

LEAN & MEAN PRODUCT DEVELOPMENT IN APPAREL INDUSTRY



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Introduction

Have you considered the colors and style of the clothes you may buy a year from now? It's difficult to imagine exactly what you may opt for, even though your taste in clothes is fairly well defined. And if it is difficult for us, imagine the task ahead for the product development departments in the apparel industry. They need to come up with styles, colors, and accessories -- and estimate their volumes for highly diversified global markets months before the selling season. Prediction pundits in the apparel industry must anticipate various scenarios and then make their forecasts. A narrow prediction that goes wrong can wipe away profits and too broad a prediction can result in waste. A way increasingly being examined to improve the accuracy of the decisions is to reduce the Concept-to-Consumer (CTC) cycle time.

One study shows that the product development stage in the apparel industry takes almost 60% of CTC lead times. Combined with the fact that sourcing and manufacturing are in fragmented low-cost geographies and consumer preferences in the industry are fickle, the pressure on the backend is tremendous. Leading industry players are already considering lean supply chains. The focus is on product development. The goal is product innovation, especially for those that have a short shelf life. Even a 10% reduction in product development cycles can lead to an advantage in the front end of the value chain, translating to savings of many thousands of dollars.

Broadly, product development can be categorized into three stages – Designing, Pattern Development (Making, Grading, Marking etc.) and Sample Development. It is estimated that Sample Development is the most time-consuming stage, followed by Designing and lastly Pattern Development.

However, the fact that the various business entities within the product development space work in silos makes the task complex. The design department works with little or no linkages with the sampling team. Today's complex world of manufacturing requires brands to be nimble. As a result, product development, sourcing and sampling teams must be closely aligned throughout the product development process. Studies by AMR Research show that Product Lifecycle Management (PLM) solutions can bridge the gap between otherwise disconnected departments. Early collaboration between product development and sourcing departments is the key to reducing overall cycle time, bringing down costs and increasing the responsiveness to market needs.



Lean is In

Lean is “Performance without Muda”. In Japanese, “Muda” means activity that is wasteful. Social, environmental and economic compulsion has become one of the key drivers of successful Lean adoption in many world-class organizations. Lean’s focus on eliminating waste without impacting quality – starting with supplier management, product design and development, shop floor management, logistics, energy usage and ending with customer relations -- holds a special appeal in the labor-intensive apparel industry.

Traditionally, product development in the apparel industry goes through various activities starting from trend and research, sketches, product and fabric specifications, accessories selection, sample creation, testing and seasonal line planning to placing a manufacturing order. The complexity of the task must be managed to drive product innovation through tighter collaboration with researchers, designers, suppliers, contractors and distributors.

With the pressure to accelerate the launch of products, organizations witness ballooning design costs. There is a growing sense in the apparel industry that product development is a cost center rather than an innovation hub that can impact bottom lines through on-time and on-trend output.

Apparel manufacturers face the challenge of providing real-time information to the supply side as well as the customer side of their business processes. Design houses create ideas and concepts based on their understanding of markets, demographics, shopping patterns and purchasing power. Their merchandisers and channel partners estimate the demand for the designs. Synchronizing the data between design

departments, merchandisers, product planners and sourcing partners dictates the allocation of manufacturing to various units to optimize shipping and logistical costs.

The inability to provide real-time information to the complete supply chain is a major barrier to collaborative lean processes. The solution is a portal where information can be easily exchanged at various stages of the business between vendors, suppliers, merchandisers, etc. to provide each the ability to closely collaborate and innovate.

It is estimated that more than 50% of non-value added elements could be eliminated in the product development cycle. The reusable components at each stage starting from designing, pattern making, sample making and even accessories sourcing is very low in product development and needs a remedy. Design iterations need to be reduced. And finally, the handover from design to manufacturing needs to be faster, accurate and efficient.

Technology is playing a key role in changing this scenario through leaner processes using improved communication, 3D visualization, digital printing strategies etc. These are allowing apparel manufacturers to reduce waste and respond to consumer demands more effectively.

Mean is Must

Mean product development means delivering relevant styles that will fly off the shelf at the right price points.

The downturn in the global economy has forced companies to rethink their global sourcing and manufacturing strategies. The CTC cycle is fraught with challenges. In today’s competitive environment, when the consumer is demanding more in terms of new styling, pricing, packing,

color and delivery, it becomes a business imperative to make one's supply chain mean, flexible and agile.

Many experts suggest that apparel companies need to cut their total lead-time to market by 50% or more over the next two to five years. When an apparel company manages multiple brands across consumer segmentation, geographies and product categories, it is difficult for the division head or merchandising head to manage the complex web of brands, SKUs, delivery deadlines, margins tracking and many other critical activities through ordinary tools like excel sheets, emails or telephonic discussions. Current market pressure is forcing key stakeholders to complete these stages more quickly.

An acute case-in-point is the 'Fast Fashion' phenomenon, where winning is all about making decisions as close to in-store delivery as possible, so as to ensure 'trend right' products. This is a price conscious market. Decisions need to be made as late as possible in the product development process. Delaying decisions can allow brands to remain closely aligned with market demands and avoid building up excess inventory.

If you need to strategize production and replenishment by as late as a few weeks, visibility in the product development stage can be quite helpful. Category heads need to make such decisions very late in the season as part of their OTB strategy for the price sensitive or premium customers. The lack of agility of the product development team to quickly turn around few styles ends up in opportunity loss.

The paradigm shift from "Creativity based designs" to "Time and commercial based designs" is set to transform product development in the apparel industry.

LMPD Traction

Though organizations are taking steps along the Lean and Mean Product Development (LMPD) path, there are areas where improvement can be realized.

Some of those change strategies are represented in the figure (below). Companies can explore these strategies to make their product development team more agile and well connected with the value chain.

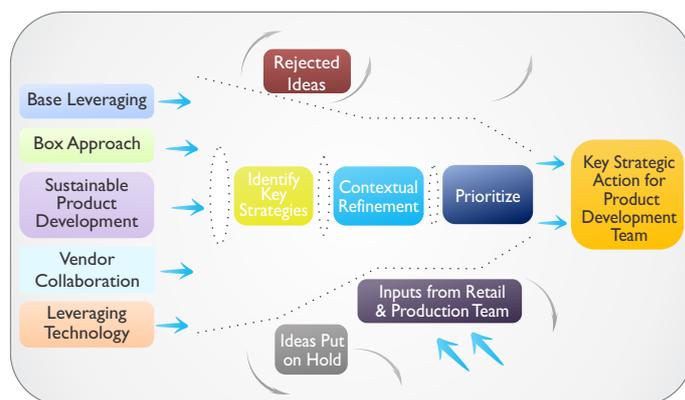


Figure: Strategies for Lean & Mean Product Development (LMPD)

Vendor collaboration

The manufacturing base for the apparel industry is well established in Asia Pacific and the prime communication is done through e-mails, faxes and telephonic discussion. The multiple level of communication between various parties like buyer (brand company), export house, supplier (accessories vendor) is done at the product development stage starting from concept, to sample making, washing and embroidery etc. Brand companies can explore the possibility of using a portal to access a near real-time picture of what is happening to their suppliers in their offshore locations during the complete engagement cycle. The portal will help eliminate chaotic communication, time-consuming processes and missed opportunities.

To be effective, the portal will need modules for Collaborative Planning, Product Development Collaboration, Inventory Tracking, Quality Management, Sales and Marketing, Voice of Customer, Policies & Compliance and much more. The portal becomes a single channel of communication and a common platform for data management.

Account executives, merchandisers, suppliers etc. will upload various details like status, test reports, inventory reports as and when data is available. This way both the organizations (Brand Company and their vendors) can work 24X7 across time zones.

Box Approach

In many organizations there are major disconnects between product development and sales teams. The product development team might be working closely with the production team but having the right details of

the sell through rate and profitability of particular designs may be missing. In a normal scenario, design elements are passed to the sampling team; the sampling team passes those elements to the production team and finally from the production team it goes to the retail team. To bring more practicality to design and pass on creativity to commercial, companies can look at a "Box Approach".

The combination of Design, Sample Development, Merchandising and Retail/Sales can create the right platform of well-connected business scenarios across functions. Under the umbrella of a Brand, Design Heads, Product Development Managers, Category Heads and Sales/Retail Heads should develop a tighter relationship – and visit each other's domains -- to understand core functions. An analysis of bulk production feasibility, costing aspect of sourcing from merchandiser and expected sell through rate of a particular design can be invaluable inputs at the time of designing.

Integrating design (first leg of the value chain) to retail (the last leg of the value chain) with the dimensions of feasibility, late point differentiation, costs, etc., product performance can be given a major boost.

Sustainable Product Development

Product development teams should also incorporate sustainable practices into product development. They not only have a social obligation for adopting sustainable practices but there is a fast growing segment of customers who are demanding such products. Some are willing to pay a small premium for them. In the fickle world of apparels and trends, eco-friendly products are also a way of building loyalty in the segment.

The sustainability drive should be two-pronged: first, through the sourcing and usage of eco-friendly raw materials and second through a reduction in energy use, water use, a reduction in wastage. Eco-friendly raw materials would include those that are renewable, have a low ecological footprint and are low in the use of chemicals such as organic cotton, bamboo fabrics, Lyocell-based fabrics, wool, soy silk, polyester fiber made from recycled plastic bottles, and Eco-friendly dyes. The simplest and most immediate way to reduce wastage --- and over which the manufacturer has the most control -- is to eliminate multiple iterations in the creation of samples and by leveraging the previous season's patterns.

The growth in organic cotton has been rapid, but it still represents only

0.2% of the total cotton crop. The American Apparel & Footwear Association (AAFA) has seen a dramatic shift towards a greener U.S. apparel industry. Apparel players like Levi's, Nike, VF Corporation and Wal-Mart are taking quick strides in sustainable product development.

Levi's is coming up with organic cotton product lines, positioning them as a premium category. Nike has plans to introduce sustainable designs and materials. It has achieved a 24% reduction in waste from factory production in 2009. VF Corp has a CO2 reduction goal. Hanes Brands became a U.S energy star partner in 2007 and had created energy management policies in their manufacturing, distribution and retail facilities in 2008.

Apparel companies are challenging themselves to better their environmental and social performance through changes in their products and the supply chains that enable them. In the process, they are also finding new and profitable markets.

Base Leveraging

Normally for an established brand, we can categorize each seasonal development into three buckets: a) Old – Old b) Old – New c) New - New

The Old – Old category is the group of established designs, fits and color combinations. These are staples or standard styles – like black trousers and white shirts, blue jeans and polo tee shirts. These range from 30% to 40% of the styles under a brand.

The Old – New category is the previous season's "Win Styles". The category is made up of styles that were a hit in terms of volumes, margins, customer satisfaction, value/price point etc. and which category heads want to continue with. They range from 10% to 20% of the styles under a brand.

The New – New category is the one that will be developed first time for the upcoming collection. Some existing concepts will be leveraged, but largely these styles will be built from scratch. They constitute 30% to 40% of the styles under a brand. The contribution of each category range may vary depending upon the brand positioning & strategy.

Pattern making is one of the most time consuming exercises. So unique all-size pattern grading makes it easy to modify and carry over styles from

season to season. On an average a pattern maker can reuse up to 80% - 90% of the concepts from past seasons and increase productivity by up to 50%.

Leveraging Technology

The "Top Technology Trends of 2012" research from Apparel Magazine and Gartner suggests that product development outranks all other areas in IT Software applications. Product development in the entire value chain of the apparel industry demands the highest attention.

Technology can be leveraged to reduce the time required for product development. Product Lifecycle Management (PLM) has seen rapid adoption over the last 3 to 4 years in the apparel industry for its ability to ensure accurate product commitments by enabling communications, establishing visibility to retailers, brands and vendors in the supply chain, and tracking suppliers versus orders. PLM also tracks data points and KPIs related to samples, materials and components, quality, delivery and costs that can be used to manage suppliers and reduce manufacturing time.

Amongst the best in class companies that have been using PLM for more than a year, 65% have improved revenue year-over-year and 56% have increased product sell through.

Along with PLM, other technologies such as Virtual Sampling (3D Technology for sample development), advanced designing, pattern making and fabric/garment simulation tools are enhancing creativity, reducing the cost of prototyping, producing greener processes and resulting in a new era of product development. 3D sampling can result in countless hours of saved labor, time and costs, ensuring a more collaborative, efficient and profitable sample development process.

Many global players like Tesco, Phillips-Van Heusen, Abercrombie & Fitch, and Jones New York Intimates use 3D sample-making software. The technology ensures that fits are as close as possible to the target customers. An infinite number of sample colors can be used to present to buyers without having to invest in time consuming sample creation. And customers can quickly request for design and fit variants in products.

In case of integrated PLM-ERP, companies have an integrated view of the complete product development starting from style selection in the PLM to product related data points like production, inventory, delivery to

customers and financial transactions etc. in integrated ERP.

ERP's production orders can flow back into PLM so the company's suppliers know what is on order with visibility into work-in-progress and shipment status.

The flow of Right Tracking to Right Measuring to Right Improving can be applied in the product development stage if the PLM solution is well integrated with the CAD system, ERP and other surrounding tools and applications.

Conclusion

Demands in the apparel industry have changed. Sourcing and manufacturing are now dynamic, global functions. Estimates indicate that time-wise, product development takes almost 60% and sample development another 50% of the time within the product development bucket. The technology supporting the industry is seeing a dramatic evolution. By using the right mix of strategies in the product development stage can definitely help increase the product performance. The recommendation is to have an integrated view of all business functions starting from financial planning, designing to merchandise planning and drill down to the level of pre-production. The integration can help reduce overall cycle time, minimize waste, establish eco-responsible manufacturing practices, bring down costs and ensure that apparel manufacturers are better positioned to deliver winning products to stores season after season.

About the Author

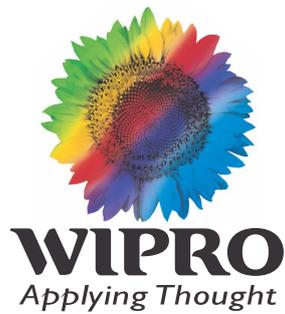
Amit Bhatia is a Practice Lead with Apparel & Footwear Practice as a part of the Retail, CPG, Transportation and Government (RCTG) vertical of Wipro Technologies. He has several years of work experience across the value chain in apparel & textile industry. His strength lies in a deep understanding of the complete value chain starting from conceptualization of the product to involvement of the end customer. His vast exposure to supply chain includes Product Development, Training, Manufacturing, close interaction with retailers, managing vendors, setting up an Apparel Factory in East Africa and heading the complete R&D operation of one of India's Largest CPG conglomerates and various technological solutions for global apparel clients. He holds a dual post graduation in Business Administration and Garment Manufacturing & Technology.

Wipro in Apparel and Footwear Domain

Wipro's Apparel & Footwear Practice aligns with the key trends in the Apparel & Footwear industry and designed solutions specifically in the areas of Demand Management, Supply Chain Management, Merchandising and Pricing, In-store Management and Data Analytics. The Apparel and Footwear Practice focuses on the unique challenges of organizations in this sector, with domain consultants drawn from the industry assisting our technology solutions. Wipro also attained domain expertise by working with the leading global apparel and footwear players.

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