INTRODUCTION

The Internet has changed the landscape of the hospitality and tourism marketing as tourism is now ranked as the number one industry in terms of online transaction volume (Werthner & Ricci, 2005). In 2005, approximately 78 percent of American online travelers (79 million in total) searched the Internet for travel information. More than 75 percent of these travelers made travel reservations online (Milligan, 2006). Compared with other types of sources and distribution channels, the Internet contains a large amount of information; it is more interactive, can be customized, provides tailored content, and can be accessed 24 hours a day and 7 days a week (Newhagen & Rafaeli, 1996). It is suggested that the Web is bringing customers into a new era in the marketing communication environment (Varadarajan & Yadav, 2002).

For hospitality and tourism businesses, the Internet has become one of the most important marketing communication channels (Wang & Fesenmaier, 2006). In the United States, the volume of online booking has exceeded all the other types of travel booking methods, including phone booking and travel agents (Milligan, 2006). Furthermore, over 50 percent of American tourists' travel decisions can be attributed to web-based advertising and promotion (Petrick, Sirakaya, & Park, 2004). However, research has shown that online travel planning remains a frustrating and unpleasant experience for some travelers because of the usability problems associated with the Internet as a travel information source (Pan & Fesenmaier, 2006). This appears to be particularly true for independent international travelers.

One country in particular need of such studies is China. International tourism in China has been regarded by its government as an effective tool for gaining foreign-exchange earnings and promoting the nation's culture and positive image to the rest of the modern world (Holt, 2002). Consequently, the country has persistently promoted itself as an international tourism destination (Holt, 2002) and as a result, China's tourism industry has experienced significant growth in recent decades. The latest United Nations World Tourism Organization (UNWTO) statistics illustrates that in 2005, overseas tourism arrivals to China reached 49.6 million with a growth rate of six percent expected for 2006 (Wright, 2007). UNWTO further estimated that China would become the worlds' top tourist destination by 2020 (Standeven & De Knop, 1999, p. 322).

As China's tourism industry grows and attracts more independent travelers from western countries, catering to the informational needs of western travelers becomes more crucial. However, the differing cultures between host and guest countries may add barriers in the trip planning experience. Although studies on the specific role cultural background plays in travel planning are still lacking (Jarvenpaa & Tractinsky, 1999), factors such as cultural values, rules of social behavior, and forms of interaction have been consistently suggested to influence tourists' behavior and perceptions of service (Crotts, 2004; Crotts & Erdmann, 2000; Philipp, 1993; Reisinger & Turner, 1997; Reisinger & Turner, 2002a, 2002b; Seddighi, Nuttall, & Theocharous, 2001). A better understanding of international travelers' online travel planning experience and informational needs is of both theoretical and practical significance. This study intends to explore the satisfaction and barriers of online trip planning to China by using

American students as a sampling population since the students will be the future independent travelers. Furthermore, the college student population is a well-educated and technology-savvy group; those problems and difficulties they encountered during online planning process are more likely to be encountered by other independent travelers. The major research questions are:

1) What is the satisfaction level when the independent travelers conduct online trip planning to China?

2) What are the usability problems and barriers independent travelers face when planning trips to China?

3) How much of those usability problems are caused by cultural barriers?

The following paragraphs detail relevant literature, following by the description of the mixed methodology; the results, implications for online marketing, and the limitations of the research are discussed later in the paper.

LITERATURE REVIEW

Chinese tourism industry has been active in the area of promoting its destinations through the Internet (Holt, 2002). Since the emergence of the country's first tourism web site (www.ctn.com.cn) in 1996, China has experienced substantial growth in terms of online travel information (Lu & Lu, 2002). Among those Chinese tourism web sites, the majority are scenic spots or attraction sites, government's official destination sites, and travel agents' sites (Lu & Lu, 2002). Many of these Chinese websites attempt to boost international tourism in the local area and have achieved success at different levels.

However, how this tourist information is interpreted and used by independent international travelers is still largely unknown. Online trip planning behavior is related to many areas of studies. This section reviews relevant literature in travel information search, trip planning, usability research in online environment, and cultures and web design.

Travel Information Search and Trip Planning

The traditional view of travel information search is closely related to travel decision making and can be viewed as information processing (Engel, Blackwell & Miniard, 1990; Bettman, 1979). In the purchasing process, a consumer will go through a series of stages including: need recognition; information search; alternative evaluation; decision making, and post-purchase evaluation (Engel et al., 1990). Past research has shown that travel planning is an information intensive activity which involves many sub-decisions (Jeng, 1999). The process can be viewed as a hierarchical, dynamic, multi-stage and contingent process; these sub-decisions have different centrality and rigidity levels which are inter-dependent. Core decisions are made at the beginning of travel planning and are usually hard to change (high rigidity) and therefore, set the context for subsequent sub-decisions (Jeng, 1999).

Many factors influence the direction and degree of travel information search. Situational and environmental factors, trip stages, and the nature of the product determine the type of information search consumers engage in during a purchasing process (Vogt, 1993). Research has shown that travelers' needs and behavior change during different trip

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stages, and they have different preferences for country, state, and city level destination

marketing organization web sites (Choi, Lehto, & Oleary, 2007). A study in 2001

sponsored by Canadian Tourism Commission indicated that travel information search and

product purchase are different depending on travel product categories in the pre-trip stage,

and travel experiences influence travel information search and product purchase (Jun,

Vogt, & MacKay, 2007). Morrison and colleagues (2001) also wrote that travelers feel

more comfortable purchasing low-risk products (flights, lodging, and car rentals) online

and less comfortable purchasing high-risk products (e.g. travel packages) (Morrison, Jing,

O'Leary & Cai, 2001; Card, Chen, & Cole, 2003).

Other determinants of information search include the travel information searchers'

individual characteristics such as gender, value systems, their product knowledge and/or

self-assessed knowledge, product involvement, views of decision risks, attitude toward

products and intentions (Jeng, 1999). Female and male travelers search and process

tourist information differently: females tended to spend more time on the Internet and had

a more favorable attitude toward both online and offline information sources. They also

have higher involvement with information search, visit more web sites, and visit them

more frequently (Kim, Lehto, & Morrison, 2007). Further, prior experience and

knowledge with a destination will influence the content of search (types of information

sought) and degree of search (time spent online) (Lehto, Kim, & Morrison, 2006).

Mature or senior travelers prefer printed brochures as their major source of travel

information and decision-making (Lin, 2005). Demographic characteristics of gender and

household income and situational factors of trip purpose and travel party type were significantly related to tourists' choices of information sources (Luo, Feng, & Cai, 2005).

Regarding information sources used, past research shows that travelers use a combination of sources while planning trips (Fodness & Murray, 1999). Local experts are used mainly as at-destination information sources (Rompf, DiPietro, & Ricci, 2005). When users search tourist information online, search engines play an important role (Ho & Liu, 2005). A study on travel information search behavior among different age groups showed that from 1995 to 2000 there was a large increase in Internet usage for travel information search purpose across all age groups and specifically the baby boomer generation surprisingly adopted the Internet more often as a trip planning tool (Beldona, 2007).

For independent travelers to a foreign destination, the Internet might be one of the most important trip planning tools. Foreign visitors to a novel destination will most likely lack the cultural and geographic background knowledge related to that destination; their trip planning will be more information-intensive and cognitively demanding compared to planning trips to a familiar destination. When an American traveler plans a trip online to an unfamiliar destination with a different culture like China, many aspects of the trip will be determined by his/her level of knowledge about China. Factors such as the geographical locations of different cities and attractions; knowledge of the Chinese language; and familiarity with the Chinese culture all will affect the need for information. Using Gursoy and McCleary's (2004) terms, familiarity and expertise play a central role

in travelers' internal and external information search. However, it is still not clear how a lack of background knowledge about the culture of China would influence one's trip planning process and how well online travel information about China fulfills the needs of western independent travelers.

Usability Problems in Online Environment

As one of the most important information sources and trip planning tools, the main advantage of the Internet is that large amounts of information can be accessed rather quickly and that the organization of the information is flexible. On the other hand, hypertext does not have a conventional structure that leads the user through documents and the user is completely unrestricted in terms of where to go and which hyperlink to click; therefore, the hypertext systems require the user to exert more cognitive effort.

Usability refers to the degree of ease of use when the system and the user can communicate with each other clearly and without misunderstanding (Benbunan-Fich, 2001). Nielson (1996) defines usability as the quality of user experience when interacting with an information system or a piece of software. Usability problems occur when a user has errors, frustration, misunderstanding, or difficulties when interacting with an information system (Benbunan-Fich, 2001). Mental models are a central concept in examining usability problems in online systems (Shneiderman & Plaisant, 2005). The mismatch between mental models of users and the models of the information system will contribute to usability problems and difficulties an online user encounter. Observations, verbal protocols, field study can be used to identify usability problems. Many usability

studies have been conducted and published in various areas. For example, a study conducted by Bilal (2000) with middle-school students showed that students always used natural language to do information search which may not be supported by the search engine. In this study students often did not find the information they were searching for because the terms these used were either too broad or too narrow. A usability study on a commercial web site showed that crowded content, poor navigation, and cumbersome interactivity caused many usability problems (Benbunan-Fich, 2001).

These studies suggest that the background knowledge and mental models of the information searchers will influence the number or type of usability problems they will encounter. When an information searcher is from a different culture, their expectations and mental models might be dramatically different from those of web designers in the destination country. As a result, it will influence their navigation and information processing, potentially causing a higher number of usability issues.

Cultures and Web Design

Culture is a loaded concept since it is defined by different disciplines (Barber & Badre, 1998). In this research, the concept of culture is used loosely to distinguish different countries and their online communication styles. This term in the current paper does not intend to imply all the connotations it carries but rather provides means for discourse on online communication styles and user characteristics from different countries (Barber & Badre, 1998).

Research has shown that users of different cultural backgrounds vary in their way of using the Internet and culture influences perceptions of Internet marketing (Tian & Emery, 2002) For example, people from different cultures prefer different types of visual elements on the sites such as graphics (Singh et al 2003; Sun, 2001). Culture also affects user reactions to the Internet including consumer trust (Jarvenpaa et al., 1999) and web site development (Junglas & Watson, 2004; Sun, 2001). In the meantime, web sites from different cultures also adopted different styles such as the usages of text and images. As a result, users' acceptance of web site design features differs across cultures (Cyr & Trevor-Smith, 2004; Evers & Day, 1997; Nielsen & del Galdo, 1996).

If a web site's target audience includes people from other nations, the web site should be internationalized. That is, the web site should reach the users beyond the national boundary of the site's origin (Alvarez et al., 1998). To make the web sites international, various factors should be considered including target audience's needs, web content and organization, and graphic design (Alvarez et al., 1998). Consider, for example, that the color red indicates danger I the U.S. but happiness in China (Alvarez et al., 1998). Internationalization of a web site involves two steps (Gribbons, 1997): the first step is globalization. A global web site has no cultural-specific information and features. Instead, it has the universally accepted interaction styles, content and functionality. The second step is localization. Localizing a web site means adjusting the global web site to fit users' needs in different regions. This process includes much more than just translating languages. On the surface level of localization, features such as dates, measurement, currency, weights, names, and addresses should be familiar to target users. On the

cultural level of localization, features including images, colors, logic, aesthetic appeal, and functionality pattern should fit target users' tradition (Gribbons, 1997). In addition, cultural markers, the design elements that are more preferred within a particular cultural group, are often used on the web sites to localize web sites on the cultural level (Barber & Badre, 1998). The use of cultural markers can increase the usability of multilingual web pages (Sun, 2001).

Studies examining localization of web sites found that various design elements, such as graphics, colors, layout, language, and content are significantly different among web sites from various countries (Cyr &Trevor-Smith, 2004). To increase the effectiveness of the web sites, researchers have proposed the concept of cultural congruity - the congruity of a web site with a user's culture (Luna et al., 2002). Cultural congruity can be achieved in two ways: content congruity and structural congruity. Content congruity means the inclusion of culture specific content and structural congruity means using the structures that targeted cultures prefer.

American web sites have made efforts to adapt to local cultures (Singh et al., 2003; Sun, 2001; Luna et al., 2002).Comparison of a Finnish and English web site of a Finnish company shows that the two web sites differ in content (Yli-Jokipii, 2001). The Chinese and English versions of a tourist city in China also suggest that the two web sites are different in content, use of color and animations and web site layout (Holt, 2002). These evidences show that the web site designers may have considered the needs of global

audience when they created these web sites. However, few studies have examined the effectiveness of web sites targeting for global audiences.

In conclusion, the literature reviewed suggests that on the searchers' side, cultural background and mental models will influence users' view and trust on different web sites; on the designers' side, different web sites from various cultures will have different design elements which may cater users in their own cultures. To appeal to audience from a different culture, internationalization is necessary which includes globalization and localization. In order to explore the difficulties and problems the trip planners encounter and cultural barriers which contribute to those problem, the authors detail a mixed methodology used in the study in the following sections.

METHODOLOGY

The present paper reports major findings from a research project on college students' online planning behavior. In this research, a quasi-experiment was conducted to examine American college students' online travel planning behavior to China. Even though most students have limited budget for traveling abroad, they are highly educated and more technology-savvy, and likely to be future independent travelers to China. Further, considering the purpose and exploratory nature of this study, college students, a relatively homogeneous group, are deemed to be appropriate subjects. A mixed methods approach used in similar previous studies (Pan & Fesenmaier, 2006; Backlund, Skaner, Monthgomery, Bring & Strender, 2003; Vining & Fishwick, 1991), which integrated

think-aloud protocol combined with a process tracing method, log analysis and survey techniques, was adopted.

In the study, 34 undergraduate students from a southeastern public university in the United States were recruited. Two subjects have been to China so their experiment data were excluded from this analysis to ensure that the subjects were planning trips to a foreign culture which they do not have any prior experience. The rest (32 subjects) are mostly sophomore, junior, and senior level students in business-related majors. The subjects were first informed about the goal of the study and ensured their confidentiality. The subjects were asked to fill out an online survey first. The goal of this pre-exercise survey was to collect each subject's individual characteristics, including their travel experience, information search styles, and their organic image about China.

After the initial survey, the subjects were asked to familiarize themselves with the think-aloud method as prescribed by Ramney and Boren (2001). This was done by asking them, prior to their trip planning exercise, to find the local weather online. After this, a travel planning exercise to China was conducted; the subjects were told to plan a week-long (December 15th to December 22th) trip to China for their winter break. S/he needs to decide where to visit during the stay in China. The subject needs to find out the cities s/he plans to visit and the attractions and restaurants in each city s/he would like to visit. Due to time limitation, the subject was asked not to worry about airline tickets and hotel rooms and also s/he has unlimited budget; instead, the subject was asked to focus on the cities, attractions, and restaurants the subject was interested.

After the trip planning exercise was completed, the subject filled out a post-exercise online survey regarding their levels of satisfaction toward their travel information search and trip planning process. The post-exercise survey measured subjects' process and outcome satisfaction (de Bruijin and de Vreede, 1999), induced image, and several other related characteristics. The total session lasted less than one hour, in which the travel planning exercise was limited to 50 minutes. During this process, the researcher was seated besides the subject and took field notes. The researcher remained quiet except when the subject had confusion regarding the study itself or when the subject stopped verbalizing his/her experience. At the latter cases, the researcher would remind the subject to keep talking.

A screen capturing software, Camtasia Studio, was used to capture their online activity into a movie file (TechSmith, 2006) and a parental control software, PC Tattletale (PC Tattletale, 2006), was used to capture the web pages the subjects have accessed.

DATA ANALYSIS AND RESULTS

After the collection of data, the click streams, the screen captured movies, and the survey results were triangulated by timestamps to provide a detailed picture of the subjects' trip planning behavior. The demographics were tabulated from the pre-exercise survey; the details on the web sites and web pages visited were captured in the clickstream.

Three different researchers open-coded the screen captured movies in order to discover the usability problems and barriers. After the interviews were conducted, a transcription of proceedings was developed which incorporated both the think-aloud protocol and process tracing method. In the case of this research, the participants' on-screen actions and verbalization explaining those actions were coded. The data were then open-coded as described by Straus (1987) through critical incident analysis (Carroll, Koenemann- Belliveau, Rosson, & Singley, 1993). According to Carroll et al.(1993), a critical incident is an event observed during task performance that is a significant indicator of some factors defining the objective of the study. Critical incidents were used to evaluate usability problems, which occur when a user has errors, frustration, misunderstanding, or difficulties while interacting with an information system (Benbunan-Fich, 2001; Pan et al., 2006). In this process the researchers examined the field notes, transcripts and the log for each interview. They then met and discussed individual interpretations to ensure inter-rater reliability. Based on that discussion, main categories were developed. In the second phase, three researchers coded the main texts

according to the categories developed. The following paragraphs report major findings of this study.

Demographic of the Subjects

Due to computer glitches, one subject did not fill out the pre-experiment survey and another one did not fill out the post-experiment survey. The authors analyzed 31 subjects in the pre and post experiment surveys and include 32 subjects in the analysis of critical incident analysis. Among the 31 subjects, there are 14 males and 17 females. Regarding travel experience, each subject took an average of 4.6 pleasure trips last year; on an average year, each of them takes 4.9 trips. On a scale of 1 to 7 (from "1: not at all" to "7: definitely"), they consider themselves as rather experienced travelers (a score of 4.7). When asked about the attractions they knew about in China prior to the travel exercise, 24 of the 31 mentioned about the Great Wall; four subjects mentioned temples (including one who used the word "castles"); two subjects mentioned the dragon parade; other attractions mentioned include Chinese food, Hong Kong, Shanghai, Tiananmen Square, Beijing and Yangtze River; five subjects did not recollect any attractions in China. This indicates that the subjects have very little background knowledge about China as a tourist destination.

Regarding their computer and Internet experience, on average the subjects have 12.2 years of experience using a computer; they have used the Web for approximately 9.5 years and emails for 8.9 years. On average the subjects accessed their emails and the Web more than 6 days in a week. When asked about their computer and Internet experience

level, they indicated average scores of above 5 in a 1 to 7 scale. All the subjects have

used the Internet to check out destination before; a majority had used the web to book

airline tickets (28 in 31) and had reserved hotel rooms (26 in 31) online before. The

subjects are apparently a technology savvy group with fair amount of Internet and web

experience.

The subjects spent an average of 23 minutes planning their trips to China. In total,

1,980 web pages were visited by 32 subjects. The following sections detail the

satisfaction of online trip planning to China and the usability problems.

Satisfaction of Trip Planning to China

De Bruijin and de Vreede (1999) categorized satisfaction on information search

into process satisfaction and outcome satisfaction. Process satisfaction implies

satisfaction toward the process of travel information search, while outcome satisfaction

measures directly how the subjects feel about the outcome of a travel information search.

The results of the satisfaction measures are shown in Table 1. The subjects indicated low

scores on both types of satisfaction (3.0 for outcome satisfaction and 2.6 for process

satisfaction) on a scale of 1 to 5 (1 being Strongly Agree, 3 being Neutral and 5 being

Strongly Disagree). The satisfaction scores in the current study are low since both scores

are very close to neutral. The subjects have even lower outcome satisfaction than process

satisfaction. In other words, the subjects in the current study generally had a frustrating

and confusing experience with their travel planning to China.

INSERT TABLE 1 ABOUT HERE

Usability Problems

Using open-coding of critical incidents (Carroll et al., 1993), a total of 117 occurrences of usability problem were discovered in the 32 trip planning exercise (Table 2). The number of usability-related incidents ranged from 1 to 11 for each subject with an average of 3.7 problems per subject. The researchers further conducted an analysis on the types of usability problems. Among 117 occurrences, there are nine different types, which can be roughly categorized into cultural-related (66 incidents and 56.4%) and non-cultural related problems (51 incidents and 43.6%).

INSERT TABLE 2 ABOUT HERE

Non-Cultural Problems

Among all the usability problems, less than half (43.6%) are not culture-related (Table 3). They are the following types:

1. Mismatch of mental models – functional aspect (23 incidents): this type of problems happens when what the user saw was different from what he or she expected. For example, a user expected to see the price and hours of the Beijing

Zoo from the web site; instead the web pages just show the pictures and descriptions of the zoo;

2. Interface problems (12 incidents): This happens when the web pages have confusing interface and the subjects did not understand the technicality of the pages. For example, a popup blocker on the web browser may cause confusion. A few web sites the subjects visited contained popup advertisements. The newer versions of Microsoft Internet Explorer (with Service Pack 2 installed) have a built-in popup blocker. As a result, the users got confused when a page did not show after a link was clicked.

3. Loading Slowly (11 incidents): Loading speed of web pages is another major problem with 11 incidents. The subjects got confused when they were not sure if a link that was clicked was a broken link or a result of low Internet speed. This was particularly the case for some Chinese web sites, whose slow loading may be attributed to the international connections. For example, travelchinaguide.com loaded slowly from time to time and several users gave up and chose a different link from Google result page.

4. Navigation Problems (5 incidents): Also causing confusion were problems related to navigation difficulties due to web site design. For example, a search box on Chinadaily.com.cn did not work; some sites exhibited broken links.

Cultural-Related Problems

Besides non-cultural difficulties, there were many more problems which were culturally related (56.4%). These are the following types:

1. Mismatch of mental models – cultural aspect (22 incidents): In this type of problems, searchers are looking for a different type of attractions or tourist information. For example, many times the subjects were looking for attractions from the country side of China, but the web pages showed the skyscrapers and westernized Beijing and Shanghai. A subject commented that "*I really like to go to the coutryside and see how people actually live today*";

2. Bias in travel information space (13 incidents): another major barrier was that the results returned by Google, when used to search for Chinese restaurants or attractions, were not very useful. Some of the returned sites are unrelated to travel in China. For example, when one participant was searching for "Chinese restaurants" on Google, it yielded many Chinese restaurants in the United States and United Kingdom. Additionally, the 32 subjects visited in total 186 unique web sites. The About Us or Contact Us section of each web site was checked in order to find out the location and nature of that web site and business. Among these sites, only 41 sites were developed by Chinese companies and have headquarters in China, and only one web site was from a local tourism board (discoverhongkong.com). Among these 41 Chinese web sites, a lot of them were Chinese official news agencies (china.org.cn), travel companies (travelchinaguide.com), high technology companies in China (chinapages.com), and foreign visitors' guide to China (beijingtraveltips.com). Google.com and travelchinaguide.com were the two most visited sites. Google.com is a search engine company located in the United States and travelchinaguide.com is

developed and maintained by a tour guiding company based in Xi'an, China.

Table 3 shows the top 27 web sites which were visited by 12 times or above.

INSERT TABLE 3 ABOUT HERE

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3. Language and customs (12 incidents): When the names of the Chinese restaurants or attractions appeared in Pinyin (the official way to use Roman letters to represent sounds in Standard Mandarin), the subjects got confused since the names were essentially meaningless to them. Prices presented in RMB (the Chinese currency) could also confuse the searchers since they were forced to use Google to find out the exchange rate to U.S. dollars.

4. Lack of background knowledge (11 incidents): The lack of a basic understanding about the geography or customs of China made it hard for the planners to know which option to choose or which link to click.

5. Information Overloading (8 incidents): In many cases, the searchers were also overwhelmed by too much information. Many subjects indicated frustration or confusion when they were presented a long list of attractions/restaurants. In such cases they did not expect the amount of activities, attractions, or service options to choose from; sometimes they just simply gave up and picked another web site which clearly suggested fewer choices and contained less information. Interestingly, for travel planners who search for a novel destination yet are unaware of the local culture, ranking becomes extremely important to navigate through the information space. For example, in many web sites, cities and

attractions appear in an alphabetical order; without knowing the popularity of each one, the visitors simply picked the ones appear on the top, whose names usually starts with "A' or "B" (Anhui Province or Anqing city for example).

Overall, the results show that when American students plan trips to China online, their satisfaction level is rather low. The 117 usability problems have nine different types, and more than half of them are due to the cultural differences between the United States and China. The non-cultural problems include the mismatch between mental models, interface problems, loading speed, and navigation problems. The cultural related problems include mismatch on cultural aspect of understanding, bias in information space, language and customs, lack of background knowledge, and overwhelming information content which is due to the different cultures. Among those, the mismatches between different mental models (cultural or functional) contributed to a large proportion of the problems (45 incidents and 38.5%). The results also show that tourism web sites in China did not market the destination well. For the limited web sites the students visited, the globalization and localization are still lacking (Gribbons, 1997).

CONCLUSIONS AND DISCUSSIONS

This study shows that in general, American students' trip planning to China using the Internet is a frustrating experience, providing them with a low satisfaction level. Moreover, cultural barriers appeared to contribute to more usability problems than purely technical or functional problems.

One major finding of this research is the influence of Google on the visibility of tourist information about China. Google has essentially become the gatekeeper and information hub connecting the tourist information about China to the western world. However, this study shows that accessible tourist information on the web about China represented by Google may not be suitable for planning trips to China. Some argued that those algorithms such as PageRank simply set up a rich-get-richer loop, whereby a relatively few sites dominate the top ranks. For example, in a study on political web sites, few political web sites dominated the online discourse (Hindman, Tsiotsioliklis, & Johnson, 2003). For the tourism information space, those web sites in English located in western countries dominated online travel information space, even for searches on tourism in China. However, users as a whole are not familiar with how search engines find what they are looking for (Introna & Nissenbaum, 2000). These results suggest that authentic travel information of China is difficult to retrieve for western travelers.

Marketing Implications

The present study illustrated that most tourist web sites accessed by the subjects were from the United States; and that the web sites from China were mainly from travel businesses and high technology companies rather than destination marketers (e.g., authoritative tourism boards or bureaus). The student subjects' limited experience with those few tourist web sites from China may be generally described as confusing and frustrating. Thus, it is of critical importance for China's tourism marketers to fully understand western tourists' information search behavior and preferences, and develop and promote their web sites accordingly. For instance, tourism marketing agencies and

businesses should utilize more search engine marketing methods and practices, especially for national and regional tourism boards or bureaus. Travelers tend to trust these authoritative and unbiased public information sources. Because of the frequent uses of Google and search engines, it is necessary to make sure the title field, URL and the description of a site are attractive and appropriate. An appealing title, URL, or description may help the searchers to locate information more easily.

Further, when promoting tourist destinations and facilities on the web, Chinese destination marketers should pay close attention to the language and cultural issues. Since Pinyin could not convey the uniqueness of the attraction or facilities, translation by meaning is recommended wherever possible. For example, Nanjing Road and TV Tower in Shanghai are among the most interesting places to visit in that city; however, the names did not convey much tourist meaning for the western visitors. Nanjing Road Shopping District and TV Tower Sightseeing Tour might be better choices. Also when presenting a list of tourist facilities, marketers need to keep the list short and concise so as not to overwhelm the visitors. In addition, ranking by popularity is recommended rather than simple alphabetical listing.

In general, Chinese tourism marketing organizations need to improve their online presence and marketing strategies, both in terms of improving their web sites and their ranking in major search engines. One subject commented: *"I don't believe China has done a great job marketing to the world their greatest assets."* Other subjects mentioned that *"I didn't realize how many attraction options there were."* and *"I underestimated the*

natural beauty and attractions China has to offer." For individual tourism web sites, internationalization (globalization and localization) is the key for successful marketing a destination with a different culture to American independent travelers (Gribbons, 1997).

Although this study is theoretical in nature and has no intention to profiling customers, the findings may provide new insights in marketing towards American college students. In the United States, the youth and student travel market is a growing segment. Around 16 millions students enrolled in universities and colleges and they are loyal repeated customers and constitute 20 percent of international travelers (Kim, Oh, & Jogarratnam, 2007). Traditionally, gaining "knowledge" is one of the most important motivators for American college students to travel (Kim et al., 2007). With China's skyrocketing economic growth and increased political influence, more and more American young people will travel to China for leisure and educational purpose. Such travel experience may also help the American youths appreciate the world's diverse culture and foster global thinking.

From a marketing perspective, the Internet has been suggested as the most effective method to reach and communicate with college students (Bai, Hu, Elsworth, & Countryman, 2004). However, tourism web sites in China lag behind the U.S. sites in terms of the Internet marketing functionalities and generating desirable marketing results (Miao & Yu, 2006) and only 10 percent of China's transit volume was supported by the Internet (Xinhua, 2005). Hence, it is hoped that this paper could inform the tourism industry in China on improving on China's tourism information and improve China's

tourist image. By offering a more enjoyable and smooth trip planning experience, China could benefit hugely from the college student market in the United States.

Limitations and Future Research

The present study intends to provide insights in American students' online travel planning experiences. Although the results are difficult to generalize to a larger population beyond the college student group, the results of this study will shed some light on key determinants of satisfaction and barriers of American students' trip planning to China and the main usability problems of the travel information space as the bridge between China's tourism industry and American travelers. The implications for providing appropriate online travel information for China's tourism industry and designing user-friendly web sites are discussed. Operational significance aside, the quasi-experimental design of this study also contributes to the tourism marketing literature from a methodological perspective.

However, the study is exploratory in nature; it has some limitations related to the state of methodological development for online trip planning. Thus, the results must be interpreted cautiously. Like any other controlled experiments in a lab, this study is subject to the artificiality of the settings. Other information sources, such as travel agencies, families and friends, telephones, and published travel books, were excluded from the travel planning exercise. The subjects were given limited time to plan a one-week vacation. Specifically, questions were raised related to whether the simulation used in this study would yield results comparable to the decision-making and search processes

subjects would engage upon on their own. While the technique in previous studies (Pan & Fesenmaier, 2006; Backlund et al., 2003; Vining & Fishwick, 1991) has been found to deliver desirable results, the potential artificiality of the environment had to be addressed.

Further, this study drew the sample from a student body in a southeast university in the United States. Subjects of this study are younger, better educated, and more technology wise than general American travelers. Although these students may not represent general travelers, one may argue that they may represent the group of people that are most likely to be the future independent travelers to China. As a result, their experience and obstacles encountered in this study may realistically reflect the usability of the Internet as a trip planning tool. Nevertheless, future studies using non-student sample may provide new insights in this. Further, many usability problems uncovered in this study are universal to all types of trip planners. Although Human-Computer Interaction research has showed that usually as few as five users can uncover the majority of the usability problems (Nielsen, 2000), future studies on similar topic are expected to recruit more subjects.

Although the present study primarily focused on the satisfaction and barriers of online trip planning to China, findings of the present study also sparked interests in a variety of other topics, such as the impact of online travel planning on subjects' destination image development, various learning processes occurred along with information search and trip planning, uses of images in web design, users' trust of third-

party reviews and recommendations, and methodological issues in conducting quasi-experimental studies. Future research may continue exploring in these areas.

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Table 1. Satisfaction Measurements of Trip Planning to China

Satisfaction Item	Average Score*
Outcome Satisfaction	
I will need to find more information before I take the trip.	1.5
The result of today's information search is satisfactory.	2.2
The information search met my expectations.	2.6
I am confident about my travel plan.	3.1
I am ready to take the trip this winter.	3.2
The outcome of today's activities does not meet my initial expectations.	3.3
With respect to the outcomes of today's trip planning, I have many complains.	3.6
Process Satisfaction	
I was satisfied with the information search today.	2.3
I had a wonderful experience planning my trip.	2.5
I was frustrated by looking for the information on the Internet.	3.3

1 being "Strongly Agree" and 5 being "Strongly Disagree" with the statement

Table 2. Types of Usability Problems

Problem Category	Example (Subjects' verbalization are in quotes)	Times
Non-Cultural Problems		
1.Mismatch of Mental Models – Functional	*"still nothing just about the zoo. No zoo hours or anything"*	23
2.Interface Problems	*"looks like it is not really working"*	12
3.Loading Very Slowly	*"this web site is too slow"*	11
4.Navigation Problems	*"this isn't getting me anywhere, I need links and this isn't helping me any"*	5
Cultural-related Problems		
1.Mismatch of Mental Models – cultural	*"I really like to go to the country side and see how people actually live today"*	22
2.Bias in Travel Information Space	Go back to Google, search for "shanghai+restaurant+local", found out a lot of Chinese restaurants in the US.	13
3.Language and Customs	*"Oh, that is a bunch of words that I am not familiar with. We will go back."*	12
4.Lack of Background Knowledge	*"I do not even know why I am reading this. I am sure it is all stuff I would have no clue about."*	11
5.Information Overloading	*"they have lot, holy cow, they're not listed by city, that'd make it easier"*	8
Total		117

Table 3. Top 27 Web sites Visited with Count of Pages Visited

Sites	Count	Sites	Count
google.com	598	lonelyplanet.com	20
travelchinaguide.com*	241	beijingtrip.com*	19
fodors.com	88	chinaetravel.com	19
world66.com	88	travelocity.com	19
yahoo.com	66	beijingpage.com	17
beijingtraveltips.com	59	live.com	16
china.org.cn*	52	unesco.org	15
discoverhongkong.com*	38	ask.com	14
chinatravel.com*	37	sinohotelguide.com*	14
chinahighlights.com*	31	beijingimpression.com*	13
frommers.com	31	china-travel-tour-guide.com	12
tripadvisor.com	26	facebook.com	12
virtualtourist.com	23	wikipedia.org	12
justchina.org	21		

* Web sites developed by Chinese companies or organizations.