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What Does the Consumer Want from a DMO Website? A Study of US and Canadian Tourists' Perspectives

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ABSTRACT

Destination marketing organisations (DMOs) are facing intriguing challenges to provide quality information online in an era of information overload. Insufficient knowledge of tourist's online information preferences and search behaviour has hindered them from effective information management. This research aimed to examine consumers' perspectives of the information role of the DMOs and their preferences and attitudes towards what constitute engaging and relevant Web contents and functionalities for a DMO website. The results suggested that tourists' preference of information content varied across the different levels of DMO websites (country, state/province and city). In addition, the study revealed that travellers' information needs and behaviour change over the entire information consumption process, which include the before, during and post-trip period. Implications for DMOs were discussed at the end. Copyright © 2007 John Wiley & Sons, Ltd.

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Keywords: online information search behaviour; destination marketing organisations; travellers' information needs; information preference.

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INTRODUCTION

Destination marketing organisations (DMOs) are entrusted with the role of promoting and marketing their cities, states and countries to consumers and travel trade intermediaries (Morrison, 1998). One crucial market communication channel for DMOs has been the Internet, as information technology (IT) has transformed the tourism industry into a digital economy (Buhalis and Spada, 2000). Although the integration of IT into the fabric of a DMO's overall marketing strategy is considered as an important key to success (Gretzel *et al*., 2000), the exponential explosion of information online has presented the DMOs with increasing challenges as well as opportunities in the information era.

New information technologies have provided travel organisations (both public and private) speedy and efficient delivery of comprehensive information without geographical confinement. While most travel suppliers and intermediaries have now adopted the Internet as an important marketing and distribution channel, almost every destination (at the country, state or city level) provides tourism information online (Sheldon, 1997; Gretzel, 2004). However, these opportunities presented by new technology have, ironically, caused new challenges. The complex composition of tourism products and the overlapped boundaries of service provision often led to serious competition in the physical market; this seems no different in the virtual spaces (Werthner,

2003). Meanwhile, consumers are often overloaded with information provided by multiple sources and feel overwhelmed before finding the intended information. Irrelevant or untargeted information will be filtered through consumers' cognitive system with little impact. This has heightened the importance of quality information provision for tourism organisations (Kaplanidou and Vogt, 2004).

Since the Internet allows each organisation to deliver information and services through structures and processes that are fast, flexible and flat, the hierarchical elements in travel organisations are expected to be dissolved on the virtual space (Barnatt, 1997). Therefore, each DMO member (country, state or city level) in a certain region, when free from the hierarchical structure, is not only equally reachable by customers in the virtual market but may also contribute to inconsistent and overlapping information in overlapped destination areas (Pechlaner *et al*., 2004). Meanwhile, national, state or city tourism websites are complicated by multiple tasks of being a comprehensive information provider and information gateway to its destination (World Tourism Organization Business Council (WTOBC), 1999). In addition to the responsibility of presenting and projecting destination image, a DMO's website can also be loaded with a multitude of functionalities such as mapping, searchable lists, travel itineraries, food and lodging as well as reservation information. Further, the need to continually update the underlying databases to keep information current is a daunting task. Marketing in cyberspace results in adding a new dimension to the current range of marketing tools utilised by DMOs. Interactive features that can be fully accommodated online such as communities of interests further present themselves as wonderful opportunities and challenges. In addition, while past marketing efforts were primarily pre-arrival in nature, post-arrival and post-purchase reinforcement marketing efforts are increasingly becoming important in attracting repeat visitors (Heath, 1999).

DMOs are embracing the new online technologies. However, in meeting objectives to promote the destination, the DMO websites need to clearly define their identities and roles. Should a destination site be more content-driven or process-driven? Should it be the final point of contact between the destination and the prospective tourist or should it be the first opportunity for the destination to develop an ongoing communication with the users? Given the complexity of the issue, there have been vigorous discussions about the DMOs' evolving role in customer service and contact through closer partnerships with private sectors and integrated information systems (Buhalis, 2000; Gretzel *et al*., 2000; Scott *et al*., 2000; Ritchie and Crouch, 2003; Wober, 2003; Sheehan and Ritchie, 2005). At the same time, much research has attempted to comparatively evaluate the sites in terms of features, functions, layouts and information presentation (Getz *et al*., 1998; Buhalis and Spada, 2000; Doolin *et al*., 2002; Ritchie and Ritchie, 2002; So and Morrison, 2003; Wang and Fesenmaier, 2006). Although it is important to evaluate the DMO sites, the solution to provide quality information and services should ultimately hinge upon the users — the travelling public.

There has been insufficient visible research effort to solicit the viewpoints and preferences of the online consumers (Benckendorff, 2006). This research aims to work towards filling this literature gap by examining consumers' perspectives of the information role of DMOs at different levels (country, state and city) and their preferences and attitudes towards what constitute engaging and relevant Web contents and features. The intent of this study was to help DMOs to better understand travellers' information needs and expectations on the Internet in their decision process so that DMOs can organise and deploy quality information and achieve marketing communication objectives on their websites.

INFORMATION SEARCH BEHAVIOUR AND DECISION-MAKING

Travel decisions involve a variety of search behaviours, and travellers have access to numerous and varied information sources to aid their trip planning (Fodness and Murray, 1998). Therefore, it is not surprising that a considerable amount of tourism research was dedicated to information search behaviour (Fodness and Murray, 1998; Vogt and Fesenmaier, 1998; Money and Crotts, 2003; Gursoy

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and McCleary, 2004; Decrop and Snelders, 2005). Factors that potentially influence tourists' information search behaviour such as trip characteristics demographic background, personality trait and family decision role have been extensively investigated (Andereck and Caldwell, 1993; Reid and Crompton, 1993; Fodness and Murray, 1998; Luo *et al*., 2004). The role of information in decision-making and the typology of tourist information search strategies are also explored in literature (Fodness and Murray, 1999). Gursoy and McCleary (2004) divided the general travel information search into internal and external, and maintained that familiarity, expertise, learning and previous visits influenced tourists' perceived searching cost, and accordingly the utilisation of internal/external information sources. The authors noted that the cost of information searching is in proportion to the perceived risk in purchasing. In addition, psychological constructs such as the travellers' motive and involvement are heavily investigated and prove to be powerful predictors of information and decision-making behaviour in tourism research (Crompton, 1992). Fesenmaier and Johnson (1989) classified the travellers into three groups by their degree of involvement and examined their different information searching and travel planning patterns. Fodness and Murray (1997) classified three different information strategies (active, passive and possessive) used by leisure tourists to Florida. The classification is made on the basis of the degree and direction of information sources sought.

Understanding how customers acquire information is critical for marketing communication strategies. There are a number of studies that have focused on customers' information sourcing behaviours. Snepenger and Snepenger (1993) identified four major information sources, namely, family and friends, destination-specific literature, media and the travel consultant. Understandably, in the early 1990s, the Internet as a powerful information channel was not acknowledged. Since then, the low cost and easy retrieval of information online have dramatically changed the paradigm of information search (Gursoy and McCleary, 2004). More travellers have used the Internet as a medium for searching tourism information and planning their trips. Travel information is now among the most popular and frequently visited information on the Internet (Law and Leung, 2000; Zhou and DeSantis, 2005). According to the Travel Industry Association of America (TIA), among the 145.7 million US travellers today, 67% use the Internet (TIA, 2004).

While more and more tourists go online to get travel information, there have been increasing research interests on the online services and features used by travellers when making decisions about travel products (Benckendorff, 2006). TIA (2004) reported that, among the various information related to travel planning, travellers searched for information on maps or driving directions, places to stay, destination activities, dinging, entertainment, local events and travel packages (TIA, 2004). Nysveen *et al*. (2003) identified the types of Web services that were most preferred by customers on tourism businesses' websites. Kaplanidou and Vogt (2004) identified the elements that travellers sought to find in destination websites and examined customers' expectation on destination websites.

Although travel information search was understood as a complex and multifaceted process in which different elements of search outcomes and travel decision choices were interrelated and evolving in a decision process over time, much of the past research has focused on the information search behaviour at the pre-purchasing decision context (Snepenger and Snepenger, 1993; Fodness and Murray, 1997; Dellaert *et al*., 1998). Recently, the complexity of travel products and travel decision-making prompted researchers to adopt a process approach to understanding tourists' information search behaviour. The dynamic nature of travel decision-making was viewed as an ongoing process, not as unchanging sequential stages that end once a decision is made (Decrop and Snelders, 2005). Information behaviour is described as a continuing integration of new information into the existing decision. Knowledge from various sources including central (functional) and peripheral (hedonic) information routes and prior experiences is accumulated through this ongoing process (Vogt & Fesenmaier, 1998; Jeng and Fesenmaier, 2002; Hyde, 2004).

Bargeman *et al*. (2002) developed a typology investigating information influence on vacation behaviour over time using a sequence

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alignment method. Jeng and Fesenmaier (2002) explained that the on-going search in travel decision-making is hierarchical in nature whereby decisions made in an earlier stage limit the scope of successive points. In other words, the hierarchical pattern is formed by contingent search as the travel decisions become more solid through the funnelling process (Jeng and Fesenmaier, 2002). Fesenmaier and Jeng (2000) proposed a structural travel decision model that consists of core, secondary and en route sub-decisions. They suggested different functional information needs at both prior and en route trip search stages. Fesenmaier and Jeng contributed to the literature by illustrating the dynamic relationship between core/secondary decisions and information search stages. Core decisions are usually planned ahead of time. Decisions such as destination choice, date/length of the trip, travel companion, accommodation, route and budget are usually core decisions. Secondary decisions are tentative and flexible decisions that include secondary destination choices, selection of activities and choosing attractions to visits. En route decisions are the decisions made during the trip and tend to be secondary decisions. Other research has also showed that tourist information search are intertwined with every phase of the decision process (Hwang *et al*., 2002), and past experiences are incorporated to the dynamic decision-making context (Bansal and Eiselt, 2004). Moreover, post-choice evaluative feedback has been viewed as a significant factor impacting the decision-maker's attitude set and/or subsequent behaviour. Tourists' experiences are stored in their memory, and they are retrieved and integrated into a decision-making frame when a new travel demand is made.

Despite the abundance of information search and decision-making literature, insufficient research attention has been paid to online consumer search behaviour in the travel and tourism field (Jang, 2004). So far there is no congruous argument on how traditional search behaviour differ from online information search (Kulviwat *et al*., 2004). IT has the potential to alter multiple dimensions of customers' information search processes, including the amount of total search, the number and type of sources consulted, and the distribution and respective roles of information gathered from these sources (Bakos and Brynjolfsson, 2000). From an econometrics perspective, perceptions of search benefits and costs are important in determining consumers' online information searching activities (Guo, 2001). In line with this perspective, many scholars in cognitive science and information systems attempted to facilitate consumers' information search with technology such as search intermediaries and intelligent agents (e.g. shop bots, recommendation agents, advisory systems) in ferreting out useful information tailored to the user needs while questioning whether consumers were overwhelmed by information overload online (Kulviwat *et al*., 2004). Studies from this perspective have identified various choice heuristics/rules (Bettman *et al*., 1991), and posit that vacationers' decision strategies are characterised by a limited amount of information processing, and accordingly selective processing is attained in the decision process (Decrop and Snelders, 2005). Otherwise, the amount of processing is not consistent across decision alternatives or attributes. The issue of selective information processing in the human decision process has revived arguments about the human cognitive system: there are various efforts to explain information processing in human decision process through mathematical algorithms (Middlekoop *et al*., 2003). However, researchers observed the disparity between mathematical and humanistic representation of decision-making processes (Luce, 1995).

STUDY OBJECTIVES

To synthesise the literature, the Internet is believed to enhance information processing and consumer decision-making by providing the right information. However, with the increased tendency of information overload, the Internet is not likely to be an information panacea for both consumers and vendors (Peterson and Merino, 2003) because ineffective or irrelevant information cannot make a particular impact on decision outcomes (Fodness and Murray, 1998). It is paramount for tourism organisations to understand that tourists' information needs differ as the travel decision-making process progresses and each stage of information search is embedded into

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the structure of the decision-making process. Very limited research has been found to explore the different information needs across the complete course of a tourism experience, i.e. pre-trip, on-site destination and post-trip. Even less is available in the online digital information space. In addition, no investigation has attempted to examine the traveller's perception or preference of information with regard to the different DMO levels (city, state and country). Using secondary data from the Canadian tourism committee, the primary purpose of the research was to investigate the role of DMO's websites in fulfilling travellers' information needs. Assuming that travel decision-making is a multidimensional process, this study will focus on exploring the types of online information the target customers perceive as valuable for pre-trip decision-making and across the different stages of the total tourism experience. The specific research questions are:

(1) Do consumers use online information differently at the various pre-trip decision-making stages (first, early, middle, late)? What is the role of DMOs' sites relative to the other types of tourism information sites in each stage?
(2) Do consumers' information needs change across the complete trip experience, namely pre-trip, on-site destination and post-trip?
(3) Do consumers' perceptions of important information contents vary across the three levels of DMO's websites (National Tourist Offices (NTO), State Tourism Offices (STO) and City Tourism Offices (CTO))?

METHODOLOGY

The data for the current study came from the *Internet Travel Survey* conducted among 2470 North Americans between 8 November and 18 December 2001 by the Canadian Tourism Commission. The samples were from US and Canadian travellers with Internet access (iTravellers). The survey instrument includes 95 questions related to demographics, Internet use patterns, online searching and purchasing patterns, and online information content and feature preferences. Because the study focuses on understanding the patterns of the traveller's information preferences and search behaviour across the complete course of the travel experience, nine sets of questions relevant to the study objective were chosen for the analysis. Six of nine selected question sets sought dichotomous responses and a 'select all that apply' option was given to the respondents to answer; the other three question sets were answered with a single choice among categorical responses. The nine sets of questions sought information from the respondents regarding: (i) the timeline of each visit in the pre-trip planning process; (ii) the types of information sites visited and other online activities before, during and post-trip; and (iii) the attitudes and perceptions towards the contents and functionalities of the three levels of DMO sites (NTO, STO and CTO).

Descriptive statistics of frequency analyses were employed to examine the information sourcing differences in pre-trip planning stages and the information need patterns across the complete trip courses (pre-trip, on-site and post-trip). Correspondence analysis using a three-way contingency table was chosen as the multivariate statistical technique to analyse the consumers' preferences of information content within the three different layers of DMOs. The correspondence map and bar graphs interpreting the contingency table provided visual representation of consumers' preference of information needs on different DMO levels.

Correspondence analysis (CA) is an exploratory multivariate technique that converts the multi-way cross-tabulation tables into graphical displays in which rows and columns are depicted as points. A map of these points can then be constructed so that the higher proportions associated with the various levels of rows and columns are close together on the map (Hair *et al*., 1998; Kaynak and Kucukemiroglu, 2001; Bendixen, 2003). CA has become increasingly popular for dimensional reduction and perceptual mapping because it provides a multivariate representation of interdependence for non-metric data, which is not possible with other multivariate methods (Hair *et al*., 1998). Mathematically, CA decomposes the Chi-square measure of association of the table into components in a manner similar to that of principal component analysis for

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continuous data. The dimensions identified in CA can be interpreted by pinpointing the largest relative contributor to the variance explained by the axis. As with principal components analysis for data reduction, CA explains most of the variation if only a few dimensions have strong dichotomies (Greenarce, 1984, cited from Kaynak and Kucukemiroglu, 2001).

RESULTS

Table 1 summarises the changes of consumers' need for online information at different pre-trip planning stages. The data exhibit different consumer needs of travel information as the travel plans move from the initial stage, characterised as broad and exploratory, to the final stage, when the plans become more concrete. For example, portal and searching sites and airline sites are most frequently visited in the first stage of trip planning, but map sites and weather sites are used in the latest stage when travel plans are more actualised. Destination websites are visited across the first, early and middle stages in the pre-trip planning course. The rates of respondents who visited destination websites in the first, early and middle stages were all higher than 10%. Meanwhile, commercial travel information websites such as travel magazines, online travel guides and news websites appear to be less frequented by tourists throughout the different pre-trip planning stages. Figure 1 helps to visualise this change pattern, demonstrating the preference changes of information sources by the different pre-trip planning stages.

Table 2 summarises the top seven online information-related activities at pre-trip, on-site destination and post-trip stages. Tourists' online activities appear to be very different across the three stages of overall trip course. Although Internet use is much more predominant at the pre-trip stage, there are still significant online activities at the post-trip phase. The overall online use rate during the trip appears to be significantly lower than both the pre-trip and the post-trip stages. However, given the age of the data (2001), this pattern could change as a result of the more prevalent availability of wireless Internet access. Post-trip online activities appear to be centred on communication with travel companions in the prior trip and information sharing with friends and relatives or potential travellers to the destination.

Table 1. Information source difference in pre-trip planning stage

Website	First (%)	Early (%)	Middle (%)	Late (%)	Don't recall (%)
Accommodation site	15.07	15.77	8.37	4.09	5.40
Airline site	18.96	8.99	3.64	1.98	4.83
Car rental site	2.66	4.97	6.27	5.41	3.15
Travel agent site	2.26	3.15	3.36	2.33	6.79
Local travel company site	1.29	2.46	5.05	3.70	5.74
Tour operator site	1.63	2.11	2.14	1.72	3.15
Destination site	10.26	10.71	10.09	3.83	5.56
Local visitor bureau site	5.71	8.16	10.13	5.85	6.09
Map site	5.48	7.07	11.42	16.73	4.86
News site	1.10	2.31	4.63	5.41	3.92
Travel magazine site	1.33	2.24	3.15	1.54	3.53
Online travel guide	2.59	4.02	4.34	2.46	4.24
Transportation sites	1.49	2.96	5.36	5.15	6.22
Portal and search engine	18.36	11.82	6.90	3.12	15.98
Special interest site	1.79	2.13	3.08	1.80	3.60
Online travel mega site	5.01	4.87	3.78	2.24	9.85
Personal travel log site	0.93	1.70	1.96	1.36	2.94
Weather site	4.08	4.54	6.31	31.25	4.15
Total Responses	3012	5770	2854	2272	4387

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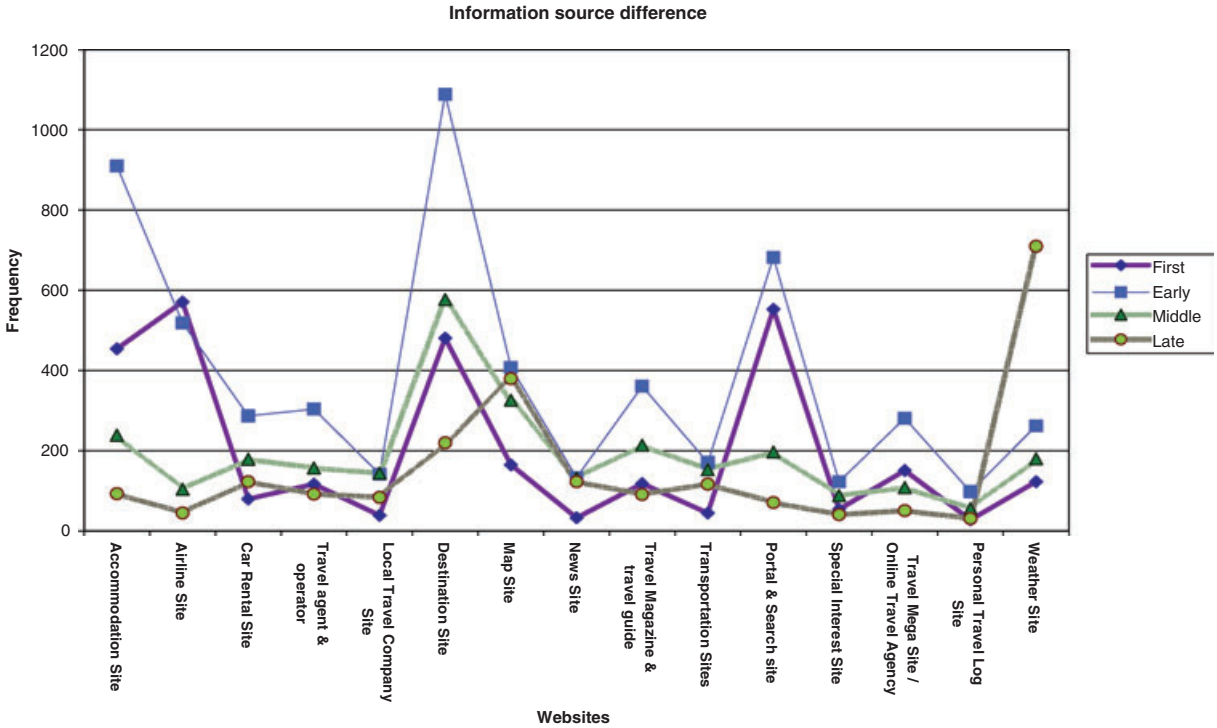

Figure 1. Information source difference in the pre-trip planning stage.

Table 2. Information need patterns across the complete trip course

Rank	Pre-trip online search (%)		On-site online activities (%)		Post-trip online activities (%)	
1	Accommodation	51.0	Email	29.0	Email	40.0
2	Flights	37.2	Weather/travel advisory	7.0	Forward/recommended website	18.0
3	Weather/travel advisory	36.9	Maps/driving directions	6.0	Posted photos	13.0
4	Maps/driving directions	33.8	Events	5.0	Register newsletter	11.0
5	Attraction	32.7	Sent e-post card	5.0	Provide feedback or suggestions	11.0
6	General travel information	28.8	General travel information	5.0	Sent an e-post card	7.0
7	Events	27.7	Restaurant/bars	4.0	Register reward program	6.0

A three-way contingency cross-tabulation analysis was employed to compare the preferences of 25 different information content types by the three levels of the DMO websites (Table 3). The comparison was performed to each set of information content provided on three types of websites — country, state/province and city DMO websites. The Chi-square tests for all sets of comparisons of information content were significant regarding consumers' perception of the importance, except for 'location identifier', 'national holiday', 'niche/special market' and 'political information'. Some hierarchical patterns in consumers' information content preferences can be found in Table 3. The sets of 'accommodation', 'events', 'deals' and 'shopping' contents are perceived as important with increasing ratios (country → state → city). That

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Table 3. Difference in perceived importance of information contents of DMO websites

Information content types	Country (%)	State (%)	City (%)	χ^2 value	p value
Accommodation	66.3	75.4	79.6	49.64	0.000**
Maps	48.3	58.1	55.1	31.83	0.000**
Tourist attraction/sightseeing	39.9	49.2	48.4	17.53	0.000**
Events	29.1	43.1	51.6	55.24	0.000**
Activities	34.7	40.1	38.5	38.62	0.000**
Deals	32.7	38.6	41.2	10.56	0.001**
Information on Tourism Bureau	31.3	33.9	27.8	18.03	0.000**
Culture	40.9	22.7	21.7	10.04	0.002**
Weather	24.6	23.4	21.8	6.58	0.010*
History	27.1	19.8	15.4	12.65	0.000**
Nightlife information	16	13.8	32.2	12.41	0.000**
Location identifier	15.4	21.6	20.1	5.78	0.160
Geography	26.9	19	9.2	17.09	0.000**
Shopping	14.4	15.7	24	27.67	0.000**
Travel information	30.7	12.5	10.1	13.56	0.000**
Travel package	18.2	17.9	14.9	34.28	0.000**
Transportation at destination	17.6	16.3	16.5	27.66	0.000**
Suggested itineraries	18.4	15.4	13.2	19.87	0.000**
Economic information	23.8	9.8	6.8	6.25	0.012*
Travelling to destination	16.6	9.4	9.6	14.35	0.000**
Tour operation	9.4	8.2	7.9	11.11	0.001**
People	10.4	6.7	4.1	4.83	0.028*
National holiday	8.4	5.4	3.4	0.22	0.638
Niche and special market info	3.2	2	3.7	3.46	0.063
Political information	6.6	2	1.8	0.16	0.686
Total frequency	3043	4941	8395		

*p value <0.01; **p value <0.05.

is, the lower the level of the DMO sites (such as city level), the more these sets of information content are perceived as needed by tourists. On the contrary, the sets of 'culture', 'history', 'geography', 'travel information', 'economics' and 'people' show descending importance ratios from country (NTO) to state (STO) to city (CTO) level. In other words, the broader information appeared to be much more important at the broader or higher level such as the country-level websites.

A CA was performed and Figure 2 provides graphical information on the relative proximities of consumers' perceptions of the information content types and the three DMO levels. The contingency table used in CA had three rows of DMO levels (NTO, STO and CTO), and 25 columns of information content types. On the graph, the three levels of DMOs seemed to be quite dissimilar as evident from their relative distance from each other. The vertical axis (Dimension 1) accounted for 86.5% of the variance and the horizontal axis (Dimension 2) accounted for 13.5%; accordingly, the associations of information types and each DMO level are mostly explained on Dimension 1. As noted from the correspondence map, the information types such as 'history', 'culture', 'travel' 'destination', 'people', 'travel information' and 'geography' were clustered around NTO websites, indicating that these information types are more sought on the NTO-level website. Information types such as 'location identifier', 'maps' and 'tourism bureau' are located closer to STO websites. Meanwhile, the information types such as 'nightlife', 'shopping' and 'event' are positioned closer to CTO websites. However, certain information types around CTO and STO websites appeared to overlap. The information contents of 'tourist attraction', 'transportation', 'lodging', 'deals' and 'activities' were not clearly positioned. These

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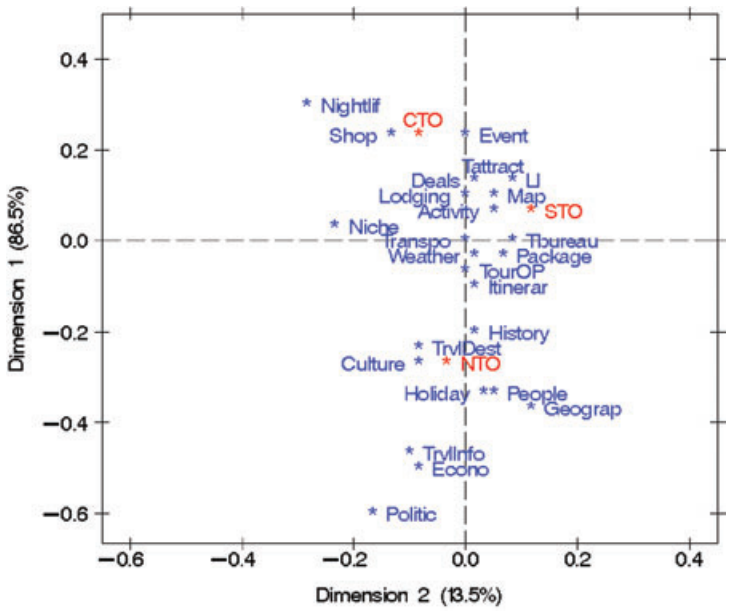

Figure 2. Correspondence map on consumers' perceptions of the information content types and the three destination marketing organisation levels. NTO, National Tourism Offices; STO, State Tourism Offices; CTO, City Tourism Offices.

information types appear to belong to both STO and CTO clusters.

DISCUSSIONS AND IMPLICATIONS

All the propositions of this study are supported by exploratory analysis. Consumers' use of online information sources shows significantly different patterns across the different pre-trip planning stages. Portal/search engine and airline sites are most frequently used in the initial stage of travel planning. As posited by Fesenmaier and Jeng (2000) and supported by this research, core decisions such as destination, budget and transportation choices are made at the earlier stages of the decision process. The result of this research shows that the corresponding online information types sought for the core decision choices start with portal/search engine and airline sites. Meanwhile, map and weather sites are mostly visited at the later stage of information search. This implies that map- and weather-related information is considered as supplementary or flexible decisions and also corresponds to the secondary sub-decision structure in Fesenmaier and Jeng's (2000) model. From the large ratio of 'visiting portal/search engine sites', we can infer that tourists initiate the online information search process from these websites. An apparent implication for DMO sites is that it can be extremely important for DMO sites to submit appropriate key words and description information to the portal and search engines. Higher rankings for a search engine can mean more tourists visiting a website in the earlier trip-planning stage. The result of this study seems to also indicate that website links from the homepages of airlines or the conglomerate virtual air travel agencies (such as ex-pedia.com) could be potentially effective ways to lend more visitors to the DMO destination websites.

DMO's websites are almost equally visited across the first, early and middle stages of the pre-trip planning course. Presumably, tourists appear to visit the DMO websites for more comprehensive information or for ongoing communication in the pre-trip decision-making process. Although the importance of online information is undeniable, as is shown by the high ratios of a variety of online information types sought by tourists at the pre-trip stage, the finding seems to support Fesenmaier and Jeng's (2000) core and secondary decision-making argument. Tourists' information needs

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appear to vary across the complete trip course, namely pre-trip, on-site destination and post-trip. The information seeking patterns of on-site activities such as event, driving and dining appears to lend support to the secondary decision-making proposition as they seem to be sought more at the on-site destination stage compared with the types of information that support core decision-making such as accommodation and flights. Although the overall ratio of Internet use on-site destination is still low, that is changing, however, as more and more individuals adopt information services through mobile devices. For example, as mobile access to Internet contents and services gets easier, it is expected that tourists may look for the directions to visit, check the weather or seek for the information on dinning places at the travel destinations through their handheld or wireless Internet tools. Post-trip online needs can also not be ignored, as is apparent from the findings of this study that a large portion of tourists appears to be involved in online activities post-trip. Whereas the pre-trip online activities centre around 'getting the trip set and ready', the post-trip online activities seem to reflect the need for information sharing and online socialisation, which help reduce post-trip cognitive dissonance. For instance, forwarding information of the trip or posting trip experiences or photos taken during the trip are popular post-trip online activities. This is indicative of the importance for DMO sites to engage tourists even after their trip. Furthermore, post-trip engagements cannot only reassure tourists of their destination choices but also work towards building online communities and loyalty.

The differences of perceived importance of information contents on the three levels of DMO's websites are evident in this research. More specifically, a hierarchical pattern can be found. As suggested by Jeng and Fesenmaier (2002), this pattern can be explained by the hierarchical nature of travel information processing. Even after a travel destination is decided, tourists appear to continue 'funnelling' information, and this 'funnelling' process influences the information selection in the three different levels of DMO' websites — country, state/province and city websites. Consequently, the perceived importance of destination-specific information such as accommodation, event, shopping and nightlife increases as the destination websites level gets tapered from country to city. On the contrary, the importance of destination general information such as history, geography, travel information, economic information and culture increases as the destination website level gets extended from city to country level. As the DMO sites move from representing the general and broad geographic region (such as a country's DMO site), to more specific and narrow geographic area (such as a city), the need for information tends to narrow down to become more specific and activity-oriented. At the higher or the broader level (the country DMO level), tourists appear to expect information that is broader, general background-related or image-related.

The geographically based preferences of online information representation can potentially be understood and explained by the schema theory (Minsky, 1975). Research has indicated that individual decision-making behaviour is bounded within a context (Jeng and Fesenmaier, 2002) and that human beings have limited processing capacity (Petty & Cacioppo, 1986; Gigerenzer and Todd, 2000; Smith and DeCoster, 2000). Although some information fails to be used in further processing in a decision subset (a problem-solving subset), this information is accumulated in our memory system as knowledge for future use (Vogt *et al*., 1993; Jeng and Fesenmaier, 2002). Although reserved in our memory, according to Minsky (1975), the knowledge can be structured and these structured frames can help in organising new inputs in terms of previously stored knowledge for future retrieval and processing frames (cited from Offredy and Meerabeau, 2005). In other words, the structured frames represent a schemata (or schema; mental frames or model) of a person's knowledge about objects, people or situation in his/her cognitive system. According to schema theorists, schema-driven processing is a top-down perceptual process that guides a selective search for data relevant to the expectation set up by the schema. This processing interacts with bottom-up data-driven processes, which may lead to the activation, modification or generation of a schema (Widmayer, n.d.). As is

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attested in this research, individuals form their expectations of information contents of NTOs, STOs and CTOs based on their prior mental schema of the various levels of DMOs.

From the clusters of information types gathered around each DMO level on the correspondence map, it can be inferred that the respondents in this study have certain perceptions of different levels of DMO websites according to their spatial or geographical representation. In other words, one might have constructed certain kinds of mental frames or schemata earlier on based on different information sources, and utilises these predispositions in working out searching strategy in various travel contexts. To optimise information-processing efforts, travellers expect to take specific information types from the different layers of DMOs. This also implies that if DMO websites provides irrelevant or non-conforming information to one's schema, the information might be easily screened out or bypassed, and cannot be processed further. This certainly can lend very important implications for the DMOs at different levels in their strategic decisions made on information content. Further, some information content types such as transportation, tourist attractions, deals, accommodation and activities were positioned on the grey area between CTO and STO clusters on the correspondence map. One might argue that these information types are not yet incorporated firmly into consumers' schemata, or the information roles or the identities of these DMOs have not been yet confirmed or acknowledged by the consumers. In any case, these results show that DMO marketers need to put more efforts into understanding consumers' preferences and expectations on the information content types on their websites and to develop clear information roles based upon the understanding of consumers' information preference and expectations. Although the results of this study could not explain how the schema of each DMO level is constructed, it lends some indicative insights and calls for further research effort in this area.

From the practical point of view, the study results seem to suggest that DMOs at different levels should deliver focused information contents to its target customers in more efficient manner based upon customers' information needs and expectations for the different levels of DMOs (national level versus state level versus city level). There have been continuous concerns whether the DMO s can develop their websites to enable consumers to move from travel planning to actual reservations. In other words, the question is whether it is legitimate for DMOs to be directly involved in commercial activities such as handling transactions or operating these services on commission bases. WTOBC (1999) expected that regional or local DMOs (i.e. state or city level of DMOs in North America) would be more enthusiastic about engaging in commercial activities, particularly where they are public–private partnership organisations, operating as businesses in their own right. For them, the Internet opens up major new opportunities to sell advance reservations of accommodation, travel, entertainment, events, etc. The findings of this study seem to provide some empirical support for this proposition. The study results indicate that the 'iTravellers' in North America preferred more destination-specific information such as 'shopping', 'nightlife' and 'events' on a city level of DMO websites and appeared to like to find the information on 'tourist attraction', 'transportation', 'lodging', 'deals' and 'activities' on either city or state level of DMO websites. Regardless of the legitimacy concerns and operational issues, the study results indicate that the consumers are also likely to look for purchasing information on the lower levels of DMO sites such as city or state rather than on the national level of DMO sites. It seems that the lower the level, the more concrete and specific the information should be and the higher the possibility for DMO websites to engage in commercial-oriented activities such as facilitation of direct online reservations. At the national level, however, it is apparent that the focus should be directed at image projection.

CONCLUSIONS AND LIMITATIONS

This study provides empirical evidence about the dynamic nature of the travel information search process indicated in previous conceptual research. While presenting the changing patterns of information sourcing online, this

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study advocates that the systematic and ongoing nature of travel information search is the same on the Internet as it is offline. This study extends the range of travel information processing stages into the complete trip course and confirms that consumers still have strong needs of experience and knowledge sharing even at the conclusion of the travel activities. This lends empirical support to the argument that DMOs should accommodate past travellers as well as future travellers with engaging options to share up to date travel information and destination experiences.

DMOs are facing intriguing challenges to provide quality information online in an era of information overload. This research reveals that consumers have different expectations on the information content from the different levels of DMO websites based on their particular schemata of them that reflect their spatial representations, and that they utilise these schemata for information search strategies in order to optimise their information processing capacities. By identifying the tourists' information needs at various trip stages and for different levels of DMO websites, this study lends practical marketing suggestions for the efficient online information representation and management of DMO websites. For example, although tourists often visit the destination websites across all trip planning stages, their preference for the information content differ depending on the destination levels. Accordingly, destination marketers can provide online information more economically by prioritising them according to customers' needs.

Due to the binary nature of many of the variables used in the secondary data in this study, more advanced statistical analyses were limited. However, the results were significant enough to support the study propositions and suggest important implications to practitioners. In addition, the data are a bit aged (2001 survey) considering the quantum speed of development of IT. However, given the fact that this is a national-scale random sample-based survey, the rigour of the data collection should add validity to the findings of this research. More empirical research is warranted regarding the information-seeking patterns online throughout the entire tourism experience. Further, because the survey data were based on North American respondents, the study results could have geographical limitations. It would be valuable to examine the information expectation differences in various geographic and cultural contexts.

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