

Redesign of a Machining Line for Producing Multi-Model Auto Components using Lean Techniques



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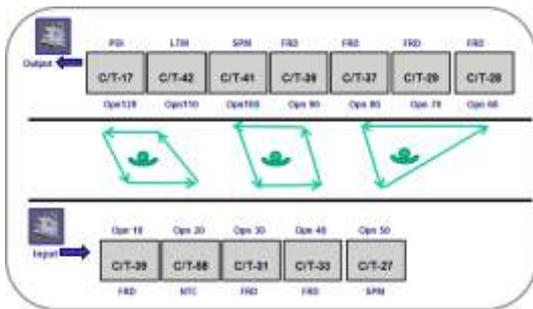
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Abstract:

Consolidation in supplier markets, rising prices and growing material demand in emerging markets have necessarily changed the traditional purchasing framework. Cost reduction is turned out as the most cited objective in successful running of any business. Despite of its overwhelming importance, attempts to study or analyze supply chain cost reduction are very few in construction equipment manufacturing business. When Customer makes purchasing decision, price remains as the major criteria here. This study addresses various cost reduction methodologies implemented at M/s Volvo CE India, Using a cost effective supply chain framework.

This framework proposes various cost effective and smarter ways of working with the suppliers. Here products are categorized based on business volume and supply risk using a purchase portfolio matrix called Kraljic Matrix. It helps company to find which supplier and area to focus more or how the strategies should differ across the supply base. Here Products are categorized in to Routine Items, Leverage Items, Bottleneck Items and Strategic Items. Different purchasing strategies are formulated to put in practice with each category. Proposed framework uses Economic Order Quantity Model, Quantity Discount Model, Complete aggregation model and Tailored aggregation model to optimize the cost drivers and achieve an effective cost reduction. Proposed model was validated for determining the degree to which its accuracy in representing real world, by implementing it as pilot projects.

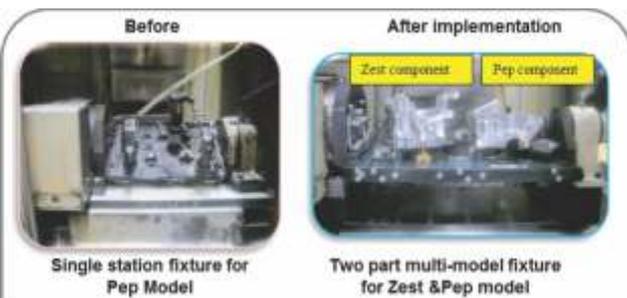
This project work resulted in 3% of supply chain cost reduction. Obtained results were compared with past data (January 2013- December 2013) for improvement verification. The suggested framework will be of immense help to the company in reducing the supply chain cost—and a prerequisite for building a strong supplier partnership and developing an effective supply chain base.



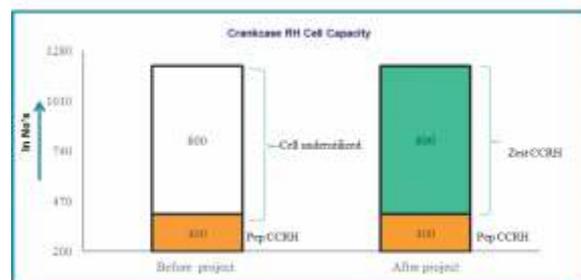
Pep crank case RH process layout



Comparison of two models crank case RH



Solution implementation



Results