



Chapter XVII

Managing Operations in the E-Commerce Era: Requirements and Challenges

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ABSTRACT

Of the many innovations that have impacted humanity during the last millennium, the Internet can be considered by far the most pervasive: It is transforming different facets of human activity, not the least of which are business transactions. One of the fundamental issues that a given firm's management seeks to address, is how best to utilize input resources to provide customers with goods and services of higher value, thus generating profits and increasing market share. To facilitate activities embodied in this transformation process, a growing number of firms now use the Internet. This chapter analyzes the interrelationship between e-commerce and operations, and assesses the role operations should play to ensure the success of business-to-consumer and business-to-business e-commerce. It also proposes how to address key issues in order to harness the full capability of the Internet for commerce.

INTRODUCTION

Since its introduction a little over 10 years ago, the Internet has had profound impact on many areas of human endeavor; indeed, far more than had been imagined or anticipated. This ranges from its impact on society through its use in government, education, medicine, engineering, as well as in business. Considering the number of people involved, as well as the amount of money that has been transacted, it seems reasonable to infer that it has had the greatest impact in business during the past millennium. It continues to play a significant role in shaping enterprises in the new millennium.

Results of surveys by many information research firms provide projections about the level of e-commerce as the years go by. Forrester Research, for example, projects unprecedented growth in Internet-related business transactions worldwide in general, and in the U.S. in particular. The group suggests that e-commerce is expected to account for more than 6.2 trillion dollars of world trade in 2005, and that trade in the U.S. through the Internet will exceed 1 trillion dollars by the year 2005. AMR research firm based in Boston, USA, indicated that sales through the Internet in 1998 amounted to 43 billion dollars and it estimates that this will grow to about 1.3 trillion dollars by 2005. Although the estimates and projections differ depending on the agency, one common thread that runs through them is the exponential rate of growth of e-commerce with time. It is instructive to observe that this growth trend and the order of growth are similar to those predicted for computer processing speed. The Internet is having tremendous impact in two main areas of business: business-to-consumer (B2C) and business-to-business (B2B) transactions.

The increase in B2C transactions is closely tied to the number of people with Internet access. The rapid technological advancement and shortened product life cycles in the computer industry has resulted in significant reduction in the price of computers over the last 10 to 15 years. There has also been an increase both in the number of Internet service providers as well as development in Internet access technology such as DSL and cable linkages. These trends will further increase the accessibility of the Internet to many people. Several polls indicate that more than half of Americans own personal computers: A poll conducted by Maritz research group (Maritzresearch, 2000) indicates that in 2000, 60 percent of Americans owned a computer, 18 percent more than the figure for the previous year. Although the percentage of people subscribing to Internet service is small, the percentage having access to the Internet is high. This is in view of the fact that most public libraries, companies, and offices have computers with Internet linkage. In fact, a recent University of California Los Angeles (UCLA) study indicates that over 70 percent of Americans are online (Plotnikoff, 2001). Although it is true that not all who have Internet access carry out purchases online, reports indicate that a reasonable percentage of those who have access to the Internet, purchase things online.

One of numerous benefits of purchasing online include convenience, as customers can search for desired products and services online (e.g., books from Amazon.com) by simply carrying out a search from the comfort of their own homes. In the same vein, customers can easily compare prices and features of products. These advantages are of particular importance to people who are very busy and cannot afford the time to move from shop to shop, comparing prices or features of items they are interested in. Dell Computers, by using its direct marketing model whereby customers configure their

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