Chapter XIX

Quantitative and Qualitative Evaluations of the Singapore National Library Board’s Digital Library

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Abstract

As part of the Singapore National Library Board’s (NLB) on-going efforts to improve the usefulness and usability of the eLibraryHub in meeting users’ needs, this chapter reports two empirical studies – a quantitative and a qualitative study – conducted on the eLibraryHub, the NLB Digital Library. In the quantitative study, we evaluated the effectiveness of the eLibraryHub from users’ perspectives. Results show that users rated
favorably their satisfaction of the overall effectiveness, usefulness and ease of use of the eLibraryHub. They also perceived it as generally quite useful and easy to use. In the qualitative study, we made use of Scenario-Based Design and Claims Analysis, to determine the usability of the eLibraryHub. Findings indicate that most usability problems occurred during the interpretation and evaluation stages of navigational actions. It concludes with recommendations on design refinement of the eLibraryHub.

The chapter illustrates the rich interplay of quantitative and qualitative data crucial in helping designers/developers to better understand users, uses and usability of deployed systems, to address the dilemma of Carroll’s task-artifact cycle of changing user needs and design possibilities.

Introduction

Designers often design for themselves unless they are trained to realize that people are diverse, and that users are unlikely to be like them. The more errors that can be avoided “up front” by the right method, the less work both test-users and designers will have to put in to refine prototypes to improve their usability. Landauer (1995) points out that it is not good enough to design interactive system without subjecting it to some form of evaluation, because it is impossible to design an optimal user interface in the first attempt. Dix et al. (1998) argue that even if one has used the best methodology and model in the design of usable interactive system, one still needs to assess the design and test the system to ensure that it behaves as expected and meets users’ requirements. Nielsen’s (1993) advice with respect to interface evaluation is that designers should simply conduct some form of testing.

As digital libraries (DLs), interactive systems with organized collections of information, become more complex, the number of facilities provided by them will increase and the difficulty of learning to use these facilities will also increase correspondingly. Like the Web, DLs also provide non-linear information spaces in which chunks of information are inter-connected via links. However, they are different in character from the Web in several important respects: a DL represents a collection for a specific purpose containing text-based and/or geospatial content, and has search strategies that are clearly defined and more powerful.

After a decade of DL research and development, DLs are moving from research to practice, from prototypes to operational systems (Borgman, 2002). In the digital world, real world cues such as face-to-face interactions with human librarians and thumbing through hardcopy books have been replaced by drop-