SUMMARY

Fabrito Budi Saputro, Department of Industrial Engineering, Faculty of Engineering University of Brawijaya, November 2015, *Determination Inventory Policy Plastic Product Vendor Managed Inventory Approach Using (s,S) Model (Case Study PT Flamboyan Jaya Malang)*, Academic Supervisors: Yeni Sumantri and Agustina Eunike.

PT Flamboyan Jaya is a company producing many kind of plastic bag for daily use with various size and color that place in Karang Ploso, Malang. PT Flamboyan Jaya has 5 distributors to deliver its products. The company has a problem in raw materials availability, the uncertainty of raw materials supply cause unhealthy stock, either overstock or understock in companys warehouse. Moreover, there are another problem related to the ability to fulfill the distrbutors demand because of the lack coordination and communication with distributors. It causes low service level of PT Flamboyan Jaya.

This study, use Vendor Managed Inventory (VMI) to determine the inventory policy of two products (N24 and N15) within supply chain of PT Flmaboyan Jaya. VMI is a model in which the buyer do not decide what, when, and how to be ordered, but only give information about their customers demand, stock position, and other informations that can affect sales in the future. The input of VMI policy are demand forecasting, reorder point (s), maximum stock (S), lead time, ordering cost, holding cost, and initial stock. Next step was simulation running for VMI policy. Monte carlo simulation is use to generate forecast demand and calculate the ROP (s) and maximum value (S). Ordering cost, holding cost, total cost inventory, and service level are the of simulation. VMI policy simulation generate a value of s and S for raw material and end product of N24 and N15 products. VMI model will affect the replenishment flow which will affect in the cost and service level. Therefore, the following calculation was carried out to compared total cost and service level of existing policy and VMI policy.

The results of these research simulation output of VMI policy including range of ROP values (s) and maximum value (S). The range of ROP value and maximum value for N24 in PT Flamboyan Jaya's warehouse respectively, are 2822,96 – 3923,17 and 2989,75 – 4107,12. For N15, range of ROP value and maximum value in company warehouse repectively, are 2092,08 – 2737,68 and 2243,52 – 2897,42. Furthermore, the simulation results of VMI policy's implementation compared to existing policy reduces total cost inventory and increased service level in company warehouse. On the other hand, increases the inventory total cost in distributor warehouse, as well as increasing service level. However, VMI policy is able to reduce supply chains total cost of both products (N24 and N15).

Keywords : Vendor Managed Inventory (VMI), (s, S) model, Inventory Policy.

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