

## **ABSTRACT**

*PT XYZ is a modern retail company in Indonesia which has supermarket and department store format. PT XYZ has a distribution center (DC) handling a wide range of product categories, among which are food and non-food products. Currently, PT XYZ does not have a clear calculation base in handling DC inventory. The ordering policy of a product is based on experience and historical data 3 months ago. Improper handling can result in the accumulation of goods in the warehouse (overstock) due to demand for goods lower than goods stored in warehouses or the unavailability of goods in the warehouse (stock out) because of the high level of demand for goods compared to the total goods stored in the warehouse.*

*From the existing problem, then the inventory policy will be developed using probabilistic continuous review method  $(s, S)$  for product category A which has up to 80% fund absorption and probabilistic continuous review method  $(s, Q)$  for product category B and C which has Absorption of funds up to 15% and 5%.*

*The results of this probabilistic method will be obtained lot size ordering, safety stock, and reorder point optimally. By using continuous review method  $(s, S)$ , total savings cost savings of 36% and continuous review  $(s, Q)$  method is founded to be a total cost savings of 59%.*

**Keywords** : *Inventory, Optimization, Probabilistic, Continuous Review,  $(s,S)$  System,  $(s,Q)$  System*