

ABSTRACT

The availability of ready-to-use pallets is critical for PT KALOG. Lack of ready-to-use pallets can cause lost sales which can reduce company revenue. As a 3PL company, PT Kereta Api Logistik is engaged in shipping cement cargo using pallets, especially the Nambo - Kalimas route. The problem that occurred at PT KALOG was that the pallet demand was not fulfilled due to the low pallet stock and caused sales losses. Lost sales of Rp. 16,644,800,000 happen because the level of inventory cannot meet the demand so that it can reduce the profit from the company. The company was still implementing a conventional Reverse Logistics system so that this research will be carried out in a modern way using the Discrete Event Simulation Model method. By creating a simulation system model will get a wider picture of the pallet supply chain network, problems in the existing system and can increase sales from Rp. 97,953,000,000 to Rp. 114,597,800,000 or an increase of 7.83%.

Keywords: Reverse logistics, pallet procurement, pallet management, scenario analysis.