Usability News

July 2005, *Vol. 7 Issue 2*

| Volume 7 Issue 2 | Past Issues | A-Z List |

Usability News is a free web newsletter that is produced by the Software Usability Research Laboratory (SURL) at Wichita State University. The SURL team specializes in software/website user interface design, usability testing, and research in human-computer interaction.
Barbara S. Chaparro, Editor

Online Flipping: Examination of the Digital FlipViewer®

By Spring Hull

Summary: This article examines the usability of FlipViewer® software for digital FlipBooks. The FlipViewer software allows users to read online documents in a three-dimensional e-book format simulates a paper document. Participants performed 11 tasks with a FlipBook and their performance was evaluated. Some tasks were difficult for participants to complete, however, participants were satisfied overall with their experience using FlipViewer® and 100% indicated that they would recommend the product to others.

INTRODUCTION

According to Li and VanBorskirk (2005) Forrester report, nearly half of all U.S. marketers are prepared to increase online ad spending by redirecting resources from other marketing channels and it is estimated that $26 billion will be spent in 2010 for online advertising. This growth in online spending for advertising is positively correlated with an increase in viewing and reading documents online as Shaikh and Chaparro (2004) found in a survey that approximately 68% of respondents reported reading news related material online versus traditional print.

The rise in online reading has created a need for software that allows users to comfortably view and read documents on the computer screen. Many software products are now on the market that allow for reading of material online while simultaneously allowing valuable advertisement space for marketers. Zinio™, Texterity®, and Active Paper™ by Olive software are just a few of the products now available. Another product designed for reading text online is FlipViewer® - a three-dimensional page flipping electronic book (e-book) viewer and web browser. FlipViewer® allows users to view and read FlipBooks– digital documents that resemble traditional printed books.

The technology introduced by E- Book Systems in 1998, allows users to convert text, search results and images into interactive FlipBooks, displaying multimedia file formats including streaming media/flash in the form of a book on the computer screen. FlipBooks can be streamed over the Web, downloaded to a hard drive and stored on a CD according to E-Book Systems. FlipViewer® incorporates several unique features. For example, FlipViewer® allows users to turn one or many pages of a FlipBook at a time while having the option of returning to the original page using the mouse. Also, users can set the flipping speed and turn pages automatically using the Auto Flipping function. FlipBooks resemble traditional paper books and magazines and there is even an optional flipping sound when pages turn recreating the ambiance of reading a printed magazine.

This study evaluated the usability of the E-Book Systems FlipViewer® using a FlipBook magazine format.

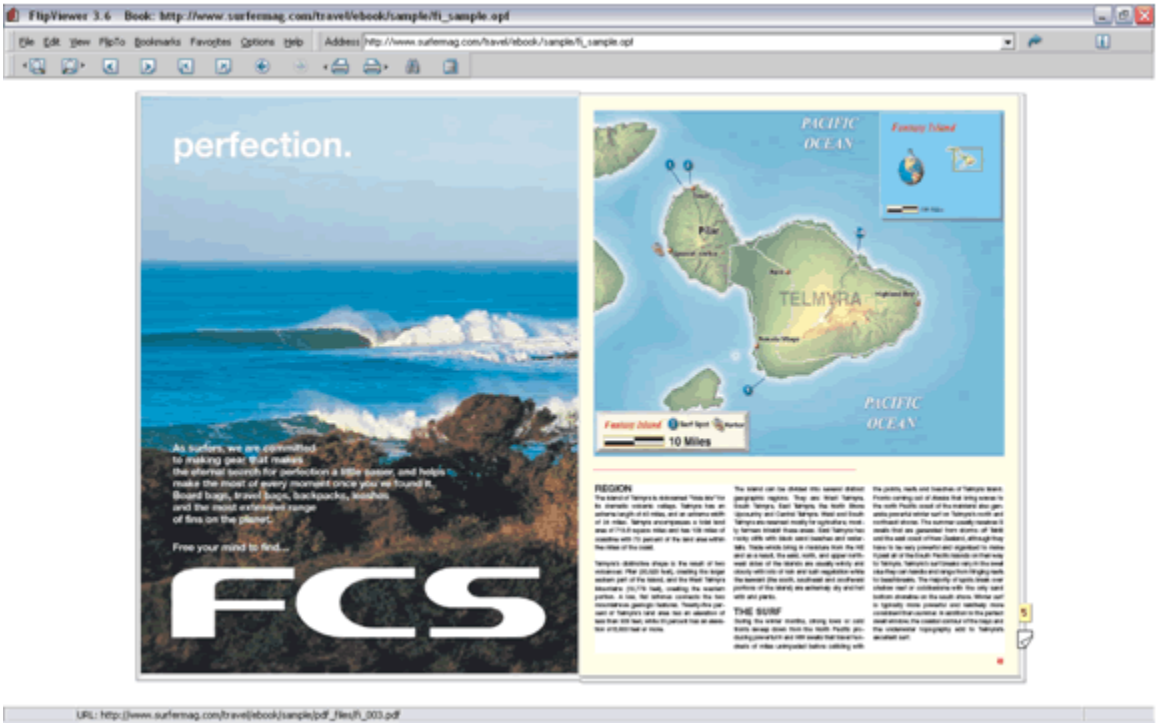

Figure 1. Screen shot of FlipViewer® toolbar in the window frame view.

METHOD

Participants

Six students (4 females, 2 males) aged 19–29 (M=24 years) enrolled in undergraduate psychology courses at Wichita State University volunteered. Sixty-six percent reported visiting web sites daily and 50% reported spending 7 hours or more per week online.

Materials

The study used a Pentium-4 powered computer displaying at resolution of 1024 by 768 pixels on a 17" flat screen monitor. The April 2005 issue of "Fitness Management" FlipBook magazine found at http://ebook.lesurepub.com/ezine/currentIssue.opf was used for content. In addition, the FlipViewer® online tutorial http://www.Flipviewer.com/support/webhelp/fv12/fv121.htm and the Help function located on the FlipViewer® toolbar (example of the toolbar is shown in Figure 1) were available for participants to use to complete the tasks.

Procedure

Participants were presented eleven tasks in random order (see Table 1). Participants were given a maximum of five minutes to complete each task. Performance on each task was determined a success if the participant completed it correctly in less than five minutes. Tasks not completed in less than five minutes or completed incorrectly were determined unsuccessful. After each task, participants rated its difficulty on a 1-6 scale (1= very easy, 6= very difficult).

RESULTS

As shown in Table 1, several tasks were not successfully completed by all participants (Task 2, 4, 6, 10). In general, these tasks took longer to perform and were rated as more difficult than tasks that were completed in less time. An exception to this was Task 4, which was completed in less time and it was not perceived as difficult, but only 50% of the participants completed the task successfully. Participants rated this task as easy because they believed they had completed it successfully when they had not. Overall, Tasks 2 (search for word), Task 6 (grab and hold page 36 without losing page 6), and Task 10 (set auto-flipping) were found to be the most time-consuming and difficult. This was supported by a one-way repeated measures analysis for time to complete tasks [$F(10, 50) = 6.08$, $p < .01$] and post-task difficulty ratings [$F(10, 50) = 4.20$, $p < .01$].

Table 1. Participant performance on FlipViewer® usability tasks. Bold indicates the most time-consuming and difficult tasks.

	Percent Successful	Mean Time in minutes (SD)	Mean Difficulty Rating (SD)
Task 1-View in window frame	100	1.09 (1.13)	2.00 (.63)
Task 2-Search for word “treadmill”	66.7	2.27 (2.25)	4.00 (2.28)
Task 3- Bookmark page 22	100	1.39 (.42)	2.00 (.89)
Task 4- Find number of options for turning directly to back page	50	1.41 (1.43)	2.00 (.89)
Task 5-Number of pages in magazine	83.3	.13 (.09)	1.50 (1.22)
Task 6-Grab and hold page 36 without losing place on page 6	33.3	**4.34** (1.39)	**4.33** (2.25)
Task 7-Zoom in on page 21	100	.52 (.52)	2.00 (.89
Task 8-Change flipping speed to slow	100	1.24 (1.56)	1.50 (.84)
Task 9-Change view (centerfold to 2-page view)	100	.56 (.52)	1.17 (.41)
Task 10-Set Auto Flipping to end of magazine	50	**3.24** (2.02)	**4.17** (2.04)
Task 11-Turn audio on/off	100	.72 (1.15)	1.83 (.75)

Tasks 6 and 10 are novel features specific to FlipViewer®. The grab and hold feature is initiated by moving the cursor over the left bottom corner of the page until it becomes a hand; then left clicks

to add more pages and right clicks to release the pages. Most participants were unsuccessful in completing this task and attributed their failure to the inability to find appropriate instructions in the tutorial and Help. Task 10 required participants to set auto flipping from page 40 to the end of the magazine. Participants unsuccessful in performing this task also were unable to find instructions in the tutorial or Help. Task 2 required users to perform a keyword search. The search function for FlipViewer® uses a 'Find Text' option found in the drop-down menu under 'Edit' rather than a search field on the toolbar. Most participants did not find this approach to be intuitive.

Despite these three tasks, participants were able to successfully complete the other tasks such as bookmarking, zooming, changing the view, and page flipping speed. They were generally pleased with the look and usability of the FlipViewer® and reported they would use it again and recommend it to others.

DISCUSSION

Participants performed 11 usability tasks of a FlipViewer® FlipBook magazine. FlipViewer® was found to be a desired alternative for viewing material online as it imitates the "look" of the traditional printed book while offering many of the same functions as other document viewers as well as some unique features such as grab and hold and auto flipping. However, finding instructions on how to utilize these features was difficult for some participants. E-Book Systems might consider revising the current tutorial and Help function to include more information on those features new to users. Also, modification of some of the toolbar items (such as the search function and including options for copying text and graphics) might also enhance the FlipViewer® utility for users.

REFERENCES

Li, C., & VanBorskirk, S. (May 2, 2005). US Online Marketing Forecast: 2005 to 2010. Forrester Research, Inc. (summary available at http://www.forrester.com/Research/Document/Excerpt/0,7211,36546,00.html)

Shaikh, A. D., & Chaparro, B. S. (2004). A survey of online reading habits of Internet users. Proceedings of the Human Factors and Ergonomics Society 48th Annual Meeting, 875-879.
