Chapter III

Internet Interface Design: e-Commerce and the User

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INTRODUCTION

Electronic commerce (e-Commerce) has exploded on the Internet over the past few years and is expected to continue growing at an exponential rate (Kannan, Chang and Whinston, 1998; Fellenstein and Wood, 2000). According to the GVU’s 8th WWW User Surveys (1997), the most important issues facing online users are privacy (31%), censorship (24%) and navigation (17%). Since user interface design directly impacts navigation and affects the user’s interaction with a Web site, this chapter will explore a number of different factors that affect user interface design on the World Wide Web. In all there are six factors that we explore in this chapter. They are the user’s mental model as newly defined and focused upon perception and conception (Haynes and Mahfouz, 2001), the level of expertise of the user, the user’s learning style, the richness of the media used, the organizational image and message, and the user’s intentions. All these factors involve internal (to the Web page design) and external (to the user’s environment) implications that impact user interface design on the Internet. Since all factors are external with the exception of the richness of the media used and, to some extent, the organizational image and message, it follows that we have chosen to emphasize in this chapter the external factors, namely those factors that directly relate to the user.

Consider the following view of the importance of the user interface on the World Wide Web and e-Commerce (Lohse and Spiller, 1998, p. 81):

“Issues of how people use the technology become critical as businesses and retailers attempt to exploit the boom in marketing. There are large differences between a physical store and its electronic counterpart. A help button on the home page of the Web shopping site replaces the sales clerk’s friendly advice and service. The familiar layout of the physical store becomes a maze of pull-down menus, product indices and search features. Now more than ever, the promise of electronic commerce and online shopping will depend to a great extent upon the interface and how people interact with the computer.”

**USER INTERFACE MODELS**

**Four Types of User Interface**

We can say that an interface is generally defined as the shared link that allows two independent systems to communicate or interact together. In computer-human interaction, it can be graphically expressed as the intersection overlapping human and computer systems. Specifically, the interface involves all the hardware input and output devices (such as the mouse, keyboard, computer monitor, etc.) and software (operating system, application, etc.) that allow the user and the system to interact.

The (human) user is flexible and adaptable (Mayhew, 1992). However, it is generally accepted that the system is neither flexible nor adaptable, which in turn places the responsibility of the initial successful connection on the interface designer. The continued interaction then falls into the “external factors of the user” (which we discuss later in the chapter). In order to maintain the interactive interest of the user, the external factors of the user are critical for the interface designer to second-guess or at least attempt to provide for. This second-guessing interface designer responsibility is the key, among other critical design considerations, to how users’ perceive the system. Barki and Hartwick (1994) concluded that user participation and involvement towards a system affect their productivity and attitude in the workplace.

There are four types of user interface, as shown in Table 1: command-line, prompted, menu-driven and graphical (Parsons and Oja, 1998). Command-line interface requires typing a command that follows a specific syntax and punctuation, as used in Microsoft DOS and Unix. The prompted interface asks for input from the user through the use of messages. Wizards are dominating prompted interfaces through the use of multi-step sequences of screens that require a keyboard or mouse response. Menu-driven interface utilizes menus and submenus for ease of use. Graphical user interface allows the computer to be accessed through graphical objects like buttons, toolbars, etc., by the means of an input device, like the mouse, and the computer monitor (as output device).
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