



Chapter 3

Planning for Effective Web-Based Commerce Application Development

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Abstract

An ever-increasing number of businesses have established Web sites to engage in commercial activities today, forming the so-called Web-based commerce. However, careful planning and preparation are needed for those businesses to achieve their intended purposes with this new channel of distribution. This chapter proposes a framework for planning effective Web-based commerce application development based on prior research in hypermedia and human-computer interfaces, and recent research on Web-based commerce. The framework regards Web application development as a type of software development projects. At the onset, the project's social acceptability is investigated. Next, system feasibility is carried out. If the proposed project is viable, its Web-page interface is examined both from the functionality, contents, and navigability points of view. The use of the framework will contribute to more effective Web-based commerce application development.

Introduction

The Internet user population has seen tremendous growth in recent years. According to the International Data Corporation (IDC), the number of Web surfers has increased to almost 100 million by the end of 1998 and will

reach 320 million by 2002 (IT Daily, 1998). The number of online shoppers on the Web will also expand from 18 million in 1997 to over 128 million in 2002. With both an increase in the number of Web shoppers and an anticipated increase in transaction volume, IDC estimated that Web-based commerce will reach more than US\$400 billion by 2002. On the other hand, the Forrester Report (Kadison *et al*, 1998) forecasted that U.S. online retailers would generate US\$4.8 billion in revenue in 1998 and that the figure would surge to US\$17 billion in 2001. Though predictions vary, the rapidly increasing trend of Web-based commerce is apparent.

Many factors have been cited to support the claim that the Web has the potential of becoming a powerful new distribution channel for businesses; however, the work-leisure tradeoff may play the single most important role in the economics of retail surfing (Meeker and Pearson, 1997). In the U.S., the median number of hours worked per week rose from 40.6 in 1973 to 50.6 in 1995; Also, the time devoted to leisure activities has fallen from 26.2 hours per week to 19.2 hours. The increasing number of dual-earner households has also resulted in the decline of the overall family leisure time. This same phenomenon also holds true for other developed and developing nations. Since the Web-based commerce has the potential of cutting down the “maintenance” portion of the average family’s lifestyle, it is predicted that it will become a major way of shopping for many in the future.

With the great potential of Web-based commerce, many businesses have established Web sites to promote and market their products and services and to engage in all aspects of the Web-based commerce. However, no comprehensive framework is available to help them plan for an effective Web-based commerce application development. This chapter proposes such a framework in order for businesses to better achieve their objectives in launching Web-based applications and to engage in Web-based commerce. After the Introduction, the Background section includes a review of the literature on hypermedia development and human-computer interface together with recent research on Web-based commerce. Next, a framework for planning Web-based commerce application development is presented, followed by a discussion on some future trends. Lastly, the Conclusion section provides final remarks on this chapter.

Background

Since Web pages employ hyperlinks and multimedia technology, they can be considered as a type of distributed multimedia hyperdocuments. Thus, previous research in hypermedia is applicable to Web application development and design. Hypermedia research generally addresses the

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