

A TYPOLOGY OF TOURISM-RELATED WEB SITES: ITS THEORETICAL BACKGROUND AND IMPLICATIONS

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The application of information technology, especially the Internet, is changing our way of life and of doing business, particularly in the tourism area. A well-defined typology is necessary to clarify the structure of the online tourism domain, to facilitate the information search process of various Internet users in the tourism area, and to provide appropriate strategies for the development of different types of tourism-related Web sites. After an analysis of the nature of information, the authors advance a typology of tourism-related Web sites based on the information communication between different information users in tourism. The implications of this typology for tourism research and tourism-related Web site development are discussed.

Internet	Tourism	Typology	Information	Richness	User analysis
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Background

Undoubtedly, information technology, especially the Internet, has changed and continues to change the nature of the tourism industry (Werthner & Klein, 1999). According to Forrester Research (1999), 17 million US households were shopping online during 1999, and by 2004, retail sales will reach \$184 billion. Compared with other industries, tourism has become the most important sector in terms of the volume of sales and online transactions (Werthner & Klein, 1999). Most tourism organizations have already gained Internet presence including both commercial and noncommercial organizations (Yuan &

Fesenmaier, 2000). Also, there is a substantial increase in the number of Web sites devoted to tourism research and administration. This growth in the number of tourism-related Web sites and the functions each Web site can provide implies that the World Wide Web (WWW) has become an important part of the tourism industry and the extraordinary effects of Internet networking are beginning to change the basic business models used by the tourism industry (Hoffman & Novak, 1996a; Werthner & Klein, 1999).

Besides this optimistic view regarding the growing importance of Internet technology in tourism, there are still many problems that need to be ad-

dressed, including poor usability of individual Web sites and the obscure structure of the online tourism domain. More and more Web sites are adopting cutting-edge and impressive Web technologies into their Web design. However, usability remains as a major issue. According to Nielsen (1999a, 1999b) most commercial Web sites have poor usability. A usability study of several highly regarded Web sites (including *travelocity.com*) found that most testers could not locate the specific information they were trying to find (Radosevich, 1997). In the tourism area, studies have shown that people often get frustrated when trying to book online, including those CEOs of online travel portal companies (Stoltz, 1999).

Perhaps more problematic is the fact that the nature of tourist products and services is not well defined; therefore, their representations on the WWW are obfuscated. For example, a search of Yahoo! using the keyword "tourism" yields 159 categories, 3087 Web sites, and 986,419 Web pages (accessed June 12, 2000). These Web sites not only include different levels of destination Web sites, hotel and motel Web sites, different transportation Web sites, tour operators and agents, but also those Web sites for tourism research and administration. It appears that this extreme variability and complexity of tourism-related Web sites causes much confusion not only among travelers but also for tourism professionals and researchers. On the Internet it is often difficult for the tourist information seeker to reach a specific tourism Web site that he (or she) expects to locate; and, once he (or she) finds a desired Web site, it is still hard to pinpoint the specific information he (or she) needs.

Radosevich (1997) argued that bad Web site design is caused primarily by the lack of understanding of the target Web users' needs. This problem, the authors argue, reflects the fact that the structure of the online tourism domain is not well defined. The problem of developing an appropriate semantic structure and domain structure for tourism-related products and services has been addressed using a number of approaches (see Smith, 1989, for a discussion on the definition of tourism). Nevertheless, when tourism goes online, the structure and characteristics of tourism fundamentally changes. Contractor and Wasserman (1999) argue that the development of technology will not only improve and facilitate traditional marketing and transaction ac-

tivities, but also "re-configures" the corporations and the industry. Therefore, a typology of travel and tourism-related Web sites is needed to describe the differences between these Web sites and will provide insights into potential strategies for their development and maintenance. This article begins the process of building an appropriate typology for tourism-related Web sites with a review of existing perspectives on the structure and characteristics of cyberspace. The investigation of the nature of Web sites using an information communication perspective is conducted and a typology of tourism-related Web sites is proposed. Finally, based on the nature of information provided by these Web sites, the implications of this typology on research and Web design are discussed.

Defining Web Sites

A clear definition of the concept of Web sites is necessary in order to establish a typology of travel and tourism-related Web sites. Unfortunately, many terms related to the Internet, including the definition of Web sites, are ambiguous and ill-defined (O'Neil & Lavoie, 1998). In an attempt to clarify the terminology, O'Neill and Lavoie defined the term Web site as "a cluster of pages" which is composed of "a unique node on the Web." Domain names are closely related to Web sites, which are "the name assigned to a computer on the Internet" and "a single computer's name can contain multiple strings separated by periods" (Comer, 1997, p. 302). The URL is the global address of documents and other resources on the Web (Webopeida, 1999) and is the most important access information for an organization (Maddox, Mehta, & Daubek, 1997). A Web site also can be seen as an information concept instead of a physical and tangible entity because one logical Web site can have multiple mirrored sites (O'Neill & Lavoie, 1998). Actually, the relationship between domain names and Web sites is quite complex. The system of domain names is hierarchical (Comer, 1997) (e.g., *travel.yahoo.com* can be seen as one subordinate domain name under the domain name *www.yahoo.com*, because it contains a specific "cluster of pages" about travel planning and tourist information). Multiple domain names can point to one "cluster of pages" with the same content (e.g., *www.headlinenews.com* and *www.cnn.com/*

QUICKNEWS/ are pointing to the same content). One domain name can have multiple clusters of pages that contain different content [e.g., www.xoom.com is an online community in which each member can build his (or her) own Web site with the address as: members.xoom.com/MEMBERNAME/; each member's Web space can be seen as a specific Web site]. In other words, Web sites can also be represented in different hierarchical levels and the criterion for defining a Web site is its informational content, not the URL or Web address. One Web site is not necessarily related to a domain name and it can be a subdirectory related to a domain name as long as it contains a cluster of Web pages that is focusing on one specific topic or targeting a specific group of people.

Existing Web Typologies

Typology is defined in the *Oxford English Dictionary* as "The study of classes with common characteristics; classification, esp. of human products, behaviour, characteristics, etc., according to type; the comparative analysis of structural or other characteristics; a classification or analysis of this kind" (Simpson & Weiner, 1989). A typology that reveals the structure of online tourism and travel-related communities according to certain attributes is highly desirable to facilitate the use of the Web for customers and tourism professionals. Many researchers have advanced various perspectives and views of the Internet, and researchers have tried to categorize Web sites from a variety of perspectives. Two major streams

of research on Web classification and typology are based upon work in information science and marketing research. The following provides a brief overview of the major concepts and models (see Table 1).

Research in Information Science

O'Neill and Lavoie (1998) discussed three types of Web sites from a technological perspective:

1. **Public Web sites:** Those Web sites have at least one portion of their contents open to the public.
2. **Private Web sites:** Those Web sites intend to be accessed by specific customers or only the homepage can be accessed by the public, and prohibit access to other parts of the Web site unless a password or IP address is recognized.
3. **Provisional sites:** Those Web sites serve meaningless content, such as: server-templates, Web page redirecting or under construction and not ready for access.

The Dewey Decimal Classification system (DDC) conceived by Melvil Dewey in 1873 is a general knowledge organization tool and the most widely used library classification system in the world (Oulton & Fisher, 1995). The DDC system follows a hierarchical structure in which the world of knowledge is divided into 10 main classes where each class is divided into 10 divisions and, in turn, each division is divided into 10 sections. Many online portals follow a similar structure as the DCC system. Yahoo!, for example, includes 14 broad areas that

Table 1
Existing Web Typologies

Name	Users or Authors	Classification Scheme	Limitations
Technical classification	O'Neill & Lavoie (1998)	Classify Web sites according to their accessibility	Content is not addressed
Dewey Decimal classification system	Yahoo! and other online portals	Hierarchical structure, mostly used in library material classification	Multifaceted, cannot be easily applied to large quantity of Web sites
North American Industrial classification system	O'Neill & Lavoie (1998)	Economic activity of a Web site is the only criterion	Excluding Web sites that include more than one industrial area and noncommercial Web sites
Functional classification	Hoger, Cappel, & Myerscough (1998)	Classify corporate uses of Web sites according to their functions in the corporate operation	Excluding those noncommercial Web sites
Value chain	Ho (1997)	Classify the different values created on the Web sites	Targeting at commercial Web sites

are similar to the DDC system (Lester, 1995) (Table 2). One entry (i.e., Web site) can appear in more than one directory in Yahoo!. O'Neill suggested that just because of the "multifaceted" characteristics of the DCC system, it cannot be easily applied to the largest proportion of public Web sites. Instead, he proposed to use the North American Industrial Classification System as a taxonomy of Web sites; it is "single-faceted" and the economic activity of a Web site is the only criterion for classification (O'Neill & Lavoie, 1998).

Research in Marketing

Several studies have been carried out focusing mainly on the functions Web sites can provide for business and marketing. In 1995, Hoffman, Novak, and Chatterjee proposed a classification of Web sites according to their functions. The six categories are:

1. Online Storefront
2. Internet Presence (Flat Ad, Image and Information)
3. Content (Fee-Based, Sponsored, Searchable Database)
4. Mall
5. Incentive Site
6. Search Agent

Hoger, Cappel, and Myerscough (1998) also proposed a typology of corporate uses of Web sites, which is similar to the previous one advanced by Hoffman et al. They pointed out that corporations may use Web sites for promotion, advertising, and

communication tools. Five categories of corporate use of Web sites were identified:

1. Promoting awareness;
2. Providing customer support;
3. Selling products or service;
4. Selling advertising space on Web sites;
5. Offering electronic information services.

Ho (1997) claimed that because technical issues regarding bandwidth and security can be resolved eventually along with the technological development, the more important question to ask is what "value" (perceived through the customer's perspective) can be created on the Web. Based on his evaluation of 1000 commercial Web sites, he classified commercial Web sites into three categories:

- I. Promotion of product and services;
- II. Provision of data and information;
- III. Processing of business transactions.

Four types of value creation processes were also identified: (1) Timely; (2) Custom; (3) Logistics; and (4) Sensational. From extensive empirical observations, Ho defined timely value as the value of time-sensitive information; custom value refers to the customization and personalization of Web sites according to the preferences of Web visitors; logistic value is defined as "predicated on preprogrammed propositions on the Web site." Based on this analysis Ho built a framework in the form of a three by four matrix (Fig. 1) in which each cell represents a purpose-value combination, or a specific value added on the Web sites for a specific purpose.

The frameworks discussed above provide different perspectives on cyberspace. However, when we try to apply these views to the online tourism area,

Table 2
Highest Level of Yahoo! Classification System

Arts & Humanities
Business & Economy
Computers & Internet
Education
Entertainment
Government
Health
News & Media
Recreation & Sports
Reference
Regional
Science
Social Science
Society & Culture

Value/Purpose	Promotion	Provision	Processing
Timely			
Custom			
Logistic			
Sensational			

Figure 1. Value matrix (from Ho, 1998).

we immediately are faced with a number of limitations. Online tourism is a broad area and we can hardly define it through technical classification or library classification systems. Technical classification tells us nothing about the contents of Web sites. Classifying Web sites based on their economic activities excludes those tourism Web sites that are either too comprehensive to summarize using one or two economic activities or noncommercial Web sites that intend to provide free online communities. These frameworks focus attention on functionality aspects of Web sites but ignore the fact that the World Wide Web is more than a virtual market that provides product information and electronic exchange functions. It offers the ability to create a virtual community (like www.lonelyplanet.com), a "global village" (McLuhan, 1964) whereby we as villagers can share our experiences, emotions, and thoughts.

A Proposed Typology of Tourism-Related Web Sites

The limitations of the above perspectives on the Internet and Web sites suggest that we still need a more profound understanding of Web sites (e.g., their nature, their use, their functions) and the real implications for the use of the Internet, especially in online tourism domain. The authors argue that the major problem of the proposed typologies of the World Wide Web is that they are based in large part upon classification schemata derived empirically, or on present implementation of information technology. With the Internet still in its infancy and undergoing a process of incredible change, the implementations of the Internet and World Wide Web are still in the process of exploring and experimenting, as the full potential of the Internet has not been completely understood. Thus, it is not convincing if we focus on current development of Web technology to develop general rules that guide our design of future information technology. Alternatively, a normative theory-based approach is more sound and reasonable. We should approach this issue by identifying the primitive building blocks underlying Web sites and the nature and characteristics of tourism. Web sites can be seen as a tool for the exchange of information. Email, for example, enables one-to-one communication; BBS, on the other hand, is a many-to-

many mass communication tool; a static Web page is similar to one-to-many publishing; and, real-time chatting with video is computer-mediated communication with both visual and audio information. This "information-based" perspective enables the user to better capture the essence of Internet space (Hoffman & Novak, 1996b). Therefore, a critical typology should be based on the analysis of the nature of information and information exchange within the online tourism environment.

The Concept of Information

Information in Psychology and Information Science. The analysis of the nature of information takes a totally different viewpoint with different disciplinary perspectives. In social psychology, information is generally defined as "anything that produces changes in consciousness of the human being—a perception, a sensation, an emotion, a memory, a thought" (Kubey & Csikszentmihalyi, 1990, p. 2). Every bit of information produced by the environment, including light, odor, or touching, can contribute to a person's consciousness. On the other hand, in information science the concept of information is differentiated at three levels: (1) information as messages; (2) information as cognitively processed; and (3) information as being in a context (i.e., situation, task, and the like) (Saracevic, 1999). The concept of information as messages involves little or no cognitive processing. Information can also be evaluated from a cognitive processing perspective that focuses attention on understanding the interaction between "human mind" and "text." The third level of information involves not only messages that are cognitively processed but also "a context—situation, task, problem-at-hand and the like" (Saracevic, 1999, p. 1054). In other words, it involves motivation and intention, which is further connected within a broader social context such as task, personality, and culture.

Information in Communication and Media Research. In a study of telepresence through virtual reality, Steuer (1992) proposed that vividness and interactivity are the two dimensions of media that can determine the sense of telepresence (see Fig. 2). Following Steuer (1992), vividness refers to "the ability of a technology to produce a sensorially rich mediated environment" (p. 81), which is determined

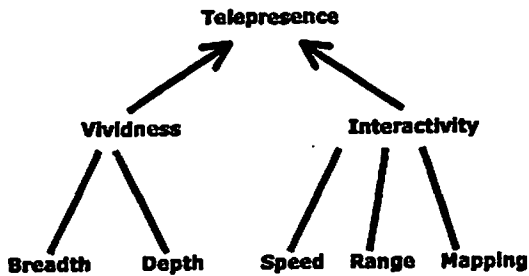


Figure 2. Variables influencing telepresence (from Steuer, 1992).

by breadth (i.e., the number of sensory dimensions simultaneously presented, which includes auditory system, haptic or touch, taste and smell system, and visual system) and depth (i.e., the resolution within each of the perceptual channels). Interactivity, on the other hand, refers to "the degree to which users of a medium can influence the form or content of the mediated environment" and is determined by speed (i.e., the rate of speed at which an input can be assimilated within the mediated environment), range (i.e., number of outcomes), and mapping (i.e., the ability of the system to respond to changes in the mediated environment) (Steuer, 1992, pp. 81-87). Another theory about information, media richness theory, was proposed by Daft and Lengel (1984) in order to investigate media choice in the communication of managers. They argued that a continuum of communication media exists (from numeric formal, formal written, personal written, telephone, to face-to-face) in accordance with lowest to highest information richness. The characteristics of media that determine the richness of information are: the speed of feedback, the channel (visual or audio), source (personal or impersonal), and language (body language, numeric or natural language). Rich media and lean media correspond to the concepts of "hot" media and "lean" media as proposed by McLuhan (1964).

Information in Marketing Research. Marketing research has taken a number of fundamentally different approaches to defining the concept of information. Evans and Wurster (1997, 2000) used the concepts of information richness and reach in order to develop strategies for corporations in the electronic commerce era. Reach is defined as the num-

ber of people sharing a piece of information, and information richness refers to "the quality of information, as defined by the user: accuracy, bandwidth, currency, customization, interactivity, relevance, security, and so forth" (Evans & Wurster, 2000, p. 23). In other words, information richness refers to information with the right content, at the right time, and with the right representation format.

The concept of information intensity is also important in marketing where information intensity denotes "the proportion of an organization's market offering and/or valued chain that is information-based" (Palmer & Griffith, 1998, p. 39). An organization's products have both physical and information components. The information component refers to the information "a buyer needs to know to obtain the product and use it to achieve the desired results" (Porter & Millar, 1985, p. 154). On the other hand, every activity in the value chain also has a physical component and information-processing component. The latter "encompasses the steps required to capture, manipulate, and channel the data necessary to perform the activity" (Porter & Millar, 1985, p. 154).

From the research areas of psychology, information science, communication, and marketing, the concepts of information vary from messages, cognitively perceived information to information of human communication. The concept of information richness in media richness theory provided by Daft and Lengel (1985) is to some extent confusing and misleading in that it uses different levels of the information concept at different places. Media richness should be a characteristic of a specific medium regardless of the users, but the authors include sources of information (personal or impersonal) as one determinant of richness of information. If we take the users of information into account, information is "anything that produces changes in consciousness" (Kubey & Csikszentmihalyi, 1990, p. 2), suggesting that information is something subjectively perceived. Information richness should be viewed as different from media richness. The former is determined by media richness (which can be seen as objective and defined by the media type), the context of the interaction, and the identities of information sender and receiver. This can explain how sometimes "lean" email can convey rich information, depending on the context, time, and the sender and re-

ceiver of the email (for a discussion of email as a rich medium, please refer to Lee, 1994). In terms of the view of information richness it is nearly impossible to separate the content of information and the medium that carries the information. As McLuhan (1964) pointed out, "the medium is the message" (p. 7).

From the above analysis, we can see that information can be defined as an extremely broad and elusive concept. If we focus on the normative model of information technology, an information provider should focus on providing information with the right content, to the right person, with the right representation, and at the right time. Therefore, we need to focus on both the sender and the receiver of the information and the context within which they exchange this information in order to define a typology of tourism-related Web sites.

Direction of Information Flow

The Internet is a platform for two-way communication. At the lowest layer of TCP/IP (Transmission Control Protocol/Internet Protocol, the basic transmission protocol for the Internet) there is always a "hand shake" style of negotiation between two computers when transferring information. At the higher level there is also two-way communication between two ends of information communication: for example, even for static Web pages, the Web visitor can obtain large quantities of information from the Web site; on the other hand, the behavior of information search of Web visitors can implicitly be stored into the Web server's log file and the opinion of Web visitors can be obtained through suggestion or feedback pages on Web sites (Bauer & Scharl, 1999). However, the direction of information flow should be taken into account when we talk about the Internet. The server-client structure of information transfer is unbalanced in that providers of content have more power; they can decide the style and format of information they want to present on the Web site, and what kind of information about the users (the client side) they want to capture. The information sender actually determines the communication style and format. When building the typology for tourism domain, we label the major direction of information flow as from the provider to the receiver.

Information Flows in Tourism-Related Web Sites

The scope of the concept of tourism has been greatly extended in cyberspace. Because cyberspace includes every aspect of our life, it also breaks the barriers between different disciplines when we use the term tourism. For example, when we are trying to locate a Web site for a specific destination (i.e., Paris), we search for a tourism Web site. When we try to find tourism statistics for a specific destination in the United States, we still refer to it as a tourism Web site. These Web sites are also categorized as tourism Web sites in most online portals. The term "tourism" in cyberspace is more than an industry or a research area but refers to every aspect related to tourism. Using this broad definition of tourism, information users related to tourism can be divided into three groups: (1) travelers; (2) tourism industry professionals; and (3) tourism researchers. Travelers are the central players in the tourism arena; tourism professionals serve travelers directly; tourism researchers study the relationships and activities of travelers and tourism professionals. Because the whole tourism area is taking the traveler as the central character, the role of the information provider is usually taken over by the researcher in researcher-professional communication and by the professionals in the professional-traveler communication even though two-way communication always exist; in other words, the main directions of information flow are always from tourism researchers to tourism professionals, and from tourism professionals to travelers. Following Sheldon (1997), a basic typology of the information flow between these groups of travel-related information in a computer-mediated environment is illustrated in Figure 3. Tourism-related Web sites can be seen as those sites designed for facilitating the information flow inside the tourism system. Web sites that link outside parts with inside parts are too general to be defined as tourism Web sites (e.g., those industry Web sites that provide hotel equipment can hardly be defined as tourism-related Web sites). Web sites can be categorized into travel Web sites and tourism Web sites based upon an analysis of information users combined with a broad definition of the words travel and tourism (see Table 3).

Travel Web Sites. Travel Web sites focus on travelers as their target visitors and their main objective

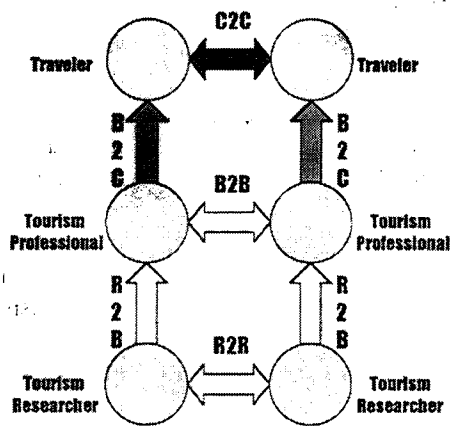


Figure 3. Information flows in tourism area. White arrows: information flows of travel Web sites; gray arrows: information flows of tourism Web sites.

is to satisfy the information needs of travelers, including communication among travelers and between travelers and tourism professionals (including governmental agencies that are providing tourist information). Tourism companies, nonprofit organizations, and personal Web sites that provide information and electronic transactions or facilitate communication and information exchange among travelers can be categorized into travel Web sites.

Tourism Web Sites. Tourism Web sites have tourism professionals or tourism researchers as their target visitors. These Web sites include tourism organizations that aim at facilitating information exchange between or within tourism professionals and tourism researchers (including governmental agencies or consulting company that can perform tourism research). Please note that travelers, tourism professionals, and tourism researchers are not strictly defined by their social identity, but rather by the activities (in other words, contexts and tasks), or the information exchanges in which they are involved, as previously discussed.

The information flows between three parts in the tourism system can be represented by each of the pairs of communicators:

Information flows between travelers: The Web sites used among travelers for the exchange of personalized, noncommercial information can be classified into this type, including mainly online traveler communities. This kind of Web site can be seen as a customer to customer (C2C) Web site.

Information flows from professionals to travelers: These Web sites are created by tourism industries to facilitate the information flow between travelers and tourism industry professionals in order to satisfy the information needs of travelers, or they are used by tourism professionals for

Table 3
A Typology of Tourism Web Sites by Information Flows

	Information Flow	Business Term	Explanation	Web Site Examples
Travel Web sites	Travelers–travelers	C2C	Facilitate information exchange between travelers	Online traveler communities: www.lonelyplanet.com
	Professionals–travelers	B2C	Facilitate information exchange between travelers and different tourism professionals	Provide online information to travelers: www.enjoyillinois.com
Tourism Web sites	Professional–professional	B2B	Business-to-business communication, Web sites of tourism professional associations, or tourism administration	International Association of Convention & Visitor Bureaus: www.iacvb.org
	Researchers–Professionals	R2B	Web sites to enhance communication between professionals and researchers (e.g., online consulting and marketing information systems)	National Laboratory for Tourism & eCommerce: www.tourism.uiuc.edu
	Researchers–Researchers	R2R	Communication between researchers	Tourism Research Webbing: www.waksberg.com/webbing

marketing purposes. Accordingly, this kind of Web site can be seen as a B2C Web site as normally called in the business world.

Information flows between tourism professionals: These Web sites focus on communication and business information exchange between partners in the tourism industry, traditionally called B2B Web sites.

Information flows from tourism researchers to tourism professionals: These Web sites are used by researchers to provide tourism industry professionals with industrial knowledge and consulting services, and also by professionals to provide sufficient and real-life research topics for tourism researchers (even though it is not the major objective of these Web sites). Consequently, we can call these Web sites researcher to business (R2B) Web sites.

Information flows between researchers: Web sites devoted to researcher communities focus on the exchange of ideas and academic materials among researchers, which we can call researcher to researcher (R2R) Web sites.

From the above analysis, we can see that different information content is needed for different tourism-related Web sites. Travel-related information needed for travel Web sites, for example, is totally different from tourism-related information, which is remotely related to the travel activity. Additionally, among travel Web sites, the information content between travelers and travelers is different from the content of the information exchange between travelers and tourism professional.

Information Richness in Tourism-Related Web Sites

Once the content of information has been determined by the typology, the next question to con-

sider is the representation of information between different tourism-related Web sites. Information richness captured one important aspect of representation of information. Here, we can define information richness in terms of the degree of involvement it causes, which is similar to the sense of telepresence proposed by Steuer (1992). Extremely rich information can cause the information seeker or surfer to become totally involved in the Web sites and lead to an optimal experience on the Web (Hoffman & Novak, 1996b). Information with a low level of richness conveys the content in a plain way, which can help information seekers reach a certain piece of information as effectively as possible without much distraction. Information richness is determined by vividness and interactivity as defined by Steuer (1992). However, because the information richness here is related to the concept of information defined at the cognitive-perceived level, one user may have different needs for different information richness depending on different contexts and tasks. Accordingly, information richness is not specific to one Web site, but specific to the information search contexts and tasks. For example, to convey the image of a tourist destination, a high level of information richness is required to give Web visitors a more exciting pretravel experience; on the contrary, when the traveler is searching for flight information or a tourism research Web site that provides tourism statistics, he/she needs to reach the specific information as immediately as possible. Under this kind of circumstance, high levels of vividness and interactivity may be harmful and low information richness with clear and intuitive navigation is needed. Therefore, even in one Web site, different information search tasks should have different information richness. Three levels of richness can be identified for different information search contexts and tasks (Table 4):

Table 4
Three Levels of Information Richness of Different Web Pages

Levels	Characteristics of Information	Web Site Examples
High richness	Customization, high bandwidth, audio and video, currency, interactivity, security transaction	www.expedia.com
Moderate richness	Moderate bandwidth, interactivity, updated periodically	www.enjoyillinois.com
Low richness	Static Web pages with low bandwidth	www.cupartnership.org/cvb/main.htm

1. **Low richness:** Provides basically static and text-based Web pages with little graphic content and very little interactive content.
2. **Moderate richness:** Provides large quantity of graphs and pictures, and some degree of interactivity like basic search engines, and the content of these Web pages may be updated on a weekly or monthly basis.
3. **High richness.** Animations and 3D images will appear on these Web sites. They can provide Web users with customized, up-to-date, interactive information, which is dynamically generated through a CGI program, or other client-side or server-side programs.

Discussion

Differences in information flows of Web sites provide a meaningful basis for the design of tourism-related Web sites. Different types of Web sites need to have different content of information, because different types of Web sites have different information user groups with different information needs. At the same time, the information representation of different Web sites or different Web pages in one

Web site may differ greatly in terms of information richness. The representation of information should depend on the contexts and tasks of information. The characteristics of context and task-specific information exchanged between users should be studied carefully in order to design a Web site with high usability. Accordingly, different Web sites should adopt different information richness strategies according to tasks and contexts in order to optimize the information search experience. Intuitively, a destination site targeting potential travelers can, for example, be colorful, animated, and even include real-time audio and video, but a B2B Web site that intends to provide information for the tourism business partners should be timely, concise, and easy to navigate. For tourism Web sites providing tourism statistics, immediate accessibility is crucial; thus, low information richness is needed. When we design a tutorial for how to do Internet marketing, rich information may be more helpful. For example, video demonstration is more effective in order to explain the methods and theories of Internet marketing.

Differences in information richness depend on the various levels of vividness and interactivity. Steuer (1992) proposed a comparison of various technolo-

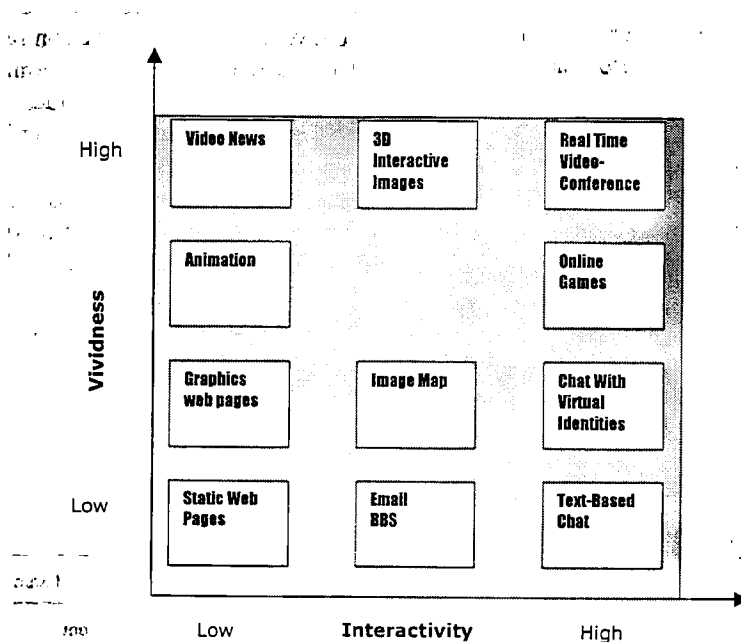


Figure 4. A classification of Web technologies by vividness and interactivity (based on Steuer, 1992).

gies by vividness and interactivity; a revised version is shown in Figure 4. The Web technologies in the upper right corner can be used to maximize the information richness of a Web site. For low richness requirements, the design focus should be an easy-to-navigate and intuitive structure, in which the technique in the lower left corner can be used.

It is not an easy task to construct a typology for tourism-related Web sites. In this article the authors argue that in order to get a clear view of the online tourism domain, a normative approach should be taken instead of an empirical method, because information technology is still undergoing fast development. The most fundamental aspect of Web sites is the exchange of information. Therefore, a critical typology of Web sites should be based on the communication of different Web users and the nature of this information exchange. Accordingly, tourism-related Web sites can be categorized into travel Web sites and tourism Web sites. Furthermore, the authors assume that information representation can be characterized by the level of information richness that, in turn, is determined by the two measures of vividness and interactivity. Information representation should be different according to different information search contexts and tasks even in the same Web sites. This normative approach of tourism-related Web sites suggests that the standard of good Web site design should not be universally identical for all the Web sites, but rather based on user's needs, contexts, and tasks in the information search process. In the tourism area, development and research on information technology need to incorporate the results of consumer behavior research on tourists. Only using this approach can high-usability tourism-related Web sites be produced and the benchmark and criteria of Web site and eCommerce design be set.

The conclusion derived from the normative approach is that information richness depending on user needs, contexts, and tasks requires careful investigation. Empirical evidence is needed to evaluate/demonstrate that differences exist among the information exchanges of travelers, tourism professionals, and tourism researchers, and that their needs differ in terms of the richness of the information presented, which depends on contexts and tasks. For example, it would be interesting to associate the concepts of hedonic information surfing versus utili-

tarian information searching (Hirschman & Holbrook, 1982; Hofacker, 2000; Vogt & Fesenmaier, 1998) with the construct of information richness and to investigate the links between information richness and the levels of hedonic information surfing and utilitarian information searching. Along with the development of information technology, a typology based on a more detailed classification scheme may be constructed when more customized, context- and task-specific information provision becomes possible.

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