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Chapter 15

An Electronic Commerce Framework For Small and Medium Size Enterprises

Anne Banks Pidduck
University of Waterloo, Ontario, Canada

Quang Ngoc Tran
TurboLinux

The accessibility of the Internet and the World Wide Web has provided an excellent means for presenting, disseminating and distributing information. As well, this is a new and convenient channel for businesses to reach customers and other businesses. In this chapter, we describe an electronic commerce framework for small business. We discuss various services that a typical small business may want to provide its customers. Possible technologies to implement the services are examined and, finally, a prototype to generate such a model will be suggested.

INTRODUCTION

We have developed a generic electronic commerce model for small business. The framework provides a template for the quick and easy development of electronic commerce sites, in particular, for those firms who do not have a lot of money, time or web expertise. A pilot implementation is currently underway on a local community information network.

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The Waterloo Information Network

The base for our electronic commerce framework is the Waterloo Information Network (WIN), developed by researchers in the Computer Systems Group at the University of Waterloo (Cowan et al., 1998; Cowan, 1998). This is a next generation community network, providing a large repository of valuable information and services. The WIN design is based on an advanced open architecture to achieve easy scalability and ease of information maintenance. It uses databases to store the information in the community network, and uses the Web to deliver and display the information (Cowan et al., 1997). It also utilizes advanced hypermap technology to provide better representation of data and information.

Current community groups presented by Yahoo and Alta Vista, for example, normally return queries with a random collection of facts and little or no context. Unlike these models, WIN takes a uniform approach to present community information. WIN's architecture satisfies the open concept in the sense that the technologies used in the network can be expanded or replaced without rebuilding the entire community network.

This innovative community network uses hypermap to display locations on a map image. Objects in the hypermap are associated with meaningful data to provide users with detailed information about the objects. Users navigate in the network via hyperlinks and tables of contents. More important, text and hyperlinks are stored in databases rather than flat files. This helps to automate the process of maintenance and cuts the cost of insertion and deletion in the table of contents. Hyperlink integrity is also kept at a constant cost. In addition, storing data in the databases makes searching easier and more extensive. The WIN pilot project built for the City of Waterloo can be found at http://www.city.waterloo.on.ca.

Goals

Our main goal is to provide an electronic commerce framework for small businesses in next generation community networks. Our current focus is the customer-to-business and business-to-customer (B2C) commerce. The more complex business-to-business orientation will be examined in the future once we successfully implement our B2C model.

We want to have a secure and complete model for this type of business. Many controversial issues such as digital certificate distribution, security features, services handled by the community networks, and so on will be identified for discussion. In many cases, we do not propose a unique valid answer but rather a range of possible answers that can be customized to best fit the business interests and requirements.