ABSTRACT

PT. WXY is a distribution company that distributes food, medical equipment, medicine and cosmetic. In the process of distribution of goods there is a problem queue setup on the car service company PT. WXY resulting average time queuing (Ws) of 1.25 hours in the barn 2 PT. WXY and delivery delays. After making observations obtained early symptoms suspected to be the root of the problem is due to lack of facilities the door. In warehouse 2 PT. WXY there is only one piece door that serves two services, namely inbound and outbound, with an average rate of arrival of car suppliers and car companies 5.44 so the need for additional facilities. After doing the calculations with queuing theory approach showed improvement of 19% and an increase in the quantity of car companies that make deliveries amounted to 45.4%

Analisisis queuing system is done with simulation techniques for the simulation of the existing condition of the company can be portrayed correctly how the process of delivery and services provided at the warehouse 2 PT. WXY. Forms of vehicle arrival served in the barn 2 have variations and criteria vary according to the volume of goods and type of goods carried, the purpose intended kendaranpun different, the type of services provided by the company is also different between warehouse services 1 and shed 2 hanging of the type of goods to be carried and stored, and the arrival rate suppliers randomize more difficult perhitungn statistical basis.

Simulation application used is ProModel run for 1 day with working hours from 08: 00-17: 00. With replication automobile suppliers as much as the number of vehicles a company car. After the addition the door (server) This study also proposes perbaikanjadwal unloading, which initially is randomize now arranged by the time the fastest processes.

Proposed research offered is by addition of 1 server door with an estimated construction amounted to Rp. 9.2756 million rupiah. The results show with the addition of 1 server is able to increase the volume departure door car company which previously amounted to 11 cars / day to 16 cars / day with an increase (Ls) amounted to 40.36%, (Ws) amounted to 40.13%, (Lq) of 86.30% and (Wq) amounted to 86.33%. other proposal is the addition of carrier, as many as one person and their hours of overtime in the initial conditions and the end of the month for two days it was always an increase in volume of vehicles. So with some ususlan above will be able to overcome the problems facing the company.

Keywords: Queueing Theory, Simulation, Promodel, Scheduling, Service Discipline, Operational Research