Analysis and Application of Queuing Theory in Supermarkets

Nityangini Jhala[1], Pravin Bhathawala[2]

Assistant Professor, Department of Applied Sciences and Humanities, Parul University, Waghodia, Vadodara,

Gujarat, India[1]

Retd. Professor & Head, Department of Mathematics, VNSGU, Surat, Gujarat, India[2]

ABSTRACT: Waiting lines or queues are a common phenomenon in life, especially in the province of organizations that are for profit making. Queues are common in such places as petrol or filling stations, supermarkets stores, clinics, hospitals, motor parks, manufacturing firms, to mention a but a few. An interesting aspect of queuing process resides in the measures of its system's performance, especially in terms of average service rate, systems, utilization and the costs implied for a given capacity level. This paper examines efficient queue management in XYZ supermarket as case study. One of the expected gains from studying queuing systems is to review the efficiency of the models in terms of utilization and waiting length, hence increasing the number of queues so customers will not have to wait longer when servers are too busy. In other words, trying to estimate the waiting time and length of queue(s), is the aim of this study. Through this, we will try to estimate that at given time how many servers will be required so that the total cost is optimized.

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