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A CASE STUDY

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Just in time (JIT) production system : Not just an option but an imperative - A study of an agro-machinery manufacturing company in Kerala

P.K. MANOJ AND V.N. NARAYANAN NAMBOOTHIRI

ABSTRACT

Just in Time (JIT) production system offers good prospects for enhancing operational efficiency and productivity through minimization of inventory. Though, JIT is yet to pick up momentum in a significant way in Indian manufacturing companies, probably because of high level of bottlenecks in obtaining the critical inputs, some less stringent forms of JIT (sometimes called, 'Indianised JIT') are being practiced meaningfully by many companies where the inventory is maintained at substantially low levels, though not to the extent that an ideal JIT production system requires. In the above context, this paper (i) makes an overview of JIT, its major features, benefits, key pre-requisites, and also the status of JIT implementation in Indian companies; (ii) makes a detailed study of inventory management system at KAMCO – an agro-machinery manufacturing company based in Kerala; (iii) locates the need for scientific inventory management through JIT in view of the significantly lower inventory turnover ratio vis-à-vis national benchmark, and (iv) finally suggests strategies for adoption of JIT production system in a systematic and phased manner, for better operational efficiency.

Key words : Inventory Turnover ratio, Benchmarking

Concept and significance of JIT production system:

Just-in-Time (JIT) production systems were developed in Japan to minimize inventories, especially work-in-progress (WIP). In fact, WIP and other types of inventory are treated as a waste by the Japanese and accordingly these should be minimized or eliminated. Ideally, a JIT production system should produce and deliver exactly the required number of each component to the downstream operation in the manufacturing sequence just at the time when that component is needed. Thus, the JIT delivery discipline ensures that each component is delivered "just in time" and this minimizes WIP and manufacturing lead time as well as space and money invested in WIP.

JIT as an emerging cost management philosophy offers good prospects for enhanced operational efficiency of any manufacturing company. JIT is a key building block for modern approaches to manufacturing planning and control. In fact, JIT is both a philosophy and a set of techniques. It reduces the complexity of detailed material planning, the need for shop-floor tracking, work-in-process inventories, and transactions associated with shop floor and purchasing systems. These benefits in turn requires more tightly co-ordinated manufacturing processes– both inside the company and with suppliers. Prompt supply of the input materials being a pre-requisite, efficiency at their level and adequacy of infrastructure facilities for prompt supplies are equally significant. Ideally, in a JIT set up the inventory in hand may be sufficient for a few hours production only. JIT orientation involves: (i) Reduction of set-up times and lot sizes, (ii) 'no-defects' goal in manufacturing, (iii) Focus on continual improvement, (iv) Worker involvement, (v) Cellular manufacturing. In the above context, this paper has set the following objectives:

– To make an overall review of JIT, its major features, benefits, key pre-requisites, and also the status of its adoption in the Indian scenario;

– To make a detailed study of inventory management system at KAMCO – an agro-machinery manufacturing company based in Kerala, including benchmarking KAMCO with the industry leader (*viz.,* VST) and the best among the manufacturing companies in JIT adoption (*viz.,* SBL);

– To make a reality check as to the extent and nature of applicability of scientific inventory management at KAMCO through JIT system for its enhanced performance and competitiveness;

– To suggest strategies for adoption of JIT

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