An organization’s e-commerce strategies either represent their entire existence for an Internet-only business or a significant investment by a traditional business. Competition on the Internet has resulted in many sites where a shopper can find the same goods and services. The differentiator for the market leader in a particular e-business is a positive shopping experience for the customer, which includes providing a reliable and high-performance Web site. This chapter describes a number of approaches to building reliable and high-performance Web sites.

INTRODUCTION

The business model of most organizations has seen a dramatic change in the last five years. Slightly more than five years ago the Internet did not allow any commercial business activity. The purpose of the Internet was for sharing information in a non-commercial environment. EPayNews.com (2000) shows the estimated revenues for US business-to-business (B2B) e-commerce goods for 1999 to be $43 billion according to Forrester Research, and it is expected to grow to $1.3 trillion by 2003. Revenues for US business-to-consumer (B2C) e-commerce goods for 1999 were estimated to be $8 billion and are expected to grow to $108 billion by 2003.

The arrival of such a new paradigm for conducting business is resulting in new companies being formed to exploit this new economy model and established businesses scrambling to change their business model to compete in this new marketplace. E-commerce strategies for today’s businesses either represent their entire existence for an Internet-only business or a significant investment by a traditional business.

Competition on the Internet has resulted in many sites where a shopper can find the same goods and services. Competition also has resulted in comparable pricing...
from the many sites. The differentiator for the market leader in a particular e-
business is a positive shopping experience for the customer. Performance, availabil-
ity and security are important characteristics in providing a positive shopping
experience. The Graphics, Visualization & Usability (GVU) Center at Georgia Tech
(1998) has found that the most frequently cited problem with the Internet is that it
takes too long to view/download pages. The responsiveness of the Web site may
determine whether a potential customer continues to do business or goes elsewhere.

Likewise, the strategy for putting together a Web site also has seen dramatic
changes. From an approach as simple as taking a discarded server and running an
open source version of a Web server application, today’s large commercial Web
sites have arrays of servers distributed around the world.

The traffic load of a popular e-commerce site increases by at least 50% on most
weekends. In order to respond to this weekend increase, the Web master must
increase the server capacity by adding additional servers to the Web site. Modern
Internet traffic management techniques can add more servers automatically. It is
very important in managing a commercial Web site that performance is managed
proactively.

With the rapid adoption of the e-commerce business model, the stakeholder
role has become strategic and includes key employees, business partners and
customers. Without information regarding the stakeholders’ perception of perfor-
ance, the effectiveness of any enterprise application is in jeopardy.

This chapter will explore the strategies for building large scalable Web sites.
The management responsibility for Web infrastructure planning should include
performance and reliability. The growth in e-commerce and its strategic business
role brings a challenge to IT management for providing an adequate network
infrastructure.

A number of strategies have evolved during the last few years for building
scalable Web sites. This chapter examines the traditional approaches to building an
Internet Web site that can grow to handle large volumes of traffic. Next, the current
array of product offerings is examined and finally, the future trend for high
performance Web sites is discussed.

BACKGROUND

Managers of Internet-based businesses or e-commerce divisions of traditional
businesses must take responsibility for the responsiveness of their Internet busi-
nesses. Menasce and Almeida (2000) raise a number of questions of concern for
managers regarding Web site performance:
• Is the on-line trading site prepared to accommodate the surge in volume that
  may increase the number of trades per day by up to 75%?
• How can IT people justify to higher levels of management an enormous dollar
  amount for site expansion without showing any analytics?
Cost-Effectiveness of Security Measures: A Model-Based Framework
Approaches and Processes for Managing the Economics of Information Systems (pp. 139-156).
www.igi-global.com/chapter/cost-effectiveness-of-security-measures/94285?camid=4v1a

An Emerging Strategy for E-Business IT Governance
Nandish V. Patel (2004). Strategies for Information Technology Governance (pp. 81-98).
www.igi-global.com/chapter/emerging-strategy-business-governance/29899?camid=4v1a