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MODELING AND ANALYSIS OF TWO-COMMODITY PERISHABLE INVENTORY SYSTEM IN SUPPLY CHAIN

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Abstract

This paper considers a two commodity continuous review perishable inventory system. Continuous review inventory control of a single item at a single location had been considered by many researchers in past. We extend this inventory control strategy to two-echelon system, which is a building block for serial supply chain. The inventory control system consists of two warehouse (WH_i), Two Distribution Centre's (DC_i) each associated with a retailer and handling two non-identical products. A (s, S) type inventory system with Poisson demand and exponentially distributed lead times is assumed at retailer node. The items are supplied to the retailers in packs of Qi $(= S_i - s_i)$ items from the distribution center (DC_i) which has instantaneous replenishment facility from an abundant source (manufacturer). The steady state probability distribution and the operating characteristics are obtained

Key Words : *Supply Chain, Inventory control, Multi-echelon system, Two commodity Perishable inventory, Optimization.*