

ABSTRACT

PT. XYZ is one of the companies that produce soft drinks in Indonesia. In supporting the product distribution to the customers, PT XYZ has several Distribution Centers (DC) which spread across each region, one of them is located in Bandung, West Java. DC Bandung itself received product shipments from three factories, there are Cibitung, Cakung and Tambun.

DC Bandung has not determined the replenishment policy, and this condition resulting in over stock at some periods due to the not scheduled delivery time and quantity of product and it causes high total inventory cost to be borne by DC Bandung.

This research was conducted to give the proposal of product replenishment policy with mixed-integer programming method which aimed to minimize over stock in DC Bandung. The result of application of proposed method are when to order and the order quantity of each product.

The results calculations of replenishment policy provide savings on total inventory costs of Rp 23,800,981.20

Keywords: *Replenishment Policy, Mixed-Integer Programming, Over Stock*