike any other discrete products (e.g. consumer goods, durables, packaged foods) industry, being transferred to distribution centers and then retail stores for final sales to consumers.



Based on industry research, we have seen retail consolidation and the growth of retail bargaining power. According to the World Trade Organization (WTO), "the role of the retailer has become increasingly prominent in the organization of the supply chain. The retail market has become more concentrated, leaving more market power to multinational retailers. These have market power not only in the consumer market, but perhaps more importantly, they have considerable buying power. In addition, high volume discount chains have developed their own brands and source their clothing directly from the suppliers. Retailers accounted for half of total garment imports in the EU in the mid-1990s, a trend that has continued during the second half of the 1990s." Through this immense bargaining power, we have seen margin erosion for the manufacturers and distributors and a margin gain for the retailers. The manufacturers have battled this margin erosion through innovation of different styles, sizes, colors, uses, materials, and technological progress, thereby increasing productivity, reducing costs, and making overall operations more effifcient and efficacious. One of the trends we see is more vertical consolidation of the industry, so as to take on retailers head-on, and shore-up margins. Manufacturers such as clothing giant Zara, have fully verticalized supply chains, and are reaping the benefits of it to fuel their stellar worldwide growth.

Hedging Becomes Even More Important

This is one of the only industries where hedging is a critical part of the business. Since the fashion world is very short-term oriented, and fashion trends are a matter of weeks and months, and not years, it is critical for the industry to be adaptive and flexible, a regular nightmare for the LSPs who service this industry. We have built different probabilistic and deterministic mathematical optimization models for this industry, where the norm is to hedge on colors, sizes, styles. In lay terms, the model is simple: fashion dictates in the very short term (weeks), what's going to be 'hot' for the season. However, buyers need to buy materials (textile) about a year or more in advance. So, they go ahead and buy what textiles they think are going to be required, but hold off on the manufacturing of these until they have a better idea of what the market is going to want (dicated by trends, fashions, and global opinion leaders). They manufacture the 'standard' set of products that sell year-in and year-out (i.e. the least 'risky' in terms of being out of fashion, such as white / black / grey tee-shirts, or standard blue jeans), at low prices, using an efficient production system at contracted manufacturing facilities. However, they don't yet know whether 'purple is the new black' yet, and so they hold off on manufacturing any significant amounts of the questionable products. When they do finally get a handle of what is going to be 'the new black', they go to 'full throttle' manufacturing very quickly, but at a premium, because this product is required immediately, with full flexibility and responsiveness, and very little efficiency.

The Shape of Things to Come?

There is convergence between what we are hearing about, witnessing, and what the pundits are saying about the future of the industry. According to Textile World magazine, "If you enjoy the status quo, today's textile industry won't hold much appeal. Dynamic business conditions --

managing rising energy and raw material costs, looking for opportunity in shifting international trade patterns, investing in an innovative future -- these seem to be common themes when speaking with executives who lead successful US textile companies." Rising energy costs? This quote comes from a September / October 2008 article from our research, and is already out of date, as energy costs are now falling! This is one aspect of what *Textile World* is referring to – the rapid manner in which the environment is changing, and the 'dynamic business conditions' that companies are having to encounter in order to survive, grow, and prosper.

We project the landscape to continue this dynamic shift, in the years to come. Industry giants such as Parkdale, Milliken & Company, Glen Raven, and others, have been investing more in downstream verticalization, scaling up production facilities, and increasing productivity. We see more money being channeled towards innovation and business efficiency, including innovative hedging techniques. This is a natural progression, considering the immense margin pressures that these companies are facing. Companies will focus more on innovation so as to improve the materials that are being used for textiles and apparel, so as to make them cheaper and more versatile. Companies are also moving towards higher utilization of assets so as to recoup their investment costs, and will continue to be aggressive players to giant retail chains in terms of offering great price efficiencies to the consumers. The continuing environmental pressures on businesses will also force them to change their processes to make them more 'green', and at the same time less wasteful, thereby also contributing to shoring up margins and making available cash, essential to fuel growth. According to *Value Line*, "for the apparel segment of the industry, diversification by brand, channel, and product line is the key to consistent earnings growth."

What Changes Should LSPs Expect?

LSPs have to cope with this fluctuating demand, and need to be flexible in terms of their operations. They need to be joint at the hip with their clients, and with zero or near-zero latency in determining the changing signals of demand and supply. This is neither cheap nor easy, and requires systems, knowledge, integrated processes, and a strategy.

LSPs should expect higher peaks and valleys in demand, more accute cyclicality, less inventory throughput in the entire system, a smaller product complexity profile (more streamlined), and more cut-throat reverse-auctions on freight pricing on specific lanes. International trade policies also inextricable link the textile industry and the apparel industry, and so be wary of political changes around the world which cap quotas, change trade dynamics, and provide specific industry incentives.

According to *Textile World,* "US textiles may not be for the faint of heart, but there are many textile companies willing to defy the status quo and create their own future." LSPs should take inspiration in the changes that these companies (their clients) are making and follow suit to adapt their strategies to the rapidly changing business times.

Deep R. Parekh is a Partner with Equus Group, LLC, a Supply Chain Advisory Services and Management Consulting firm based in New York, NY and Sao Paulo, Brazil. He welcomes your feedback and comments at deep.parekh@equusllc.com, and can be contacted at +1-917-940-7538. *The author wishes to acknowledge the contribution of Amanda McAlister, for her research support.*