Chapter 10

Information Foraging in Internet-Based Selling: A System Design Value Assessment Framework

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Abstract: Information foraging theory provides a theoretical perspective for the study of different online consumer purchase behaviors that need to be understood to support a sound basis for the measurement of business value of the design of Web-based applications. In this chapter, we examine the extent to which online consumer purchases are effectively supported through systems design choices in Web-based applications through a series of five classical stages in consumer purchase decision-making. They include need arousal, information search, product evaluation, purchase decision, and post-purchase evaluation. We distinguish between different purchase behavior settings through a framework that identifies purchase decision-making contingencies in the context of three different consumer purchase scenarios: convenience goods, researched goods, and replenishment goods. The different types of purchase scenarios reflect distinctions in terms of the extent of consumer involvement in information processing and evaluation leading up to the purchase decision, and the frequency of repeat purchases. We then illustrate and evaluate the extent to which the framework offers insights into the evaluation of the efficacy of systems design for Internet-based selling with reference to a number of minicases for each of the three types of purchase scenarios. The primary means for assessing the efficacy of the Web-based support in a given setting is the extent to which the consumer is able to achieve high levels of return on information foraging. We also consider differences that may arise between information goods and physical goods, and the Internet-based selling of goods versus services, in general. The results of our analysis suggest a number of new design guidelines for software application development in this area, and provide an initial assessment of the extent to which information foraging
theory can be leveraged as a means to understand the referents of systems value.

Key words: Business Value of IT, Consumer Purchases, Electronic Commerce, Evaluation Framework, Information Foraging Theory, Internet-Based Selling, Systems Design, Web-Based Applications

1. INTRODUCTION

Firms that sell on the Internet are especially reliant on getting people who browse a Web site to buy things. In the early days of e-commerce, most firms were overly concerned with getting visitors to their Web sites. Today, in contrast, the focus has shifted to getting people to make purchases. But the Yankee Group in a November 2000 study noted that the average conversion rate for business-to-consumer Web sites is on the order of only 1% (Patton, 2001). As a result, developing, launching and maintaining state-of-the-art electronic commerce Web sites have become critical activities related to organizational success in e-businesses. For example, today businesses that make a commitment to doing business via the Internet budget around $1-2 million yearly for Web site setup and maintenance. Leading Web sites require annual investments that are closer to $8 million (Rizzuti and Dickinson, 2000). But what value emerges from such spending? Are Web site investments effective? Or are expenditures for Web sites that support Internet-selling an example of yet another category of business software that doesn’t do what it is supposed to, ultimately leaving American industry open to billions of dollars of lost value in systems investment (Levinson, 2001)?

Although e-commerce application development requires very large firm investments, the process of designing high quality Web sites for e-commerce is still more of an art than a science. Firms mostly still rely on intuition and experimentation when it comes to designing their Web sites (Wallach, 2001). This results in the lack of a clear tie to performance metrics that might otherwise be applied in the context of a firm’s e-business activities that would offer guidance for e-commerce application design. This is mainly due to the lack of theory for how the design of systems for e-commerce applications should be approached.

In this chapter, we tackle the problem of e-commerce application systems design by focusing on the following research questions: