WHITE PAPER

# A Lean Supply Chain is Key to Fashion Business Success

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# *Executive summary.*

Fashion is a bellwether of change. In keeping with its reputation for the highest level of customer responsiveness, the fashion industry is poised to respond strategically to major changes occurring in today's global supply chains. A lean supply chain management strategy can address the necessary elements of change that will ultimately enable a simpler, more efficient and responsive operations model.

The seminal issue today is "the China question." How will changes in China's economy affect future sourcing decisions? Regardless of what happens in China, lean supply chain management can help provide cost savings and more efficient operations by realigning process according to a demand-driven model, as it also lays the groundwork for the next level of advanced collaborative processes.

Lean supply chain management is a supply chain operational and strategic philosophy that uses Web-based technologies to continuously reconfigure dynamic supplier networks. Such networks are able to execute superlative customer value at the lowest cost. They allow for real-time collaborative synchronization of demand priorities, manufacturing and logistics/delivery, intelligence, and lifecycle management.

To describe the process we call lean manufacturing, AMR Research (now part of Gartner) coined the term "demand-driven supply networks" (DDSNs). Both terms embody our belief that it is imperative for companies to create roles and responsibilities for lean, demand-driven networks.

Involving all partners—customers and suppliers—in this supply chain planning process is critical. We believe that this is a survival issue for all. Stable, long-term partnerships evolve into a supply chain ecosystem that supports ongoing benefits for all members. Lean supply chain management makes it possible for trading partners to use a synchronized platform and tools and also instills cultural and organizational changes in all participants up and down the supply chain.

# *External drivers of change.*

The word "fashion" itself means change: "To accommodate; adjust; adapt," according to Dictionary.com. As such, change is the normal condition of the fashion industry. Every "new normal" is succeeded by another—in the ways products look, how they're used, and in how they're manufactured, sourced, and sold. The most conspicuous drivers of the next wave of change include:

### The narrowing China cost gap.

The cost advantages of manufacturing in China are shrinking due to widely reported economic and social changes resulting from the country's economic expansion. A recent report by Manufacturing.net found that the difference in total landed costs between the US and China has narrowed by nearly 50% over the past eight years, and is expected to stand at just 16% by 2013[1]. Politicians and the media talk as though lower labor costs drove the shift in textile and apparel manufacturing jobs from developed to developing countries. Certainly it is one cause.

[1] The Cost Gap And Reshoring Of Chinese Manufacturing Jobs, May 25, 2012, http://www.manufacturing.net/news/2012/05/the-cost-gap-and-reshoring-of-chinese-manufacturing-jobs

There is no denying that chasing the "cheap needle" at the equivalent of $1 a day instead of paying a US or European factory worker $20 per hour will lower the cost of the finished goods. But other developing countries are now becoming more cost-competitive for other reasons as well. With the most recent Chinese sewn product labor cost increases, it's easy to understand manufacturers' flight to places like Bangladesh.

China and India in particular have invested more in physical plants (though investments in IT infrastructures have lagged). Very little Chinese apparel manufacturing is now government controlled; private investors have taken over the majority of the business. Along with unmatched vertical integration through mergers and acquisitions, China is specializing more in textile production as well as garment and footwear manufacturing. Related businesses locate close to each other for JIT benefits, and within a shorter supply chain, processes and technologies evolve rapidly.

Doom-and-gloom views of a world market swamped by cheap imports overlook key demographic changes. China and India have become consumer as well as producer countries. An increasing share of China's enormous apparel output now goes to clothe its own citizens—nearly 25% of the world's population. The same is true of India, Pakistan, and other developing countries. China, India, and other Asian countries now have a growing number of designers focused on domestic markets.

Finally, ever since factories began, capital has sought to lower production costs by locating manufacturing in areas where land, materials, and labor costs are lowest. The money trail crosses two centuries: leading from England to New England to the Southeast US to Mexican maquiladoras and Asian contract manufacturers, or from Western to Eastern Europe and Asia. Ironically, this cycle is already impacting China's hot manufacturing provinces; in some areas, labor rates have risen to the point that work is outsourced to other countries with even lower costs, including Vietnam, Cambodia, and Bangladesh.

## The real costs of outsourcing.

The fashion industry is highly labor intensive, and it's easy to see the cost advantage in contracting offshore. However, the real costs of sourcing from a low-labor-rate country involve increased costs in other areas, as well as tradeoffs:

- Logistical costs for in-country and ocean transportation
- Quality costs
- Cost of changes to the fashion plan
- Factoring in extra time for shipping

According to a report by Margaret L. Bishop of New York's Fashion Institute of Technology, shipping from China to the West Coast of the US adds from three to seven weeks of incremental time, including customs clearance, an eternity in the ever-accelerating world of fast fashion[2]. Ships from China reach US West Coast ports in about 20 days and East Coast ports in 25. An Aberdeen Group survey found that many companies spent almost as much time moving goods onto the ship and from the receiving port to their own facilities, as was spent in the ocean passage.

[2] Reshoring Garment Production: China to the US, Margaret L. Bishop, Fashion Institute of Technology, New York, NY, November 2011, http://bit.ly/JYUNDo

Logistics costs are only part of this picture. Aberdeen notes, "Many enterprises have increased their inventory positions to account for the greater lead times. However, this results in excess inventory carrying costs. In addition, excess inventory of short lifecycle and seasonal products can cause increased discounting or write-offs and missed sales opportunities." In addition to hedging their bets on inventory, buyers typically make one big buy per season for the fashion plan, incurring a huge capital risk.

Some experts expect the fashion industry to experience a reverse outsourcing trend, such as Toyota led in the automotive industry. Toyota built production facilities in the US in order to shorten lead times and eliminate logistics costs, and has widely publicized the jobs it created for American workers as an added public-relations advantage. Perhaps the China trade will do the same, led by Haier, a Chinese appliance and electronics manufacturer. Haier has built a $40 million dollar industrial park in Camden, South Carolina—also home to two fabric mills and two garment manufacturers.

"Near shoring" is another emerging trend: The recent 30% down turn in China fashion exports to the US in 2011 was mirrored by a 30% increase in textile and apparel exports from Central America to the US. We have seen similar shifts between Western European imports from Eastern Europe as well.

## Shipping delays.

Freight transportation is currently experiencing a global meltdown. The largest companies have locked up ocean, trucking, and rail capacity with long-term contracts, and it is difficult for smaller companies to get any space with available shippers. Rising fuel costs and driver shortages due to new regulations decreasing service hours have reduced truckload capacities. This situation has resulted in dramatically increased transport costs. That said, the shortage might be a short-term issue. Several years of carrier bankruptcies contributed to the current pressure; those carriers are missed now that the economy is improving and industry consolidation has made the remaining carriers stronger and more efficient.

Though quota processing delays by US Customs have been gone for several years, another set of government regulations remains in effect: the Homeland Security Initiative, which requires ocean shippers to file manifests for container-packed cargo 24 hours before leaving a foreign port. Further, accompanying documentation must verify that the shipment has not been altered since the container was packed and sealed in the warehouse.

The risk here is that a do-not-ship order from Customs can immobilize the whole ship and not just a few containers with missing manifests. Manual systems are the most error-prone. Shippers with logistics systems can pull data electronically from product catalogues to prepare documents. Look for Extensible Markup Language (XML) capabilities in both logistics and ERP software to expedite that data transfer.

# *Lean supply chain management.*

Electronic mechanisms with tremendous point-of-demand data collection capabilities may eventually help create true demand-driven supply networks. Until then, supply chain members can start positioning themselves to take advantage of that transformational potential by leaning-out their operations. Lean practices will allow them to evaluate and remove the vestiges of the old quota-linked batch mentality and start moving toward an on-demand market.

Every hand-off in a conventional linear supply chain impedes the flow of demand information in one direction and the rapid supply of goods and services in the other. In a lean supply chain, the focus is on removing unnecessary activities that impede the free flow of information and goods and services, providing superior value to the end customer and increased profitability to all supply network partners.

# *What is lean?*

Lean supply chain management uses Internet-enabling technologies to effect collaborative, real-time synchronization of product and service transfer, demand priorities, vital market place information, and logistics delivery capabilities. The lean discipline has its roots in the core principles of the Toyota automobile production system:

- Always create value for the end customer.
- Rigorously identify and eliminate waste (i.e., all non-necessary activities that do not add value) .
- Continuously improve processes.

Lean supply chains will differ from lean manufacturing in a number of significant ways. The most obvious is scale. A lean manufacturer aims for the optimal logical flow for operational processes taking place primarily within company walls. Lean supply chain managers aim for the optimal connections in a network that crosses organizational and national borders and involves many-to-many relationships among many customers and suppliers. Every source, every process, every hand-off will be examined to remove waste and create value for the customer.

This approach to optimizing the value stream will require a strong collaborative approach and transparency that spans the network as well as the enterprise. It is a formidable task. The Aberdeen Group's "Lean Strategies Benchmark Report" finds that most manufacturers are still struggling with implementing lean simply within their four walls:

- Lean techniques are used sporadically by 67% of respondents
- Lean knowledge remains in the hands of a few individuals in 87% of companies surveyed
- Fully 93% of respondents still rely on spreadsheet- and paper-based solutions to perform high-value functions, such as line design and load-levelling production

Survival in today's harshly competitive environment, however, requires, lean, highly responsive manufacture interdependent with its lean supply chain ecosystem.

# *The Infor viewpoint on fashion's future.*

In stark contrast to earlier fashion markets that stressed conformity, current fashion serves consumers who want to develop a unique style, regularly updating their core wardrobe with trendy clothes and accessories. Trends are short-lived and consumers are fickle, resulting in volatile seasonal sales patterns.

Few companies have adapted to this market as well as the retailer Zara, based in La Coruña, Spain. "While its rivals typically start planning their lines nine months before they hit the shelves, Zara has a reputation for instant reaction to fashion trends and rapid restocking of stores to meet demand on popular items. It's also not afraid to cancel items that aren't selling. Zara can make a new line—from the initial concept to when it arrives in the shops—in just three weeks. Zara lines rarely stay on the shelves for more than a month, and new stock often sells out in days," CNN reports.

CNN quotes a reaction from retail analyst Richard Perks, of Mintel, "They've got to get the design. They've got to engineer it for low-cost production. They've got to take the gray fabric and print it. They have got to get it out to their outworkers to be made up, and they've got to ship it from Galicia across Europe. That is an unbelievable achievement." Zara has set the bar high for the entire industry.

The Holy Grail of the fashion industry has been "the lot size of one"—cost-effective and timely unit production of highly customized goods upon demand. Zara and its holding company, Inditex (Industria de Diseño Textil, SA), are closing in on that target. The secret, according to CEO José Castellano, is its "reliance on communication, and the way [Zara] uses existing technology to take control of almost every aspect of design, production and distribution." This includes:

- **Communication about customer demand:** Store managers place up to two orders a week. Product managers are the link between store managers and production, and rotation of the merchandising
- **Close collaboration between teams:** Five different teams (design, product, merchandising, sourcing, and patterns) share the same space and work closely together
- **Short production runs:** Small lots take out much of the financial risk inherent in the industry
- **Emphasis on time-to-market rather than on costs:** "Logistics is a basic component of our business model and allows us to move quickly when it comes to giving our customers what they want, and it accounts for a sizeable chunk of our investments. Agility and speed- to-market are vital elements of the Inditex vision of the fashion business," according to Inditex General Manager Juan Carlos Rodríguez Cebrián.

Any company can employ these methods. CEO Castellano has used and improved on this model since Zara, his flagship business, started as a small lingerie company in 1975. Group net sales for Inditex are now nearly $19.5 billion US, with an annual growth rate of about 10% in recent years.[3]

[3] The Strategic Retail Genius Behind Zara, Lydia Dishman, March 23, 2012, http://www.forbes.com/sites/lydiadishman/2012/03/23/the-strategic-retail-genius-behind-zara/

Inditex holds nearly 100 companies specializing in textile design, production, and distribution activities, most of which are located close to La Coruña. They serve its eight brands, each operating through its own chain of stores to reach a well-defined segment. The vertical integration and specialization of Inditex resembles the Chinese "cluster" cities of specialized suppliers and manufacturers. It provides the ability to meet market demand with minimum inventory, maximum speed, and optimal ability to fine-tune fabrics, patterns, and styles to customer demand.

## *International consolidation.*

Vertical integration gives Inditex an advantage that will be hard for its competitors to duplicate—except through new sourcing arrangements and adopting lean supply chain practices. Fashion industry consolidation on the local and global level has already begun and will be ongoing. Polo Ralph Lauren, for example, had licensed out their brands to manufacturers in the European Union and Asia. They are now buying their licenses back so they can go direct to those markets.

The reversal of the licensing trend could cause many changes. For manufacturers, licensing complements their regular production and helps them fully utilize their capacity. For designers, selling distribution rights to another territory has been the most expedient way to enter the market. However, licensing can dilute the value of the brand, and apparel is nothing without branding and brand recognition.

Going forward, retailers will try to gain more control over the supply chain in order to improve their speed-to-market, and this will drive lean ideas through their networks. Because retailers are close to the customers, RFID implementation will consolidate their ability to segment, analyze, and anticipate demand. Unlike Inditex, with its wholly owned supply network, most retailers will have to turn to the open market to identify the most responsive partners.

Infor™ customers span the whole fashion and apparel supply chain. Among them, those who supply goods and services to US and European retailers want to have the technology and portal infrastructure in place to serve customer demand rapidly and communicate electronically with partners. Most of the apparel industry typically communicates by email and spreadsheets. Providing partners with order visibility and shared data is a huge competitive advantage in an industry historically run with much slower methods.

## *Collaboration is the future.*

To work with the speed, responsiveness, and clockwork integration of a Zara, apparel industry supply chain partners will have to collaborate closely in a demand-driven network. More specifically, they will have to master two collaborative disciplines:

- **Collaborative planning, forecasting, and replenishment (CPFR):** a real-time alternative to traditional forecasting
- **Collaborative product commerce (CPC):** a management philosophy that leverages a company's supply chain to design and produce products.

Such collaboration was suspect only a few years ago. Defensive forecasting and finger pointing as a form of partner management were common. Product design was a jealously guarded trade secret. Now technology is at a level where it can support process calibration and cost control—benefiting everybody involved—and the Internet provides the mechanism for real-time collaboration. Responding rapidly and imaginatively to fashion trends is key to survival, absolutely requiring collaboration. A supply chain that acts in a competitive manner will always struggle with embracing a collaborative structure.

## *Now: CPFR synchronizes supply and demand.*

CPFR is the implementation of data and information transfer tools that facilitates timely, interactive communication of demand forecasts and inventory statuses among a chain of trading partners. It enables channel retailers, distributors, transportation providers, and manufacturers to synchronize supply with network demand from one end of the channel to the other. In the past, supply chains were burdened by isolated forecast, planning, and inventory systems, and consequently lacked accurate and timely demand information as well as visibility beyond immediate trading partners. CPFR simplifies and connects overall channel demand planning with a single, real-time plan of forecast and supply.

Previous industry initiatives—from the still widely used EDI through quick response (QR), vendor-managed inventories (VMI), continuous-replenishment planning (CPR), and efficient consumer response (ECR)—attempted to overcome this lack of integration. Unfortunately, while achieving inventory reductions, none of these techniques really addressed the critical issue: How to achieve the level of continuous, systematic collaboration necessary to link total channel demand and supply. CPFR has been deployed to respond to this issue.

A complete implementation of the CPFR model is not for everyone. Some companies choose a stage or two and do "CPFR lite." Others take a more traditional and less structured approach to collaboration, using the Internet and EDI to coordinate their inventory management efforts with partners. Still, according to the Voluntary Interindustry Commerce Standards (VICS) committee, "Over 300 companies have implemented the process. Numerous case studies of CPFR projects document in-stock percentage improvements of from 2-8% for products in stores, accompanied by Inventory reductions of 10-40% across the supply chain.[4]"

An Infor customer, TAL Apparel Ltd, and its supply chain partner, JC Penney, have one of those successful implementations based on a fifteen-year history together. TAL produces over 50 million pieces a year, including one of every eight dress shirts sold in the US. It has production facilities in Hong Kong, Thailand, Malaysia, Taiwan, China, US, Indonesia, and Mexico. TAL's Dr. Harry Lee explained that the company's supply chain management relationship with Penney went through three stages before they tackled CPFR: rapid replenishment to warehouse, direct shipment to stores, and vendor-managed inventory (VMI), producing incremental savings at every step. VMI alone saves 15% of inventory and operational costs[5].

[4] CPFR Overview, Voluntary Interindustry Commerce Standards Committee, http://www.vics.org/committees/cpfr/cpfr_model_faqs/

[5] Customer Profile, Lawson at TAL, http://www.infor.com

The CPFR initiative with Penney's introduced a Make to Measure (MTM) offering that TAL produces to actual demand and ships directly to the consumer. Dr. Lee said that with MTM:

- The garment is tailor made for the individual customer.
- Measurements are captured on the web or in-store.
- Customer order and measurements are sent to factory.
- MTM software automatically generates the pattern and marker.
- Factory cuts, makes and ships to individual customer or store in three weeks.
- Benefits include zero inventory and increased customer loyalty.

This is the "lot size of one" in the market now—with no need for the customer to leave home to pick up the purchase.

# *Next: CPC transforms product design and management.*

Where CPFR manages the supply chain from the inventory perspective, collaborative product commerce (CPC) manages the same relationships from the product design perspective. CPC requires businesses to execute product management processes in relation to how they will impact the production, planning, and distribution of products required by supply chain partners to meet specified or documented customer demand. It includes, and frequently improves upon, the traditional product management processes for cost, quality, and features.

Collaborative design and product management bring together cross-functional teams at every stage of the product life cycle, from concept to design, production and distribution. The Internet provides the forum for real-time collaboration even when team members work half a world away in different time zones.

Mass customization and shorter product life cycles will be key business drivers for adoption of collaborative techniques, along with the need to reduce time-to-market and time-to-profit. Other benefits include extending design resources, sharing demand information, and pooling intelligence to navigate complex market forces. The fashion industry in particular stands to benefit from cross-cultural collaborative design, since consumers want something new and different all the time.

To implement CPC, companies will have to extend visibility upward to management, across functional silos, and outward to partners. In addition, they will need more precise coordination of supply chain activities, as well as change management practices that most retail, textile, and apparel companies have not yet considered. Companies will have to ask and answer hard questions about how to control projects and products. The most pressing need, however, is for trust. Until supply chain partners can overcome their mutual suspicions, the grounds for collaboration do not exist.

# *Conclusion.*

The fashion industry is poised to leverage the great changes occurring in supply chain networks. Sourcing arrangements, logistical requirements, and technology innovations are creating new alignments among trading partners. To compete successfully for consumer attention and purchases, companies face increasing pressures for speed-to-market and asset allocation, and they need help from their partners to optimize the value stream for the customer. Industry conditions now favor those who can run a lean supply chain, apply the lessons learned from lean manufacturers, or adapt them as needed. It requires greater supply chain collaboration—from inventory control through product design and lifecycle management—assisted by appropriate technology.

# *About Infor.*

Infor is the world's third-largest supplier of enterprise applications and services, helping more than 70,000 large and mid-size companies improve operations and drive growth across numerous industry sectors. To learn more about Infor, please visit www.infor.com.

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