Cost Optmization for Multiserver Queueing System with Impatient Customers

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ABSTRACT

A long wait time allows the customer to leave the queue. While that, the addition of the server resulted in total service provider spending being increased also. This study aims to determine the addition of the optimal number of servers on the multiserver queuing system if on the old system there are impatient customers, ie customers who cancel the queue (balking) or leave the queue (reneging) judging from the total cost incurred by the service provider as well as the total profit gained so it is expected in the new system, the probability of customer impatient decreases close to zero. Optimization of the number of servers will be done by involving the factor of existence impatient customers by maximizing the total pro t at the same time minimizing the total cost as a function of destination and time limits waiting and the server as a constraint. As for the steps that will be taken to achieve the goal are (1) Determine model for the corresponding queue system, (2) Determine the system solution under steady conditions state, (3) determine the performance measure formula of the system, (4) Calculate the total cost for all possible number of servers and (5) Determining the number of servers that minimize total cost.

Kata Kunci: *Impatient Customers, Matrix Analysis, Cost Optimization*