

ABSTRACT

Nowadays the growth of technology was increased fast, but newspapers industry in Indonesia still alive though there were many media used the internet. PT Pikiran Rakyat is the one of newspaper's company that still alive since 1966 with high quantity production each day. In order to fulfill that high demand, it required the print machine that can always in the good performance. If that machine was failed, it will disrupt the activity of newspaper production which will impact to unstable demand fulfillment. Print machine GOSS Universal had high investment and high maintenance cost in 2015 that reached up to Rp800,000,000.00 each month, that condition is not expected by the company. So that it required optimum cost calculation. In addition, it required conducting calculation the optimum amount of machine number, retirement age of machine, and amount of maintenance set crew to reduce the cost.

This research using the LCC model that is an approach to total cost incurred from start to finish considering various variables because in this method the calculation of the maintenance cost, operating cost, shortage cost, population cost and purchasing cost, as well as using Monte Carlo simulation to perform optimization and sensitivity test.

Based on the Life Cycle Cost calculation, the minimum LCC is Rp15,396,556,923.19. In that LCC it obtained optimum of number machine is 4 units, optimum retirement age of machine is 7 years, and the optimum amount of maintenance set crew is 1 team. Based on Monte Carlo Simulation, the minimum LCC is Rp15,397,100,001.74 with the optimum of number machine is 4 units, the optimum retirement age of machine is 7 years, and the optimum amount of maintenance set crew is 1 team. Based on Monte Carlo simulation additional 1 new machine the optimum LCC is Rp17,861,646,442.35 with the optimum of number machine is 5, optimum retirement age of machine is 7 years, and the optimum amount of maintenance set crew is 1 team.

Keywords: Maintenance Cost, Life Cycle Cost, Monte Carlo Simulation