

## ***ABSTRACT***

*PT. XYZ is a distributor of various construction vehicles and large equipment and their spare parts in Indonesia. In carrying out its business activities, the company purchases from overseas suppliers to be marketed in Indonesia. However, in carrying out its business activities, the company has not carried out effective inventory control. This is indicated by the value of days of inventory in one of the warehouse which is still above the company's target and the total cost of inventory is high. This research was conducted on GEN category spare parts with 157 SKUs. Based on the data analysis, it is known that spare parts have an abnormal distribution and a Poisson distribution. The results of the ADI-CV analysis show that 96.8% of spare parts have lumpy demand characteristics, 2.6% have erratic characteristics, and 0.6% have intermittent characteristics. Therefore, demand forecasting is carried out using monte carlo simulation calculations. The results of this calculation are used as demand input for the method used. Problem solving uses the periodic review method (R,s,S) with a power approximation approach. The results of calculations on the inventory system reduce the total cost of inventory by 4.01% and the level of days of inventory by 23.66%.*

*Keywords: Supply Chain Management, Spare Parts Inventory Management, Periodic Review, Days of Inventory.*