

Pawin Suwakae 2013: Implementation of Vendor Managed Inventory System to Determine Inventory Levels for Single Warehouse with Multi Retailers Problem. Master of Engineering (Industrial Engineering), Major Field: Industrial Engineering, Department of Industrial Engineering. Thesis Advisor: Associate Professor Anan Mungwattana, Ph.D. 76 pages.

The replenishment problem using the fixed order size system usually results in high transportation and holding costs. Thus, this research investigates the single warehouse-multi retailer problem with the objective of minimizing the inventory and transportation costs. The vendor managed inventory concept is applied to specify the inventory level and time to delivery. But first, the multi traveling salesman problem is solved to cluster the retailers with the objective of minimizing the total distance with time window constrain. Furthermore, in this research, it is assumed that delivery is made with full truckload. Then, truck capacity determines inventory level. The results have been compared with the economic order quantity with rising delivery cost. And the total cost is reduced on average by 23.03% comparing with the rising cost.

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Thesis Advisor's signature