

Analysis of Information Sharing and Capacity Constraint on Backlog Bullwhip Effect in Two Level Supply Chain

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Abstract : This paper investigates the impact of information sharing and capacity constraints on backlog bullwhip effect of Automatic Pipe Line Inventory and Order Based Production Control System (APIOBPCS). System dynamic simulation using iThink Software has been applied. It has been found that smooth ordering by Tier 1 can be achieved when Tier 1 has medium capacity constraints. Simulation experiments also show that information sharing helps to reduce 50% of backlog bullwhip effect in capacitated supply chains. This knowledge is of value per se, giving supply chain operations managers and designers a practical way in to controlling the backlog bullwhip effect. Future work should investigate the total cost implications of capacity constraints and safety stocks in multi-echelon supply chain.

Keywords : supply chain dynamics, information sharing, capacity constraints, simulation, APIOBPCS

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