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## Section F

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### A study of merchandising activities in supply chain management in the apparel sector

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The objective of this study is to analyze merchandising activities in Sri Lankan apparel supply chain and find out the critical path, which influences the production start time; subsequently, crushing the merchandising activities to minimize the lead-time (LT). The main emblematic issues faced by the Sri Lankan apparel supply chain are longer LT, distance from the raw material suppliers and customers, smaller order quantity and eventually the failure in achieving planned start date, all of which now force to improve the supply chain efficiency in order to be competitive in the global market.

In this research, both quantitative and qualitative approaches were undertaken, and variables measured by using interval and ordinal scales. The data were collected during the period, 2005 to 2008, from four Sri Lankan garment-manufacturing organizations, which consist of 2000 employees and monthly production capacity of 300,000 units. The data collection strategy consists of observations, in-depth interviews with the key executives of the companies and records of past administrative reports. Further, the population and the sample sizes of this research study were 104 orders and 32 orders respectively with the *inadequate frame* sample category. Consequently, the lead-time of three independent variables such as fabric sourcing (FS), trim sourcing (TS) and sample approval (SA) processes were analyzed to find out which variable influences more on the dependent variable of production startup date. Thus, a network analyses, Critical Path Method (CPM) and statistical software, Minitab were used to find the critical path of the merchandising activities.

The results showed that though all three processes, FS, TS and SA significantly influence the total LT, the most critical process influencing the production startup date was SA process, which has the LT of 80 days. In addition, the LT of FS and TS processes were 65 days and 64 days respectively. Subsequently, the lead-time of SA has been crushed by using the time/cost trade-off analysis and succeeded in reducing 22 days. This would provide quick turnaround time to customers and reduce the cost of production, thus enabling the organization to be competitive in the global market. Further, this research provides valuable information and unbiased recommendation for senior managers to develop their own supply chain and merchandising strategies for the apparel industry in Sri Lanka.

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