This is to certify that the

thesis entitled

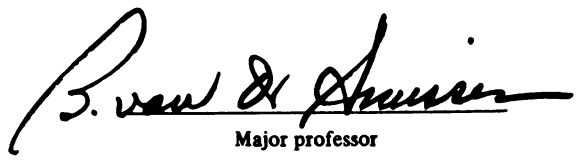
A METHOD OF ASSESSMENT OF WORLD WIDE WEB SITES WITH APPLICATION TO TOURISM

presented by

Renee Dopplick

has been accepted towards fulfillment
of the requirements for

Master of Science degree in Park, Recreation and Tourism Resources



Major professor

Date 4/26/96

A METHOD OF ASSESSMENT OF WORLD WIDE WEB SITES WITH APPLICATION TO TOURISM

By

Reneé Dopplick

A THESIS

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

MASTER OF SCIENCE

Department of Park, Recreation and Tourism Resources

1996

ABSTRACT

A METHOD OF ASSESSMENT OF WORLD WIDE WEB SITES WITH APPLICATION TO TOURISM

By

Reneé Dopplick

A method of assessment was developed to ascertain the ability to find, identify, and access information and the utility of information on the World Wide Web. The method was applied to five Web sites provided by National Tourism Organizations in Asia and in existence in July, 1995. Three variables, Arrangement, Behavior and Content, consisted of the elements of the Uniform Resource Locator, Title/Bookmark, the layout of nodes and linkages, multi-media components and the home page. Analysis of the quantitative and qualitative units of observation contained within the elements of the three variables demonstrated that sites limited the ability to find and access information, the interactivity with the sponsor, and coordination with external entities. The method was determined to be successful at discerning strategic features of a Web site within the control of the sponsor. Future research that incorporates the uniqueness of the presentation format of the Web is recommended.

To my phenomenal family, inspiring friends, and all travelers
who seek unexplored environments - on land, in the waters,
deep in space and online.

ACKNOWLEDGEMENTS

The printed publication of this thesis and the development of a Web site would not have been possible without the remarkable support, understanding and assistance of Professor Betty van der Smissen; Associate Professor Gail Vander Stoep, Professor Thomas Muth, Department of Telecommunications; Michele Malarney at the Michigan Office of National Oceanic Atmospheric Administration Sanctuaries and Reserves Division; and Ken Vrana at the Center for Maritime and Underwater Resource Management. Gratitude is also extended to Patrick Dickson and Mark Gillingham, Co-Directors of the Technology Exploration Center, for creating an environment of opportunity.

Throughout this study, I was continually amazed and refreshingly encouraged by the cooperative spirit of the online community and am thankful for the numerous online interactions and emails that informed, encouraged, clarified and entertained.

As the youngest child, I thank my parents, brother and sister (and rescue dog Shandi) for providing vision, guidance, insightful wisdom and inspiration throughout the years. Have I earned my slide rule and pocket protector yet?

To my friends both near and far, I thank you and implore you to stay online such that our friendship may continue regardless of time and locality. My first choice is, and will always be, to see you in person, but in the absence of that possibility, the

magic of computer-mediated environments keeps you as close as a "click" away. What a connection!

To those of you who find yourself immersed in these pages of pulp, I thank you for taking the time to explore a section of what I researched. If you are interested in the data and analysis that do not appear in print, you can use the search engines to find me, inquire at the International Institute of Tourism Studies, Washington, D.C. or visit my "virtual home" in the tropics, which if still in existence for early "homesteaders," can be found at URL: http://www.geocities.com/TheTropics/4111.

Thank you again one and all for everything you have done! I look forward to continuing the interchange of ideas, thoughts, cultures and travel stories.

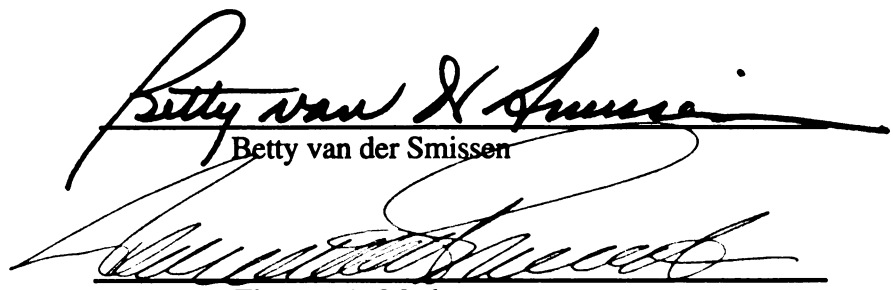
REFLECTIONS FROM THE COMMITTEE

What started as a student effort to explore how to improve the quality of sites on the World Wide Web resulted in an effort to demonstrate, to teach, and to contribute to the possibilities evolving at Michigan State University. This thesis was confined to print because the exception of format for a Web site was rendered without compromise to the existing guidelines. The value of this document in printed form is greatly diminished in regard to the quality and content of the research that was done in Web format. However, the value of this document as a basis for future discussion and opportunity is unprecedented at this university.

This thesis is neither the first nor the last of either print or electronic format. The researcher expressed that, in the end, the Web will not replace traditional forms of communication, but rather, will serve to complement existing forms by allowing for new options of information processing, analysis and distribution.

The creative pursuit of a technical challenge became both a philosophical challenge and a vision of distinction. As her Committee, we enjoyed critiquing, questioning, scrutinizing, doubting and shaping the method of assessment, inclusive of that information not represented in print. With even greater satisfaction, we enjoyed watching as she then in turn questioned the system, not of the computer but of the academic institution that she found to have constraints to freedom of thought and conveyance.

If electronic communications are as persevering as she, networked environments will not fade, but rather, will grow with time to become ubiquitous and indistinguishable in competence and acceptance.



Betty van der Smissen

Thomas A. Muth

Gail Vander Stoep

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1

INTRODUCTION AND STATEMENT OF THE PROBLEM

The World Wide Web (WWW or Web), the multi-media area of the Internet, offers tourism information providers worldwide the opportunity to become part of an expanding network of information, products and services as diverse as the number of users and Web site sponsors. Through the advent of graphical Web browsers, such as the copyrighted browsers of NCSA Mosaic (1993) and Netscape Navigator (13 Oct 1994), millions of Internet users can navigate, with the click of a button, through tourism Web sites showcasing photos, stories, hotels, airlines, and reservation systems.* At the end of 1995, travel agents, tour operators, travel magazines and tourism organizations were a few of the site sponsors who could be found on the Web.

The Web, as a channel of distribution, functionally delivers information nearly instantaneously, regardless of locality or time zone. In 1995, over 100 countries were connected to the Internet in a twenty-four hour, boundary-free computer networked

* All underlined words within this document indicate nodes or "pages" of information made available on the World Wide Web. The addresses, known as Uniform Resource Locators (URLs), take the place of page numbers and are given in the List of References. Deviation from traditional stylistic citation, including but not limited to capitalization and spacing, within this printed document ensures the retention of specific textual characteristics determined by the site sponsors and which are necessary for navigation and site identification.

environment. For managers and decision-makers, the resulting online benefits, such as increasing the timeliness of information and quality of service, may or may not be reflected concurrently in economic measures. The growth of businesses on the Web, not just tourism-related, from 2,000 to over 20,000 during 1995 (Open Market, Inc., 1996) indicates that electronic commerce may become a beneficial function, helping to defray the costs for online connection, Web site development, site maintenance, staffing and associated computer hardware and software; however, in the absence of a ubiquitous secure encryption system, the fate of online financial transactions remained uncertain in 1995 and into 1996.

The benefits of the Web are creating a situation that could be described as both a threat and a source of opportunity for National Tourism Organizations (NTOs). During the early 1990s, NTOs were plagued with budget cuts or privatization (ex: U.S.A.). The Web, as one tool to cut costs of distribution, allows tourism organizations to reach global audiences, even those previously ignored due to targeted marketing approaches, without the high costs of traditional media delivery. At the same time, current text, audio and graphic online information can be delivered to tourists who self-select to receive the information. Moreover, NTOs can provide tourism information directly through the computer communications interface to the tourist regardless of time, locality, and even language, although languages were still limited in 1995 by software or language(s) of the provider.

Threats and opportunities also exist in structural changes within the Travel and Tourism Industry. Through the communications alternative of the Web, tourism suppliers can function independently of the intermediaries and deal directly with the tourists. This intraindustry process of disintermediation, the breakdown of barriers between supplier and consumer, is most evident in the direct airline ticket reservation

systems that were once of proprietary access by travel agents. Electronic collaboration on the Web raises questions of information management and dissemination within and across businesses and agencies (Downs and Lange, 25 Apr 1994).

Challenges of the Web, not just management changes in response to threats and opportunities, are developing. Globalization and expansion of commercialization are making the Web more accessible to more commercial providers, government agencies and consumers than past means of communication (Eckhouse, 1 Jan 1996). In the past, traditional media limited the range of sources of production through barriers such as costs. Constraints of financial funding for Web site maintenance, security, and standardized network protocols have served as barriers to a limited extent, as have the constraints of equity and equal opportunity of access as applied to countries as well as individuals. Uneven distribution of technical hardware and inequities of economies in the global marketplace pose challenges for public administration, management and policy. Of concern for nations seeking to diversify weak economic bases through tourism is the ability to have equitable access or representation to the global market on the Web, especially for those developing countries with costly or inadequate telecommunications infrastructure, such as was situation with most of Africa in 1995.

Even when a site on the Web exists, having that site does not denote quality of information, adequate service to the tourist or even that the tourist can find the Web site. A site on the Web merely indicates existence, an address among the other 19 million unique addresses as of January, 1996 (Lycos search engine). For some sites, today's site on the Web may be nothing more than a demonstration page awaiting future development.

In order to maximize the features unique to the Web and create a provider-tourist interface, two concerns must be addressed. First, there must be an identification of the existence of Web sites, or by default the absence, of national destination tourism information sources on the Web. In 1995, the Middle East had the highest tourism growth rate, followed by South Asia and East Asia (World Tourism Organization, 1996). The growth of these two regions might be reflected in the number of Web sites for those regions. Second, a systematic assessement of the Arrangement, Behavior and Content of each Web site needs to occur. Arrangement contains the elements of the address, the title of the home page and the relationship of nodes or "pages" and linkages. Behavior is a function of the multi-media components with which the tourist interfaces. Content examines the textual nature of the home page.

Subsequent sections of this Chapter further develop the concepts of 1) benefits of tourism information delivery, 2) intraindustry changes, 3) challenges of the Web, and 4) provider-tourist interface, followed by the statement of the problem. Research questions pertaining to the method of assessment are posed according to each of the criteria used to define the variables of this study, Arrangement, Behavior and Content.

Benefits of Tourism Information Delivery

The Web functions as an alternative channel of information distribution. Based on articles presented in the mass media, at professional seminars and at conferences, information delivery on the World Wide Web offers four benefits:
1) communication, 2) economic, 3) public relations, and 4) quality of service.

- **Communication**

Accessible 24 hours a day, the computer-mediated communication environment of the Web distributes information almost instantaneously, regardless of time zones, for both tourism information provider and tourists. The round-the-clock information not only provides a "virtual" office but also has the potential to save time for tourists by providing self-service information regardless of geographical origin delivery (Washburn, Dec 1995). In addition to the communication benefits produced without regard to locality, another benefit has been the increased communication within the Travel and Tourism Industry.

As a global, decentralized network, the World Wide Web transforms national borders to mere lines on maps. In the mid-1980s, international tourism-related businesses identified two obstacles imposed by nationalistic processes: 1) denial of market access to foreign companies, and 2) restrictions on transborder data flows, specifically reservation systems (Asher, 1984). The Web, as a boundary-free environment, has the ability to overcome past limitations that were imposed by restricted geographical distribution and reinforced by political policies, regulations and proprietary systems within the Industry. For example, on the Web in 1995, tourism information and reservation systems accessible to a tourist in North America also were accessible to a tourist in any of the over 100 hundred countries connected to the Internet (Network Wizards Internet Domain Survey, 1995). In October, 1995, Travel Web made available 3,000 hotel listings with "real time" access to rate and availability at no charge to the online tourist and had no plans to charge the tourist in the future. This information was formerly restricted to travel agents and typically contained within the borders of a country.

Intraindustry relationships are changing as a result of the new information flows. Disintermediation, the breakdown of traditional interactions between the tourist and the intermediary, has created concerted efforts by the intermediaries to redefine or retain roles and functions within the industry. For example, the Genesis Project was developed to address the concerns, needs and functions of 46 thousand U.S.A. travel agencies who, in 1995 after 30 years of stability, were facing competition from electronic ticketing that allows the tourist to directly reserve and purchase an airline ticket.

Other Industry players, such as regional tourism organizations, were using the Web in January, 1996 to functionally realize the universal purpose of government tourist offices to coordinate and foster activity within the Travel and Tourism Industry (Crouch, 1991). For example, Maine State Government (U.S.A.) maintained the Directory of Maine Tourism Businesses on and off the Web that included hyperlinkages to tourism-related intermediaries on the Web, as well as direct hyperlinkages to attractions, lodging establishments, restaurants, and sporting stores. Thus, the tourist was allowed to deal directly with the supplier. The New Brunswick Department of Economic Development and Tourism developed an online Outdoor Adventure Guide with hyperlinkages to local businesses that generated 3,000 inquiries per day in late 1995 (Shewchuk, 1996). Travel Southern Africa - the Complete Travel Guide had a response form in December, 1995 upon which was written that the sponsors of the site would be "....passing on your information to the correct party, . . . as they may not be on email." Thus, the network funneled the inquiries to local businesses that otherwise would not have been able to reach the Web audience.

Fostering a sense of online community at a Web site through tourist-tourist interaction, Maine's online chat forum and guestbook provided a platform for informal

information exchange. South Dakota (U.S.A.) Department of Tourism, as another example, offered tour guide scripts (escort notes) for operators as part of the "South Dakota Group Tour Planning Guide." Due to the nature of the Web, the guide was equally available to any online user, including a tourist interested in bypassing the intermediary and taking a self-directed tour.

Internal office communication may also benefit from a Web site. In July, 1995, the South Dakota Department of Tourism's online survey, which the researcher completed, electronically generated user-submitted mailing addresses. This online ability to capture a database of tourists' addresses not only increases the capacity to automate targeted mailings but also avoids the internal "little scraps of paper" record keeping problem of some U.S.A. tourism organizations' offices (Wicks, 1991). Moreover, for an organization or business, the information flow can increase the internal conveyance of information within a building or with regional offices (Loeb, Sept 1995). Thus, overseas tourism offices can receive up-to-date information and even current, real-time images and information from the home country.

- **Economic**

The decreased costs of paper-intensive functions of items such as brochures and tickets (Lennon, 1995) or mail-catalog intensive services (L.L.Bean catalog) are the beginning of a growing list of economic benefits being discussed in popular literature and are the sources of disussions on the future direction of electronic commerce. TravelNow's Director of Marketing is among those travel professionals who believe that the Web offers service at lower costs (Wasson, 9 Oct 1995).

The potential of an online site to cost-effectively reach audiences never considered (Rudyk, 15 Feb 1995) can allow for preservation or even expansion of

market share. Elaine Rubin (1995), manager of interactive services of 1-800-FLOWERS, told reporter Katy M. Bachman that the vision of the Web site was ". . . to make our services available anywhere and everywhere our customers want to reach us." Jeffrey Hoffman (1995), President and CEO of TravelLOGIX, asserted a similar corporate approach, referring to increased distribution points at minimum costs.

Incorporating a new product with future plans for online revenue, Destinations Magazine began online publication in October, 1995. On the Home Page, a banner advertisement that was externally hyperlinked to a travel agency announced "Win A Disney Village Vacation." As of January, 1996, the specified classified advertisement and sponsorship sections were under construction.

National Tourism Organizations (NTOs) have expanded the concept of coordinating and fostering activities within the Travel and Tourism Industry to include electronic commerce on the Web. In Fall, 1995, the Bermuda Department of Tourism coordinated the Bermuda Tourism Mall, a centralized access platform for commercial lodging and tourism related services. Also in Fall, 1995, Francescape, a cooperative effort by the French Government Tourist Office in the U.S.A. and France OnLine, had a membership application for Club France to be printed from the screen and sent through the regular mail with the membership fee. Francescape also provided advertising space for operators and other tourism service providers.

Whether the future direction of the Web or for National Tourism Organizations on the Web is towards commercialization is unclear. The unidentified authors of the article entitled "Dollars & sense—mind your business: marketing, management and advertising tips abound on these 15 sites" (NetGuide, 1 Apr 1995) began looking at the growing list of Web benefits by pragmatically examining 200 business resources.

As reported by John Markoff in the New York Times (20 Nov 1995, p. A1), "Few experts are willing to conclude that the Web has taken its place in the mass media because profitable business formulas have yet to be found." A team of reporters from Information Week and Interactive Age looked at electronic commerce case studies in retrospect and concluded that "Yes, there really is business on the World Wide Web. In fact, it's probably a whole lot bigger than most people realize" (Maddox et al., 4 Sept 1995). According to the report, $25 million was earned by just eleven online companies in the first seven months of 1995. Les Ottolenghi, Holiday's Inn Director of Emerging Technologies, told the reporters, "The company won't disclose reservations revenue from the Web; it's too early in the game."

- **Public Relations**

Having a site on the Web to improve strategic positioning is referred to in articles such as "20 Reasons to Put Your Business on the World Wide Web" (Net 101) and "Who should advertise on the World Wide Web?" (updated: 21 Sept 1995) by Werbal, Advertising and Marketing Consultancy. Werbal's list of who should be on the Web included travel agents and tourism associations.

The Web's potential as a public relations tool is attributed to the Web's ability to provide personalized information and interactive online communication as presented in "The Executive's Guide to Marketing on the Internet" by The Industry NET Marketing and Research Group. The use of interactive areas and form-generated information maximizes the features of the Web that allow for information to be generated by a third party, a distinction between public relations and advertising (Parrish, 15 Jun 1995).

- **Quality of Service**

Beneficial gains in productivity due to a Web site may or may not occur, but rather, the site may produce a beneficial increase in quality of service. In 1995, Travel Management Services boasted "ACCURACY, TIMELINESS AND RESPONSIVENESS" at their Bon Voyage Travel Web site. Travel TIME ™, Travel Information Center, a full service agency, used the Web's online ability to decrease response time. Increasing consumer awareness of agent availability, office business hours and phone contact numbers were posted online for tourists who wanted to talk directly to an agent. Travel Search took advantage of the interactive component of the Web to incorporate the tourists and businesses into a process for finding errors and updating information. The Travel Search databases were under constant reconstruction as a result of external feedback received online. In February, 1996, at the "How to Market and Sell Travel and Tourism on the Internet" seminar in San Francisco, California, U.S.A., Jeff Richards, senior consultant with Fleishman-Hillard, discussed quality assurance on the Web, including case histories of national tourism promotion.

Travel and Tourism Intraindustry Changes

The implementation and use of information technologies have impacted the dynamics of the channels of information distribution within the Travel and Tourism Industry, thereby causing intraindustry changes. Computer systems as external communication alternatives are changing the supplier-tourist relationship through direct electronic consumer interaction. In a restructuring of private-public roles, commercial funds are being used to provide tourism information independently of and in cooperation with publicly funded information sources. Three intraindustry changes

applicable to the Web include: 1) computer systems as external communication alternatives, 2) direct electronic consumer interaction, and 3) the restructuring of private-public roles.

- **Computer Systems as External Communication Alternatives**

In 1991, Morley asserted that potential tourists will restrict their destination choices to those about which they have some information. Brochures were recognized as a critical element of tourism marketing (Wicks and Schuett, 1991). In the United Kingdom two years after Gilbert and Houghton (1991) investigated the content of brochures and how the tourist filters information, Hodgson (1993) found that brochures in the U.K. resulted in 90% "wastage" rate. Such a high "wastage" rate challenged the effectiveness of investment and raised the question of whether alternative distribution channels would be more cost-efficient and effective.

Prior to the growth of the Web, Crouch (1991) asserted that computer information systems serve as determinants for competitive advantage. The ability of the potential tourist to have interaction with virtual graphic and textual elements was foreseen by Hrsuschka (1990) as being useful in delineating product attributes. Computer-assisted travel counseling, one means to reduce the large printing costs of brochures while increasing interaction with tourists, functioned and was analyzed under the assumption that the tourist had no direct access to the computer (Hruschka, 1990). Prior to the graphical interface of the Web, expert computer reservation systems were criticized for not providing information to travel agents or tourists on where to go, how to get there and what to do once there (Crouch, 1991). Even when the travel agent had access to informational computer databases, the role of the travel agent as a filtering intermediary was scrutinized. Michie and Sullivan (1990) had data

to suggest that international travel agents were unfamiliar with customer preferences and, as a result, were less effective as filtering intermediaries.

With the potential to overcome past criticisms of proprietary computer information systems and limitations of information content on what-where-how, the Web allows a tourist to navigate according to personal preferences. Textual, visual and audio elements assist the tourist in self-directed travel with and through the communications interface of the Web. The information search strategy is unique to the individual tourist's word choice, interests, and self-selected flow through the hypermedia environment of the Web.

Snepenger et al. (1990) investigated search strategies of various media by destination-naive tourists but this research was done prior to the introduction of the Web. The role of the Web in tourism information search strategies and as an effective alternative means for tourism information distribution offers areas of future research. The assurance and deliverance of quality tourism information, products and services on the Web are not automatic. As with any technology, the Web is a tool, subject to variations of effectiveness for information distribution as related to the consumer, intermediaries and businesses.

- **Direct Electronic Consumer Interaction**

On the Web, not only is "anyone with a modem . . . potentially a global pamphleteer" (Markoff, 20 Nov 1995), but also reservation systems are no longer exclusive, proprietary or restricted. In June, 1994, PCTravel began online air reservations and tickets with the Apollo system, allowing direct interaction with reservation systems formerly accessible only by travel agents. Ticketless airline reservation systems, such as used by ValuJet, are changing the means of

communication between travel supplier and customer, eliminating the role of the travel agent.

Disintermediation, the breakdown of barriers between supplier and customer as evidenced in electronic ticketing, allows for direct interaction and freedom by the tourist to choose elements of the trip itinerary, such as plane, hotel and restaurant. The increased freedom and sense of control have been suggested to enhance the tourist's feeling of satisfaction, resulting in a positive travel experience (Smith, 1994). What role traditional intermediaries, such as travel agents, will play in this global electronic marketplace is unclear. Whether Mansfeld's research (1992), which asserted that U.S. travel agents play an important role when tourists only have a vague destination preference, could be replicated with online customers would be for future study and remains outside the scope of this research.

With anyone potentially delivering information through the new unregulated and expanding channels of interaction of Web sites, how is a tourist assured of reliable and accurate tourism information, products or services of a supplier when the criteria of access to the Web is not restricted by size of company (Maddox et al. 4 Sept 1995), locality (Gerwig, 1 Jan 96), or experience in the Travel and Tourism Industry? Do the official coordinating bodies, such as associations, organizations and consortia within the Travel and Tourism Industry, have a role in protecting consumer interests in the diversified computer-mediated environment of the Web, where broad, interactive access is restricted only by voluntary standards of protocol? Likewise, how is a country assured of producing and reinforcing a positive image necessary to attract inward tourists and investors (Bramwell and Rawding, 1994) in the sea of 19 million URLs indexed by Lycos search engine in January, 1996?

- **Restructuring Private-Public Roles**

Public-private merges occurring within tourism marketing organizations, such as in Britain (Bramwell and Rawding, 1994) and in the U.S.A., reflect a worldwide trend towards privatizing government functions. Delegates at the White House Conference on Travel and Tourism in October, 1995 voted in favor of the dissolution of the publicly funded United States Travel and Tourism Administration and the creation of a mandated, privately operated Visit U.S.A., Inc., whose purpose would be to promote international travel to the U.S.A., potentially inclusive of Web site management.

John Rafferty (26 Sept 1995) of the Gulliver system in Ireland disagrees with the assertion that the private sector alone can successfully meet the needs of tourists, especially online. He believes that NTOs need to lead Web development with the purpose of coordination, definition of standards, removal of barriers and reduction of costs. Costs are incurred in Internet connection charges, monthly fees, telecommunications charges, staffing and maintenance of traditional marketing costs.

Even if the roles and functions of National Tourism Organizations are defined, the external players active on the Web can contribute to an NTOs image and information distribution process. For example, Kaimakis' dissertation (1995) on the creation of an online "Tourist Guide to Greek Islands," used information and pictures scanned from official brochures provided by the Greek National Tourist Organization. The dissertation appeared online and endorsement by the NTO was neither explicitly stated nor denied. Thus, the appearance to a tourist who follows a linkage to the site but fails to first access the "dissertation" preface node, is that the NTO provided the site and information.

What role will National Tourism Organizations play in creating "national" images given that Hunt (1975) stressed the potential significant influence of image upon the viability of that area's tourism development? Will National Tourism Organizations seek to have proprietary, closed systems entirely within their control or will the global marketplace favor coordinated, transnational approaches with multiple linkages to tourism related products and services, as well as to other nations? Within South America, some NTOs provide online linkages to neighboring countries but this is not the rule worldwide. At the White House Conference on Technology and Tourism, technology was referred to as a weapon to be used to increase competitive positioning of the U.S.A. as the international destination of choice.

In the political realm, the nation state is built upon a framework of treaties, organizations and international laws of voluntary agreement. Voluntary cooperation concerning electronic communications among National Tourism Organizations representing nation states has been slow. The World Tourism Organization (WTO) had not yet established standards or a fundamental framework for electronic global communication and cooperation in 1995. At the Eleventh General Assembly of the WTO in Cairo, Egypt in October, 1995, funding from the 1996-7 WTO budget, which was not increased from the 1995 budget, was committed to electronic resource development.

In 1996, the Pacific Asia Travel Association (PATA) Web site provided hyperlinkages to Web sites for membership countries. Appearing on the top of the screen with the listing was the following:

> The country information homepages on hypertext links have been collected from various websites. PATA does not assume responsibility for the information provided and members are advised to verify the information prior to use, except for pages done by national tourist organisations. PATA member NTOs are requested to send us information on links they wish to establish to improve on current experimental links.

NTO-sponsored linkages on the given page were not identified. The tourist, by hyperlinking to a national Web site, was responsible for identifying the site sponsor. The sponsorship of each country Web site was not readily apparent with some sites requiring additional hyperlinkages to discover sponsorship information. In some cases, such as China, the ability to identify the site required more than three linkages within the site. While NTOs were not identified before a hyperlinkage was made, the linkages to tour operators, hotels and travel agents were identified as such. The request by PATA for NTOs to voluntarily find the PATA Web site and submit linkage information to Web sites infers that PATA is unfamiliar with the actions of the individual NTOs. The last statement also indicates that NTOs may manage, endorse or support specific Web sites, including commercial and educational sites.

Challenges of the Web

The growth of the Web, as an unregulated, uncontrolled communications environment, has produced challenges that, like the growth, recognize no political or social boundaries. The constraints and opportunities of the Travel and Tourism Industry also are shared with other industries. The allocation of tourism resources and the continued implementation of Web technology will depend upon the challenges of the Web-at-large. The challenges, featured at the international Internet conferences, include: 1) economic, 2) legal, 3) security, and 4) technology.

- **Economic**

The quality of the supply of tourism information scattered about on the Web and the fear of future vulnerability to economic disadvantage in the global tourism market raise questions of fiscal and administrative responsibility of providing information. Doubt about how, or even if, customers will use the Information Superhighway (Hastings, 1994) has not deterred voices calling for an artificially accelerated deployment of information and home pages ("Your customers are looking for you on the Internet: are you there?" by Rational Data Systems, 1995). Given the uncertainty of customer demand for new technology like the Web (Hastings, 1994), the development of a self-sustaining business community and market unique to the Web (Pikes, 1 Jan 1996), and the privatization of government functions, should governments spend public funds to provide tourism information? In the article, "Hype and hooey clog superhighway," Crain (1994) highlighted a prevailing concern that perhaps this new technology ". . . will never be more than a niche player." Will the timing and level of demand by potential tourists match the development process of offering information and services in such a manner that the public investment costs of the Web can be recovered or justified?

Funding is necessary to research, create, implement and maintain a Web site. A case example of insufficient financial planning for adequate memory space, staffing and server capacity was the Toyota Interactive bulletin board on Prodigy. Toyota abandoned the project after realizing a lack of resources for maintenance, even though consumers wanted to access the board (Bachman, 1995).

Electronic commerce, as a means by which information providers can recover investment and/or produce revenue, has produced mixed results. According to "Who's Succeeding on the Internet and How?" (1995) by ActivMedia, online marketers'

perceptions and rewards ranged from despair to elation. From the section on "Sales Generated on the WWW," this passage explained the status in 1995:

> Online marketers come from companies of all sizes, with products and services of many types. Most of them are very new to the www; two out of three have had sites less than six months. Twenty-two percent of online marketers report their sites are financially rewarding; 40 percent expect their sites to be rewarding within one to two years. Fifteen percent state that they never expect their sites to be financially rewarding, but find them useful for information or PR purposes. Fourteen percent are either totally disappointed with the results of their online site or did not expect a financial return for 3-5 years.

- **Legal**

Whether the unregulated environment of the Web can remain so is unclear. In early 1996, the issue of electronic commerce was being closely linked to the role of regulation and the threat of government intervention into the electronic marketplace (Heyman, 1 Jan 1996). New laws on freedom of speech on electronic communications have appeared in U.S. states, such as Michigan and Connecticut (Eckenwiler, 1 Feb 1996). The ethical and legal use of copyright information is part of electronic multimedia law. The Copyright Clearance Center (CCC), a non-profit organization, provides online copyright licensing services to assist with U.S. copyright law compliance. The Web, however, is a global network without a centralized regulatory body. Data privacy, trademarks, copyright and freedom of expression are among the issues being discussed and addressed at conferences, such as at the Sixth Conference on Computers, Freedom, and Privacy held, March 27-30, 1996, at the Massachusetts Institute of Technology, Cambridge, Massachusetts.

- **Security**

In trying to answer whether doing business on the Web is worth the risk, the authors of the "Secure Web platform whitepaper: a new breakthrough in WWW application security", stated:

> Admittedly, the first shopping malls are beginning to spring up on the Web and many companies are at least considering applications that would be accessible to the Web. Nevertheless, the concern is **that application processing normally involves interaction with data and applications inside your own network.** That data is usually too sensitive, too proprietary and too valuable to risk exposure to the prying eyes of the Internet.

In June, 1994, David Dalva of Trusted Information Systems identified three components of "Security and the World Wide Web":

- threats the client software poses to the local computing environment
- access control and threats to servers
- authentication, confidentiality, and integrity issues.

The most popular solutions to the security issue at the end of 1995 included Netscape's secured software and SHTTP.

- **Technology**

On the Web, continuous operation of the site and host computer is essential to information delivery. The dependability of supply 24 hours a day at a level adequate to meet demand may denote larger technical capability and financial resources. Web Marketing Today offers an article online with a section entitled "How to Shop For a Local Internet Service Provider to Host Your Organization's Web Pages."

Objectives for the use of the Web, as a means for deliverance of travel and tourism information, goods and services worldwide, remain more than just challenges

of technological application, but also, are part of a technological bias based on inability to afford or acquire the technology. The supporting infrastructure required for the Web to exist requires investment. In a world of information economies (Rimmer, 20 Mar 1995) and where information is inextricably linked to the various telecommunications infrastructures, will those countries at the low end of telecommunications density and wealth be unable to join in the "tourism revolution on the Web," based on economic rather than technical constraints? What mechanisms are being created to protect equity and opportunity regardless of locality and economies? Will the private sector, in a capitalistic spirit of competition, adequately fulfill the obligations if any are defined?

Provider-Tourist Interface

A researcher wrote an article for Computer-Mediated Communication Magazine (December, 1994) on the challenges he faced as an information provider. His information resource list grew out of his doctoral work in May, 1992. The problems that he faced in presenting a list of information sources on information providers included identifying those providers, verifying the accuracy of the sources, formatting his presentation, improving the content, and expanding the context and activity within the site. The provider-tourist interface has similar concerns: 1) tourist-directed travel to the Web site, 2) identification of Web site sponsor, 3) information adequacy, and 4) beyond traditional promotion, marketing and advertising.

- **Tourist-directed Travel to the Web Site**

The first step of the interface, finding the site, requires active input by the tourist to navigate to the Web site. No comprehensive listing of sites, for the Web-at-large or for the Travel and Tourism Industry, exists and, as a result, finding information is regarded as one of the largest consumer complaints ("Web pages show

new marketing approaches, but offer no guarantees," 31 Jul 1995). Self-directed travel by a tourist to a site is a function of the Web site's Arrangement that includes the address and Title/Bookmark and the interrelationship of the Arrangement with search engines and external hyperlinkages to the site. The address, referred to as Uniform Resource Locator (URL), is a series of numbers and/or letters. Internet users see URLs both online and in print and, therefore, URLs have both textual and visual interfaces. The URL system is a functional part of being able to find resources.

Construction of the URL depends upon the agglomeration of subcomponents and the assignment of file names. The URL subcomponents may not be under the control of the site architect. For example, address domains are available on a first-come, first-serve basis excluding proven copyrights. Businesses are being advised to register a domain name "now" because the domain name may not be available in the future (Rational Data Systems, 1995). Many organizations entering the Web get a URL prior to having the format or adequate information, rather like buying or renting a small room along a trendy road just to have "presence" and "prestige." Wilson (4 Jan 1996), editor of Web Marketing Today, believes that a custom domain is necessary, especially given that as of the beginning of 1996 over 130,000 unique domains could be found on the Web. In response to quick solutions for a single address across a company or for names taken on other server networks, domain name services (DNS) companies offering domain names for a fee are developing.

Feeling the pressures of uncontrolled growth sparked from the rush for domains, the National Science Foundation in the U.S.A. started charging for domain registration beginning in late 1995 to cover the administrative costs of registration. Special subsidies for "edu" and "gov" domains continued (Cowles/SIMBA Media Daily, 14 Sept 1995). As the Registration Authority for the domains "edu," "gov,"

"com," "net," and "org", InterNIC has formerly expressed no intention of becoming a miniature enforcer for Patents and Trademarks, and issued a release (29 Jan 1996) on the Guardian Object Proposal that stated:

> The registration activity at the InterNIC has increased exponentially with the rapid growth of the Internet. In the absence of a formal authorization model, the likelihood of making malicious changes to the registered Objects has also increased and could have serious consequences at the affected sites. For example, an unauthorized update could lead a commercial organization to lose its presence on the Internet until that update is reversed.

Other Internet Registries linking Network Information Centers (NIC) include the Asian Pacific Region Internet Registry and the European RIPE Network Coordination Centre.

Once the domain is established, the remainder of the address needs consideration. At INET'95, Hoffman advised avoiding unnecessarily long URLs or including unexpected capitalization, unusual punctuation, and characters that are difficult to represent in print. Without one comprehensive directory of official travel sites on the Web, a simple method used and recognized to capture audiences, is to construct a URL containing commonly used words. Since the "www" is the predominate host, having the "www" as the beginning of the address is likely. English-speaking tourists would most likely add the word "travel" or "tourism," followed by the country code. The researcher initially tried this approach starting in late 1994 but did not locate any National Tourism Organizations (NTOs).

In the absence of an address, search engines are necessary to locate Web sites. Not all search engines use the same criteria. Search engines may use the URL and Title (World Wide Web Worm, WWWW). Other search engines incorporate keywords and subject categories (Yahoo and Magellan). For extensive searches, words from Web

pages or "full text" are added to the indexes (Alta Vista and Open Text). The results of searches also vary. Titles (WebCrawler), URLs (Lycos) or user-specified options including descriptions and provider-submitted fields (ALIWEB) are among the possibilities for results.

In addition to using search engines, collective listings of popular Web sites subjectively judged and packaged to be "hotlist" are used to locate information. Point Survey Top 5% distributes an icon to selected sites. The search engine InfoSeek maintains a guide to travel sites, displaying selected sites below a search-submission form interface. Lycos has a "What's Hot in Travel" hotlist formed from an adaptation of the top 250 sites on the Web. In January, 1996, a disclaimer noted that some sites were added where deemed necessary even though the sites were not among the top sites.

Users typically lack knowledge of overall structure of the site, and as a result, may become disoriented, thereby choosing to jump from a site to another site (Mukherjea, 1995). The role of the Title/Bookmark as an identification landmark can be to assist in navigation to the home page. The Title/Bookmark also can be used by the tourist to revisit a site but requires the tourist to actively add the site to a list located on the tourist's computer or disk.

Having external hyperlinkages to a site, including from search engines, requires an awareness and inclusion of a site by external entities. For search engines, user-submitted form submission interfaces allow for direct registration. Hyperlinkages from other sites can require reciprocal linkages, fees or icon representation for the home page rather than words.

- **Identification of Web Site Sponsor**

A Wall Street Journal article in May, 1995 stated, "Some of the best tourist information is right at the fingertips of many prospective tourists," and "all that's needed is a computer and access to the World Wide Web, a multi-media portion of the Internet" (Sandberg, 1995). Who is providing the information?

Commercial businesses, individuals, governments, educational institutions, non-profits and National Tourism Organizations (NTOs) were among those entities offering travel and tourism information on the World Wide Web. A sampling of Web sites in Summer and Fall, 1995 revealed that publicly available information from National Tourism Organizations and governments was being presented by individuals not endorsed, associated or affiliated with the official sources. A few examples of such sites included:

> The Bahamas! This individual sponsor was shown with the Prime Minister in June, 1995 but the disclaimer noted that this site, while containing some "official" information, was "not official."
>
> URL: http://www.gti.net/bahamas
>
> Chile. Benvenido a Chile . Sponsored by the Computer Science Department, University of Chile.
>
> URL: http://sunsite.dcc.uchile.cl/chile/turismo/turismo.html
>
> Cuba, Republic of, WWW. This WWW page was ". . . a personal, voluntary exercise of HTML programming by Davide Peis" and gave a large disclaimer button with a hyperlinkage to a page confirming that the site was not official.
>
> URL: http://www.unipr.it/~davide/cuba/home.html
>
> Tourist guide to the Greek Islands. This dissertation by Kaimakis, Agamemnon (Sept 1995) at University of Sheffield, United Kingdom used scanned images and text information from brochures from the Greek National Tourism Organization.
>
> URL: http://www.shef.ac.uk/~is/studwork/agis/tg-home.html

Slovenia. A systems manager used "adaptations" from "Welcome to Slovenia" published by the Ministry of Tourism in Summer, 1993.

URL: http://www.ijs.si/slo.html

See also Ljubljana.

URL: http://www.ijs.si/slo.html

Turkey. This site was authored by an individual, Melih Ozbek, using publicly available information from the Ministry of Tourism.

URL: http://www.metu.edu.tr/~melih/melhome.html

UNISA-South Africa. All documents on this site were not official.

URL: http://osprey.unisa.ac.za/0/docs/south-africa.html

Given that the foregoing independent efforts to use publicly available information with appropriate reference to the source were occurring on the Web, what type of information was being distributed by the National Tourism Organizations (NTO) and how was this information being presented? National official tourism Web sites for countries in North America did not exist in Summer, 1995. In Canada, local tourism organizations were responsible for providing regional information. A central listing of Canadian Provinces and Territories, accessed through the Government of Canada home page, linked to the regional governments or tourism entities when possible. In the U.S.A., the United States Travel and Tourism Administration (USTTA) of the Department of Commerce did not provide national information. Instead, USTTA provided endorsement to the development of the United States Travel and Tourism Information Network (USTTIN) which was developed and hosted at the University of Colorado at Boulder in Summer, 1995 before moving to an organization "org" domain. Mexico's Ministry of Tourism did not provide official tourism information until Fall, 1995.

Official sites in South America did exist in Summer, 1995. Argentina's official Web site for tourism had four very large graphic files and almost no text except for

non-English titles for the four pictures. With a bilingual Web site in early Fall, 1995, Peru had a site that changed in structure and format. Brazil also had a Web site in early Fall, 1995.

Within the European community, official tourism organizations on the Web included the Netherlands and Latvia. The Netherlands' home page, identified as Holland in the Title/Bookmark, changed both in graphic content and internal linkages after July, 1995. Latvia's NTO's single all-text welcome page appeared within a larger site whose relationship status to the NTO was never confirmed, defined or denied. Latvia's NTO's home page provided no external linkages, inclusive of the other tourism-related pages of the host computer. Switzerland, like other European countries, did not have official tourism sites until after September, 1995.

The Middle East and Africa faced high telecommunications charges and lack of physical infrastructure. Through the Embassy in Washington, D.C., Israel sponsored travel information in text format with few if any linkages. The travel information appeared on the same screen with recipes and required the user to scroll down, with most of the space given to the recipes. In August, 1995, the identification of only one site in all of Africa was a reflection of the lack of hardware infrastructure and World Wide Web access. In early Fall, 1995, South Africa's site was under construction, providing information on three, rather than a self-reported ten, geographical areas. During one week in late Summer, 1995, a travel preferences and attitude questionnaire designed by a university student appeared on the South Africa site but was subsequently removed.

In Asia, which had the largest visitor growth rate of any global geographical region during the past decade (PATA, 1994), at least three sites were cooperating with or using current and former staff of national computer boards and universities.

Accesses to those sites in Summer, 1995 included multimedia components such as server-push animation on the Thailand NTO site, audio and video on the Singapore NTO site, and extensive photos on the Japan NTO site. The Malaysia official site had a clickable map.

- **Information Adequacy**

Beyond finding a site, an interface concern on the Web is the mass amount of public and industry participation in the information distribution decisions being made without mechanisms to protect and incorporate the tourist or traveler. Given the decentralized unregulated environment and increased access provided by growing numbers of hosts, the Web has been criticized for being "unorganized" (Calcari, 1995) and "polluted" due to ". . . masses of potentially misleading and speculative information" (Gordon, 1995). Even the official tourism sources that in past research studies ranked high in terms of credibility and quality (Mansfeld, 1992) have acquired a new cyberperception.

One of the Web's first commercial sites with an estimated 400,000 readers and over 180,000 registered subscribers, the Global Network Navigator, Inc. (GNN), offers the GNN Travel Center, which provides brief editorial descriptions of various tourism sites. Allen Noren, the curator of the GNN Travel Center, told the Wall Street Journal in May, 1995, "When tourist authorities put up tourism information, it's usually just drivel. The real value is from the individual." Individuals can exchange tourism information through email listservs, newsgroups, guestbooks such as Maine's Tourism Guestbook, or personal home pages. In late 1995, the big three commercial companies (America Online, Prodigy, and CompuServe) announced intentions to offer personal home pages at no additional charge.

External to the control of the NTO is the interface the tourist has with other sites, such as the GNN Travel Center or sites quoting NTO information such as those previously described. In June, 1995, an online GNN TC editorial read, "Although put up by the Board of Tourism, this nicely organized page is full of useful information for travelers of all budget levels." An August, 1995 entry read, "The Internet is experiencing an influx of increasingly well crafted 'official' tourist sites, and this one for (deleted for this study) is another." The image and the perception, whether right or wrong, is a strong factor in tourism development (Hunt, 1975) and if GNN's or Noren's perception is one shared by others, the ability of policy-makers to plan and guide tourism development may be "polluted" or rendered less effective due to the image and product development of their online sites.

At a time when the Web was first developing, Rick James (1994), the Senior Vice President of Sales and Corporate Relations for Princess Cruises, stated that "those who do well will be those who position themselves as somebody who provides more information than the competitor at a value." Providing travel and tourism content to the Web audience requires that the information is available to everyone and not restricted to a specific network (Gilder, 1995).

- **Beyond Traditional Promotion, Marketing and Advertising**

Publishing on the Web is not the traditional glossy magazine or brochure approach of the past. As an article in US News and World Report stated, the Web user typically has ". . . little patience for 'brochureware,' advertisements that are thrown up like so many billboards" (Sussman and Pollack, 13 Nov 1995). Marketers and advertisers alike have been accused of and warned not to try offering hype rather than valuable content (O'Reilly, 1995). David Vis wrote an article in Travel Weekly (9 Jan 1995, p. 40) entitled, "Online advertisers should provide information, not hype."

Visits to travel and tourism Web sites in Spring, 1995 revealed postcards, directions, pictures of food choices, hotel listings, prizes, photos and diaries.

The definition and application of promotion and marketing take on new dimensions on the Web because "the Internet communication model cannot be compared to any other distributed medium in the history of civilization" (Payne, 1995). In Cyberspace, the "P's" of marketing - product, place, price, also includes "promotion marketing," where the definition between promotion and marketing becomes so blurred as to be interconnected. Baum (1994) pointedly discusses the past interchangeability without definition of "promotion" and "marketing" in tourism literature and, be it fortuitous or not, the Web complicates rather than clarifies the issue.

What are the travel and tourism information sources doing, rather than just presenting, on the Web? According to Master Card International, as reported by Associated Press' Dave Skidmore (26 Jul 95), more than 25,000 merchants in 150 countries were already selling or advertising on the Internet in 1995. At Travel Distribution 2000 in September, 1995, Helen Edelstein, Internet Project Director for Holiday Inn, revealed that Holiday Inn will add QuickTime to show hotels.

Updating an article on online advertising rates in the April 15, 1995 issue of Interactive Publishing Alert, Resnick (1 Aug 1995) justified the need for a second article in such a short time period because "in just a few short months, the online advertising market has exploded from almost non-existent to practically ubiquitous." Citing Interad Monthly, he echoed the predictions that "online advertising placement will grow from $10 million to $15 million in the first six months of this year to as large as $440 million by year end." That estimate did not include $80 million to $100 million for Web design and creative services. If half of the leading 200 corporate

advertisers planned to have an online presence by year end, according to Webtrack as cited in Resnick's article, what is the future for information distribution within the tourism field? Updated listings of travel, hotel and resort advertisers on the Web can be found at WebTrack.

The assertions within mass media and by businesses that the interactivity of the Web is being realized for purposes beyond traditional forms of marketing and advertising or as a multi-format platform for information have been questioned (Hertzberg, 10 Apr 1995). In the article "Industry not actively pursuing ads either on company sites or to attract users" (Interactive Travel Report, 18 Apr 1996), the unidentified writer remarked upon the perception that the Travel and Tourism Industry is rapidly changing with online efforts. The writer stated, "A look at current advertising efforts by much of the travel industry active in electronic marketing and sales shows how misleading that attitude can be. Even companies that have had an interactive presence for years are only now looking at how to accept ads at existing Web sites or how to make others aware through ads that the sites are available." Not only are the online efforts falling short of the expectations, but also, the writer stated, "Active Web marketers are not doing an effective job getting mention of their sites out to others in the industry through more traditional advertising, either." As indicated in the article, the result, deriving from the difference between traditional advertising and advertising in interactive media, has been the lack of both the awareness of sites and the attraction of customers to sites.

Writer and consultant Christopher Elliot (18 Apr 1996) took a transnational stand in his article, "Is Europe taking the lead in interactive travel?" In the article, Elliot asserted, "Judged by their present efforts, many American travel businesses believe

the Internet is nothing more than an experiment, a sideshow to their current enterprise," and then added, "But the Europeans are online for good."

Several questions develop from the realm beyond traditional marketing and advertising. What are sponsors doing to position sites on the Web? Can the sites be found using the search engines? Can the information within the site be located? How are the interactive multi-media components being used, or even more fundamentally, are the components being used? Yet another question, based in concerns of the Travel and Tourism Industry, would be the utility of the information and the ability to overcome past restrictions of transborder data flow, especially those for flight, hotel, and tour bookings and billings (Baum, 1994). Does the nature of the Web overcome these restrictions by allowing essentially seamless information flow and service to occur across national borders?

This study incorporates the concerns identified by December (1 Oct 1994) when providing for information resources at a highly-visited site. The identified concerns offered opportunities to improve and modify the site for expansion and continued existence. An analysis of sites for strengths, weaknesses and problems could improve the ability to find, identify, access and utilize information. More specifically, the foundation of all sites, the Arrangement, Behavior and Content, could be manipulated to strategically position the site and facilitate information exchange. Background information from research literature and detailed descriptions of the three variables (Arrangement, Behavior and Content) of a Web site are set forth in Chapter Two.

Statement of Problem

The Web does not have a centralized structure and, as a result, finding and locating information can be problematic. Once the information is found, the ability to access the information is reliant upon the interactive components and computer-mediated interface design, which are within the complete control of the site sponsor. The information once accessed may or may not convey the purpose, identify the sponsor or provide a utility of content. Web developers have created sites without a clear understanding of what other sites are doing, how to *arrange* the information, how the information *behaves* or what the utility of *content* of the home page is.

The Problem

A systematic method of assessment of World Wide Web is needed to address the three common concerns: 1) the ability to find and identify information, 2) the ability to access information, and 3) utility of content. Each of these three concerns is linked to a variable (Arrangement, Behavior, and Content). *The development and application of such a method of assessment of World Wide Web sites is the focus of this study.*

- **Ability to Find and Locate Information [Arrangement]**

The unique features of the Web as an alternative channel of distribution enable the presence of a Web site to support behavioral multi-media components that allow for increased interactivity and access to information. In the absence of one centralized indexing system for the Web or a single point-source coordinating site for the Travel and Tourism Industry, finding a travel and tourism-related Web site requires prior knowledge of an address, the use of a search engine or random "surfing" through the

various linkages until a site is found. External linkages, those linkages maintained on a site other than the destination to which the linkage is made, are not monitored and can occur on external sites without the knowledge or permission of the sponsors of the Web site to which the hyperlinkage is made. If a site is to be found through random "surfing," the site needs to be included on external sites throughout the Web-at-large. To a large extent, the identification of these external "random" links is beyond the reasonable control of the sponsor of a site. Linkages resulting from payment to external sites to include a hyperlinkage is also beyond the scope of this study.

To maximize the ability to find a site and locate information, the site must be arranged such as to provide an interface with search engines and to provide a cognitive framework within which internal site navigation can exist. The layout of the site with reciprocal linkages to external sites also can promote increased awareness of the site to those who "surf" or who access related Web sites. External linkages to other Web sites with reciprocal linkages back to the site of origination increase the frequency of occurrence of linkages to the site, irrespective of the search engines. Thus, increasing the means by which to access the site increases the probability of finding the site. The ability to find and identify information constitutes the Arrangement Variable.

- **The Ability to Access Information [Behavior]**

The performance of the site functionally determines the overall ability to access information and includes multi-media components which display or convey the information through text, graphics and/or audio. The unique feature of interactivity on the Web creates an opportunity to provide a computer-mediated environment designed to promote information exchange between the site sponsor and tourist, and/or amongst the accessors of the site. The essence of the performance and interactivity give rise to the Behavior Variable.

- **Utility of Content [Content]**

The information, especially that upon the first node known as the home page, is the cornerstone to identifying the site's purpose and sponsor. The home page acts as a gateway and landmark. The home page needs to convey the "who," "what," "where," and "when" of the site. The "who" is the identification of the sponsor and/or the audience for which the site was created. The "what" is the identification of the subject or topics of information contained within the Web site. "Where" identifies and reinforces the tourism destination by name. "When" provides an idea of the reliability of the information across time. What is the current relevancy of information, such as prices, regulations, holidays and addresses. The utility of Content forms the foundation of the Content Variable.

Research Questions

The research questions focused on the three variables:

- **Arrangement**: Can a search engine be used to find the site? Can the site be identified by the search engine's results? Are the relational hyperlinkages within the site hierarchical in nature or dispersed? Does the site have a closed set of hyperlinkages or does the site incorporate external hyperlinkages?
- **Behavior:** Do multi-media components of audio, sound, navigation devices and interactive areas provide access to information? Does the site serve as a platform for information exchange among those accessing the site?
- **Content:** Is the information source provider identifiable? Does the site target a particular market audience by explicitly referring to that audience on the home page? Are the words "travel" and "tourism" used to convey the purpose and

sponsor of the site as a travel and tourism information provider? Is the country identified on the home page?

Delimitations

This study was delimited for application of the method of assessment to Web sites by official tourism source providers of Asia nations prior to and including July, 1995. Official tourism sites on the World Wide Web were defined as those associated, endorsed, financed or authorized by National Tourism Organizations, Boards, Authorities, Departments, and Ministries. Official sites also included government sites with tourism nodes regardless of the presence of an official tourism entity in that country. Co-sponsored sites with educational, commercial and non-profit organizations were also included.

Definitions

The following operational definitions were used in this study:

Arrangement - the structural layout of a site and the positioning of a site for locality and searchability; includes the spatial and temporal relationships that govern external navigation to and from the site, as given in the elements of Uniform Resource Locator, Title/Bookmark, and layout of nodes and linkages.

Behavior - the interactive performance of a site based on multi-media components, such as internal navigation devices, audio, video, forms, and interactive areas.

Communications Interface - interaction with and through an electronic medium, such as with the computer.

Content - the words appearing onscreen as displayed by a graphical browser adhering to the 1995 voluntary standards of HTML 1.0.

Domain - components within the Domain Naming System for the Internet.

Home Page - the Uniform Resource Locator consisting of the host name and/or "index" file or the node identified either explicitly or inferred through access ["All other pages on a server are usually accessible by following links from the home page." (On-line Dictionary of Computing)].

Landmarks - attributes, either graphic icon, menu bar or text, that serve to establish points of reference for the user.

Navigation - self-directed travel by the user from node to node when on the World Wide Web.

Presence - the existence of a site on the World Wide Web.

Site - all nodes relating to tourism that can be accessed from the home page through one or more links and that are created from files residing on one host computer.

Basic Assumptions

The existence of English-language World Wide Web sites related to tourism at a national level by official sources is assumed for countries in Asia as of July, 1995.

Limitations

Neither the expected value of outcome of investment nor the impact of the Web site on the change of tourist market share as a result of a Web presence was evaluated.

The data and procedures in this study reflected the status of the Web in Summer, 1995 and may or may not reflect or be applicable to site, protocol or technological developments of the Web in the future.

CHAPTER 2

LITERATURE REVIEW

The Web has been identified as a distribution channel (Chatterjee, 1994), as both a medium and a market (Hoffman and Novak, 1994), as an environment, and as a mode (Falk, 1995). As a distribution channel, the Web can lower barriers to market entry, increase the irrelevance of distribution intermediaries and function to accelerate market changes (Chatterjee, 1994). The Internet Group suggests that a paradigm shift is occurring to "delivering value" of interaction, new markets and quality.

The Internet communication model cannot be compared with any other distribution medium in history (Payne, 1995). Comparing the Web to the discovery of America, Falk (1995), of the Department of Science and Technology Studies, University of Wollongong, Australia, described the Web ". . . as new territory to be discovered and colonised by others." Indicating the restructuring of public-private roles and the incorporation of "new agents of change," Falk wrote, ". . . governments increasingly have been forced to create supra-national organisation." Moreover, in response to the transnational flow of technology, ". . .governments now find themselves one of many actors in what is increasingly a single, integrated world market."

Addressing the trends of having a corporate presence on the Web, Duffy and Palmer (1994) placed emphasis on factual Content and quality presentation. More complex features and in-depth Content were discouraged for incorporation on the home page; tourist self-directed exploration of the site should be inspired by increasingly complex linkages. This "invitational publishing" is reliant upon the quality of Content and the mapping of the information. The advice was subjective, based on the assumptions that the first audience consists of opinion leaders and the second audience of casual users, the "surfers," who are not the intended audience. Duffy and Palmer identified that ". . . slick mass-market ad copy and execspeak PR (public relations) spins simply won't play in this quarter" (/part2.html).

At the 4th International World Wide Web Conference, Steve Fink, Marketing Development Manager, Digital Internet Business Group, spoke on the radical change for businesses and the new ways that consumers are interacting with businesses on the Web. Bachman (1995) suggested that "what gives the new media its promise is . . . the new roles played by both the consumer and the marketer." Brian Ferren, Senior Vice President of Creative Technology for Walt Disney Corporation (Keynote Address at the 4th International World Wide Web Conference), strongly asserted that developers need to reflect upon the communications interface to understand what the users are ". . . interfacing to." (QuickTime of his speech). He likened the state of the Web in 1995 to an "Institute for the Aesthetically Challenged" with "bad design" being the most common Web design.

Comber (1995) gave "specific guidelines" for "Building Usable Web Pages: An HCI Perspective" at AusWeb95, the First Australian WorldWideWeb Conference. The first guideline was Content as applied to the Title and to the context and length of the Web document. The second guideline recommended providing adequate visual

appearance through the use of formatting and limited use of graphics or objects, quoting a maximum number of seven objects per document as a general rule. Navigation, as the third guideline, was recommended to reduce cognitive confusion by the user. The "click here for information" linkages were criticized for being useless to the user or redundant given that any hyperlinkage is inherently a "click" for more information. Testing was the final guideline and consisted of checking links on a regular basis, making sure the system functioned properly and gauging access logs, implying that access logs need to be maintained.

At the Second International World Wide Web Conference in 1994, Andrew Fry, the Vice President, Director of Projects at Free Range Media, Inc. presented "Publishing in the New Mass Medium: Creating Content on the Internet." Fry raised the issues of Content growth versus audience growth and the lack of central organization of information. The three factors of success include developing a recognizable look, providing quality information and building an "information community" through interactive features.

Hoffman and Novak (1994), at the Owen Graduate School of Management, Vanderbilt University, asserted:

> Despite the massive amount of attention given to the Internet in the popular press . . . and any of the 1,526 references to the Internet in ABI Inform through August 1994, and the belief in many business circles that the Web represents a phenomenal marketing opportunity, to date virtually no scholarly effort has been undertaken by marketing researchers to understand hypermedia CMEs (Computer-Mediated Environments), both as media for marketing communications and as markets in and of themselves. (section1.html)

Hoffman and Novak also indicated the absence of literature regarding marketing on the Web:

> . . . we do not provide an exhaustive review of the extant marketing and consumer behavior literature as it relates to new media environments. Indeed, although there have been recent scholarly efforts detailing the impact of new information technologies on marketing (notably compiled recently in Blattberg, Glazer, and Little 1994), there is a dearth of research on the impact that hypermedia CMEs such as the World Wide Web hold for marketing theory and practice. (section1.html)

Key concepts in the paper by Hoffman and Novak included the properties of network navigation, interactivity and perceived behavioral control. When the speed and range of interactive components combined with ease of use and "mapping," the ability to access information was believed by the investigators to increase.

This Chapter reviews the literature of the communications interface of the Web as associated to three research variables: Arrangement, Behavior, and Content. The three research variables, used in this method of assessment of Web sites, were derived from the concepts in the foregoing literature and were operationally defined in this study as:

Arrangement - the structural layout of a site and the positioning of a site for locality and searchability; includes the spatial and temporal relationships that govern external navigation to and from the site, as given in the elements of Uniform Resource Locator, Title/Bookmark, and layout of nodes and linkages.

Behavior - the interactive performance of a site based on multi-media components, such as internal navigations devices, audio, video, forms, and interactive areas.

Content - the words appearing onscreen as displayed by a graphical browser adhering to the 1995 voluntary standards of HTML 1.0.

Arrangement Variable

Inbound tourism destination management requires not only management of the product but also concurrent efforts to increase inbound visitation rates. In Cyberspace, strategic efforts are needed to increase online visitation rates—"suppose you built a Web site and nobody came" (Klein, 17 Jul 1995)? To increase access to the site, the sponsor needs to maximize the Arrangement of the site.

Arrangement is the strategic positioning of the site such that a tourist could locate a site and cognitively follow the layout of the links and nodes within that site. Three common tools used in 1995 to locate a site included: a) the Uniform Resource Locator (URL), b) searches, and c) hyperlinkages from another site, an external factor not addressed in this research. Search engines and site-sponsored databases functioned according to the word choice and language identified by the tourist and tourism provider. Search criteria included, but were not limited to, the URL, the Title/Bookmark and the file's Content . The Title was one element of Arrangement used in locating a site because some search engines used and reported the Title. The Uniform Resource Locator and the Title were elements of the visual interface. A third interface element within the Arrangement Variable was the relational structure of the nodes and linkages of a site. To maximize the Arrangement of a site, the three interface elements of the Uniform Resource Locator (URL), Title/Bookmark, and the layout of linkages and nodes, needed to be considered.

Uniform Resource Locator

The Uniform Resource Locator (URL) was an exact textual interface intolerant of change and which was unique to the information of each provider. The URL allowed a client to find a desired server according to a protocol ("Le Web en dix points

cardinaux," 1 Jul 1995) and could be displayed by a browser as a "Location" or "Address." Some search engines displayed the URL as part of the results. URLs also appeared in print on business cards, advertisements and onscreen on other Web sites. As a standard, the URL was ". . . the syntax and semantics of formalized information for location and access of resources via the Internet" containing subcomponents specified in the 1994 Proposed Standard: Uniform Resource Locators (URL) (Berners-Lee et. al. 1994): access protocol, host computer, port of data request, data path, and file name.

The access protocol included, but was not limited to, hypertext transfer protocol (http). The host computer contained "the fully qualified domain name of a network host, or its IP address as a set of four decimal digit groups separated by (a period)" (Berners-Lee et al., 1994, p. 5). The domain name required international registration on a first come-first served basis. The selection of the name was within the control of the information provider but if the requested name was unavailable, another domain name had to be selected. Ralph Wilson (1996), Editor of Web Marketing Today, suggested domain names be memorable and limited in length. He also recommended that words be pronounceable and directly related to the topic of the site. For the Travel and Tourism Industry, domain names of or containing the words "travel" and "tourism" should have been common but no systematic research was identified in the literature on the frequency of the words in domains or the nature of the entities with those domains.

Jakob Nielsen (1995), Distinguished Engineer for Strategic Technology at SunSoft, advised attendees of the 4th International World Wide Web Conference to make the URL logical, using only lowercase letters to avoid typing errors or hard to remember capitalization. Typing errors of the URL or an incorrect URL could have

resulted in the status code warning messages of "NOT FOUND 404," "FORBIDDEN 403" or "FATAL ERROR 500" (Bernstein, 1 Sept 1995).

Title/Bookmark

The Title/Bookmark was another textual and visual interface. The Title/Bookmark could be used to identify a site in the results of some search engines or within a user-generated listing housed on the tourist's computer (Fry, 1994). The Title/Bookmark was within the complete control of the Web site developer. Thus, official tourism sites were able to determine the words, language, length, and character set.

At the first Australian World Wide Web Conference in early May, 1995, Comber presented his paper, "Building usable Web pages: an HCI perspective paper." Comber recommended that the Title be short because of display and storage of characters. The conclusion, while initially logical given the width of characters that can be displayed in some browser's Title/Bookmark window, was of limited value because of the over simplicity. Character limitations on the Title without regard to the function of the Title as keywords for searches by spiders and for site identification could have resulted in ineffective site identification. Comber suggested that Titles be repeated on the contents of the home page in large type. The scale of font tends to be a discretionary function of the creative designer and greatly limits new approaches while promoting a generic format answer without proven effectiveness.

On the tourist's computer, user-generated listings known as "Bookmarks" displayed the "Title" of the page and allowed for a "one click" access return to that site. The Title/Bookmark list had the potential to be lengthy and identification of a Title/Bookmark was necessary for site retrieval.

Structure of Nodes and Linkages

The graphical interface of linking nodes or "pages" together was the online interaction by the tourist with hyperlinkages. Hyperlinks appeared as printed words in a different color, as a graphical icon or as an image. In this study, the use of graphical interfaces as a tool to locate information applied to the existence of external linkages from, not to, an official tourism site. External linkages to an official tourism site could have been made on any site on the Web without the knowledge or permission of the official tourism site. Creating linkages from other sites to the official site could have been accomplished by voluntary cooperation, reciprocation, submission to free sites and payment for space, and could be an area for future research.

The structure of linking nodes was the layout of the site. Since nodes and links could be arranged nonlinearly, unlike printed materials, the structure of Web sites was not restricted to hierarchical systems. Likewise, the number and direction of linkages to any given node were unrestricted, unlike a book or magazine that allows for only two pages to "link" in a linear fashion. Web nodes and links resembled the steric Arrangements of atoms and molecules without the restriction of the number of bonds.

Persistent problems across browsers have been the users' inability to find things and the tendency to become lost. Entering a site through the home page, the initial menu for most sites, was not necessarily automatic and should not be assumed. Linkages may have brought the accessor, such as a tourist, to the site at another node other than the home page. Just like the traveler with a map in hand on an unknown street corner, the user had the potential of becoming disoriented. This lack of overall comprehension contributed to the questioning feelings of: "Where am I?", "How did I get here?", and "How do I get to where I am going?" Very few sites provided a map or overview of the extent and structure of the nodes and linkages. Browser technology

could change in the future and incorporate a mapping system upon arrival at a site. If sites were likened to buildings, distinguishing between a skyscraper and a one-story building was not possible until you physically explored all the floors. Thus, upon first encounter with a site, a tourist could not have determined how large or limited a site's linkages were unless the site itself defined and mapped the files contained therein. According to Duffy and Palmer (1994), attracting and holding a tourist ". . . will hinge on the content's accuracy and utility, as well as how efficiently it's arranged and mapped."

In the 1995 American Internet User Survey, the number of sites explored in-depth by users was less than ten. Researching user interface, Catledge and Pitkow (1995) used a spoke and hub structure to describe the internal structure of textual linkages in their study site. The summary finding that only a relatively small interactive area was explored did not offer insight into the reason for this limited exploration. Speculation on the reason included lack of Content , boredom, or disorientation alleviated by leaping from the site.

The differences between sites with no external linkages and sites with external linkages remained unclear. Completely closed systems were "self-contained" sites that provided only internal hyperlinkages. In a "closed loop" hyperlinkage structure, only internal hyperlinkages were included. External hyperlinkages were only possible through the browser buttons. "Open" sites offered a range of external hyperlinkages. Hall (15 Jan 1996, p. 162) perceived a requisite of a Web presence to be an ". . . overabundance of hypertext links to ever imaginable corner of the Internet." External hyperlinkages raised concerns of the ability to identify the source of any given linkage and to navigate across multiple sites that may or may not have offered navigational linkages back to the site of origin. External linkages from other sites to the

official tourism sites were not included in this study but external linkages from the official tourism site to other sites were included so as to identify the role of the tourism site in facilitating information flow in the Travel and Tourism Industry.

Behavior Variable

The Behavior of the Web site was a function of how the multi-media components performed and the existence of an internal navigation system. The performance of a site and the development of a community, regarded as very important for tourist retention and repetition to the site, depended upon the level of interaction with multi-media components (Hall, 15 Jan 1996). Hoffman and Novak (1994) defined the vague terms of quality and interaction more specifically as interactivity with, not through, the medium using the concept of perceived behavioral control and network navigation.

To better understand multi-media, Hoffman and Novak introduced several concepts: machine- interaction (interactivity with the medium), telepresence, hypermedia, and network navigation. Navigation in their study incorporated the concept of flow. The antecedents of interactivity were defined as the variables of ease of use, mapping, speed and range. The interdisciplinary approach and defense gave support to their argument that "a new paradigm for marketing is required in which the marketing function is reconstructed to facilitate electronic commerce. In many cases, the differences are so great that conventional marketing activities have become transformed and cannot be implemented in their present form." The concept of telepresence, as the interactivity with the medium, incorporated the elements of the range of multi-media and the perceived behavioral control the user has in the environment.

At the first Australian World Wide Web Conference in early May, 1995, Comber used the words "useability," "learnability," and "memorability" as the framing concepts to construct visual and audio guidelines for Web site development. Like Hoffman and Novak, he identified the need to establish expectations for the user. Comber did not specify "flow" when he referred to the need to establish expectations regarding multi-media functions. He suggested that developers define the size of files and, thus, downloading time, for the consumer. He did not provide substantive research to support the suggestions.

At the Second International World Wide Web (WWW) Conference '94, Andrew Fry also expressed the same concern regarding downloading time as related to interactivity and Behavior of the document. The advanced multi-media elements can be counterproductive for a tourist who grows bored or who cannot operate the multi-media. At the 4th International World Wide Web Conference, Jakob Nielsen (1995), Distinguished Engineer for Strategic Technology at SunSoft, asserted that a conservative approach of no graphics is better than having bad graphics.

In Fry's opinion, increasing levels of interactivity promoted and enhanced user participation. This online participation with a site developed a sense of community that was stated to be crucial in attracting and keeping the user. The Web's ability to support interactive community areas could enhance a site, but at the same time, the increased community information flow could negatively impact the success of a site. Bill Tobin, President of PC Flowers, told reporter Katy Bachman, "If interactive consumers are unhappy with your service, they have the ability to log on to a bulletin board and inform millions of other members how unhappy they are with your service and what a terrible job you have done." In 1995, online tourists had the ability to place a site on one or more of the "Blacklist of the Web."

Content Variable

The importance of the quality of the Content (Duffy and Palmer 1994, Fry 1994; and Comber 1995) was associated with the wording, identification of languages, and type of information provided. Bill Holland (1994), an official at AT&T Bell Laboratories, stated: "It's no longer a question of systems administration, but of quality control on documents." In 1996, the role of Content , how much and what type, had changed since the early days of the Web in 1993. Jakob Nielsen (Jan 1996), SunSoft Distinguished Engineer, wrote the following for The Alert Box about the change in Content of Web sites:

> The main thing in 1994 was to show users how much information you had. This was the year of home pages that were no more than glorified hotlists with long bulleted lists of links. At this relatively early stage of the Web, people were still easily impressed by anybody who had real, useful content.
>
> The preferred style for home page design in 1995 was to provide a clear sense of priority for the user and to showcase a small set of high-quality information, recognizing that users normally cover no more than about five pages when they visit a site.

Nielsen predicted that 1996 will be the year "most users will probably spend the majority of their time with a small number of Web sites that meet their requirements with respect to quality and Content ." The foregoing was published after Nielsen was the Chair of the panel debates on cool and content at the 4th International World Wide Web Conference in Boston in December, 1995. One panelist, Jennifer Nieters of Sonline Studios, felt that entertainment could coexist with Content . Jonathan Rosenberg of C/NET, a site with 700,000 hits a day staffed by 15 to 20 employees, advocated "contentful" sites, meaning structural consistency with frequent updates and automated customized interaction areas.

In an article in Interactive Age on Content Experts, Hertzberg (10 Apr 1995, p. 14) wrote that the ". . . Web is an entirely new medium, and nobody is an expert at creating material for it." Unlike print media, the format and the Content of the site cannot be controlled across all users. White space, placement of text and images, size of font, colors and even character display and language translation were not consistent or finitely controllable.

Rosenberg (1995) presented five concerns for Web sites:

- it's hard to re-use content
- there are no semantics for building relationships within content
- there are no style sheets in HTML
- programmers cannot maintain both format and content
- automation is problematical - because we are missing semantic relationships.

Will format prevail over Content or is Content more valuable than format? Are format and Content intertwined? At the Second International World Wide Web Conference, Duffy and Palmer (1994) presented "factual content IS the message: if substance is yin, then style is yang."

The foregoing concerns focused on the language protocol. With new languages being introduced and accepted, such as the copyrighted Java, information providers must determine which one of the languages to use or if to use several on multiple sites. Zhang, (1 Aug 1995, p. 59) advised: "Sticking to HTML standards, along with those Netscape extensions included in the working drafts of HTML 3.0, would be the wisest choice for Web designers."

CHAPTER 3

PROCEDURES

Travel and tourism information on the World Wide Web has grown during 1995 with individuals, businesses and governments gaining access. To address the concerns of how to find, locate, access and utilize information, a method of assessment was developed and applied to tourism World Wide Web sites.

This Chapter defines the study population according to four criteria and describes the method of site identification. The data analysis procedures are divided into the three variables: Arrangement, Behavior and Content. The quantitative and qualitative units of observation are contained within the elements of the three variables and subsequently are described according to each variable.

Study Population Definition

The official national tourism Web sites were delimited according to four criteria: 1) sponsorship, 2) language, 3) geographical location, and 4) time period.

Sponsorship

As discussed in Chapter One, the number and extent to which National Tourism Organizations were represented on the Web prior to and during Summer,

1995 was limited. This research defined official sources of tourism information to be inclusive of Tourism Bureaus, Ministries of Tourism, National Tourism Organizations, and Boards of Tourism. Travel and tourism information sites provided by these entities alone or in cooperation with other entities, be they public, private or academic, were included. The study population included one territory, in the absence of a tourism Web presence for that nation.

Language

Only official Web sites in English were included.

Geographical Location

In 1995, the two fastest growing regions included the Middle East and South Asia. No Web sites for the Middle East were identified and confirmed for analysis.

In regard to the growth of tourism in South and Northeastern Asia, the World Tourism Organization (Feb. 1996) reported:

> South Asia was the second fastest growing tourism region of the world both for tourist arrivals and tourism receipts. International tourism in the region was spurred by strong increases in tourism flows to India and a sustained growth of long haul leisure travel from traditional European markets and new emerging markets of the Middle East and East Asia to major destinations in the region.
>
> Northeastern Asia continued to be the most visited subregion with almost 46 million arrivals, more than half of total arrivals in the region. East Asia and the Pacific, which had led the world in tourism growth for over a decade, dropped to third place in 1995 -- with a still enviable increase of 8.6 per cent in arrivals and a nearly 12 per cent jump in receipts.

In the decade 1984-94, the Asia region had the highest average annual growth rate of visitor arrivals, with an annual average rate of 11.3%. (Pacific Asia Travel Association (PATA) Annual Statistical Report 1994).

Given the growth rates of tourism to Asia, the existence of a regional coordinating body (PATA), the early presences of national tourism information on the Web by Asian countries, and the coordination and cooperation of the national tourism organizations with current and former staff of national computer boards and universities, this study was delimited to this region.

Time Period

Only Web sites in existence in July, 1995 were included. The study population was determined during the month of July, 1995. During the month of July, the nodes and linkages of each Web site were recorded. Changes in number of nodes or linkages of the Web site during the month of July were included, with new information replacing former information. The first three hyperlinkages away from the home page in any combination were monitored five times each week by physically hyperlinking through the nodes. All hyperlinkages within the site were monitored at least once a week for four weeks. During this time, the nodes and linkages were graphed and multi-media functions were recorded.

The source files for the home pages of the sites, all of which were Hypertext Markup Language (HTML) files, were collected on a single day at the end of the month. The files were opened in TeachText on a Macintosh and saved as text only files.

The images on the home pages of the sites were collected on a single day at the end of the month and saved directly from the screen. The images were recalled in JPEG view with "show statistics."

Study Population Web Site Identification

To identify official tourism Web sites, the following search and confirm methods were used:

Search Engines - Lycos, Yahoo and WebCrawler were used to find the Web sites during the month of July in 1995.

Search Keywords - the words "travel," "tourism," "official," "bureau," "ministry," "department," "organization," and "board," and the names of the Asian countries (Cambodia, China and/or Taiwan and/or Hong Kong, Indonesia, Japan, Malaysia, Myanmar and/or Burma, North Korea, Philippines, Singapore, South Korea, Thailand, Vietnam) were used in the search engines.

Confirmation of Sponsorship - once a potential site was identified, an email message was sent to confirm the endorsement, association or affiliation of the Web site with an official information provider if such status was not explicitly stated on the home page. No reply to the email inquiry negated the inclusion of the Web site in the study population.

Through this process, five sites were identified as meeting the four criteria and were included in the study. The five sites included Japan, Malaysia, Singapore, Taiwan and Thailand. The Taiwan site was included in the absence of a confirmed site for the mainland of China. Thailand's site stated that the site was for demonstration and testing purposes. Since the site was the only site available and with the assumption that the Tourism Authority of Thailand would use some of the site in the future, Thailand's site was included in the study population.

Data Analysis Procedures

The means of assessment of Web sites was comprised of three variables, Arrangement, Behavior and Content, as detailed in Chapter Two. The variables contained elements within which were the units of observation to be analyzed.

Variables of Web Sites

Three variables, Arrangement, Behavior and Content, derived from past research concepts and ideas presented at conferences during 1994 and 1995. As noted in Chapter Two: Literature Review, the concepts from which the variables developed were presented without elaboration beyond subjective recommendations. None of the references indicated the collection of quantitative or qualitative data for the purpose of analysis. For this research, the three variables were operationally defined as the following:

Arrangement - the structural layout of a site and the positioning of a site for locality and searchability; includes the spatial and temporal relationships that govern external navigation to and from the site, as given in the elements of Uniform Resource Locator, Title/Bookmark, and layout of nodes and linkages.

Behavior - the interactive performance of a site based on multi-media components, such as internal navigations devices, audio, video, forms, and interactive areas.

Content - the words appearing onscreen as displayed by a graphical browser adhering to the 1995 voluntary standards of HTML 1.0.

Elements of the Variables

The elements within a Web site, as set forth in Chapter Two, were contained within the variables of Arrangement, Behavior and Content.

- **Arrangement Variable**

The Uniform Resource Locator (URL), the Title/Bookmark and the layout of the nodes and linkages were the three elements of the Arrangement Variable. The URL served as an address and specified the host computer and file name. The Title or "Bookmark" of the home page was given by the Hypertext Markup Language (HTML) file or by the default value of the file name. The last element of the Arrangement Variable was the nodes and linkages within the site.

The URL was partially within the control of the Web site sponsor; parts of the address could have been partially determined by registration and technical naming standards. The Title and layout of the site through nodes and linkages were within complete control of the Web site sponsor.

- **Behavior Variable**

The Behavior Variable had one element, the multi-media components of a Web site. Examples of multi-media included audio, visual, search, interactive forms, replies and guestbooks. Textual or graphical navigation mechanisms, occurring within a site but independent of the browser, were considered to be multi-media components.

- **Content Variable**

The element of the Content Variable was the home page. This element was within the complete control of the Web site sponsor.

Units of Observation

Each of the elements contained units of observation. Quantitative data were measured from the manifest contents of the units of observation for the Arrangement and Content variables. All three variables contained qualitative data.

- **Arrangement Variable**

The Arrangement of a site is concerned with the strategic positioning of the site for locality and searchability. A potential tourist could type in a location, use a search engine or follow an online linkage to access a site. Search engines did not use the same submission format which means that some search engines allowed for additional keywords to be added or for the Uniform Resouce Locator (URL) to be categorized into existing "travel," "recreation," or "tourism" menus. Likewise, search engines did not report search findings the same. Lycos and InfoSeek, two popular search engines, reported the Title and a description.

Units of Observation of Uniform Resource Locator

The manifest contents of the Uniform Resource Locator (URL) for the home pages of official tourism Web sites were examined for the presence of the following units of observation:

Country code

Internationally defined

Domains:

.com - commercial
.edu - education
.gov - government
.org - organization

Host computer:

.www - leading host on the Web

Word content as part of the file name or part of network address

Travel
Tour
Name of country

Length

Physical count of URL, excluding http://

For non-numerical data, the numbers one (1) and zero (0) were assigned to indicate presence or absence of content, respectively. Tables of occurrence were generated for each of the five country sites.

The Uniform Resource Locator (URL) was analyzed according to the units of observation. The eight units of observation related to content were reflective of the words used by search engines to identify the site. The country name was used by search engines to identify the country of the information provider. Search engines used the country code to establish the locality of the host computer of the information provider, as opposed to mirror sites located in other countries. The commercial, education, and government domains indicated the nature of the host computer. The presence of the most popular host name "www," while not indicative of more than one server on the host computer, indicated an administrative system which could support adding more servers or a decision by the administrator to include a host name used by the majority of Web sites. Derivatives of the words "travel" and "tour," such as "tourist" and "tourism," were used by search engines to identify the nature of the site's information.

Units of Observation of Title/Bookmark

The Title/Bookmark was the identification given within the file. All of the sites specified Title/Bookmarks. The Title/Bookmark was within complete control of the information provider. The manifest contents of the Title/Bookmark for the home pages of official tourism Web sites were examined for the presence of the following:

Title

Given title of a document or the file name as the default

Length

Physical count of characters of Title/Bookmark including spaces because spaces occupy part of the viewing window width.

Word Content

Country name
Travel
Tourism

Languages other than English

For non-numerical data, the numbers one (1) and zero (0) were assigned to indicate presence or absence of content, respectively. Tables were generated for each of the five country sites.

Units of Observation of Layout of Nodes and Linkages

The relational structure of nodes through linkages provides a cognitive framework or, if likened to a journey, the map necessary to find the destination and/or return. The layout of the site was constructed by following the links from node to node and graphically rendering the site, excluding the "search" function pages that, if connected to an extensive database, could have yielded thousands of nodes. External

linkages from the site were included but linkages from other sites to the tourism site were not included.

In providing the layout of the site, the file names played a functional role in giving each node a name or "landmark" with which to be found. The home page Uniform Resource Locator (URL) was not the only URL given for a site. All nodes within a site had file names and should be considered because the user may record the address by writing down the URL or by adding the Web page to a "hotlist" or Bookmark listing. Moreover, a site could be accessed through a different page other than the home page. The file name functioned as a default value for the "Title" or "Bookmark" of a page and, thereby, became criteria used in search engines, onscreen display and user-defined listings of Titles/Bookmarks. An in-depth look at all file names for the sites was beyond the scope of this study but the importance of the names should not be overlooked.

- **Behavior Variable**

The Behavior, or performance of the document, is a function of multi-media components contained within a site. The use of images, the size of the images and the quality of the image as defined by pixels and palette determined waiting time for the tourist, as did the time needed to download audio and video files.

With "development of a community" regarded as very important for tourist retention and repetition to the site, the use of guest feedback forms, search, chat rooms and other interactive functions served as indicators of interactivity. The multi-media components were examined qualitatively in comparisons across sites. The following were the units of observation for the Behavior Variable:

Presence of audio files

Graphics

Presence of size and number of colors of image files

Video

Presence of video

Animation

Presence of cgi-bin, server push animation

Searches

Ability to search information

Reply

Ability to reply online to official source

Guestbooks

Presence of guestbooks

Postcard/games

Creative approaches to keeping tourist's interest

Site navigation

Incorporation of navigational devices within a site

For non-numerical data, the numbers one (1) and zero (0) were assigned to indicate presence or absence of content, respectively. Tables and graphs of occurrence were generated for each of the five country sites.

- **Content Variable**

The units of observation for the Content Variable reflected the words on the home page. The Content of the home page was within the control of the sponsor of the site. The units of observation for the Content Variable included:

Physical count of words

Country

Number of times country name appears in document, including in images

Identification

Stated name of official source

Word Content

Travel(ers)
Tour(ism/t) - "tour" "tours" "tourism" or "tourist"
You

Audience

Stated audience

Date

Presence of date

Contact

Electronic or regular mail/phone/fax contact information

Languages

Other than English accessible from the English home page

For non-numerical data, the numbers one (1) and zero (0) were assigned to indicate presence or absence of content, respectively. Tables and graphs of occurrence were generated for each of the five country sites.

CHAPTER 4

DATA ANALYSIS

The method of assessment of Web sites was applied to tourism Web sites of Asian countries as of July, 1995. Data obtained from units of observation were contained within the elements of three variables, Arrangement, Behavior and Content. A Summary of the Findings and Discussion are in Chapter Five.

Arrangement Variable

The Arrangement Variable contained the elements of the Uniform Resource Locator (URL), the Title/Bookmark and the layout of the site as given by the nodes and linkages.

Uniform Resource Locator (URL)

One unit of observation was the length of the URL because physical space was occupied by the URL in browser windows and in print through traditional media such as advertisements and business cards. The length of the URL was the total count of characters appearing after "http://", the protocol which was consistent across all the URLs in this study. Malaysia had the longest URL. The length of the Malaysia URL

was over twice the length of each of the other Asian countries' URLs, except Taiwan. Taiwan had 32 characters (Table 1).

Table 1: URL and URL Length by Country

Country Name	Uniform Resource Locator	Character Count
Japan	www.ntt.jp/japan/JNTO	21
Malaysia	www.jaring.my/~webmster/old/ pub/msia-state/msia-map.html	56
Singapore	www.ncb.gov.sg/sog/sog.html	27
Taiwan	www.sinica.edu.tw/tit/index.html	32
Thailand	www.cs.ait.ac.th:80/tat/	24

The countries used different domains in the Uniform Resource Locator and not all domains were represented. None of the sites were commercial ".com" or organizational ".org" domains. All sites included the country code and the host computer, "www" (Table 2).

None of the sites had "travel" or "tourism" in any part of the URL of the home page. One site included the country name in the Uniform Resource Locator.

Title/Bookmark

Two countries had less than ten characters. Both of these were single word Titles/Bookmarks. The longest Title/Bookmark was 22 characters and consisted of three words (Table 3).

Table 2: URL Units of Observation by Country

Unit of Observation	Country Name				
	Japan	Malaysia	Singapore	Taiwan	Thailand
Country Code	1	1	1	1	1
Domain					
.com	0	0	0	0	0
.edu	0	0	0	1	0
.gov	0	0	1	0	0
.org	0	0	0	0	0
www	1	1	1	1	1
Word Content					
Tour/travel	0	0	0	0	0
Country Name	1	0	0	0	0

The numbers one (1) and zero (0) indicate presence or absence of content, respectively.

Table 3: Title/Bookmark and Length by Country

Unit of Observation	Country Name				
	Japan	Malaysia	Singapore	Taiwan	Thailand
Title/Bookmark	JNTO	Malaysia	Singapore Online Guide	Travel in Taiwan	Sawaddee Thailand
Character Count	4	8	22	16	17

Four of the sites included the country name in the Title/Bookmark. One of the sites included "travel." The word "tourism" was not used in any Title/Bookmark. Thailand was the only country to include a foreign word, "Sawadee." Japan included the acronym, "JNTO," for the Japan National Tourist Organization (Table 4).

Table 4: Title/Bookmark Word Content by Country

Unit of Observation	Country Name				
	Japan	Malaysia	Singapore	Taiwan	Thailand
Title/Bookmark	JNTO	Malaysia	Singapore Online Guide	Travel in Taiwan	Sawaddee Thailand
Tour(ism)	0	0	0	0	0
Travel	0	0	0	1	0
Country	0	1	1	1	1

The numbers one (1) and zero (0) indicate presence or absence of content, respectively.

Nodes and Linkages

The 2-dimensional representations of the nodes and linkages of each country were graphed over a period of a month with any update of information replacing earlier information.

- **Japan's Nodes and Linkages**

The Japan National home page linked to the Japan National Tourist Organization (JNTO) site. The JNTO home page directed the user to "free brochures" and then linked to the "Travel Companion." Thus, two linkages were necessary to get to categorical information such as accommodations and transportation. The farthest node, other than a search result, was five hyperlinkages from the home page. Two nodes linked back to "Travel Companion" home page. The site did not offer navigation. The site had external hyperlinkages to NTT, the Nippon Telegraph and Telephone Corporation in Japan, and Japan Info operated by NTT. The tour node, which was three hyperlinkages away from the home page, was not functioning. All other nodes did function (Figure 1).

- **Malaysia's Nodes and Linkages**

The Malaysia home page could be reached through the Gateway to Malaysia operated by the Malaysia Institute of Microelectric Systems. The hyperlink through "Malaysian Info" to "Tourism" on Malaysia's national home page then linked to the tourism home page. A reverse hyperlinkage from the tourism home page could not be made. The clickable map of the home page included all the states within Malaysia. The farthest node was four hyperlinkages from the home page. No external hyperlinkages were permitted. The set of second hyperlinkages away from the home page had the same format (Figure 2).

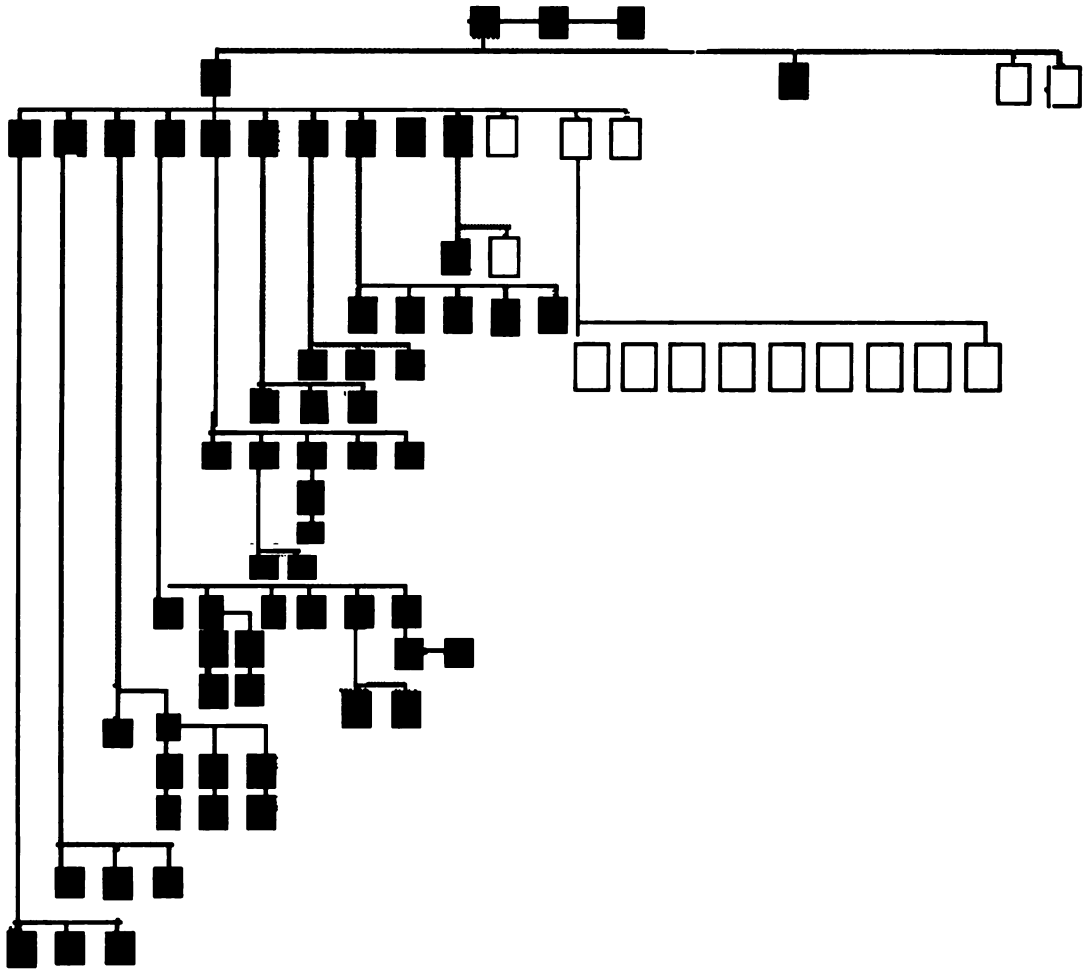


Figure 1: Nodes and Linkages of Japan's Tourism Site*

* The dark squares indicate a page, or node, sponsored by the official source. Solid lines indicate a hyperlinkage away from the home page. White boxes are nodes sponsored by other entities. Lines not positioned vertically or horizontally represent cross-references.

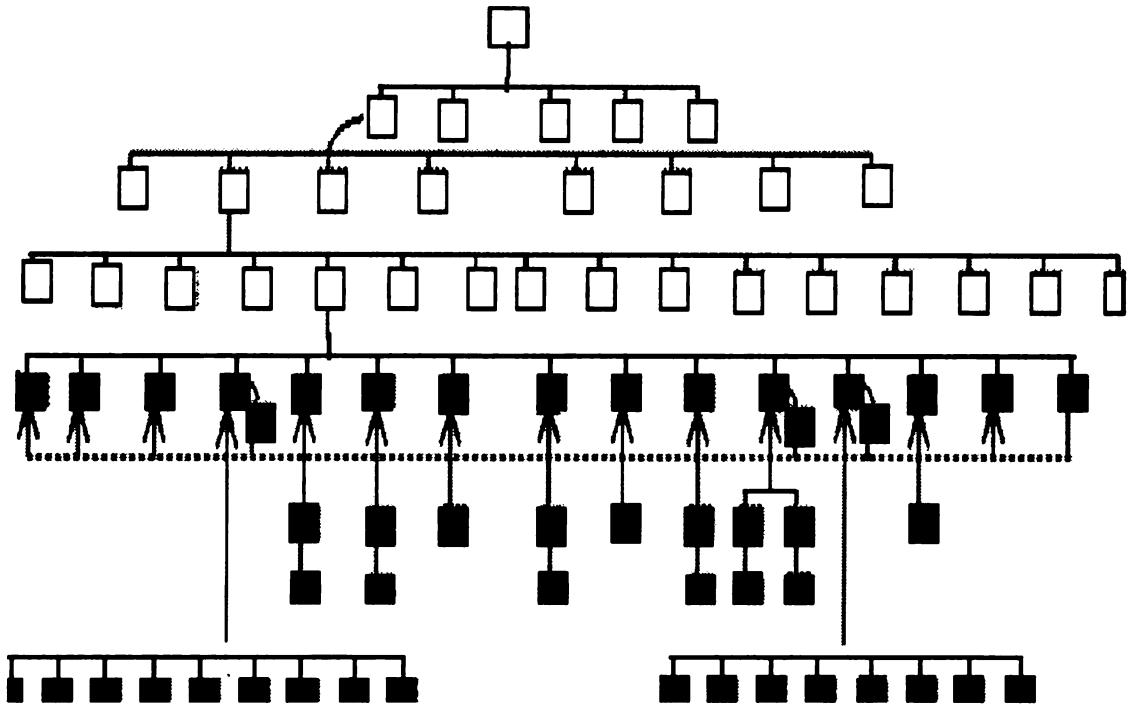


Figure 2: Nodes and Linkages of Malaysia's Tourism Site*

* The dark squares indicate a page, or node, sponsored by the official source. Solid lines indicate a hyperlinkage away from the home page. White boxes are nodes sponsored by other entities. Lines not positioned vertically or horizontally represent cross-references. Arrows indicate text-based linkages that repeat the graphic linkages.

- **Singapore's Nodes and Linkages**

Singapore's National Computer Board (NCB), operated by the Ministry of Finance, linked to 43 other choices and Singapore Online Guide. The farthest hyperlinkage was two hyperlinkages from the home page. Six hyperlinkages on the home page were cross-linked within the site. At least one icon used for navigation had more than one reference node upon which the icon was pictured. Thus, attempts to follow an image did not link the user necessarily to the node previously associated with the image. External linkages were made to hyperlinkages made available in the National Computer Board listing, including the Online Museum and the National Heritage Board (Figure 3).

- **Taiwan's Nodes and Linkages**

The Taiwan site was not linked through the sponsor site, the Computing Center, Academia Sinica (ASCC). A reverse linkage from the Taiwan home page to ASCC was made. The site provided address and information lists, and book contents from a publishing company. No external hyperlinkages were included. The farthest hyperlinkage was two hyperlinkages from the home page. Thus, the site was self-contained. The site had 31 nodes of which 13 contained information from external entities such as the authors of books available through the publishing company (Figure 4).

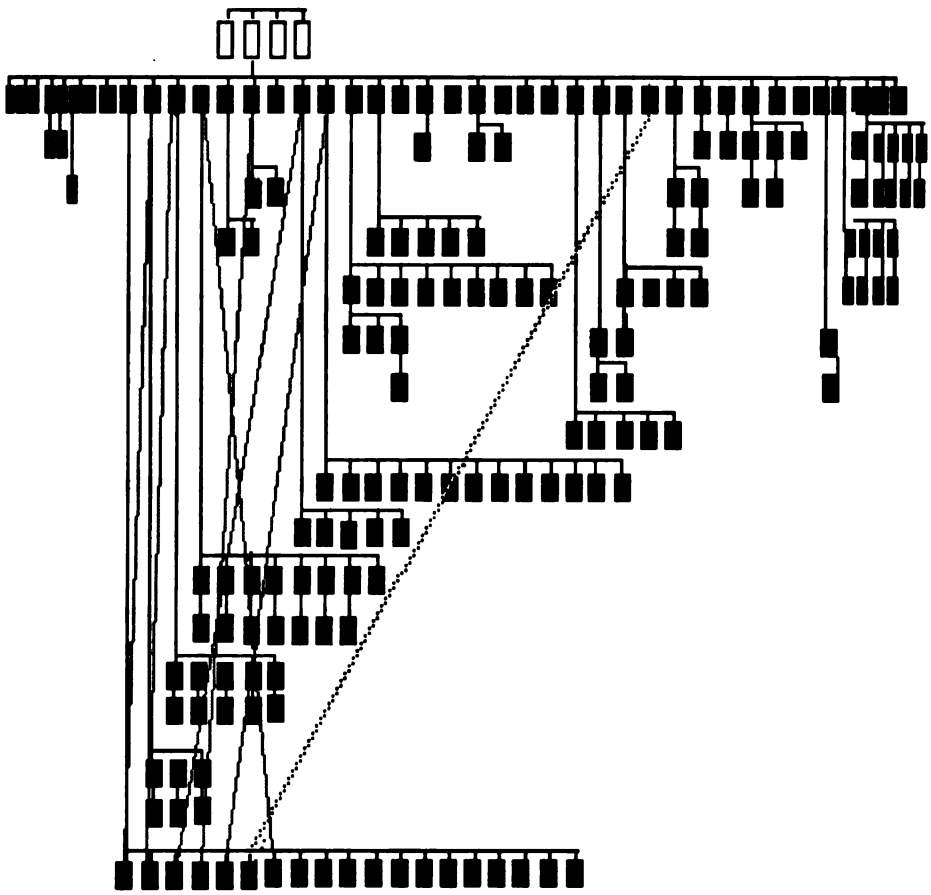


Figure 3: Nodes and Linkages of Singapore's Tourism Site*

* The dark squares indicate a page, or node, sponsored by the official source. Solid lines indicate a hyperlinkage away from the home page. White boxes are nodes sponsored by other entities. Lines not positioned vertically or horizontally represent cross-references.

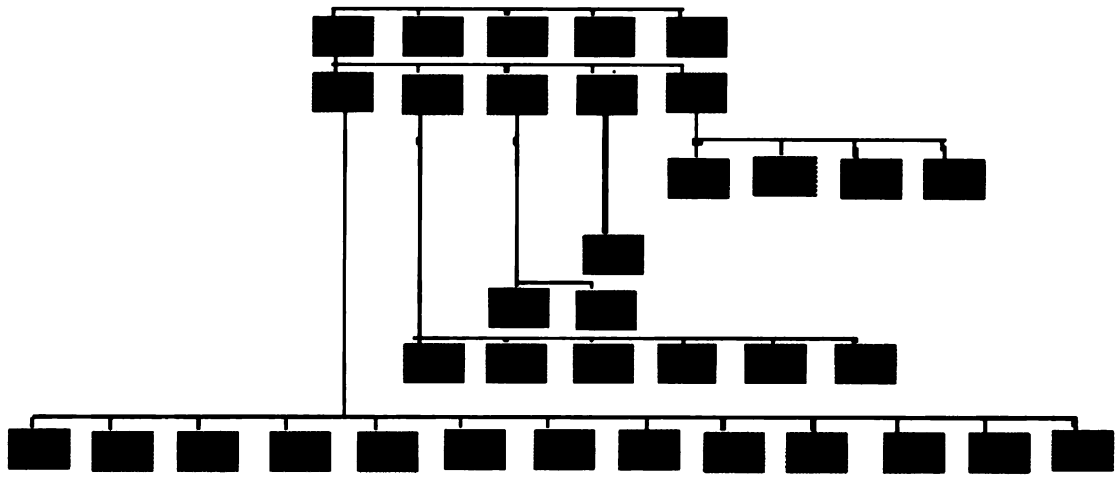


Figure 4: Nodes and Linkages of Taiwan's Tourism Site*

* The dark squares indicate a page, or node, sponsored by the official source. Solid lines indicate a hyperlinkage away from the home page. White boxes are nodes sponsored by other entities. Lines not positioned vertically or horizontally represent cross-references.

- **Thailand's Nodes and Linkages**

The Asian Institute of Technology (AIT) Network Services linked to the Thailand home page. A reverse hyperlinkage from the home page was not made. Within the site and two hyperlinkages from the home page, a link was made to the Asian Institute of Technology (AIT) but not to AIT Network Services. The farthest hyperlinkage was five hyperlinkages from the home page. External hyperlinkages linked to the U.S. State Department, a Guide to Thailand by Mahidol University, and ASIA Trade sponsored sites. Cross-hyperlinkages were made, including the use of the menu bar that navigated part, but not all, of the site (Figure 5).

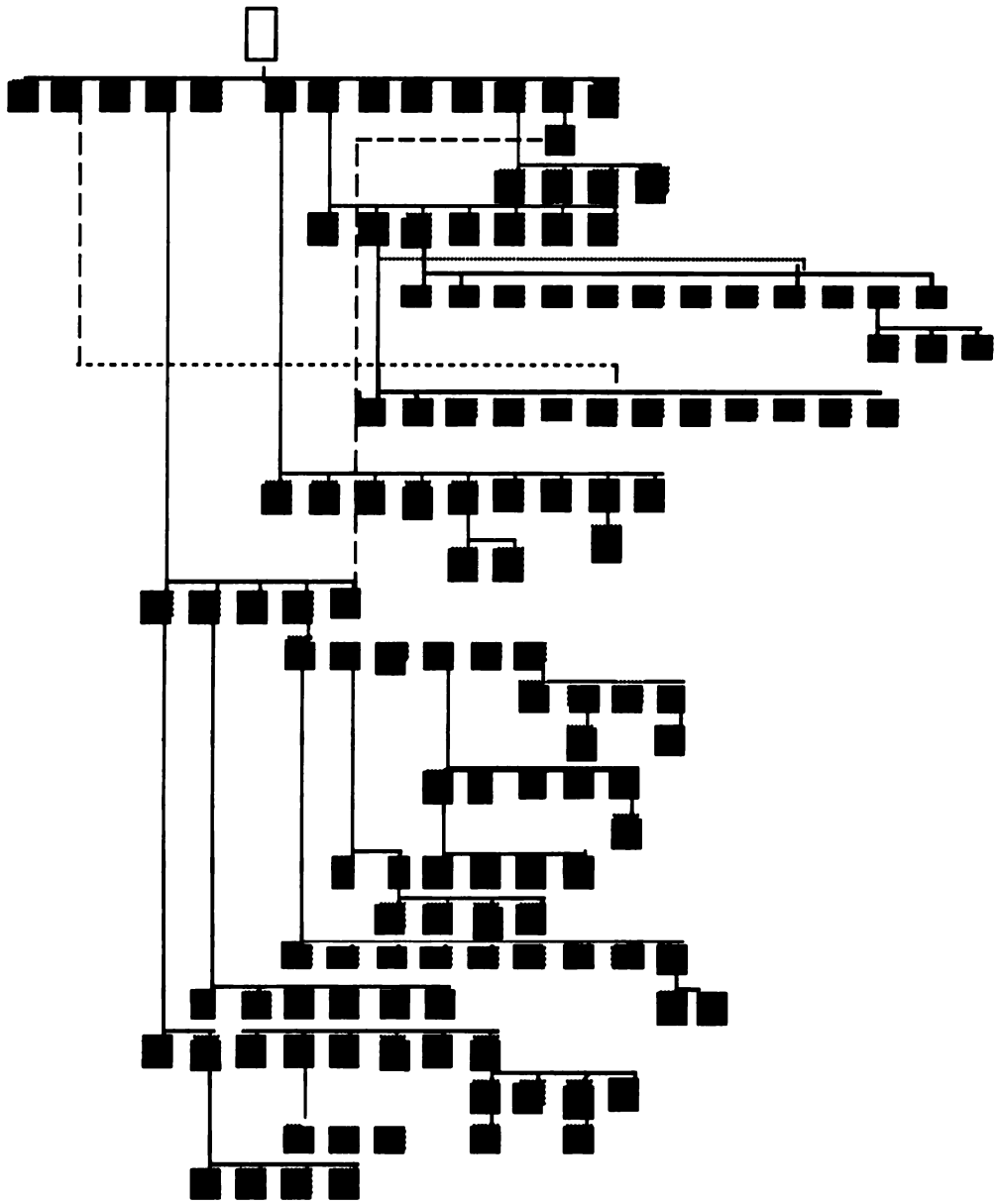


Figure 5: Nodes and Linkages of Thailand's Tourism Site*

* The dark squares indicate a page, or node, sponsored by the official source. Solid lines indicate a hyperlinkage away from the home page. White boxes are nodes sponsored by other entities. Lines not positioned vertically or horizontally represent cross-references. Dashed lines indicate a cross-linkage.

Behavior Variable

The units of observation of the Behavior Variable were contained within the element of the multi-media components within each site. Two sites offered search ability within the site but not inclusive of the whole site. Two sites offered a direct online linkage to reply to the sponsor of the site. The same two sites offered email addresses but no forms (Table 5).

No site offered a "guestbook" interactive area for tourists to talk to other tourists, view comments, pose questions or offer suggestions, or for the site to receive an idea of who was visiting the site. Postcards and games were not included in any of the sites. No incentives were included to return to the site or to refer another tourist to the site (Table 5).

Two sites provided navigation. One site used the same images to represent multiple destinations. Thus, to "click" an image would not necessarily return the screen to a previous node associated with that image. Another site used a navigation system for part of the site but did not use the system for the entire site. The two completely closed sites offered no navigation within the sites (Table 5).

The ability to hear the audio or to see the video components relied upon the user having a computer with the software to view the information transmitted. Thus, a user without the computer capability would have been unable to interact with these multi-media components (Table 5 and Figure 6).

Table 5: Presence of Multi-media Components by Country

Units of Observation	Country Name				
	Japan	Malaysia	Singapore	Taiwan	Thailand
Audio	0	0	1	0	1
Graphics	1	1	1	1	1
Photos	1	1	1	null*	1
Video	0	0	1	0	0
Animation	0	0	0	0	1
Search	0	0	1	0	1
Reply	0	0	1	0	1
Guestbooks	0	0	0	0	0
Postcard/Games	0	0	0	0	0
Site Navigation	0	0	1	0	1

The numbers one (1) and zero (0) indicate presence or absence of content, respectively.

*Null indicates a default image and inability to determine the content of the intended image.

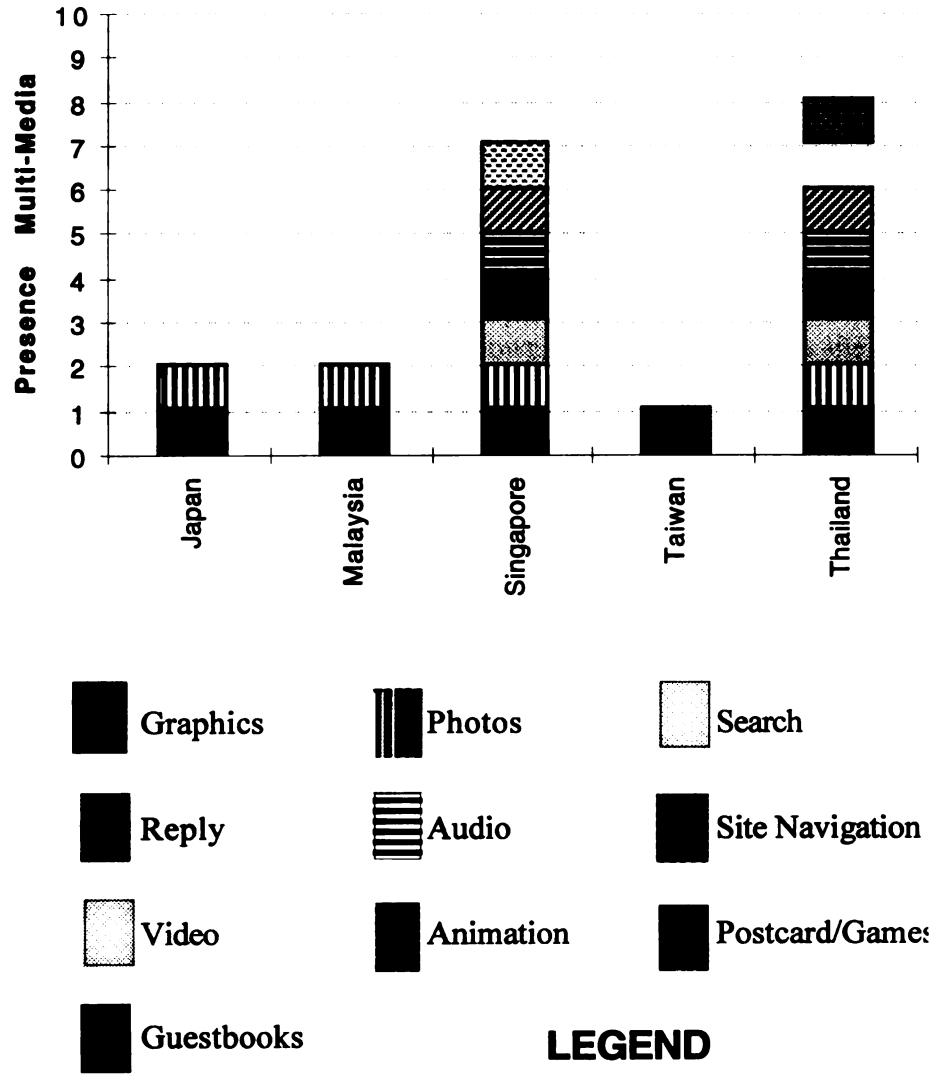


Figure 6: Presence of Multi-media by Country

Source: Table 5

Download time, the time necessary for information to be transmitted to the user's computer, was a concern. Download time for the video took over five minutes during the weekly site reassessment of functions and once the video took over ten minutes to download. The size of the file and the approximated time necessary to download were not indicated in advance of the download. None of the images, whether graphic or photo, indicated size or download time. Thailand's site did indicate file size for audio files but not for animation.

The total area of images could not be compared in relation to total area for a given node. The font size, which could be independently altered per computer, altered the number of viewing pixels. Moreover, the screen could be manipulated in size, both height and width. Thus, "white space" was not a fixed quantity. The images, having been specified in both height and width when created and again when authored into the document source, were fixed in both height and width for all the sites in this study.

The widest image was 569 pixels across. The image with the greatest height was 278 pixels. A large array of colors was used to create icons, except for the JNTO image which had only two colors. The reduction of colors decreases the file size and, thus, increases the rate of data transfer to the screen. One site had a gray image background. While all sites had images, the total number of pixels ranged from less than 10 thousand to nearly 200 thousand (Table 6 and Figure 7).

Table 6: Home Page Image File Data by Country

Country Name	File Name	Length (pixels)	Width (pixels)	Colors	LengthXWidth (pixels)	Total Pixels
Japan	JNTO-mark-new.gif	98	92	2	9016	9016
Malaysia	/msia-state/gif/bmsia.gif	116	227	256	26332	
	msia-state/gif/bmsia3.gif	115	119	128	13685	
	msia-state/gif/m-sia.gif	278	569	128	158182	
	yellow.gif (twice)	23	20	64	460	199119
Singapore	sog/pics/header.gif	101	329	64	33229	
	nhb/dmcicon.gif	32	32	8	1024	
	sog/gifs/copyright.gif	18	19	8	342	34595
Taiwan	tit.gif	50	179	256	8950	
	blue.gif (five times)	14	14	16	196	9930
Thailand	picture/gpalace.gif	176	347	256	61072	
	icon/ihome.gif	49	50	256	2450	
	icon/imail.gif	49	50	256	2450	
	icon/isearch.gif	49	50	256	2450	
	icon/ical.gif	49	50	256	2450	
	icon/itour.gif	49	50	256	2450	
	logo/tatcopyl.gif	68	321	256	21828	
background	greybg.gif	*	*	*	null	95150

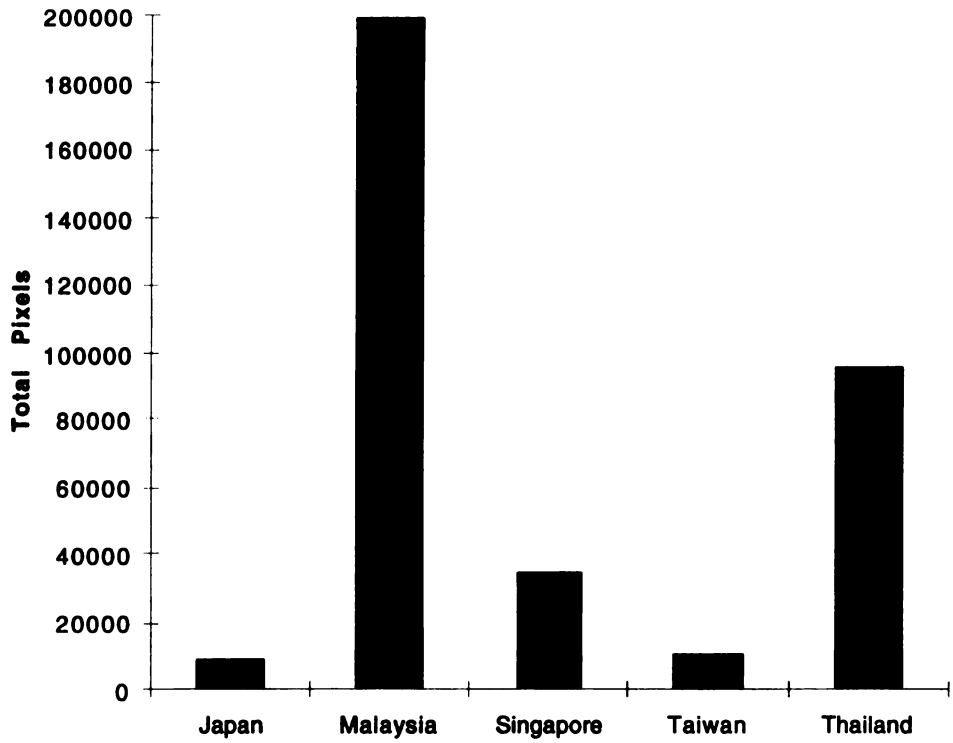


Figure 7: Total Pixels of Home Page Images by Country

Source: Table 6

Content Variable

The Content Variable analysis relied upon data collected for units of observation contained within the element of each site's home page.

Every site contained the country name at least twice on the home page. The country name appeared 17 times within the home page node of one site (Table 7 and Figure 9).

Three sites had less than 10 hyperlinkages on the home page. One site had 16 hyperlinkages and one site had 42 hyperlinkages. Thus, one site offered more hyperlinkages on the home page than the total number of hyperlinkages contained within another site (Table 7).

Three countries had less than 75 words on the home page. Two countries had over 175 words on the home page (Figure 8).

All sites contained either "travel" or "tourism." All sites except one used the word "you." One site used the word "you" nine times on the home page. The site also referred to "travel agents and their personnel." "Tourists," "travelers," and "visitors" were words used by three sites, inferring the information was aimed at these audiences (Figure 9).

The word "welcome" appeared on the home page of four sites. The appearance of this word, beyond a social custom, was not anticipated. Spelling errors did occur on the home page.

Table 7: Word Content of Home Pages by Country

Unit of Observation	Country Name				
	Japan	Malaysia	Singapore	Taiwan	Thailand
Word Count	176	44	246	57	75
Hyperlinkages	3	16	42	6	8
Word Content					
Visitor(s)	0	0	0	1	0
Tour(s)	1	0	3	0	1
Tourist/m	3	3	5	1	3
Travel	5	0	2	3	1
You(r)	9	0	2	0	1
Country Name	8	4	17	3	2

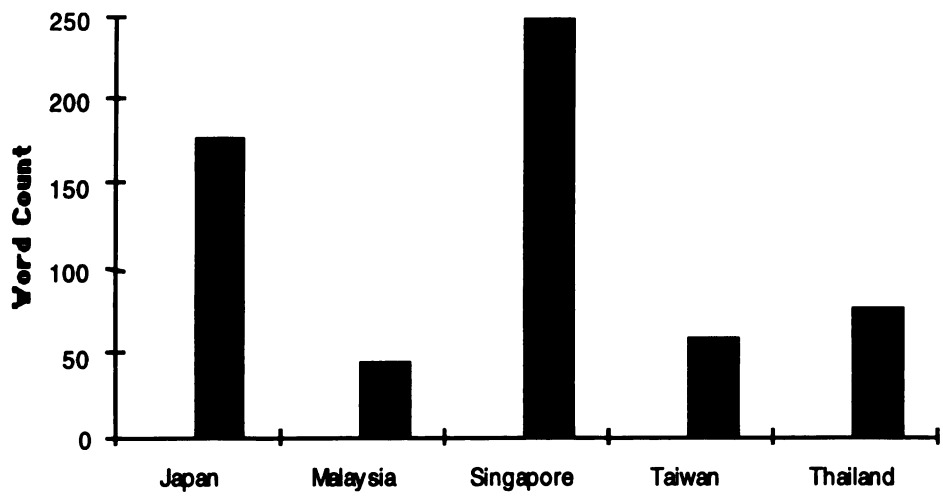


Figure 8 : Word Count on Home Page by Country

Source: Table 7

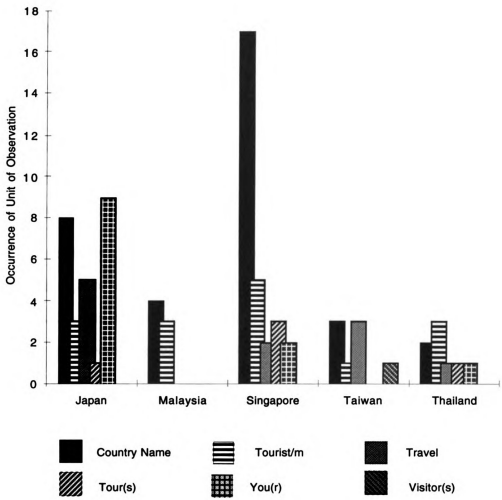


Figure 9: Occurrence of Home Page Word Content by Country

Source: Table 7

Two sites omitted date information. Three sites included the year (1993, 1994, and 1995) but did not indicate if the information contained within was created at that time or if the information was updated (Table 8).

Foreign languages were not included. At least, information in other languages was not made accessible through the English home page (Table 8).

All sites included the complete name of the NTO. Three sites included credit to other entities: a National Computer Board, a publishing company and a network unit of an Institute of Technology (Table 8).

Online ability to contact the sponsor of each site was essentially nonexistent. The online linkage of one site was not working. Two sites provided a physical address for inquiries. One site did not provide either a physical address or an online mail function but did provide a listing of travel agencies (Table 8).

Table 8: Qualitative Units of Observation of Home Page by Country

Unit of Observation	Country Name				
	Japan	Malaysia	Singapore	Taiwan	Thailand
Date	1993	0	Jan-94		1995
Languages	none	none	none	none	none
Audience	travel agents and their sales personnel	0	all tourists and travellers		tourists
Source Identity	Japan National Tourist Organization	Malaysia Tourism Promotion Board	Singapore Tourist Promotion Board and the National Computer Board (NCB)	Tourism Bureau Ministry of Transport and Communication Published by Vision International Publishing Co Computing Center Academia Sinica (ASCC)	Tourism Authority of Thailand Design AIT Network Services Unit
Who to Contact	Physical Address Hyperlink	Physical Address Hyperlink	Online NCB	Online to ASCC	AIT/listing travel agencies for tours

CHAPTER 5

SUMMARY OF FINDINGS, CONCLUSION AND IMPLICATIONS

A method of assessment was developed to ascertain both the ability to find, identify, and access information and the utility of information on the World Wide Web. The method was applied to five tourism Web sites provided by National Tourism Organizations and in existence in July, 1995.

This Chapter reviews the procedures outlined in Chapter Three before providing a brief summary of the findings of Chapter Four. Then, the variables are discussed in context of the findings. The success of this study to develop a method of assessment is addressed in the Conclusion section. The applicability and limitations of this study to site assessment, development and future decisions or policies are presented in Implications. Lastly, research topics are given for future studies.

Summary of Procedures

The study population for tourism on the World Wide Web was delimited according to four criteria: a) sponsorship by official tourism source, b) English language, c) geographical location in Asia, and d) time period spanning the month of July, 1995. The Web sites of five National Tourism Organizations (Japan, Malaysia, Singapore, Taiwan and Thailand) were investigated with respect to three research

variables: Arrangement, Behavior and Content. The research variables were derived from literature, conferences and previous research regarding computer-mediated environments (see Chapter 2).

Within the variables were elements that contained the units of observation used for analysis. The Uniform Resource Locator, the Title/Bookmark and the layout of the nodes and linkages constituted the elements of the Arrangement Variable and reflected the ability to find and locate information. The multi-media components reflected the ability to access the information or the Behavior of the site. The Content Variable contained the element of the home page. An analysis of the textual units of observation was done to determine the utility of the Content in regard to the "who," "what," "where," and "when" of the information contained within the site.

Summary of Findings

The following summary describes the findings of this study by variable. The variables contained elements within which were units of observation. The data collected for the units of observation in July, 1995 and the analysis of the data are set forth in Chapter Four.

Arrangement Variable

According to the analysis of the eight units of observation within the element of the Uniform Resource Locator (URL), two of the units used in the URL to find information were not present in any site. None of the sites were commercial, and none of the sites included the words "travel" or "tourism."

The word "tourism" was not included in the second element of the Arrangement Variable, the Title/Bookmark. The word "travel" was included in one Title. Thus, the sites did not include the words "travel" or "tourism" in the Uniform Resource Locator (URL) or within the Title/Bookmark, except for one site that included "Travel" in the Title/Bookmark. Titles are used by search engines to display results, to search for matches, and to categorize the nodes and/or sites. Titles are also displayed on the screen by some browsers and can assist in site identification of a node.

Two units were included by all sites. Both the country code and the host "www" were present within the URL of all sites.

One site included the country name. Within the element of Title/Bookmark, all but one country, Japan, included the country name in the Title.

All sites had multiple nodes and linkages. Cross references within a site were limited; two sites cross-referenced less than ten nodes. All sites had at least two hyperlinkages away from the home page. Two sites had a "closed" structure, meaning that the sites had no external linkages. External hyperlinkages excluded commercial or business sites, specifically hotels, attractions and transportation, except for a linkage to an online museum. One site included information from books of a publishing firm as part of the site but did not maintain an external hyperlinkage to that publisher. External hyperlinkages included the U.S. State Department Fact Book on that country, an example of cross government information sharing of publicly available information.

The home page as a "landmark" relied upon the browser navigation buttons and backtracking through hierarchical structures, yet the "landmark" could not provide insight into the Content or depth of the site. No site provided a cognitive framework of how large or small the site was or where to find the information within the site. The

home pages appeared as "gateways" to hierarchical structures. Within the structure of the site, nodes not directly linked to the home page remained "invisible" upon first access.

Behavior Variable

Multi-media components were present on all sites. Those multi-media components increased the download time to access information. Audio and video required external software not available in the browser and required download time of up to ten minutes. Two sites offered searches within a portion of the site but did not offer a comprehensive search of the site.

All sites included images, either graphic, icon, or photo, on the home page. The amount of images on the home pages of the sites ranged between 9 thousand and 200 thousand pixels. Two sites had roughly 9 and 10 thousand pixels. Four sites had less than 100 thousand pixels. The number of pixels and number of colors determined file size and impacted the time of display.

None of the sites had interactive areas for games or guestbooks. The sites' internal interactivity did not allow for interaction with the sponsors, with other tourists or with travel and tourism services associated with the nations in this study.

Content Variable

The sites did not include the addresses of the Web sites, the physical addresses for the NTOs, or email addresses in print on the home page.

None of the sites included all the words "you," "travel," "touris(m/t)," "tour" and "visitor(s)." One site included all the words except "you," while another site also

included all the words except "visitor(s)." One site included only one of the words, "touris(m/t)," with only one occurrence of the word on the home page.

All sites included the country name at least more than once on the home page. One site included the country name seventeen times. The other four sites included the country name less than ten times.

Only one site indicated a "1995" date while two of the other sites indicated earlier years, 1993 and 1994. The other two sites omitted the date.

Three sites had less than 75 words on the home page. Two sites had over 175 words. Three sites had less than ten hyperlinkages from the home page. One site had 42 hyperlinkages on the home page. The remaining site had 16 hyperlinkages.

None of the sites offered information in any language other than English with access from the English home page.

Discussion

Arrangement Variable

The Ability to Find and Locate Information

An address, search engine or hyperlinkage must be used to find information on the Web. The first tool to find information, the address, consisted of Uniform Resource Locators with visual interfaces that included characters beyond the alphabet, acronyms and at least two "/" per URL. At least one, if not two, sites used acronyms within the management and naming of the URLs, beginning with the file name of the home page. The identification of the site then depends upon the awareness of that acronym by the search engines and the user. The second site's acronym appeared in the file name but did not appear within the site's Content . Thus, the understanding

and association of the suspected acronym were difficult to determine, clarify and apply in this study.

Search engines, the second tool to find information, functioned according to varying criteria specific to each search engine. The sites did include the country code in the URL or the country name in the Title/Bookmark, thereby enabling search engine identification of the country, but not necessarily the purpose of the site. The absence of "travel" and "tourism" in the URL, and in all but one Title, reveals how search engines could overlook the fundamental nature and classification of these sites within the Travel and Tourism Industry.

The third tool used to find information, hyperlinkages, refers to both internal and external linkages. The layout of nodes and linkages within a site are internal hyperlinkages. In graphing the layout of the nodes and linkages, insight into the role of both internal and external hyperlinkages was obtained even though hyperlinkages from other sites to the destination site were beyond the scope of this study. Three sites offered external linkages, identified as a change of URL domains of the host computer. The departure from a site and/or the identification of information as being part of the site was not apparent necessarily from the document contents. The browser function keys were necessary to return to all sites once an external hyperlinkage was made.

The layout of two sites as completely closed, the lack of reciprocal linkages to other servers on the host computer, the absence of intraregional or transnational linkages, the exclusion of reservation systems or linkages to private businesses, the use of landmark icons without consistency of reference, the existence of "under construction" nodes, and the hierarchical structures within each site without indication

of site size and structure served as barriers and deterrents to hyperlinkages to, from and within each site.

Behavior Variable

The Ability to Access the Information

The multi-media components are unique features of the Web and do not occur in traditional media. The technology in July, 1995 required external software to use the multi-media components of audio and video. The download times, which reached upwards of ten minutes, and the playing times, which were equally lengthy, especially for the video, were a function of the technology. The audio of one site incorporated language and demonstrated the advantage the Web has over the written word in providing a more accurate conveyance of the word's pronunciation.

Graphics, photos and/or images were used on all home pages. The site with no other multi-media component had an image of large text on the home page. This site had the least number of nodes and was a "closed" site. Thus, the site had little internal and external interactivity. One site had a graphic interface on the home page, inclusive of a clickable map of the country. The graphic was an established width and did not change with a change of the screen size. Thus, scrolling up and down and right and left were necessary. The image, being 569 pixels wide, exceeded the "standard screen size" of 480 pixels wide. Thus, the picture would not have been seen in entirety on a twelve-inch screen with the default browser size shown.

Except for the one image in two colors, the image palette for icons less than 100 pixels contained a range higher than was necessary. As the number of colors increased, so did the file size. With a reduction in the number of colors, file size could have been minimized and could have increased the rate of transmission, thereby

increasing the performance of the site. Examples included a yellow dot with 16 colors and a blue dot with 64 colors in the palette. Icons used for a menu bar included 256 colors. Thus, the manipulation of images to maximally decrease the file size, regardless of number of pixels used, while maintaining image quality was not apparent for any site except one. That exception did not have any color.

No interactive areas were established for user-based interactivity, such as guestbooks or games. The sites did not facilitate the development of community within the site or strategically position the site to attract other tourists through the user's actions. The nodes of the sites did not indicate that the information contained within would change, except the "under construction" pages. The "under construction" pages did not indicate an expected completion date.

Content Variable

The Utility of Content

In regard to "who," the contents of the home page did provide an understanding of the sponsors and the targeted audience. The information source providers of all sites were identified. Four sites implied an audience by stating "tourist," "visitor" or "traveler" on the home page. The absence of other languages implied English-speaking tourists.

The nature of the sites as travel and tourism related, which answers "what," was identifiable through the use of at least one of the word content units of observation, such as "travel" or "tourism." All sites included the word "travel" and "tour(ism)," except one site that did not include the word "travel." Thus, the pages could be identified as being related to travel and tourism.

The site with the largest number of words on the home page included the country name 17 times, thereby establishing the "where" or destination being promoted. The country name appeared at least twice on the home page. Four sites provided the country name less than ten times on the home page.

"When" was omitted by two sites that did not indicate any date. Three of the sites included a date on the home page (1993, 1994, and 1995). The sites did not specify if the information had changed since the given years. If not, the information from the years 1993 and 1994 might not have been accurate or applicable to the year the information was accessed, 1995. The site that gave 1995 did not indicate when the site was created or if the information was newly created. Thus, insufficient information was given to determine if the information was up-to-date.

The Tourism Authority of Thailand did indicate on the bottom of the home page that "This presentation is strictly for testing purposes." The definition and scope of what constituted "this presentation" remained undefined. The phrase appeared on the home page but not subsequent nodes. A user entering another node within the site would not know this information. An interactive component would have been beneficial to the "testing purposes." No such interactive component was included. In addition, no online email or form submission was possible to provide feedback to the site administrator or the Tourism Authority.

Research Questions

In Chapter One, a series of questions was posed and were to be answered throughout the study. The research questions pertained to the three variables. However, answers cannot be contained within the scope of just one variable. The

Web, as a series of interconnections, denotes answers that derive from both the respective variable and the interrelationship of that variable to the other variables.

Arrangement

- Site Identification

  Can a search engine be used to find the site?

  Can the site be identified by the search engine's results?

Finding sites was difficult due to the lack of "travel" and/or "tourism" in the URL and Title/Bookmark. Considering that popular search engines (Lycos, Yahoo, and Incite) included "travel" specific categories in quick menus, the absence of these words in the most ubiquitous indexing criteria, the address and Title, indicated that potential strategic positioning of the sites was being underutilized. Search engines also used the document source and, thus, another mechanism found to exist but which was not being maximized was the increased occurrence of keywords within the document source.

- Nature of the Site Layout - Nodes and Linkages

  Are the relational hyperlinkages within the site hierarchical in nature or dispersed?

The hierarchy of the sites began external to the site with the host computer of the site or the government of the country. This hierarchy was not apparent from within the site because reciprocal hyperlinkages to the underlying computer sponsor or government was not made from the tourism home page, except for Singapore. All sites relied upon the use of the browser keys at some point to provide navigation. Increased hyperlinkages away from the home page produced "dead ends" and increased the time necessary to locate information.

Does the site have a closed set of hyperlinkages or does the site incorporate external hyperlinkages?

No external hyperlinkages to neighboring countries were possible, indicative of lack of regional cooperative agreements. No external hyperlinkages were made to regional organizations within a nation or to a global organization. Noticeably absent were commercial linkages to reservation systems, travel and tourism services, attractions, or commercially based travel-related sites.

Behavior

- Multi-media Access to Information

  Do multi-media components of audio, sound, navigation devices and interactive areas provide access to information?

The sites in this study incorporated audio, video, images and navigation devices as interactive components that allowed for increased access to information.

- Increased Information Exchange

  Does the site serve as a platform for information exchange among those accessing the site?

No, the sites did not provide for site interactivity with either the sponsor of the site or with other site visitors. Moreover, two sites excluded and three sites limited the external hyperlinkages, thereby decreasing the interactivity of the site with other sites.

Content

- Authenticity of the Site

  Is the information source provider identifiable?

Yes, all sites were identified on the home page by name. No addresses, online or electronic, were given on the home page. Likewise, the URL did not appear on the page, thereby making it difficult to associate an address with the official source of information.

- Audience

  Does the site target a particular market audience by explicitly referring to that audience on the home page?

Four sites used "tourist," "visitor," or "traveler" on the home page. The only language accessible or used on the home page was English.

- Communicating Purpose of the Site

  Are the words "travel" and "tourism" used to convey the purpose and sponsor of the site as a travel and tourism information provider? Is the country identified on the home page?

All sites used the words and/or derivatives of "travel" and "tourism," except one site that did not include the word "travel." All sites identified the country by name at least twice.

Conclusion

Thus, upon review of the findings and within the limitations of this study, it is concluded that the method of assessment of World Wide Web sites as applied to tourism is useful for discerning criteria within the control of the site sponsor as pertaining to the Arrangement, Behavior and Content of a Web presence. The assessment distinguishes the importance of the URL, Title/Bookmark, Content of the document source, interactivity of the multi-media components and the components of utility.

Implications

In developing the Arrangement, Behavior and Content of a site, managers and designers need to decide the strategic positioning of a site's locality, identification,

performance and Content . The Web provides opportunity to develop personalized information, to lower the barriers to access information and to increase the flexibility of providing that information. The improvement of a site depends upon the site's ability to change while providing consistency of performance and quality of Content across time.

The first interface component, the ability to locate a site, remained limited in regard to search engines. The URL and the Title/Bookmark in this study, while meeting some of the criteria, such as the country name and the word "travel," did result in a search engine reporting the site as related to travel information on that country. However, individuals, commercial companies and non-profits are establishing sites that offer national tourism information. To identify the sites for this study, thousands of sites were searched for the sponsor's identification. The site's identity needs to be clearly communicated. At minimum, the Title/Bookmark should indicate the site's sponsor or include the word "official," thereby indicating the authenticity of the site. This identification becomes even more important when a site expands or has a mirror site in another country. The mirror site might not include the country code and could increase the difficulty for search engines to match the country name with the site.

To maximize the ability of a site to be found by a search engine and to display visual interfaces that contribute to identification, the URL, the Title/Bookmark and the Content of the Home Page need to be manipulated by the site developer to create increased occurrence of search words associated with a site and with the categories found within Web indices. The URL should be included in traditional media to reduce the need for search engines. The URL should also be included onscreen. In 1995, the

printout from the screen did not include the URL and, if used for future reference in the absence of the URL, required searching again for the "keywords" of the site.

The layout of a site, in the absence of a change of browser or user technology, needs to provide a "cognitive framework" of the site such that information can be quickly located without having to traverse through multiple nodes. Possible mechanisms include the use of search functions or "site maps" much like a destination map. Internal navigation systems need to be implemented with consistent "landmarks." The use of graphics and display layout should serve to complement the identification of these landmarks.

All sites need to increase the interactivity of the site. First, graphics need to be maximized for quality and minimized for file size to increase the rate of data transfer, thereby decreasing the time for display. Likewise, other multi-media components need to be developed with the time of download, display and function as a consideration. Interactivity with the sponsor of the site, with other industry players and with other tourists has been overlooked and denotes concerted effort to incorporate interactive areas. With no information about the accessors of the site and no platform within which accessors can determine who else has accessed the site and for what purposes, the development of "community" was undermined. In doing so, the opportunity to generate marketing and profile databases was lost.

The inclusion of advanced technologies but lack of use of email or forms to increase communication flow to the NTO was of concern, especially when the audiences identified as a unit of observation of the Content Variable were "tourists," "visitors" and "travelers." The inability to contact the NTOs tends to suggest that either the NTOs were unable to handle online communication, for technology or staffing

reasons, and/or that interaction with the accessors to the sites was not a priority for the NTOs.

Specific recommendations as to which multi-media to incorporate would be greatly limited to the technology available at the time of writing, technology that continues to evolve rapidly. The goal should not necessarily be to incorporate "generic answers" of interactivity, but to develop interactive areas that are unique and distinctive to the site while also providing for communication flow.

The home page of a site acts as the "gateway" and should readily identify the site, the country, the sponsor of the site, the date of the information, any copyrights if applicable, and any consistent "landmark" features. The home page's Content should provide enough insight into the structure of the site to differentiate the relative size of the site.

Is there a generic list of "things to do right" and "things to do wrong" for NTOs on the Web? No identified research to date has shown that one model of Arrangement is "ideal" for the Web, regardless of function, purpose or audience of the Web site.

Regardless of the changes of the Web and of sites, three questions remain to be answered:

- What is the purpose of the Web site in meeting the mandate or mission of the sponsor, which in this case is a National Tourist Organization?
- How can the Web be used to achieve this purpose?
- What role and function does the sponsor have on the Web?

The Arrangement of a site by a National Tourist Organization should serve to facilitate information flow and integrate information within the Travel and Tourism Industry. At a national level, the NTO has the ability to expand industry coordination by serving as a central point source. The sites in this study included few, if any, external linkages, partly due the lack of Web site development by businesses and partly due to the lack of sites' internal and external Arrangements. Noticeably absent were commercial linkages to reservation systems, travel and tourism services, attractions, or commercially based travel-related sites. The collaborative efforts of three of the sites with other entities suggests that future efforts by NTOs to foster and coordinate inward tourism flow will be based upon broader, diversified management approaches.

Two of the sites did not include any external linkages. If the sites are closed sites or have limited external linkages, can the function as facilitators be realized? The layout, therefore, impacted the performance of the site as a whole, and contributed to download time as given in the Behavior Variable Discussion Section.

For those sites that do include external linkages, decisions need to be made regarding the following concerns: "to whom," "how," "at what cost," "for what purpose" and "how is equity given to all interested participants?" Can the NTO sites service all participants or will a select few Travel and Tourism Industry players dominate to the exclusion of others?

This study found that the NTOs were limited in serving as facilitators, clearinghouses or interactive information providers. As the sites were English-language only, the NTOs were also limited in serving the global population. Are the "invisible" barriers to facilitation created not only by what information is there or not,

but also by what language the information is conveyed? What inequities are forming as a result of the Web sites?

Regional coordination through Pacific Asia Travel Association was not present at the time of data collection, nor was global cooperation through the World Tourism Organization. The existence of a central organization, on a regional, national or international level, could facilitate finding, accessing and exchanging information. A non-commercial entity could also function to ensure equity of access across services and businesses.

The application of this study should not occur as an internal site development plan but must be integrated into a plan that is inclusive of issues relating to the Web space at-large, the Travel and Tourism Industry, other travel-related Web sites, the Internet and the user, be it the tourist, intermediary or service provider. The Web's potential, as an example of a networked environment with multi-media interactive components, was illustrated in a limited context in this study. Audio files online, unlike printed brochures or language books, allowed for an accurate representation of the language and music. When potentially coupled with the interactivity of the Web such as with other tourists online, live images of the country, and video Internet phone, the capacity and advantages of the Web over other distribution channels become increasing apparent. Thus, while the features of the Web were not being fully realized, the potential of the Web as an exciting means of communication not adequately represented by any other existing means of communication, presents unparalleled opportunity to increase tourists' flow while increasing understanding through the exchange of knowledge, the arts, the languages, the cultures and the currencies.

Suggested Future Research

This study was a "snap shot" of the technology, the approaches and the status of the Web's distribution and accessibility during 1995. The changes of technology may or may not, but most likely will, resolve the issues surrounding individual concerns for the units of observation included in this study. Changes in search engines, browsers, multi-media convergence and computer programming could potentially put a stamp of obsolescence on the existence of Uniform Resource Locators, Title/Bookmarks, or multiple node networked sites. The application of this study, especially over time, is not necessarily the individual components of the units of observation or the elements. The units and elements were established to develop a better baseline understanding of World Wide Web sites in 1995. The essence of this research, during a time period of rapid technological change, is contained within the concepts of the three variables. Even as technology progresses, policy, management and development will depend upon the ability to find, identify, access and utilize information. This ability depends upon the Arrangement, Behavior and Content of information in a networked, computer-mediated environment.

This study did not include an investigation into the words used in the programming of the site that do not appear onscreen. These words also assist in effective positioning of the site for search engines. Likewise, the words used in form submissions to the search engines were not part of this study. Both the hidden words and the submission words could potentially include other languages such as to position the sites for the international audience while not interfering with the textual format and display on the home page. Research is needed on the role of cross-cultural communication and multi-lingual functions for the purpose and intent of reaching the global audience.

"How" was not identified in Chapter One in the Statement of the Problem but the analysis of the units of observation suggest that "how" was of concern. As the sites within the study did not link to regional organizations within the nation, to other nations within the region or to global resources, future study is needed to assess the role and effectiveness of regional, national and international tourism organizations in information facilitation on the Web.

Do we need NTOs on the Web if the private, commercial or personalized sites on the Web potentially provide the same services or even better country information than that presented by the NTO? Can NTOs become privatized or dissolved without an impact upon the Travel and Tourism Industry if the information is already being provided?

Are countries with low telecommunications density or low Web connection rates being excluded from having equal access to the global marketplace? If so, what impact does the travel and tourism information on the Web have on tourists' destination choice?

Do Web sites influence the "image" of the country as being "near" or "far" or "easy to travel" versus "difficult," based not on Content of information, but the overall performance of the national Web site?

An ambitious project would be to test the effectiveness of a Web site for the user. As the Web allows for anyone connected to be a potential user, the sample population would need to reflect tourists, potential tourists, intermediaries, and even arm-chair travelers who might spend money online in that country for travel and tourism services but never physically travel to the destination.

Lastly, computer -mediated environment research, especially that of networked environments, needs to be expanded such as to utilize the components of interactivity to analyze and present data that could not be represented in traditional means of communication.

LIST OF REFERENCES

LIST OF REFERENCES

Note: World Wide Web citations retain all textual characteristics and may deviate from traditional bibliographic style. URLs that were too long to print on one line should be treated as one continuous reference without a break.

ALIWEB. URL: http://www.cs.indiana.edu/aliweb/form.html [accessed 29 Jan 1996]

Alta Vista. URL: http://www.altavista.digital.com/ [accessed 29 Jan 1996]

American Internet User Survey (1995). FindSVP. URL: http://etrg.findsvp.com/graphics/resfh/chart6.gif [accessed 15 Dec 1995]

Argentina Informacion Turistica: URL: http://gopher.ar:70/1/turismo [accessed 19 June 1995]

Ascher, Bernard (1984). Obstacles to international travel and tourism. Journal of Travel Research, 22(3):2-16.

Asian Pacific Region Internet Registry. URL: http://www.apnic.net [accessed 19 Jan 1996]

Bachman, Katy M. (March/April 1994). Brave new world: why you should be investing in tomorrow's media today. Marketing Tools, American Demographics Inc. URL: http://www.marketingtools.com/search/mt/MT114.htm [accessed 30 Jan 1996]

The Bahamas! URL: http://www.gti.net/bahamas/ [accessed 20 Oct 1995]

Baum, Tom (1994). The development and implementation of national tourism policies. Tourism Management, 15(3):185-192.

Bermuda Tourism Mall. URL: http://www.ibl.bm/tourism [accessed 13 Oct 1995]

Berners-Lee, T., L. Masinter, and M. McCahill (Dec 1994). Editors. Proposed Standard: Uniform Resource Locators (URL). URL: http://www.w3.org/hypertext/WWW/Addressing/rfc1738.txt [accessed 30 Jan 1996]

Bramwell, Bill and Liz Rawding (1994). Tourism marketing organization in industrial cities: organizations, objectives and urban governance. Tourism Management, 15(6):425-434.

Brazil Tourism. URL: http://www.gdf.gov.br/setur/index.html [accessed 10 Jul 1995]

Calcari, Susan (1995). Network skills in a networked infromation world: the latest tips and tools. WWW Conference.

Canadian Provincial and Territorial Sources of Information. URL: http://www.cs.ubc.ca/opengov/provinces.html [accessed 15 Aug 1995]

Catledge, Lara and Pitkow, James (1995): Characterizing browsing strategies in the World-Wide Web. Georgia Institute of Technology. URL:http://www.igd.fhg.de/www/www95/proceedings/papers/80/user patterns/UserPatterns.Paper4.formatted.html [accessed 20 Dec 1995]

Chatterjee, P. and A. Narasimhan (1994). The Web as a distribution channel." URL: http://colette.ogsm.vanderbilt.edu/seminar/patrali_anand_final/first.htm [outdated URL]

Chile. Benvenido a Chile . Computer Science Department, University of Chile. URL: http://sunsite.dcc.uchile.cl/chile/turismo/turismo.html [accessed 15 July 1995]

Comber, Tim (1 May 1995). Building usable Web pages: an HCI perspective paper. First Australian World Wide Web Conference, Ballina, Australia, 30 Apr - 2 May. URL: http://www.scu.edu.au:80/ausweb95/papers/hypertext/comber/ [accessed 15 Nov 1995]

Copyright Clearance Center, The (CCC). URL: http://www.copyright.com [accessed 29 Jan 1996]

Cowles/SIMBA Media Daily (14 Sept 1995). Rush to register spurs charges on Internet domain names. URL: http://www.iworld.com/netday/simba/95091404.html [accessed 15 Jan 1996]

Crain, Rance (24 Oct 1994). Hype and hooey clog superhighway. ADA, 65(45):18.

Crouch, Geoffrey (1991). Expert computer systems in tourism: emerging possibilities. Journal of Travel Research, 29(3):3-10.

Cuba, Republic of, WWW. URL: http://www.unipr.it/~davide/cuba/home.html [accessed 30 Aug 1995]

Dalva, David (Jun 1994). Security and the World Wide Web. URL: http://www.tis.com/Home/NetworkSecurity/WWW/Article [inactive/accessed 1 Nov 1995]

Davis, John III (1995). Travel Distribution 2000 Conference, Washington, D.C., 12-13 Sept.

December, John (1 Oct 1994). Challenges for Web information providers. Computer-Mediated Communication Magazine. 1(6):8-14. URL: http://www.rpi.edu/~decemj/cmc/mag/1994/oct/webip.html [accessed 29 Jan 1996]

Destinations Magazine. URL: http://www.travelersguide.com/destinations/destcovr.htm [accessed 29 Oct 1995]

_____ Dollars & sense -- mind your business: marketing, management and advertising tips abound on these 15 sites (1 Apr 1995). NetGuide, CMP Publcations, Inc., (204):88.

Downs, Scott and Alex Lange (25 Apr 1994). The Net as a vehicle for business data sharing - existing tools for a cross-platform information strategy. Open Systems Today, 148:86.

Duffy, Robert and Michael Palmer (1994). Taking the high road to institutional self-promotion. 2nd International World Wide Web Conference. Ramada-Congress Hotel, Chicago, U.S.A., 17-20 Oct. URL: http://www.ncsa.uiuc.edu/SDG/IT94/Proceedings/Overviews/duffy/main.html [accessed 15 Nov 1995]

Eckenwiler, Mark (1 Feb 1996). Net.Law. CMP Publications, Inc., 302:35.

Eckhouse, John (1 Jan 1996). Setting your sites on the Web--all the world's your stage when you create your own home page on the Internet; it's easy to do--just follow our guide as you go. HomePC, CMP Publications, Inc., 301:108.

Edelstein, Helen (1995). Travel Distribution 2000 Conference, Washington, D.C., 12-13 Sept.

Elliot, Christopher (18 Apr 1996). Is Europe taking the lead in interactive travel? Interactive Travel Report, (1) 22:(electronic edition, Part Two).

_____ Executive's guide to marketing on the Internet, the. The Industry NET Marketing and Research Group. URL: http://www.eznet.com/personal/solomon/guide.html [accessed 17 Jan 1996]

Falk, Jim (1995). The meaning of the Web. AusWeb95, Ballina Resort, New South Wales, Australia, 30 Apr -2 May. URL: http://www.scu.edu.au:80/ausweb95/papers/sociology/falk/ [accessed 30 Jan 1996]

Felker, Clay (1995) in Markoff, John (20 Nov 1995). If the medium is the message, the message is the Web. New York Times, vol. CXLV, no. 50, 251, p. A1; C5 col. 1.

Ferren, Brian (12 Dec 1995) Keynote Address. 4th International World Wide Web Conference, Boston, U.S.A., 11-14 Dec. URL: http://www.bellcore.com/WWWCONF/index.html [accessed 30 Jan 1996]

Fink, Steve (13 Dec 1995) How Internet technology drives new business models. General session. 4th International World Wide Web Conference, Boston, U.S.A., 11-14 Dec.

Francescape. URL: http://www.france.com/francescape/top.html [accessed 18 Nov 1995]

Fry, Andrew (1994). Publishing in the new mass medium: creating content on the Internet. 2nd International World Wide Web Conference, Chicago, 17-20 Oct. URL: http://www.ncsa.uiuc.edu/SDG/IT94/Proceedings/Overviews/fry/fry.html [accessed 10 Nov 1995]

Genesis Project. URL: http://www.io.org/~consult/genesis.html [accessed 29 Jan 1995]

Gerwig, Kate (1 Jan 96). Getting your small business online--the world can be your small business' marketplace. NetGuide, 301:95.

Gilbert, D.C. and P. Houghton (1991). An exploratory investigation of format, design and use of U.K. tour operator's brochures. Journal of Travel Research, 30(2):20-25.

Gilder, George (1995) in interview with Ubois, Jeff (1995) Auguring the matrix. Internet World, 6(11):62-71.

GNN Travel Center - URL:http://gnn.com/gnn/meta/travel/index.html [accessed 22 Jan 1996]

Gordon, Howell (1995). The emerging Internet Market. INET'95.

Hall, Eric (15 Jan 1996). Adding interactive services to your Web server. Network Computing, 701:162

Hastings, Hunter (1994). Wining with technology requires a customer focus. IADW, 35(41):18.

Hertzberg, Robert (10 Apr 1995). Where will Web content experts come from? Interactive Age, 212:14.

Heyman, Karen (1 Jan 1996). Web 2000 - we show you tomorrow's net today. NetGuide, CMP Publications, Inc., 301:53.

Hodgson, Peter (1993). Tour operator brochure design research revisited. Journal of Travel Research, 32(1):50-52.

Hoffman, D.L. and T.P. Novak (15 Dec 1995). Marketing in computer-mediated environments: conceptual foundations. Project 2000 Working Paper. URL: http://www2000.ogsm.vanderbilt.edu/cmepaper/section1.html#worldwideweb [accessed 15 Dec 1995; revisions 1 Jan, 11 Jul 1995]

Hoffman, Jeffrey (1995). President and CEO of TravelLOGIX. URL: http://www.travelogix.com/MOMAInter.html [accessed 25 Jan 1996]

Hoffman, Paul E. (28 Apr 1995). The user interface of URLs. INET'95.

Holland, Bill (1994) in Finnie, Graham (12 Dec 1994). Companies on Web face an information overload. Communications Week International, 136:8.

_____ How to shop for a local Internet Service Provider to host your organization's Web pages: effective marketing with small business Web sites (4 Dec 95). Web Marketing Today, "A Bi-Weekly E-Zine", issue 3.

Hruschka, Harald and Josef Mazanec (1990). Computer-assisted travel counseling. Annals of Tourism Research, 17:208-227.

Hunt, John D. (1975). Image as a factor in tourism development. Journal of Travel Research, 13(3):1-7.

_____ (18 Apr 1996). Industry not acively pursing ads either on company sites or to attact users. Interactive Travel Report, (1) 22:(electronic edition, Part One).

InfoSeek Guide to travel sites. URL: http://guide-p.infoseek.com/WW/NS/tables/DB?C1183,1971&db=62 [accessed 25 Jan 1996]

Israel, Embassy in Washington, D.C. URL: http://www.israel.org/israel-info/Titles.cgi/tour [accessed 15 Jul 1995]

James, Rick (1994). in (no author) The bottom-line: supply-side's view of SABRE. Travel Tech, Miller Freeman, Inc.

Kaimakis, Agamemnon (1995). Tourist guide to the Greek Islands. Dissertation (presented online), Shefield, United Kingdom. URL: http://www.shef.ac.uk/~is/studwork/agis/tg-home.html [accessed 5 Deb 1995]

Klein, David (17 Jul 1995). How people really find Web sites. Interactive Age, CMP Publications, Inc., (single access page generated)

Latvia. URL: http://www.vernet.lv/Latvia/travel/welcome.html [accessed 15 Aug 1995]

LeBlanc, Gaston (1992). Factors affecting customer evaluation of service quality in travel agencies: an investigation of customer perceptions. Journal of Travel Research, 30(4):10-16.

_____ "Le Web en dix points cardinaux," (1 Jul 1995) Interactive Age, CMP Publications, Inc., (single access page generated)

Lennon, Martin (1995). Tourism marketing on the World Wide Web. URL: http://www.ait.ac.nz/people/mlennon/028.html [accessed 1 May 1995]

L.L.Bean catalog. URL: http://www.llbean.com/ [accessed 20 Dec 1995

Loeb, Larry (Sept 1995). Internal Webs: not just for techies. Web Week, Mecklermedia Corp., 1(5) [instantaneous web page]

Lycos search engine. URL: http://www.lycos.com [accessed 25 Jan 1996]

Maddox, Kate, Mitch Wagner, and Clinton Wilder (4 Sept 1995). Online commerce: making money on the Web. CMP Publications. URL: http://192.216.191.71/techweb/iw/543/43mtweb.htm [accessed 25 Jan 1996]

Magellan. URL: http://www.mckinley.com/mckinleycgi/browse.pl?UMB+23 +Travel_&_Tourism [accessed 29 Jan 1996]

Maine's Directory of Maine Tourism Businesses On and Off the Web. URL: http://www.state.me.us/decd/tour/direct.html [accessed 20 Jan 1996]

Maine's Tourism Guestbook. URL: http://www.together.com/maine/guestbook/ [accessed 20 Jan 1996]

Maine's Online Chat Forum: Talk About Maine! URL: http://www.together.com/maine/bbs/ [accessed 20 Jan 1996]

Mansfeld, Yoel (1992). From motivation to actual travel. Annals of Tourism Research, 19:399-419.

Markoff, John (20 Nov 1995). If the medium is the message, the message is the Web. New York Times, vol. CXLV, no. 50, 251, p. A1; C5 col. 1.

Metro Maps. URL: http://metro.jusieu.fr:1001/bin/cities/english [accessed 17 Jan 1996]

Michie, Donald A. and Gary L. Sullivan (1990). The role(s) of the international travel agent in the travel decision of client families. Journal of Travel Research, 29(2):31-38

Morley, Clive (1991). Modeling international tourism demand: model specification and structure. Journal of Travel Research, 30(1): 40-44.

Mowlana, Hamid and Ginger Smith (1993). Tourism in a global context: the case of frequent traveler programs. Journal of Travel Research, 31(3):20-27

Mukherjea (1995). Visualizing the WWWeb with the navigational view builder. Georgia Institute of Technology. URL: http://www.cc.gatech.edu/gvu/people/Phd/sougata/www/mukh.html [accessed 15 Nov 1995]

NCSA Mosaic (1993) URL: http://www.ncsa.uiuc.edu/SDG/Software/Mosaic/NCSAMosaicHome.html [accessed 25 Jan 1996]

Netherlands/Holland Tourist Information by subject. URL: http://www.xxlink.nl/nbt/ [accessed 1 Jun 1995]

Netscape Navigator (13 Oct 1994). URL: http://home.netscape.com [accessed 29 Jan 1996]

Network Wizards Internet Domain Survey (1995). URL: http://www.nw.com/zone/WWW/dist-bynum.html [accessed 15 Dec 1995]

New Brunswick Outdoor Adventure Guide. New Brunswick Department of Economic Development and Tourism. URL: http://www.csi.nb.ca/tourism/ [accessed 25 Nov 1995]

Nielsen, Jakob (13 Dec 1995). Panel debates cool over content. 4th International World Wide Web Conference, Boston, U.S.A., Dec. 11-14.

Nielsen, Jakob (Jan 1996). Relationships on the Web. The Alert Box for 1996. Sun Microsystems.

Nielsen, Jakob (13 Dec 1995). What does it take to design a great Web site? 4th International World Wide Web Conference, Boston, U.S.A., 11-14 Dec. URL: http://www.w3.org/pub/Conferences/WWW4/Panels/coolorcontent.html [accessed 25 Jan 1996]

Noren, Allen in Sandberg, Jared (12 May 1995). Tourists turn to Internet for other tourists' tips. The Wall Street Journal, B1; B9, col. 4.

On-line Dictionary of Computing. URL: http://wombat.doc.ic.ac.uk/?home+page [accessed 15 Oct 1995]

Open Market, Inc. (1996). URL: http://www.directory.net/dir/statistics.html [accessed 29 Jan 1996]

Open Text. URL: http://www.altavista.digital.com/ [accessed 29 Jan 1996]

Pacific Asia Travel Association (PATA). URL: http://www.singapore.com/pata/asia.htm [accessed 15 Jan 1996]

Pacific Asia Travel Association (PATA) Annual Statistical Report 1994. URL: http://www.singapore.com/pata/tta.htm

Parrish, Deidra-Ann (June 15, 1995). No P.R.? That's no good--an effective public relations strategy is crucial to success. VARBusiness, CMP Publications, Inc., 1110:33.

Payne, Jeffrey and David Pool (Nov 1995). Forging ahead. Internet World. Mecklermedia Corp., Westport, CT, U.S.A., 6(11):55-56.

PCTravel. URL: www.nando.net/ads/pctravel/pctravel.html [accessed 29 Jan 1996]

Peru, MITINCI. URL: http://www.rcp.net.pe/MITINCI/mitinci.html [accessed 15 Jul 1995]

Pikes, Bradley J. (1 Jan 1996). Business deals flourish -- spinning a Web of infinite opportunities. Computer Retail Week, 624:35

Point Survey Top 5%. URL: http://www.pointcom.com/ [accessed 22 Jan 1996]

Rafferty, John (1995). World Conference on Technology and Tourism, Bartle Convention Center, Kansas City, 25-27 Sept.

Resnick, Rosalind (1 Aug 1995). Online advertising: building a rate card that sells. Interactive Publishing Alert. URL: http://www.popco.com/hyper/inet-marketing/archives [accessed 15 Aug 1995].

Richards, Jeff (1996) How to market and sell travel and tourism on the Internet. Grand Hyatt, San Francisco, CA, U.S.A., 26-27 Feb.

Rimmer, Peter J. (20 Mar 1995) in McClain, John D. (22 Apr 1995). Disparity between rich, poor widens. Associated Press.

RIPE Network Coordination Centre. URL: http://www.ripe.net/ [accessed 29 Jan 1996]

Rubin, Elaine (1995) in Bachman, Katy M. (March/April, 1995). Brave new world: why you should be investing in tomorrow's media. Marketing Tools. URL: http://www.marketingtools.com/search/mt/MT114.htm [accessed 27 Jan 1996]

Rudyk, Nathan (15 Feb 95). Internet's your ticket to ride: wild horses couldn't take me away. Speech, National Capital Chapter of the American Marketing Association, Ottawa, Canada.

Sandberg, Jared (12 May 1995). Tourists turn to Internet for other tourists' tips. The Wall Street Journal, B1; B9, col. 4.

_____ Secure Web platform whitepaper: a new breakthrough in WWW application security (1995). SecureWare, Inc., Hannah. URL: http://www.sware.com/papers/secureweb/ [accessed 20 Dec 1995]

Shewchuk, Janice (1996). Tourism on the Net. Canada Internet World'96, session K4, Sheraton, Centre, Toronto, 9-12 Jan.

Sixth Conference on Computers, Freedom, and Privacy (1996). Massachusetts Institute of Technology, Cambridge, Massachusetts. 27-30 March. URL: http://www-swiss.ai.mit.edu/~switz/cfp96/ [accessed 20 Jan 1996]

Skidmore, Dave (26 Jul 1995). Associated Press. [online access page not retained]

Slovenia. URL: http://www.ijs.si/slo.html [access 28 Sept 1995]

Smith, Stephen L.J. (1994). The tourism product. Annals of Tourism Research, 21(3):582-595.

Snepenger, David, Kelli Meged, Mary Snelling and Kelly Worrall (1990). Information search strategies by destination-naive tourists. Journal of Travel Research, 29(1):13-16.

South Africa Travel. URL: http://www.africa.com/docs/satravel.htm [accessed 15 Jul 1995]

South Dakota Department of Tourism Group Tour Planning Guide. URL: http://www.state.sd.us/state/executive/tourism/grptour/grptour.htm [accessed 17 July 1995]

Sussman, Vic and Kenan Pollack (13 Nov 1995). Gold rush in Cyberspace. U.S. News and World Report, pp. 72-80.

Tobin, Bill (1995) in Bachman, Katy (March/April 1995). Brave new world: why you should be investing in tomorrow's media today. Marketing Tools, American Demographics, Inc.

Travel Management Services. URL: http://www.fortnet.org/BonVoyageTravel/BVT_Corporate.html [accessed 25 Jan 1996]

Travel Search. URL: http://travelsearch.com/contact.htm [accessed 20 Jan 1996]

Travel TIME (TM) Travel Information Center. URL: http://www.vais.net/~traveltime/abouttt.html [accessed 25 Jan 1996]

Travel Southern Africa - the Complete Travel Guide. URL: http://www.pix.za/business/rfid/formt.html [accessed 25 Jan 1996]

Travel Web. URL: http://www.travelweb.com/ [accessed 25 Jan 1996]

Travelers Guide. URL: http://www.travelersguide.com/destinations/destcovr.htm [accessed 25 Jan 1996]

Travellers Survey. URL: http://www.hk.linkage.net/markets/abt/survey/survey.html [accessed 25 Jan 1996]

TravelLOGIX. URL: http://www.travelogix.com/MOMAInter.html [accessed 25 Jan 1996]

Turkey . URL: http://www.metu.edu.tr/~melih/melhome.html [accessed 10 Sept 1996]

UNISA-South Africa. URL: http://osprey.unisa.ac.za/0/docs/south-africa.html [accessed 10 Sept 1996]

United States Travel and Tourism Information Network (USTTIN). Developed and hosted at University of Colorado at Boulder in Summer, 1995 (URL: http://www.colorado.edu/USTTIN/home.html). URL: http://www.usttin.org/ [accessed 20 Jan 1996]

ValuJet. URL: http://www.valuejet.com [accessed 30 Jan 1996]

Vis, David (9 Jan 1995) "On line advertisers should provide information, not hype." Travel Weekly, p. 40.

Washburn, Bill (Dec 1995). The midas touch. Internet World, Mecklermedia Co., 6(12):(electronic version, single page access).

_____ Web pages show new marketing approaches, but offer no guarantees (31 Jul 1995). Knight-Ridder Business News.

WebCrawler. URL: http://webcrawler.com [accessed 29 Jan 1996]

_____ Web pages show new marketing approaches, but offer no guarantees (31 Jul 1995). Knight-Ridder Business News.

WebTrack. URL: http://www.webtrack.com/adverts/category/t4.html [accessed 14 Dec 1995]

What's Hot in Travel. Lycos. URL: http://206.101.96.100/lycos250/hot-travel.html [accessed 25 Jan 1996]

White House Conference on Technology and Tourism (1995). Sheraton Washington Hotel, Washington, D.C., U.S.A., 29-31 Oct.

_____ Who should advertise on the World Wide Web?" (updated: 21 September 1995). Werbal, Advertising and Marketing Consultancy, Berner Technopark, Bern, Switerzerland. URL: http://www.werbal.ch/wwwprose.html

_____ Who's succeeding on the Internet and how? ActivMedia. URL: http://www.activmedia.com/details.html [accessed 29 Jan 1996]

Wicks, Bruce and Michael A. Shuett (1991). Examining the role of tourism promotion through the use of brochures. Tourism Management 12(4): 301-303.

Wilson, Ralph (4 Jan 1996) Does your business need a custom domain name? Web Marketing Today, Issue 4. [accessed 28 Jan 1996]

World Tourism Organization (1996) URL: http://www.eunet.es/InterStand/omt/ [accessed 05 Apr 1996]

World Tourism Organization (Feb, 1996). International Tourism Overview. URL: http://www.eunet.es/InterStand/omt/asia.htm [accessed 06 Apr 96]

World Tourism Organization Eleventh General Assembly (1995). Cairo, Egypt, Oct.

World Wide Web Worm, WWWW. URL: http://wwww.cs.colorado.edu/wwww [accessed 29 Jan 1996]

Yahoo. URL: http://www.yahoo.com [accessed 29 Jan 1996]

_____ Your customers are looking for you on the Internet: are you there? (1995). Rational Data Systems. URL: http://www.rds.com/5steps.html [accessed 15 Jan 1996]

_____ 20 Reasons to Put Your Business on the World Wide Web. Net 101. [accessed 29 Jan 1996).

Zhang, Bruce (1 Aug 1995). Language barriers --Which Web design standard is the safest bet? NetGuide, 208:59.