

ESCALATING PROFITABILITY OF CHAIN BY USING AN INNOVATIVE SLIT-LINK APPROACH FOR OPTIMIZING THE CHAIN'S PRODUCT- FLOW THROUGH SEQUENTIAL QUADRATIC PROGRAMMING ALGORITHM

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Abstract

Customer expectations today stand at very high levels where responsive, demand-driven supply chains can only meet the desired service levels. For this, chains need to be well integrated & at the same time help maintain low costs and high margins. The price of the product is a key differentiator which influences a customer's buying behavior for a mass market like India. With the increasing maturity of many industries and the mass commoditization of products, the product price and on time delivery becomes a very critical factor. A 1:1:8 chain of Hindustan Unilever Ltd. for a single high demand FMCG product is optimized using the proposed approach. In any industry, the four broad supply chain metrics considered are: Cycle-time metrics, Cost metrics, Service quality metrics and Asset metrics. As the theme of this project suggests, we have primarily focused on the Cost metrics and Service quality metrics. Each product flow line is optimized by slit approach, yielding minimum supply chain cost and maximum service level. The results obtained can then be linked together, giving optimum product flow.

Keywords: Profitability, Commoditization, SQP (Sequential Quadratic Programming), Customer Service Level, FMCG (Fast Moving Consumer Goods), Supply Chain Metrics, Slit-Link approach.