Warehouse Network Design for A Commodity Chemicals Manufacturer

by

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ABSTRACT

The choice of the location and number of warehouses is a strategic-level decision that can have a long-lasting impact on a firm's performance. Warehouse locations and their capacities determine how products flow within a firm's supply chain, which directly influences a firm's performance in terms of cost and service level. This research applies a mixed integer linear programming method to evaluate factors that drive existing inefficiencies in a warehouse network belonging to a Thai commodity chemicals manufacturer. The objective is to determine an optimal warehouse network configuration that minimizes the firm's total transportation and warehousing cost. Inventory turns and storage capacity constraints are found to be the key drivers of inefficiencies. The optimal solution suggests that the company should retain fewer warehouses and expand capacities at these locations. As the company continues to grow, the potential benefit from expansion becomes greater

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