

# Pricing and Coordination Policy for a Three Layer Integrated Supply Chain with Linear Declining Demand and Suggested Selling Price by Manufacturer

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## ABSTRACT

This article analyses a pricing strategies and coordination among three layer, multi-channel and multi-echelon supply chain members, which consisted one manufacturer, distributors and retailers. The demand is considered as a linear declining with time and selling price at retailer's end for a single item. The maximum profit function per unit time is designed for each supply chain members subjected to the expenditures. In the urban areas holding cost of goods is more expensive other than rural areas, then a holding costs sharing concept among the distributors and retailers are considered in this article. In this study we have maximized respectively the initial lot size, selling price and replenishment time for retailers, initial lot size, wholesale price for distributors and manufacturer. This study is analyzed in two framework first one is decentralized and other one is centralized. The optimality conditions of each supply chain members' profit function have been derived with respect to the decision variables and propositions and results are shown in data table to illustrate the model and also, we have done sensitivity analysis with numerical example.

**Keywords:** Supply chain, individual strategies, collective strategies

