Scheduling Order and Delivery Times for Computer Companies

Bahadtin Ruzgar

Abstract— It is a well known problem for production companies not being able to deliver orders on time. When and if this occurs, companies would have to pay a penalty fee and risk losing their credibility and eventually their customers. For this reason, companies should have well organized plans or schedules for order receiving and delivery times. This case study presents a simulation program developed for estimation of order and delivery times for a hypothetical computer company where ordered computers are constructed according to costumer preferences and delivered to costumers via cargo. It is shown that with a simple simulation program, companies can effectively solve their problems on order and delivery times. Statistics at the end of the simulation give valuable information to customer and manager, separately.

Keywords— Order time, Delivery time, Modeling, Simulation.

I. Introduction

The most typical feature of our period is the rapid changing of societies. The most evident factors that speed the changing in societies are seen in information, technology, communication and economy fields. In our period called as the information era, the information society concept has emerged. The information is a fundamental asset for which the individuals and societies compete to acquire.

The information technologies that mark the current century recreate the contemporary human profile. In the rapidly changing and developing world of today, individuals are expected to know how to access and use information from multiple sources, and are able to establish effective solution methods for problems using the information acquired. To design effective and interactive learning environments compatible with the information technologies is very important for getting such features.

For continuity of the Information Technologies studies that are considered important and academically established in our country across all the universities, the knowledge and experience on the subject matter must be transferred or shared. Especially, in respect to competition with other countries in the world, the information society must take significant steps to bring the software sector in line with modern standards of our era, in which computers and software are inevitable tools for information society. Sometimes, with a simple program written for special applications, challenging problems can be solved easily.

Customers usually wish to procure their orders in the shortest possible time and find delays quite unfavorable. If an organization is unable to fulfill an order and the customer rejects to wait during the time it takes to procure the order, the organization will sustain financial losses. A typical situation would develop as follows. The company's sales & service department would have serious difficulties dealing with the complaints such as "I gave my order to your representative selling your equipment here, and I also made the payment but I still haven't received my order." Customers would be put on waiting lists, and most of these customers would be lost because they would switch to other brands instead of waiting. This situation would immediately cause concern to the company executives that would start wondering and raise questions such as: "Are we doing something wrong in this business?" At this point, the company should start using an order model to determine the most appropriate operation and the goal is to prevent losing customers, who may turn towards alternative sources for procuring their needs. Many authors share the same idea of the order model that by not delivering the orders on time, without scheduling order-delivery system, or without inventory policies, companies would suffer economically [1-9]. To solve their problems, companies generally pay large amount of money to buy simulation software. However, the problems associated with order delivery can be solved inexpensively with a simple program as it will be addressed in this work.

In this work, a simulation program has been developed for a company that assembles and sells computers, but it can easily be adapted to other applications as well. The phases of simulation, system design and improvement studies are explained and the details of the program sections, working logic, user orientations and sample practices are described in detail.

II. Simulation Program Details

The most important issue in a simulation project is to adjust and program the inputs of application effectively such that the objective is fulfilled. The quality in a simulation ensures that the results of the simulated event can be relied upon. This has been the emphasis in the work. The design of the simulation program considers almost all the details from receiving an order to delivery in a computer company. The technical feature choices, number of employees in technical service, their daily working periods and some important standards that

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B. Ruzgar is with the Actuaries Department, Banking and Insurance School, Istanbul, Marmara University, Turkey, (phone: 90-216-414 99 89; fax: 90-216-347 50 86; e-mail: bruzgar@marmara.edu.tr).