ABSTRACT

Vendor managed consignment inventory (VMCI) is a collaboration strategy that is existed among parties involved in the supply chain, where the vendor as a supplier has the authority to decide the order quantity that must be sent into retailer and become the owner of goods until the goods is sold or used. The integration in the supply chain system is due to information sharing and business process reengineering. Some studies concluded that the VMCI strategy provides a higher profit on a system although there is a treaty concluded in short term, vendors still could not gain benefits in this strategy.

This study will developed a model and analyze the advantage of vendor managed consignment inventory (VMCI)'s strategy of a single-vendor multi retailer under probabilistic demand. An algorithm to solve the model was also developed. The result of experiments suggest that model that has been made. Moreover, this study also conducted a sensitivity analysis to determine the parameters which is including vendor's order cost, vendor’s holding cost, retailer’s storage cost, retailer’s opportunity cost is borne by vendors, retailer's order cost, retailer’s service level and standard deviation of demand retail.

The result of experiment suggest that VMCI model have supply chain total cost lower than consignment inventory model. Based on the results of numerical calculations, VMCI model resulting in savings total cost by $17754.65, or 40% of the total cost in advance.

Keywords: Vendor Managed Inventory, Consignment, Probabilistic Demand.
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