



MANAGING ERRATIC DEMAND: THE MULTI-CHANNEL MANUFACTURING APPROACH

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ABSTRACT

Contemporary cellular approaches to the development of manufacturing architectures based upon lean manufacturing concepts are often hindered or prevented by the lack of a smooth regular demand for products. This is frequently the case in apparel manufacturing where demand is erratic because of the high variety of end items and the fickleness of fashion markets.

Multi-Channel Manufacturing (MCM) is an approach to cell development, which examines first the market channel requirements and configures cells based upon common customer service requirements. This paper describes the MCM approach and presents an application study in the apparel industry. Working through the case example, the paper describes the application of three MCM principles in seven specific application steps. The resulting revised system provides better customer service and reduced inventories albeit at some potential sacrifice in direct labor efficiency. Like other cellular designs, refinement of the system is a continual process. The paper illustrates trade-off's and extensions of the system to improve efficiency and performance. It has immediate applicability to apparel manufacturing.

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KEY WORDS: Multi-Channel Manufacturing, JIT, Lean manufacturing, Quick Response, Erratic Demand

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The purpose of this paper is to describe an approach to achieving a high performance manufacturing system in a difficult operating environment. Despite many constructive ideals in just-in-time (Ohno,1988), lean manufacturing (Womack and Jones, 1996) and world class

manufacturing (Schonberger,1986), implementation on the factory floor remains fraught with pitfalls. In particular, erratic demand, defined as demand that exhibits no discernable pattern and high day-to-day variability, is not well handled by these techniques. Other barriers not easily resolved by continuous improvement programs include: high variety of outputs, processes which are inherently batch by nature, limitations on setup flexibility, and