

Reservations about the Usability of Airline Web Sites

Paula Selvidge

Software Usability Research Laboratory

Wichita State University

1845 Fairmount

Wichita, KS 67260-0034

+1 316 684 9854

pselvidge@feist.com

ABSTRACT

Designing effective and usable web sites is important to survival in the e-commerce market. The focus of this study was to identify general usability issues on major airline web sites. Seven web sites were compared on the task of locating flight and fare information. Finding flight information across the web sites was a difficult task for many users in this study. Numerous usability issues were identified including problems with logon procedures, non-descriptive and redundant links, round-trip options, and unfamiliar technical language.

Keywords

Web site evaluation, designing web sites, airline web sites, usability testing

INTRODUCTION

The first impression a potential customer may have of a prospective business may be through a web site, so it is of utmost importance to have a well designed, easy to use web site. Unfortunately, web designers are typically developing web sites for marketing appeal rather than for usability issues. The major problem is that few standards exist that guide web site development and little research has been focused on the area of defining usability on the World Wide Web.

Some guidelines have been provided for web site design by Yale Style Manual, IBM: Web Design Guidelines, and Sun's Guide to Web Style. These heuristic guidelines to web design have been established through a collaboration of designers' shared experiences on numerous projects, and typically not through empirically validated research. One resource provides a guide to web site design based on usability testing (Spool et al., 1997). Problems were identified from usability tests of eight popular web sites in areas related to navigation, links, within-site searching, handling comparisons, readability, and graphics.

All of the major airlines have web sites that provide information about their services. Some of the airlines, such as Delta and American, are on the verge of offering their lowest fares to those who book from the airlines' web sites (Jones, 1998). This would undoubtedly increase the percentage of sales from Internet booking, which currently accounts for only a small portion of total sales. The purpose of this study was to examine the usability of airline web sites on the basic task of locating flight and fare information. Seven web sites were compared in an attempt to specify general problem areas and suggest changes to improve usability.

METHODOLOGY

Users located the same flight and fare information across all seven airline web sites. The seven participants were undergraduate students that were relatively experienced computer and Internet users, with a mean of 4.21 hours a week of computer use and 2.50 hours a week of internet use. The following web sites were tested: 1) American Airlines, 2) Delta Airlines, 3) Northwest Airlines, 4) Trans World Airlines, 5) United Airlines, 6) US Airways, and 7) Vanguard. The order of presentation of the airline web sites was counterbalanced across users. Flight information collected during the task included flight numbers, departure/arrival times, layover information, and the cheapest fare on a specific round-trip flight from Kansas City, MO to Atlanta, GA. The number of nodes or path length to locate all the information was recorded. The path length was defined as the number of pages that users visited by selecting hyperlinks within the document or using the Back and Forward command buttons. Users' navigation through individual web sites was recorded using a program written in Microsoft Visual Basic 6.0. Subjective ratings of task difficulty for each web site and think aloud data were collected.

RESULTS

Difference scores were computed to measure path efficiency by taking the actual number of pages visited to complete the task minus the optimal number of pages to complete the task (Table 1). This enables comparisons across the web sites, since the optimal number of pages varied from 3 to 9. Vanguard was the most efficient site in

locating flight information ($M = 7.14$), and US Airways was the least efficient ($M = 22.17$). The flight and fare information was not successfully located on 13 occasions across all the sites, and 6 of them were on the TWA site.

User	AA	DT	NW	TWA	US	UN	VG
1	8	8	3	6	6	26	18
2	19	4	9	6	0	2	5
3	0	4	2	3	11	6	2
4	*	10	17	50	55	21	16
5	*	0	8	3	2	6	0
6	10	17	15	55	39	*	8
7	14	16	10	19	32	39	1
Mean	10.20	8.43	9.14	20.29	22.71	16.67	7.14
St Dv	7.08	6.37	5.58	22.71	21.32	14.47	7.27

Bold = did not complete task successfully * = missing data

Table 1: Difference scores across web sites

When looking at task difficulty ratings, Delta ($M = 2.57$) and Northwest ($M = 2.57$) were rated easiest, and Vanguard ($M = 3.71$) and United ($M = 3.50$) were rated as more difficult to find flight information (Table 2). The users' preference ratings seem to be fairly consistent with performance. Vanguard had the highest discrepancy in preference and performance, which could be a result of the task the users had to complete. The users were required to find round-trip information, and the Vanguard site only provides flight information about one-way trips.

	Preference	Performance
AA	3	4
DT	1	2
NW	1	3
TWA	5	6
US	4	7
UN	6	5
VG	7	1

Table 2. Preference and performance ranking across web sites

DISCUSSION

The task of finding flight and fare information did not turn out to be such a basic, simple task. The web sites overall were not easy to use, and several users made comments that it would be much faster to just contact the airline by phone and get the information.

This study replicated some of the problems identified in the Spool (1997) usability test of the Travelocity site. Users did not want to log-on to find flight information on the web

sites. A log-on procedure was required for American, United, US Airways, and TWA web sites in order to access the airfares. Many users expressed objections to the log-on process and didn't understand why they had to log-on just to view fares. Non-descriptive and redundant links also caused confusion when attempting to locate information in this study. For example, American and United had numerous links that went to the same page, which frustrated users. The participants in both studies also commented on the problem of unfamiliar language and abbreviations on the sites that they did not understand. Terms like "leg" and "segment" were used to describe connecting flights making up a round-trip schedule, and airport codes were not clearly defined.

Designing usable web sites should be a top priority to remain competitive in the e-commerce market with other airlines. A couple of users commented, "This airline just lost my business." The users also indicated whether they would use any of the web sites to make future airline reservations. TWA, which had the fewest users complete the task, had only 29% of the users report that they would use the TWA site for making reservations in the future.

To improve usability across the airline web sites, the following is recommended:

- Simplify the steps in finding flight information and fares
- Present an option for selecting round-trip travel
- Allow users to search for flight and fare information without a log-on procedure
- Avoid non-descriptive and redundant links
- Provide visual feedback to the user as to which links have been selected
- Allow users to limit the search for flights by specific options, like cheapest fares or time of day
- After selecting flights, present an itinerary with the flight and fare information clearly displayed

If the major airlines plan to increase sales via web site ticketing, these types of usability issues must be addressed. It will be more difficult for the airlines to discover that they have so many unsatisfied customers because customers will not be at the ticket counter expressing their frustrations. The customers will simply type in the URL of another airline web site, or an "all-purpose" travel site like Travelocity, and see if the next web site can meet their needs more efficiently.

REFERENCES

- 1 Jones, D. (1998, November 2). Major airlines consider discounted web fares. *USA Today*, 1B.
- 2 Spool, J. M., Scanlon, T., Schroeder, W., Snyder, C., & DeAngelo, T. (1997). *Web site usability: A designer's guide*. Andover, Mass: User Interface Engineering.