

Modeling Distribution Networks Using Stochastic Simulation And Response Surface Models

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Abstract

OEM Customers and Distributors across the electronics industry are pursuing all available means to reduce their materials costs while maintain high service levels to their end customers. The OEMs have asked their suppliers to implement various forms of Consigned Inventory and Vendor Managed Inventory (VMI) programs. Some Distributors have stocked high levels of Finished Goods (FG) inventory in order to maximize their service levels to the end customers; and use return policies to minimize their risk by returning excess product.

This paper will focus on statistical methods that have been successfully used to design and run experiments on stochastic simulation models of the Intel distribution network to understand the effects on customer service level (on time delivery) of the amount and positioning of inventory in that distribution network.