

Assignment 2  
Application of Information-seeking Behavior Principles  
In the Design and Functionality of Electronic Information Systems

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ILS 537-S70  
Spring 2011

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Submitted April 16, 2011

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Since the publication of Gary Marchionini's "Information Seeking in Electronic Environments"(1995), advancements in user-friendly electronic search systems have occurred. Today, many information websites are designed with the casual user in mind. Web design mechanisms that support a casual user have their foundation in the analytical search strategies used by professional searchers in specialized systems. Analytical strategies are the result of professional users adapting their behaviors to the system to maximize results in a short period of time making these strategies goal-oriented, systematic, and system oriented (p.76). However, novice and intermediate users find analytical strategies difficult to learn so employ informal, opportunistic, and interactive strategies called browsing. Marchionini's user-centered browsing model provides the basis for predicting users' browsing strategies based on the "interactions among the information seeking factors: task, domain, setting, user characteristics and experience, and system content and interface" (p. 107). Based on these interactions, Marchionini describes browsing strategies as scanning, observing, navigating, and monitoring. Observing is the primary strategy used in casual or exploratory searches to verify that the information presented is in the vicinity of where users can expect to find the answer. Scanning is for well-defined searches and requires users to selectively assess information to their visualized answer to what is seen and to recognize the answer is likely to be found. If the answer is there, users navigate more deeply into the system and reflect on results. Monitoring is similar to scanning however it is relies on users making mental connections from the cues of what is represented to the visualized answer (pp.111-117). Marchionini endorses user-oriented system designs that increase interactivity, "the number of and rate of choices and actions the user makes and takes during information seeking",

and reduce cognitive effort, “the amount of reflection, analysis, integration, and decision making during browsing” (p.110). This paper examines trip-planning websites for the online travel industry to determine which information-seeking behavioral principles influence their designs and how efficiently they guide users to locate information. The pretext for the analysis is planning a trip to Beijing, China, a destination that the user is unfamiliar with. The preferred outcome would be the ability to locate one website that would satisfy all areas of inquiry the user has about the trip. These include current and accurate information on flights, hotels, restaurants, attractions, as well as culture, language, safety reports, and entry requirements. Five websites were initially reviewed after which the two sites that came closest to meeting the criteria were given a more extensive analysis of their design strengths and weaknesses.

### **Overview of the travel websites**

The selection of the five websites began with TripAdvisor.com because it is often part of a library’s database subscription package. Colleagues recommended KAYAK.com based on ease of use, performance, and realized purchase value. The addition of Oyster.com was due to recent coverage in the media as a new, online travel source. Lastly, a selective Internet search added ChinaTravel.net and iGuide.travel/Beijing.

Upon observation, all five websites are designed in HTML, HyperText Markup Language, which gives the sites a preset format and design; representing information quickly, clearly, and spatially for rapid scanning. HTML elements are the “building blocks” of all websites and are based on the analytical search strategy of the same name. This strategy groups facets or concepts together so users can scan pages for main themes. HTML allows images and objects to be embedded and creates structured text for headings, lists, navigation tools, etc. enabling users to move from a category, such as Beijing, to its sub-categories, hotels, restaurants, etc. Each websites’ Home Page layout design is divided into two columns of grouped

information, or stratified fixed length fields, and carried throughout the website. KAYAK.com and iGuide.travel/Beijing use left column navigation while the other websites use top bar navigation across the page. All employ implicit links such as tabs or pull down menus and explicit links or hyperlinks that jump users to specific pages within the website. A hyperlink is a word, group of words, or image that allows non-linear movement once clicked or activated. If a specific search item was not pre-designed in one of these links, the websites offer a text field or a small rectangle, typically on the upper left side of the page, to enter specific search terms. Based on two or three typed letters or keystrokes, the field's help feature completes the word. However the websites do not intuitively search the completed term; users must use a key-press or click a search button to activate the search. All sites have a listing of pages previously visited to help users retrace their steps and avoid getting lost located either at the top of the page or in a list field. Also, all have filter features so users can manipulate results to select travel dates, price points, travelers' reviews, etc. And all except ChinaTravel.net offer bookmarks to social networking sites such as Twitter, Facebook, etc. KAYAK.com and TripAdvisor.com have their own mobile applications. TripAdvisor.com, ChinaTravel.net, KAYAK.com, and Oyster.com offer free website registration enabling users to access the trip management feature. Based on the interactive scanning analytical search strategy, this feature allows users to save information in a personal folder for further examination and, if applicable, to build their itinerary (p. 79). Also, registered users can place comments or reviews on forums or blogs, however only TripAdvisor.com and ChinaTravel.net offer uploading travel photographs and videos.

Because the websites are designed using HTML, the differences among the websites are slight and choices are mostly due to purpose and content. As Oyster.com is a hotel-only website serving a limited number of cities, it was eliminated as a source. KAYAK.com was removed

from contention because it does not offer information on restaurants and attractions, two of the user's concerns. Although [iGuide.travel/Beijing](http://iGuide.travel/Beijing) provides comprehensive answers, it was eliminated for three reasons. First, the website promotes and focuses all pages to Google Maps' interactive map that offers five views: street, terrain, hybrid, satellite, and cosmos, view of the night sky over Beijing. However map pins or flags do not pull information on hotels, restaurants, or attractions to the user. To locate the information, users must move away from the map and navigate to the desired information. Also, the font and photograph sizes are too large and, when combined with too much information per page, hinder users' scanning and processing ability to assess the viability of the website's worth. Further poor web design is witnessed in the placement of the websites' sponsors' advertisements. Although not intrusive, the advertisements use prime design space that could be better used for travel related functions and some relate to the user's Internet Protocol address, not the destination.

### **Comparative Analysis**

An in-depth analysis of the remaining two websites focuses on the specific features and techniques Marchionini outlines as useful to support browsing (p. 122) to determine [TripAdvisor.com](http://TripAdvisor.com)'s and [ChinaTravel.net](http://ChinaTravel.net)'s strengths, weaknesses, and areas for improvement.

#### **Representations**

When first visiting [TripAdvisor.com](http://TripAdvisor.com), users encounter a pop-up promotion, inferring users are looking for the latest travel deal or top destination. However, to enter the website, users must first click away the pop-up. Consequently the action and cognitive effort required may turn away potential users. This website's information appears crowded or busy, which may be a result of the use of the company's color green around every fixed field, requiring users to hesitate and adjust their scanning. Nevertheless, [TripAdvisor.com](http://TripAdvisor.com)'s design strength is that it anticipates users' frequently asked travel logistic questions and presents a text field containing this

information immediately on the top left of the Home Page. The field fits within a computer's screen reducing movement and optimizing scanning and reading.

The first impression of ChinaTravel.net is a pleasing grey background that instantly reduces eyestrain. The good use of font size and color is inviting and makes scanning, assessing, and entry into the website easy. ChinaTravel.net illustrates with images; a combination of thumbnails, reduced-size photographs, and video slide shows contributed by travelers or website-owned. Many website-owned photographs have hyperlinks to their specific webpage, inferring users' desire for answers on history, price, hours of operation, etc. ChinaTravel.net has a specific link for the Pictures page on the navigation tool bar. Once there, users can manipulate the query for Beijing pictures only, for instance. In contrast, TripAdvisor.com's design places links to photographs and videos only within the destination section, limiting the volume of information available to user while ensuring advertisements are strategically positioned on the page and throughout the site.

### **Mechanisms**

To reduce interactivity, TripAdvisor.com locates a user's Internet Protocol address and pre-populates the airport "from" text field with the closest airport. Although a timesaver, it is unnerving and also frustrating because it may not be the best departure location. Unlike ChinaTravel.net, TripAdvisor.com provides users the option to select comparisons with all affiliates or just a few to obtain the best price and service. After selection, the website probes its affiliates' websites and brings the summarized results to users in an ordered display with limited descriptions and hyperlinks to full descriptive results. The number of affiliates selected minimally affected response time. A value-added feature is TripAdvisor.com's cost estimator to help users understand the entire cost of a flight in a single display. Unfortunately, ChinaTravel.net's design does not offer a flight fixed field on the Home Page or a link on the

navigation bars. When a hotel is selected, the website links to CTrip.com to book flights, hotels, and a car. Or users must scroll to the web page's footer and locate CTrip's line of services, which is in very small print, to book flights, etc. As this requires investigative and deductive skills, the designers could consider adding a travel booking feature to the navigation bars.

An area for improvement is ChinaTravel.net's map which is located on the Destinations page. It only has a rollover function that highlights provinces; locating information on the province requires two-clicks on separate areas of the map. Similarly, TripAdvisor.com's map is located on the destination page, but it uses Google Maps with filters and pop-up features. When users roll the mouse over a pushpin or an icon, the site infers users want more information so presents a pop-up menu to the hotel, attraction, or restaurant with a link to the specific page in the website. Although ChinaTravel.net may not be able to license with Google Maps, the site contains this information so could easily enhance their map. Also, adding features to the metro stop icon to pull up fares, schedules, etc. could improve both maps.

An area for improvement for TripAdvisor.com is their search field on the Home Page. When entering a word, for example "American", the pre-population function retrieves all words beginning with American from every category in the website resulting in a long list of names that does not assist users to narrow their search or reduce time. In contrast, ChinaTravel.net has a small navigation tool bar on the Home Page that links the highlighted category to the search field and searches only the category, not the whole website. For instance, if the small Destinations tab is selected, the field's help feature intuitively completes a word from only cities that match the two or three letters entered, not hotels or restaurants. This value-added feature controls the volume of solutions and focuses the search. However some users may find this feature frustrating, as users may want to jump to hotels from this page instead of moving to the top of

the page and clicking the hotel tab. Although very difficult to locate in ChinaTravel.net's page footer, Travel links is a value-added hyperlink to a new page with links to information on expat communities, language lessons, and culture. Other useful features on ChinaTravel.net's site contain currency, phone listings, entry requirements, and weather information as well as scripted questions and answers from the website creators as well as questions from travelers, all one-click from the top navigation bar. TripAdvisor.com has the same information, but it takes three or four clicks to locate. For many users, so many movements may stop their search unsatisfied, so consideration could be given to reduce the "Rants & Raves" field and add a field in the open space for quick links to these categories.

### **System features**

As ChinaTravel.net is an English-language travel website, it is the only website that does not offer a language translation feature. For English language users, the websites are designed left to right with travel logistic information on the left side of the page. The design facilitates observing and scanning strategies so users can make quick judgments about the ease of locating relevant solutions. However, designers could consider re-designing the websites to ensure consistent one-click maneuverability, text fields to automatically search completed terms, and to include customized systems features for better interface control, such as font size controls. These improvements follow Marchionini's endorsement of highly interactive websites to keep users engaged and not frustrated. The sites have access to databases and retrieve sets of information that can be manipulated by the user. Additionally, the blogs, forums, and user comments features provide valuable, experienced input. Users enter plain language terms to search the sites, resulting in high-resolution displays of clustered information from a combination of sources which provides more feedback for continuous search resolution. Although a concern, response times are significantly reduced to almost instantaneous thereby making the query - examine

results – extract information reiterative search steps indiscernible and speed the search to quick resolution.

### **Conclusion**

As experienced during the examination of the five travel websites, website designers attempt to create environments that anticipate users' questions and think for the user by offering hyperlinks and intuitive in-text help features. Although features varied slightly corresponding to a website's mission and service focus, the majority are consistent, enabling users to conduct complicated searches to obtain fast, accurate information at their convenience. The websites' interactivity provides flexibility to the user to control results. Although TripAdvisor.com is reportedly the world's largest travel website, the site's congested feel and prominent advertisements within the site along with the specific dimensions of the search made ChinaTravel.net the better solution. Both offered many of the same features and information packets, however TripAdvisor.com required users to employ more physical and cognitive processes to locate it. Based on its affiliation with CTrip.com, users can be confident in their hotel and flight arrangements, as CTrip.com is China's leading travel enterprise having been in business since 1999 and traded on NASDAQ since December 2, 2003. Although there are areas for improvement, the website is visually and esthetically appealing, incorporating an intuitive use of color, navigation, blogs, and forums give the user perspective on China and will inspire users to come back. ChinaTravel.net's mission to create the best China travel website on the Internet by travelers with up-to-date travel information on all aspects of China makes it a one-stop website solution.

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