

## Judicious product mix vital for apparel supply chain - II

*It is crucial to analyse the impact of proliferation of product mix on the operational platform in the apparel supply chain, says Debasis Daspal*

In apparel manufacturing, development of marker becomes increasingly difficult with increasing diversity in garment. Consequently material waste in pattern making and cutting increases with under-utilisation of fabric. In addition to the above impacts, product variety also contributes largely to generation of more sub-standard goods at the end of every process.

**Difficulty in Assortment Planning:** To achieve maximum impact on consumer's value perception, it is necessary to make all the assortments of a particular product line available on the shelf at the same time. The availability of a complete range of an item necessitates considerable assortment planning at every link of apparel supply chain, starting from initial textile manufacturer. But proliferation of lot sizes deters success of this assortment planning. As back-end textile manufacturing consists of both batch and continuous processes, it becomes mandatory to move all the assortments of a style together out of final warehouse. To achieve this, it is necessary to harmonise the movement of manufacturing lots in a way that makes the entire component (assortments of a style) available during garment cutting stage. However, each component has differential processing time, making it difficult to push the entire 'assortment of product' together through the 'manufacturing leeway' of apparel chain. For instance, in an assortment comprising white and colour fabric, white products reach final warehouse earlier as processing time for white goods is considerably less than that of colour merchandises. And higher the number of product components, more difficult it would become to achieve this synchronization across product-process continuum. Obviously the final upshot is lost sales due to lack of complete assortment on retail-shelf during purchase.

In apparel manufacturing, a Master Production Schedule (MPS) is always developed to meet the contract delivery dates of the buyers. In many cases, the production orders from the same buyer are grouped together on the production schedule. Those late completed orders contribute to extra transportation costs and reduce selling price of the garments demanded by the buyers to compensate for the late delivery.

**Poor Asset Management:** In internal supply chain, all components needed for a particular product are required to be processed together. With increase in number of variety, the time taken for individual component to be processed increases, as lot of changeover time and various downtimes related to quality problems increase. This results in higher amount of work-in-process at various stages of operation.

In fibre and yarn dyeing, higher number of changeover from one type of blend to another increases machine downtime. Also time required for matching shades increases with more product varieties. Due to capacity constraint of different machines regarding batch size, there is more chance of excess dyeing. Waiting time for component shade also

increases, as there is more variety to be processed in a given time. All these leads to more material being locked in the process.

In spinning, multiplicity in various blends, count, and twist combination results in more waiting time due to higher number of change-over and insufficient batch quantity of a particular blend-count-twist combination to feed ringframe.

In weaving and finishing, machine set-up time increases with more number of beam-gaiting and higher frequency of changes in process sequence. Also in finishing, batch preparation time increases with more number of varieties as all similar quality-pattern of a particular product group needs to be processed together for uniform finish. All these need more material in process, which correspondingly increases inventory carrying cost at each stage of processing. All these lead to higher work-in-process.

In warehouse, the finished goods despatch depends on availability of all similar quality of a particular product. In a more diverse product mix, it will take more time for individual quality-pattern to reach in the warehouse. This results in increase in waiting time and higher finished goods inventory.

Tailoring product mix holds the key

Already a high degree of variability is present in retail due to volatile fashion and ever-shortening 'season'. Product lines get proliferated with creation of new segments. For example, in sports wear 'Yoga' wear is added to the already established lines - golf wear, tennis wear or swimwear. Moreover, product lines, sizes and overall fits vary with globalisation of the market. All these tend to amplify S.K.U variability at retail level to an unprecedented level. Retailers and buying houses need to manage this diversified product line right through different stages - product development, sample approval, bulk sourcing of components, production or outsourcing apparel, distributing finished product across retail outlets and merchandising. And all these activities need to be coordinated across vast geographical distances. This complexity of operation is magnified many times by the increasing product mixes in the basic textile fabric.

Most of the times the adverse impacts of product proliferation go unnoticed by the frontline organisations (retailer or buying houses), as organisations in textile-apparel-retail chain are seldom interconnected, and very little coordination exists among different players up to the initial textile manufacturers.

Retailers have to realise that they should not focus only on purchasing and selling, but on the entire supply chain. Because, should a manufacturer not be in a position to deliver the goods at an agreed point in time, delays run through the entire supply chain up to the end customer. Based on the given configuration of apparel supply chain, the retailer has little possibility to exercise control in this process.

Even relatively simple garments depend on the combination of a fabric from one factory, buttons and zippers from another, and snaps from yet another, all of which must come

together in time for the finished apparel to be stacked on store shelves. Moreover, as product development consists of developing and selecting fabric swatches, figuring out garment style and merchandise flow, proliferation of product-mix results in high product development cost, long design-to-market cycle time. Typically design-to-market time for a fashion-apparel item is 6 to 9 months. Generally it is found that 70 per cent of this time comprises non-value added activities such as communication delay, waiting time for assortments, and non-approval of merchandise at various stages, etc.

Hence, a judicious product mix will make the entire apparel supply chain more manageable without sacrificing the end diversity in terms of apparel fit, size and style that attract the consumer's imagination.

*(The author is a supply chain professional. Having graduated from Indian Institute of technology, Delhi, he has experience in leading textile, apparel organisations. He is currently with KDS group, Bangladesh as vice president - supply chain & operation - accessory business.)*