

A Usability Study of Websites for Older Travelers

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Abstract. Older people (aged 45+) are the fastest growing segment of the population, make up a significant percentage of overseas travelers, and often book their travel online. Despite these trends, several studies indicate users' frustration with online travel sites. This could indicate that travel companies are not factoring their customers' web usability needs into the design of their websites. Focusing on three travel websites explicitly target mature travelers, we conducted an exploratory study¹ to assess their usability for older adults. The travel websites, all of which were professionally designed, represent popular travel agencies. Nine study participants, aged 55-80, completed usability sessions (three per site). After giving their impressions of the website's Home page, participants were asked to perform a series of information-seeking and trip-finding tasks using the website. Their voices were audio-recorded and their activity on the website was recorded using screen-capture software. All three mature traveler websites presented problems for the test participants. Common problems included: text too small and not easily enlargeable, difficulty returning to Home page, confusing terminology, hard-to-operate menus, poor marking of links, changes too subtle to notice, hard-to-navigate search results, and cluttered page layouts. Participants exhibited several noteworthy behaviors, including: misunderstanding the scope of information and controls, not knowing where in the site they were, functional fixedness, change blindness, and a preference for talking to someone on the telephone rather than using the site to get information or book a trip. The usability problems found in the three travel websites are well-known in the web-design community and are addressed in published guidelines for designing for seniors and for usability in general. Many web designers ignore usability and accessibility design guidelines, but it is somewhat surprising that companies that target older adults would fail to follow such guidelines. The HCI community must expand its efforts to educate web designers.

Keywords: Website, usability test, older adults, seniors, design, guidelines.

1 Introduction

Older web users are disproportionately affected by poorly-designed websites. Pernice and Nielsen found overall usability for older web users to be less than half that for younger ones [9]. One cause of older web users' increased susceptibility to poor

¹ Wiser Usability, Inc. conducted the study independently, with no external funding.

design is that, in general, they have less computer experience than their younger counterparts. This may, in turn, increase their anxiety about using the technology [5, 7].

Another major factor is that, as people age, many experience diminishing sensory, cognitive, and motor abilities. While many older people do not consider themselves “disabled” or even impaired, they are more likely to suffer from one or more chronic conditions, leading to reduced abilities in one or more of the following [1]:

- *Vision*: age-related farsightedness (presbyopia); decreased ability to discriminate colors; increased sensitivity to glare; reduced contrast sensitivity; loss of peripheral vision; cataracts, glaucoma, and macular degeneration.
- *Hearing*: reduced ability to follow conversation in the presence of competing background noise; reduced detection of high-pitched sounds.
- *Dexterity and Fine Motor Skills*: difficulties controlling mouse, keyboard, or other input devices (due to arthritis, essential tremor and medication-induced tremor, Parkinson’s disease, stroke).
- *Cognition*: increased distractibility; short-term memory limitations; longer learning curves, reduced concentration.

Web design guidelines to support older web users abound, e.g.: guidelines proposed by the National Institute on Aging [6], Chisnell and Redish [2], and WCAG [12]. Most recommendations for designing for older web users would also improve the experience for the average web user, regardless of age or ability. However, older web users are more likely to be adversely impacted by designers’ failure to follow even the most general usability guidelines, such as:

1. Avoid small font sizes; provide an obvious way to resize text.
2. Make the difference between links and non-links obvious; indicate link state.
3. Indicate the user’s navigation path (e.g., with “breadcrumbs”).
4. Make it easy to return to the Home page.
5. Minimize the need for scrolling, especially horizontally.
6. Minimize page clutter; use sufficient white space.

However, even government mandates to improve accessibility, such as Section 508 of the U.S. Rehabilitation Act, have not been widely observed by web designers. Despite the well-publicized aging of the global population, and continuing growth in the numbers of older adults going online, organizations and businesses do not seem motivated to make their websites more usable for older people [1, 4].

Previous studies of website usability have examined the usability of general websites [2] or focused on the impact of specific impairments on website usage [1]. But what of commercial websites whose primary audience is older adults? How well do they follow the well-known guidelines for designing websites that audience?

Take, for example, the travel sector. Recent UK market research [11] indicates that:

- travelers aged 45+ account for over *half* of all leisure travel spending
- people aged 45+ take 50% of all overseas trips

- those aged 65+ travel more often than those aged 45-54
- 63% of travelers aged 55-64 book their entire trips online (compared to 57% of those under 45).

While these travel trends are expected to continue, there are potential clouds on the horizon of online travel. Several market studies have pointed to users' frustrations with online travel sites [8]. Trade publications report a number of ways in which online travel websites do not satisfy their potential customers: poorly-supported ability to reuse previous settings, limited search options, inefficient navigation, slow page loading, etc. These travel retailers were estimated to be losing over \$3.25 billion per year due to "simple website inefficiencies" [3]. The businesses may have misjudged what was involved in designing and supporting a successful website [10].

To begin investigating this question of whether the travel sector has integrated the results of research recommendations regarding usability and older web users, we conducted a usability test of the websites of three travel companies that provide tours and cruises for older adults. All three are large, well-established tour operators; two of them could be considered among the top such companies in the U.S.

2 Method

2.1 Websites

We first compiled a list of half a dozen websites representing travel companies that cater to older adult travelers. We visited all the sites, assessing their general usability and accessibility based on a set of usability and accessibility guidelines. We also checked traveler reviews of trips at the websites and independent service-review websites to determine the reputations of the various companies among senior travelers.

We had three criteria for selecting travel websites for inclusion in the study:

1. They target older adult travelers.
2. They appear to have been professionally designed.
3. The travel agencies they represent have good reputations among travelers.

Not all senior-travel websites we considered met all of these criteria. Three that did, which we selected for the study, were: Grand Circle Travel (GCT.com), Grand European Tours (GETours.com), and Road Scholar (RoadScholar.org).

2.2 Participants

The study participants were nine females ranging in age from 55 to 80 years old. They were recruited from local senior centers or from the researchers' own acquaintances (no men volunteered). They varied in their travel experience and their experience using the Web (see Table 1). Each participant was asked to use one of the three travel websites.

Table 1. Study Participants' age, web expertise, web experience

	Travel Websites that Target Older Travelers								
	Grand Circle Travel			Grand European Tours			Road Scholar		
	P1	P2	P3	P1	P2	P3	P1	P2	P3
Age	74	55	70	62	62	66	68	80	58
Web Expertise	Low	Med	Med	Med	Med	High	Med	Med	High
Travel Experience	High	High	High	High	Med	Med	Med	High	Med

Participants received a \$25 gift certificate from a store of their choosing for participating in the study.

2.3 Procedure

Test Location, Web Access Technology, and Recording

The usability test sessions were conducted in locations familiar to the participants. In most cases the sessions were conducted at the participants' homes, at kitchen tables or office desks. A few test sessions were conducted at the home of one of the researchers.

Where possible, the computer used to access the Web was the participant's own computer. In a few cases, we provided computers that were of a type that the participant had normally used. In this study, all of the participants used Apple Macintosh computers.

The computers used in the study were connected to the Web through Wifi connections at the site of the test session.

Participants accessed their assigned website using the Web browser with which they were most familiar. In this study, all participants used Apple Safari.

During the test sessions, participants' voices and their activity in the Web browser window was recorded (with their permission) using Voila video-screen-capture software. The session moderator also took notes.

Test Tasks

Test sessions started with a brief introduction in which the purpose of the study was explained. Following that, participants were shown the home page of their assigned travel website and asked a few questions about it. They were then asked to perform a series of information-seeking and trip-finding tasks using the website. The tasks were similar at a gross level between the three travel sites, but varied in their details because the content and trips varied between sites.

2.4 Data Analysis

After the sessions, we reviewed the session video-recordings to flesh-out our notes and to find and tag interesting video segments.

We then reviewed our notes to find noteworthy usability problems – mainly those encountered by more than one of the three participants for each website. Next, we compiled a list of usability problems for each website.

Finally, we compiled usability problems and observations of participants' behavior that were common to at least two of the three travel websites.

3 Results

All participants had severe difficulties with the travel site they tried. Almost all indicated that if they were really trying to book a trip, they would either have to call the tour operator's toll-free telephone number for help or they would look for another site that was easier to use. Only one participant said she could use the website she was asked to try, but even she qualified that statement by saying that she "liked to futz with these things" and that she would be willing to do so only if she had spare time.

3.1 Common Usability Problems

Table 2 shows how well the three travel websites followed the six common usability guidelines for designing websites for older adults that were presented in the Introduction (above).

To elaborate on the sites' compliance with three of these usability guidelines:

- **Text Resizing:** GE Tours provided no visible controls for increasing the text-font size. RoadScholar offered text-resizing at the top of every page, but in a non-standard location and form that was difficult to find (and it did not work very well). GCT provided text-resizing capabilities, but not on all pages. Only one participant knew how to resize text via the browser controls. The rest struggled to read the text-intensive pages, leaning in towards the screen, switching to different pairs of reading glasses, or simply missing the content.
- **Scrolling Not Minimized:** Results for trip search results and trip reviews were not organized, just presented in their full (and apparently random order). In one case, this resulted in 35 pages of trip reviews. Scrolling was a problem on menus, as well. Road Scholar's Advanced Search page, for example, offered over 200 lines of country choices, but only four lines of the country menu were shown at a time.
- **No Obvious Link to Home Page:** For the sites without an explicit Home button, participants were unsure how to return to Home, either in general or from specific places, e.g., the trip-booking form. Even on the sites that featured a Home button, participants often scrolled further down a page, lost track of where they were, and could not find the Home button. One site (GETours) provided a Home link on most pages, but not on the trip-booking pages.

Table 2. Travel websites' compliance with five age-related usability guidelines

Guideline	GCT	GETours	RoadScholar
Avoid small font size; provide an obvious way to re-size text	No	No	No
Make the difference between links and non-links obvious; indicate link state	No	No	No
Indicate the user's navigation path (e.g., with "breadcrumbs")	No	No	No
Make it easy to return to the Home page	No	Usually	Yes
Minimize the need for scrolling, especially horizontally	No	Yes	No
Minimize page clutter; use sufficient white space	No	No	No

Several other usability problems were common to two or more of the three travel websites, and caused considerable difficulties for the participants:

- **Confusing Terminology:** Terms used on the site were often unclear or confusing to participants. Examples include "Small Ship Cruise Tours" vs. "River Cruises" (GCT) and "Escorted," "Guided," and "Hosted" tours (GETours).
- **Menus Difficult to Operate:** Pull-right menus were difficult for participants to operate, and they often had to make several attempts before being able to select their choice. Some menus extended beyond the bottom of the page, requiring participants to scroll while pressing the track-pad to keep the menu open. Participants were also confused by accordion menus that toggled between collapsed and expanded states.
- **Inadequate Marking of Links:** Participants were unsure which elements on a page were clickable, and the sites often failed to indicate a link's state (hover, active, etc.). Links to the current page were often not disabled, so participants who clicked them often became disoriented because they expected to go somewhere else but didn't.
- **Changes Not Obvious:** Specifically, price-changes resulting from user-actions were often not obvious. Participants routinely had difficulty finding prices associated with trips, but even after spotting the price information, participants were prone to change blindness: when they changed trip-parameters (e.g., departure city, additional excursions, cabin class), they often would not notice that the price changed.
- **Poor Presentation of Search Results:** Conducting trip searches, interpreting results of trip searches, and understanding (or noticing) search-related error messages caused constant problems. Participants had difficulty selecting the desired parameters, which involved complicated interaction with sometimes erratic widgets (particularly on Road Scholar). If the search returned a lot of results, there was no clear way to sort them. And if searches produced no results, the websites did not provide much assistance to suggest a close match.

- **Information Overload:** The sites tended to present all conceivable options simultaneously, rather than chunking information or guiding users to different levels. On the Home Page, participants were overwhelmed with choices. Many pages displayed numerous competing calls to action, e.g.: “Call for Information!”, “Sign up for our newsletter!”, “Donate Now!”, “Request a catalog!”, “Live chat!”, “Like us on Facebook!”.

3.2 Noteworthy Behaviors

In addition to the above-described usability problems, we observed the following:

- **Overall, Overwhelmed:** All participants described their assigned travel site as “cluttered”, “busy”, and “confusing”.
- **Misunderstanding Scope:** They misunderstood the scope of information and controls, e.g., if they were viewing a tour of Turkey, they assumed that other links on the page were about that tour.
- **Lost in Place:** Several participants did not know how to use cues on web pages (e.g., breadcrumbs, menu highlighting, page titles) to keep track of where they were in the website. Indeed, some seemed to lack any concept of “location” within a site, perhaps due to inexperience with computers and the web. Conversely, some participants interpreted changing photos on a page as meaning that they were on a different page.
- **Functional Fixedness:** Once they found a way of interacting with a site, participants tended to stick to that way for all tasks, even if the site offered more efficient ways to perform other tasks.
- **Attitude towards Website:** While some participants blamed themselves for difficulties they were having with the sites, others were quite vocal and articulate about the design shortcomings. Several said that they would call the company to talk to a person rather than using the website. Some participants stated that they would not use a particular travel company, based on the its poor web design.

4 Discussion of Results

For the most part, the usability problems identified in the three travel websites we studied are quite well-known, i.e., they appear in virtually every list of usability guidelines, so website designers should know better! Among the most prevalent problems were those related to scrolling, navigation, search, and information overload.

We observed several other sources of confusion and frustration for the participants, including not understanding “where they were” in the information space, and not understanding how some parts of a web site relate to other parts; this was particularly true for search criteria and results.

These usability issues were severe enough that most participants said it would be a struggle for them to use the travel websites. Several participants went so far as to say they would not book a trip with that travel company.

5 Summary

An exploratory usability test of three commercial websites for older adult travelers found numerous well-known usability problems. The responsible travel companies appear to be either ignorant of, or willfully ignoring, even the simplest design techniques that would improve their customers' user experience and thereby enhance their bottom line.

Such practices make poor business sense, as they drive away potential customers. More disturbingly, they hint at a widespread ignorance of the need for user-centered design in general, and the needs and characteristics of older web users in particular. This is difficult to understand, given the proliferation of research papers, usability design guidelines, and government mandates on the topics of accessibility, usability, and older adults.

This study focused on the websites of organizations that provide travel services to older adults. Somewhat surprisingly, these companies have not yet accepted the imperative to design age-friendly websites. Studies of other sectors' websites will likely provide further examples of organizations' failure to provide successful and satisfying user experiences for their intended customer base. Clearly, the human-computer interaction community needs to expand its efforts to educate web designers (and/or the marketers responsible for the websites).

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