Designing Effective Documents for Destination Information Systems

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Abstract. This article summarizes the results of research into cognitive and usability issues related to the design of online documents such as those used in destination information systems. The literature reveals that several topics are consistently found important: expectations, metaphors, consistency and coherence, performance, context, feedback, and controls. The article goes on to suggest an empirically supported set of guidelines for the design of online documents in destination information systems.

1 Introduction

Online activity is central to travel marketing and distribution. Jupiter Communications estimates that online travel expenditures will grow from a $276 million level in 1996 to $827 million in 1997 and then to approximately $4.5 billion for the year 2000. The internet in general, and the World-Wide Web (WWW) in particular, are major growth areas for online travel marketing and distribution. International Data Corporation expects 60 million internet users by the end of 1997, with at least 44 million of these using the WWW on a regular basis. WWW users are not just browsing, either—they are buying travel online. For example, Travel Web (http://www.travelweb.com/) claims to be booking in excess of $1 million per week, and both Microsoft’s Expedia (http://www.expedia.com/) and Preview Travel (http://www.previewtravel.com/) claim bookings in excess of $2 million per week through their web sites.

Getting travel information published on the WWW is easy. It is getting this information noticed and used by potential customers that is the real trick. Inktomi Corporation reports that internet traffic volume is doubling every 90 days—an amazing rate. They also estimate that there are approximately 100 million documents available on the WWW now, and they expect over 800 million by the year 2000. It is becoming ever clearer that gaining and keeping the attention of users in this cacophony is the real challenge for travel marketers. While the importance of quality content in achieving success on the WWW almost goes without saying, the vital role played by good design must be emphasized as well.
Our understanding of how to design paper documents is highly developed. A large body of research exists on issues such as graphic design, the use of images, typography, color selection, etc., for maximizing the communication effectiveness of paper-based documents [12,18,19,20,22,35]. However, our understanding of how to design effective online documents such as those that make up destination information systems is not as mature. A body of literature from experimental psychology reports that both the reading speed and performance of readers of computer-based documents is lower than that of readers of paper-based documents [6,10,11,13,24]. This may imply that even the cognitive processes underlying the reading and comprehension of documents in the two media may be different. In the print world, the graphic designer combines document elements such as text, graphics and white space very precisely in order to create a specific gestalt. However, many of the designer’s basic assumptions do not hold for online documents [2]. For example, the designer of WWW documents has very limited control over font selection and size, color choices, placement of document elements on the page, and even page size.

This paper summarizes the results of a number of research efforts on cognitive and usability issues related to various design elements used in online documents on the World Wide Web. It goes on to offer a set of design guidelines for the development of effective online destination information systems that are empirically supported by existing research.

2 Design Research

The last five years has seen growing progress in research on issues related to the design of online documents and the WWW. This section of the paper will highlight some of the core usability and cognitive issues from the literature, and then summarize the results of several empirical and experimental research projects that have explored these issues.

2.1 Usability and Cognitive Issues

*Expectations:* As Marshall McLuhan said, “The medium is the message.” With this statement, he might have been foreseeing the nature of the WWW. In no other case has a medium been so intertwined with its content as on the WWW, combining the characteristics of both documents and computer programs. Users possess various levels of skill and experience with computers, and therefore may have different sets of needs and expectations as to content and design. In addition, many people are conditioned to electronic media in the form of television, and they may expect online media to share television’s characteristics.

*Metaphors:* People develop new cognitive structures by using metaphors to extend their existing structures [3]. The obvious metaphors relating to documents in standard