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# INFORMATION TECHNOLOGY IN EVERYDAY AND VACATION CONTEXTS

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**Abstract:** This research employed a longitudinal panel to examine diffusion of information technology (IT) and its spillover from everyday contexts to vacations. Over the course of the research wireless access to Internet became more common and increasingly IT was brought or available on a trip and the decision of tourists to be off or on the Internet while vacationing became more pronounced. Panelists showed evidence of diffusion with IT advancements through learning, equipment ownership, and improving perceived skills, as well as spillover of IT use and behavior into vacation contexts as a continuation of trip planning and information search beyond home or pre-trip planning, where Internet access is available and most common at destinations and travel facilities. **Keywords:** technology, diffusion, spillover, panel study. 

## INTRODUCTION

Information technology (IT) and its increasing dominance in everyday life have established it as a *discontinuous innovation* (Assael, 1984), one that establishes new behavior patterns and transforms old ones in our daily environments, including vacations, travel, and leisure time. Research is beginning to surface that considers the imperative of situating IT and Internet use in the context of people's everyday lives (Chesley, 2005; Haythornthwaite, 2001; Selwyn, Gorard, & Furlong, 2005; Spennemann, 2006). Haythornthwaite (2001) identified three Internet trends that have led to the blurring of boundaries across life domains; ''domestication'' of the Internet – its prevalence in home environments, the increase in availability and access to the Internet from almost everywhere, and the increase in time spent online and

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variety of tasks performed on the Internet. Access to and the use of the Internet is becoming ubiquitous. IT equipment is becoming smaller, more portable, universal, and more multi-functional. Cell phones and personal digital assistants (PDAs) are wireless ready and enable functionalities such as e-mail, digital photography, global positioning locating, music downloading, and an increasing assortment of applications that provide access to specialized information. More automobile manufacturers are offering *telematics*, web-access in vehicles (Hossain et al., 2010) and a new generation of mobile broadband networks is providing wireless communication spurring development of more sophisticated location-based services using GPS (global positioning systems).

Researchers initiated studies of the Internet by assessing the importance and impact of the Internet on tourism business-to-business (Frew, 2002; Gretzel, Yuan, & Fesenmaier, 2000) and business-to-consumer transactions (Buhalis, 2003; Kim & Fesenmaier, 2008; Tierney, 2000). Academic researchers try to keep pace with the rapid diffusion of technology, but this remains a challenge. Moreover, little research has been completed that examines IT utilization and its influence on tourists' vacation behavior and experiences beyond pre-trip planning and information search (Frew, 2000; Tjostheim, Tussyadiah, & Hoem, 2007; White & White, 2006).Thus, the overarching question that guides the line of inquiry from which this research is drawn, asks how is technology changing the way we plan, experience, and perceive vacations? A bold research question required a significant research design that employed a panel of tourists to share *in situ* vacation technology use along with profiles of their technology use in everyday contexts, and robust theories and models to explain emerging innovations.

A prominent theoretical model to explain IT usage is diffusion of innovation (DOI) (Kukafka, Linfante, Johnson, & Allegrante, 2003). This model has been used over the past century to understand adoption behavior in fields as diverse as agriculture and health care (Rogers, 2004). The six steps in the adoption process (i.e., awareness, knowledge, evaluation, legitimation, trial, adoption) provide the basis for multitudes of sequentially based decision process models in tourism and elsewhere. This process model, by which new and innovative products are adopted by a market over time (Rogers, 2003), serves as the overarching theoretical framework to guide examination of IT use in this study, and specifically, participant IT adopter classifications.

With technology being such a powerful and pervasive factor in everyday life, researchers have examined the permeation of boundaries across life domains facilitated through technology use (Boswell & Olson-Buchanan, 2007; Chesley, 2005; Haythornthwaite, 2001; Spennemann, 2006). Spillover theory proposes that one's work influences, in a complementary versus inversionary fashion, other nonwork life domains such as family (Boswell & Olson-Buchanan, 2007; Chesley, 2005), vacation, and leisure (Ryan, 2003; Wilensky, 1960). Specifically spillover is a bidirectional transfer from one life domain to another manifested in the expression of values, affect, skills, and/or behavior (Staines, 1980; Stevanovic, 2011). Spillover occurs in both directions

and can be perceived as positive or negative based on the nature of the work (or other influencing domain) (Chesley, 2005). Anderson and Tracey (2001) contended that the Internet does not change the way we live our lives but instead supports or enhances an existing lifestyle. Nonetheless, vacation behaviors frequently differ from those in the home and work (i.e., everyday) environments and have been discussed and documented extensively, especially in the travel motivation literature (Crompton, 1979; Iso-Ahola, 1982; Pearce, 2005). Less frequently examined are the everyday behaviors and activities retained while on vacation; albeit for a few exceptions that consider spillover theory applications across work – leisure domains (Currie, 1997; Ryan, 2003; White & White, 2006). Familiarity, continuity, and comfort of routine are often overlooked aspects of tourist behavior. Currie (1997) proposed a conceptual framework to aid in explaining why some everyday behaviors are retained on vacation, while others are not. He concluded routines will be maintained on vacation that provide comfort and for which the cost of changing them is too high for potential benefits. A conceptual cornerstone of Currie's work is based on tourism behavior juxtaposed against ''everyday life'' behavior, which does not specifically delineate work/leisure/family but considers them as a collective. Retained behaviors provide stability in what is frequently a new, novel, or unfamiliar setting. Ryan notes examples of hotels offering amenities that reassure clients of access to what they have at home for no interruption in routine (e.g., cable television in the past or wireless internet contemporarily). White and White (2006) studied the continuing engagement with home by tourists using IT as a means of maintaining social relationships. As such, spillover theory assists in examining tourists' IT adoption and use on their vacation experiences.

### *Research Questions*

This research was delimited in three ways. Firstly, the research focus was on the vacationer's use of and perspectives on IT not the tourism or IT industries' perspectives. Secondly, vacation was conceptualized and treated as a multi-phase leisure experience comprised of spatial and temporal variations, and thirdly, the design incorporated a tourist panel enabling a longitudinal approach conducted during a period of rapid IT products diffusion. These three foci enabled this research to extend in important ways the current growing body of literature on web-based travel information search and purchase (*cf.* Special issue of *Information Technology & Tourism* vol. 9, 2007 on travel information search) and provide building blocks to understanding IT use on actual vacation experience.

Four specific research questions examined in this paper that enable temporal-spatial understanding firstly of Internet diffusion and secondly of spillover are: How diffused is information technology (equipment and use) in everyday life? How are technology skills changing over time? What portion of the tourist sample uses the Internet in everyday life, including home and work contexts, and on vacations?

What type and number of places is the Internet being accessed in everyday and vacation contexts? Fig. 1 illustrates the related concepts of diffusion and spillover. In this study, diffusion is specifically considered through equipment ownership/access, skills, and use; whereas, spillover is addressed though use and behaviors across a variety of contexts (i.e., home, work, vacation).

## TECHNOLOGY, INFORMATION AND VACATION EXPERIENCE

To date, the majority of research on IT and tourism has focused on industry use of IT, or supply side issues, many of which are concentrated on pre-trip planning, websites, and information provision (Frew, 2000; Lee, Soutar, & Daly, 2007; Xiang, Gretzel, & Fesenmaier, 2009). Information search by tourists, however, also plays important and differing roles in subsequent stages (i.e., en-route, during, post-trip) of vacation behavior (Dann, 1996; Gitelson & Crompton, 1983; Jeng & Fesenmaier, 1997; Nysveen, 2003; van Raaij & Francken, 1984; Vogt & Stewart, 1998; Vogt & Stewart, 2001). Currently, increasing numbers of tourists have web access en-route or during their vacations. Mobile services available with cell phones and PDAs, which provide real-time information to tourists are no longer the sole purview of high-income earners (Berger, Lehmann, & Lehner, 2003). Location-based services (LBS) and mobile information applications have been hailed as a major innovation for tourism that could replace the ubiquitous travel guidebook and/or city map/brochure. Several authors have examined the functionality of LBS for information search, value added, language translation, map/routing, and safety across various phases of travel and in a variety of settings (Berger et al., 2003; Krug, Abderhalden, & Haller, 2003; Manes, 2003; O'Brien & Bermeister, 2003; Sharma, Kitchens, & Miller, 2003; Umlauft, Pospischil, Niklfeld, & Michlmayr, 2003).

Travel information search in a mobile context continues to receive attention (Kim & Schleisser, 2007; Rasinger, Fuchs, & Hopken, 2007; Yoo, Tussyadiah, Fesenmaier, Saari, & Tjostheim, 2008). Beyond the ability to receive information through these technology advancements is the ability for vacationers to send information. Pictures, attraction commentaries, itineraries, and e-postcards can be sent while still on holiday (Umlauft et al., 2003) – a growing practice that has yet to be

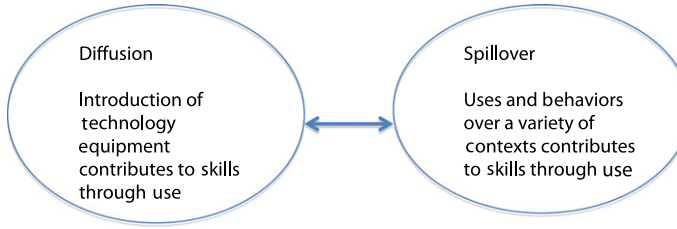


**Figure 1. Illustration of Technology Diffusion and Spillover Theory**

examined extensively in the context of effects on vacation experience. Green (2002) observed that with the proliferation of mobile technologies, a re-examination of traditional notions of proximity, distance, presence, and mobility is required. Such a re-examination challenges much of the tourism literature and Richards' (1999) contention that going on a vacation trip provides relief from time, space, and other constraints experienced in everyday life.

Since Frew's (2000) critical analysis and identification of research gaps on the demand side or tourist/consumer perspectives, some research has shifted focus to tourists' IT experiences for the benefit of marketing and management (*cf.* Buhalis, 2003; Buhalis & Licata, 2002; Doolin, Burgess, & Cooper, 2002; Jung & Butler, 2000; Kah, Vogt, & MacKay, 2008; Law, 2002; Pan & Fesenmaier, 2001; Wood, 2001). Beyond assessing consumer needs for website information and testing of new devices from computing and engineering perspectives (Christodoulidou, Brewer, & Countryman, 2007; Nysveen, Methlie, & Pedersen, 2003; O'Brien and Burmeister, 2003; O'Grady & O'Hare, 2002), there remains a paucity of research that addresses tourists' experiences with technology and its relationship to actual vacation behavior and experience. One notable exception is the work by Yoo et al. (2008), who through narrative analysis explored the use of mobile (i.e., Web 2.0) technologies by tourists and their movements and relationships with time and space in a destination city. Their findings point to what can be considered the reconfiguration of time and space (Green, 2002); that the resultant interactions using mobile technology are individual and social, co-present, and contemporaneous (Yoo et al., 2008).

Regardless of the changes in access to information technology and increasing opportunities for tourists to access the Internet en-route or during the vacation (via cafés, hotels, cell phones, PDAs, etc.), research continues to suggest that traditional sources remain prevalent, past experience of tourists is relied upon throughout all phases of the trip, and websites are still primarily used for pre-trip information search, hence the Internet can be viewed as a complementary information source (Oorni, 2003; Tjostheim et al., 2007). Word of mouth as a dominant source continues through blogging and other web-based social networks that assist potential tourists with web-based information search and decisions (Rudström & Fagerberg, 2004), providing an example of Anderson and Tracey's (2001) findings that people are doing old things in new ways.

### *Vacations as Multi-Phase Experiences*

Travel as a leisure behavior clearly situates vacations as a multi-phase experience. Over 40 years ago Clawson and Knetch (1966) conceived six stages of outdoor recreation to include anticipation and planning, travel to and from the outdoor setting, the actual outdoor experience at the site, and recollection of the experience. Similarly, van Raaj and Francken (1984) described the vacation sequence as beginning with anticipation and planning, traveling to the destination, the actual ''holiday'' experience at the destination(s), traveling from the

destination, and the recollection of the holiday. While this sequential and temporally-based model appears simplistic, the model has been used successfully as a catalyst to examine, challenge, and extend traditional leisure behavior research, which observed Stewart (1998), suffers from a ''dearth of research relating to the nature of the evolving leisure experience'' (p. 393).

Technology use at home, work, and in transit contexts is habit forming. As one part of addressing the overarching research question, of particular interest in this study is the retention of everyday life IT ownership and usage to vacation contexts across multiple phases. Evidence exists that planning and reservations occur at home for vacation purchasing. Secondary analyses of a Canada – US travel Internet use study by Jun, Vogt, and MacKay (2007) found high conversion rates between search and purchase for hospitality based sectors, often considered services with lower risks, which tend to be purchased online (Sigala, 2004). Once plans are made, do tourists continue to show attachment to IT as they vacation or do they escape everyday props and habits like IT?

### *Study Methods*

Consistent with the multi-phase model and process approach to travel planning and information search, the methodology employed in this study recognizes the importance of data collection across time and situations, and in particular recognizes the need for *in situ* examination of events (Stewart & Hull 1992; Vogt & Stewart, 1998; Zins, 2007). Only recently, less static approaches on IT and information have appeared in the tourism literature. For example, Zins' (2007) study of Australians endorses a longitudinal approach to capture the process nature of trip planning behavior and hence avoids bias due to decay, recency, loss, and dominance effects based on tourists' post hoc recall and retrospectives.

With the overarching aim of this study to reveal patterns of IT use and influences on vacation experiences in concert with the social implications and industry opportunities presented, the research program centered upon the longitudinal study of Canadian vacationers. A multi-year panel study using survey research methods was designed to meet the research objectives. The data considered in this paper were collected between September 2005 and November 2007 through a series of scheduled questionnaires (i.e., initial profile survey, monitor surveys) and vacation diaries completed while the participants were on vacation and hence not detached from their experiences. The repeated waves of data collection from panel participants allowed investigation of changes across time and a richness of descriptions that cannot easily be achieved through cross-sectional research (Anderson & Tracey, 2001; Zins, 2007). Table 1 shows the waves of questionnaire distribution and response. Note that scheduled questionnaires use months for their time reference, while diaries are referred to by seasons in which a vacation occurred.

**Table 1. Summary of Panel Design and Participation**

| Questionnaire | Date | Overall Sample | | | Online | | Paper | |
|---|---|---|---|---|---|---|---|---|
| | | N | n | % | n | % | n | % |
| Profile | Sept. 05 | 732 | 331 | 45 | n/a | | 331 | 100 |
| Monitor 1 | Jan. 06 | 315 | 263 | 83 | 135 | 51 | 128 | 49 |
| Diary 1 | Spring 06 | 68[a] | 51 | 75 | 3 | 6 | 48 | 94 |
| Monitor 2 | May 06 | 318 | 246 | 77 | 128 | 52 | 118 | 48 |
| Diary 2 | Summer 06 | 125 | 72 | 58 | 5 | 7 | 67 | 93 |
| Monitor 3 | Sept. 06 | 315 | 224 | 71 | 111 | 50 | 113 | 50 |
| Diary 3 | Fall 06 | 70 | 44 | 63 | 3 | 7 | 41 | 93 |
| Monitor 4 | Jan.07 | 312 | 225 | 72 | 124 | 55 | 101 | 45 |
| Diary 4 | Winter 07 | 81 | 51 | 63 | 1 | 2 | 50 | 98 |
| Monitor 5 | May 07 | 302 | 199 | 66 | 111 | 56 | 88 | 44 |
| Diary 5 | Summer 07 | 97 | 61 | 63 | 0 | 0 | 61 | 100 |

[a] Willing participants with an upcoming trip for which a diary was appropriate.

Participants were recruited to the study through three co-operating tourism destination agencies that provided lists of individuals (e.g., travel information requesters), who consented to be contacted for research purposes. Criteria for inclusion in the panel included: initial information search or trip planning from one of three destination agencies with contact by phone, e-mail or mail; leisure travel in the following 12 months after recruitment; level of Internet use; and willing to consent to two years of panel contacts. A total of 732 possible participants matched the criteria and remained once the list was refined to include Canadian residents only and cleaned of incomplete/incorrect addresses. The first contact required informed consent forms to be completed for ongoing panel engagement over two years and included the initial qualifying or profile questionnaire in the mailing. The research design incorporated a postage-paid return envelope, incentive prize, and follow-up reminder for this first contact (Dillman, 2000). The incentive for completing each monitoring questionnaire was a prize draw for a $100 (CAD) retail gift card. Subsequent monitoring questionnaires and vacation trip diaries could be paper or electronic, based on the preference indicated by the participant on their consent form (see Table 1). Data collection followed the same methodological procedures in both traditional and online formats.

The initial qualifying instrument was developed to provide baseline profiles of travel behavior, information search, IT use, and demographic characteristics. The periodic monitoring questionnaires were designed to report on: (a) changes in any of the initial information provided; (b) planning and information search and IT use for their next vacation trip; and (c) upcoming vacation trips for which they would be willing to complete a trip diary. Only panelists taking a trip who agreed to take a diary were sent one to complete (or directed to the study website by email in the case of online option). Vacation

diaries contained pre-trip, during trip (up to 10 days), and post-trip sections. Pre-trip questions focused on travel motivation and trip planning. During trip questions were daily reports regarding trip aspects such as information search, use of IT, and place of information/IT use (i.e., channel context of information: portable; in-car; highway based; on-site at the destination). Post-trip questions related to trip satisfaction, spending, and effect of IT on vacation satisfaction and return to daily life. A $25.00 cash incentive was provided for each diary completed.

As can be seen from Table 1, panel participation varied throughout the course of the study time frame. This is not unusual for longitudinal studies (Anderson & Tracey, 2001) and is complicated in this particular instance by the nature of the participants (i.e., tourists) and topic of study (i.e., vacation travel). To ensure a highly comparable set of data points across time and elucidate IT use outcomes both within and across subjects, a refined data set was used in the analyses presented here. Specifically, only those panelists who completed the profile questionnaire plus four or five monitors were included (n = 201 from a possible 315 in the full panel). These 201 panelists completed 264 vacation diaries (T = 264). This refined data set resulted in a panel of vacationers, the majority of whom are married/living common law (82%), employed full-time (48%) or retired (30%), hold a post-secondary diploma (32%) or university degree (42%), and have an annual household income of $60,000 or above (71%). The average age was 49 years. Slightly more than half of the panelists (53%) were women.

## FINDINGS

### *Panelists' Technology Adoption*

In the initial profile questionnaire, panel members reported they had been using the Internet for eight years (s.d. = 3.4). The mode of use was 10 years (27%) and range one to 25 years. To examine adoption of IT among panelists, a classification matrix was created. Guided by diffusion of innovation theory categories (Rogers, 2003), and following previous work by Kah et al. (2008) and Selwyn et al. (2005), data relating to IT equipment ownership and frequency of Internet use were used to categorize panelists into baseline groups of low, medium, and high technology. These measures did not specify everyday use, work or travel, but were intended to be general measures of technology adoption. Since these adopter groups are likely to be dynamic; that is, over time there would be movement expected across the adopter categories, the panelists were classified at the start of the study (baseline September 2005) and re-grouped at two subsequent intervals – the mid-point at monitor three (September 2006) and the final monitor (May 2007).

Firstly, equipment ownership was considered. Table 2 displays IT equipment owned by the panelists. ''Laggards'' were those who had no wireless communication devices and no desktop computer;

**Table 2. IT Equipment Own/Access in Everyday Life (N = 201)**

| IT Equipment Types | September 2005/Baseline Profile Questionnaire | |
|---|---|---|
| | n | % |
| Desktop computer | 171 | 85.9 |
| Digital camera | 139 | 69.8 |
| Cell phone | 137 | 68.8 |
| Laptop computer | 49 | 24.6 |
| Laptop with wireless access | 41 | 20.6 |
| Cell phone with Internet access | 36 | 18.1 |
| Personal Digital Assistant (PDA) | 27 | 13.6 |
| Cell phone with camera | 19 | 9.5 |
| GPS/GPS in vehicle | 19 | 9.5 |
| Pager | 9 | 4.5 |
| On Star service | 7 | 3.5 |
| PDA with Internet access | 5 | 2.5 |
| Other | 4 | 2.0 |

whereas, ''innovators'' had at least one wireless device. The remainder comprised the ''mid-adopters'' who had technology but not the newest forms like wireless devices. Secondly, panelists represented one of three groups according to their frequency of Internet use – infrequents' used less than once a day; 'frequents' used the Internet one or more times per day; and 'constants' reported using the Internet continuously. Cross-tabulating equipment ownership with frequency of Internet use produced the resulting IT adopter typology across three time points presented in Table 3: *low tech* – laggards and majority with infrequent Internet use; *medium tech* – mid-adopters with frequent Internet use; and *high tech* – innovators with frequent and constant Internet use. Table 3 shows movement among the technology adopter groups over time, in particular low and medium tech groups declining and the high tech group increasing.

**Table 3. Technology Adopter Groups over Time**

| IT Groups | Baseline Measure M1 | | Middle measure M3 | | Last measure M5 | |
|---|---|---|---|---|---|---|
| | n | % | n | % | n | % |
| Low Tech | 40 | 20.0 | 38 | 20.3 | 27 | 15.2 |
| Medium Tech | 98 | 49.0 | 75 | 40.1 | 78 | 44.1 |
| High Tech | 62 | 31.0 | 74 | 39.6 | 72 | 40.7 |
| Total | 200 | 100.0 | 187 | 100.0 | 177 | 100.0 |

At the start of the study there were no significant (alpha <.05) relationships among the baseline adopter groups according to gender, marital status, employment, or education; however, high techs were found to be significantly higher income earners ($X^2 = 22.193$, df = 10, p = .007) than the other two lower technology groups. At the study's mid-point, the same pattern held, except education now displayed a relationship of higher education with the high tech group and lower education with the low tech group ($X^2 = 24.489$, df = 8, p = .002). By the end of the study period, the same patterns held with education remaining significant ($X^2 = 22.203$, df = 8, p = .005) but income no longer was related to adopter group. While ANOVA results for age and IT adopter groups initially showed no significant difference across groups, at the mid-point and the final measurement, age was found to be significantly different. Post hoc Scheffe tests revealed that at the mid-point, high tech adopters were now eight and a half years younger than the low tech group (F (2, 183) = 5.5, p = .005). By the study's end, the spread between the high and low tech groups was 11.4 years, and the 6.7 year difference between medium and low tech groups was also significant. Results of the technology adoption classifications and subsequent analyses elucidate the nature and extent of IT diffusion throughout the longitudinal study, addressing research question one.

### *Self-Perceptions of Technology Skills and Behaviors in Everyday Life*

An additional inquiry into diffusion of technology focused on an individual's perception of their technology skills based upon technology use and ownership adoption. In fall 2005, panelists rated their use of technology and Internet, as well as their ownership of technology compared to their friends on seven-point ''high to low'' rating scales. These assessments were repeated on the subsequent five monitoring questionnaires providing six time points in the 20 months between September 2005 and May 2007.

To investigate whether shifts occurred among adopter classifications, the rank distributions were examined (i.e., one = low, two = medium, three = high). Wilcoxon signed-rank tests the hypothesis that two variables share the same distribution by computing the differences between the two variables for all cases and indicating whether they are negative, positive, or tied. Results suggested that the hypothesis is not valid ($p < .05$) and that the two variables have different distributions. Wilcoxon signed-rank tests showed no significant difference between baseline and monitor three IT user group distributions or between monitor three and monitor five; however, there were significant changes between the baseline and monitor five groups (p = .018). Based on these results two repeated measures ANOVAs were conducted, specifically a doubly multi-variate repeated measures ANOVA was used to analyze multiple observations of multiple measures (Vogt & Stewart, 1998). This statistical modeling provides between and within subjects results across time. A type IV sums of squares model was chosen due to unbalanced cell frequencies for the adopter groups.

The first analysis used the baseline adopter groups across the first three time point measures at fall 2005, winter 2006, and spring 2006; the second analysis used the monitor five or final adopter groups across the next three time point measures at autumn 2006, winter 2007, and spring 2007.

*Baseline Comparisons.* Baseline adopter group test results of between subjects effects (Table 4) confirm significantly different self-perception scores regarding their technology and Internet use, and IT ownership throughout the first half of the study ($F(2, 164) = 25.84$, $p < .001$; $F(2, 164) = 31.89$, $p < .001$; $F(2, 164) = 26.80$, $p < .001$). Review of the estimated marginal means and associated plots (Fig. 2) reveal the patterns of difference among adopter groups across time. Post hoc testing confirms that for technology use and IT ownership, scores for all groups were significantly different from each other (Table 5). For Internet use, the medium and high tech groups were not significantly different from each other but they were higher than the low tech group.

Test of within subjects effects contained in Table 6 show test statistics with adjusted degrees of freedom to account for the violation of sphericity assumption, with Pillai's Trace being the most robust. The main effect is significant, however the interaction effect is approaching significance suggesting the effect of time on panelists' self perception of IT and Internet use may depend on their adopter group in some situations. Univariate test results and contrasts indicate the interaction effect is significant in the case of IT ownership only ($F(4, 328) = 3.646$, $p = .006$). The plot in Fig. 2 illustrates how the panelists' perceptions of their ownership of technology increase over time for the low tech group only.

*Final Adopter Group Comparisons.* Final adopter group test results of between subjects effects confirm significantly different self-perception scores regarding their technology and Internet use, and IT ownership for the latter portion of the study ($F(2, 138) = 20.59$, $p < .001$; $F(2,$

**Table 4. Tests of Between-Subjects Effects for Technology Measures at Baseline Technology Adopter Groups**

| Source | Measure | Df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Intercept | Tech use | 1 | 7451.24 | 1707.33 | .000 |
| | Internet use | 1 | 8790.16 | 1877.23 | .000 |
| | IT ownership | 1 | 7223.12 | 1559.98 | .000 |
| Baseline | Tech use | 2 | 112.79 | 25.84 | .000 |
| | Group Internet use | 2 | 149.34 | 31.89 | .000 |
| | IT ownership | 2 | 124.07 | 26.80 | .000 |
| Error | Tech use | 164 | 4.36 | | |
| | Internet use | 164 | 4.68 | | |
| | IT ownership | 164 | 4.63 | | |

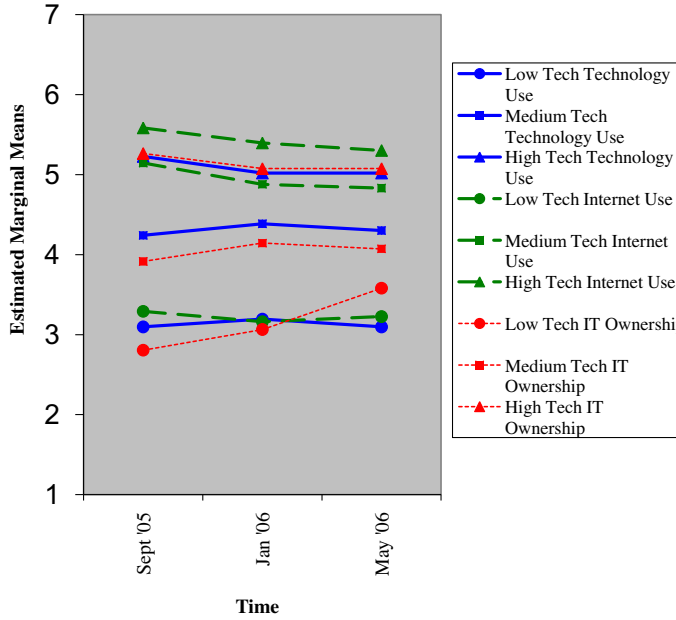


**Figure 2. Estimated Marginal Means of Technology Use, Internet Use and IT Ownership (Baseline)**

**Table 5. Comparison of IT Self-Perception Mean Scores by Adopter Group**

| Measure | Adopter Group | Baseline Mean[a] | Two Years Later Mean[b] |
|---|---|---|---|
| Technology use | Low | $3.13^{A}$ | $3.17^{A}$ |
| | Medium | $4.31^{B}$ | $4.26^{B}$ |
| | High | $5.09^{C}$ | $5.13^{C}$ |
| Internet use | Low | $3.23^{A}$ | $3.57^{A}$ |
| | Medium | $4.95^{B}$ | $4.75^{B}$ |
| | High | $5.43^{B}$ | $5.32^{B}$ |
| IT ownership compared to friends | Low | $3.15^{A}$ | $3.50^{A}$ |
| | Medium | $4.04^{B}$ | $4.24^{AB}$ |
| | High | $5.14^{C}$ | $4.90^{B}$ |

[a] Scale of 1 equals low and 7 equals high.; [b] Scheffe tests – means that do not share a superscript for each measure are significantly different at $p < 0.05$.

138) = 15.15, p < .001; F(2, 138) = 9.15, p < .001). Post hoc tests demonstrate the same pattern for technology use and Internet use as for the baseline adopter groups; that is, for technology use, scores for all groups are significantly different from each other, and for Internet use, the medium and high tech groups were not significantly different from each other but they were higher than the low tech group. IT

**Table 6. Multivariate Tests of Within Subjects Effects**

| Within Subjects Effect | | Value | F | Hypothesis df | Error df | Sig. |
|---|---|---|---|---|---|---|
| Time | Pillai's Trace | .048 | 2.693 | 6 | 654 | .014 |
| | Wilks' Lambda | .952 | 2.705 | 6 | 652 | .013 |
| | Hotelling's Trace | .050 | 2.717 | 6 | 650 | .013 |
| | Roy's Largest Root | .045 | 4.855 | 3 | 327 | .003 |
| Time* TechGroup | Pillai's Trace | .058 | 1.627 | 12 | 984 | .079 |
| | Wilks' Lambda | .942 | 1.633 | 12 | 862 | .077 |
| | Hotelling's Trace | .061 | 1.637 | 12 | 974 | .076 |
| | Roy's Largest Root | .044 | 3.646 | 4 | 328 | .006 |

ownership differences were found between the low tech group and the high tech group only (Table 5). There were no significant within subject effects. Findings in Tables 4–6 provide evidence for research question two that Internet and technology use in everyday and vacation contexts are increasing skills over time.

### *IT and Internet Use in Everyday Life and Vacations*

In the initial qualifying questionnaire and monitor one, 96% of the panelists reported using the Internet for personal or work reasons in four months prior to receiving the survey instrument. Subsequent monitors divided the question to consider personal and work situations. Table 7 illustrates the patterns of usage over the study period. Dividing the question showed that personal reasons dominate over work related use of the Internet for these panelists. For vacation travel, in each monitoring questionnaire, respondents were asked to complete a table enumerating any future trips over the next four months. In addition to destinations, likely departure date, and length of trip, they were asked to consider Internet use for trip planning or purchasing for a trip they reported as most likely to occur in the next four

**Table 7. Purpose of Internet Use in Past Four Months across Study Time Frame**

| | M1[a] Jan. 06 | | M2 May 06 | | M3 Sept.06 | | M4 Jan. 07 | | M5 May 07 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | n | % | n | % | n | % | n | % | n | % |
| Personal | n/a | | 176 | 94.1 | 181 | 96.8 | 186 | 98.4 | 171 | 97.2 |
| Work | n/a | | 125 | 72.6 | 121 | 71.6 | 123 | 73.7 | 119 | 73.9 |
| Vacation[b] | 166 | 83.1 | 144 | 79.9 | 109 | 78.0 | 129 | 86.8 | 135 | 83.0 |

[a] Asked in combined form on Monitor 1 96.3%; n/a = not asked as separate categories.
[b] Internet use thus far or for future trip planning or purchasing for a trip most likely to occur in the next four months.

months. These data reinforce the high use of Internet for pre-trip planning and purchasing; however, Internet use across all contexts remained high throughout the study time frame. While actually on vacation, Internet was accessed for 60% of trips and the highest percentage (42%) of diarists accessed the Internet for one-quarter or less of their vacation duration; only nine percent accessed the Internet more than three quarters of their vacation duration. Internet access while on vacation was found to be unrelated to destination (domestic/international or first time/repeat) but there were significant relationships between Internet use on vacation and visiting friends and family ($X^2 = 11.21$, df = 1, $p < .001$) or including business/meeting as part of the vacation ($X^2 = 4.58$, df = 1, $p < .05$). In these cases, Internet use was higher.

Table 8 illustrates the type of IT equipment vacationers brought along on their trips and what they actually used. The five most common IT equipment diarists brought/had available to them were digital camera, cell phone, wireless laptop, cell phone with Internet, and IPod/MP3 players. In general, those who actually used the IT equipment they brought/had available to them ranged from 40% to over 100%. While the number of diarists who reported they brought/had available wireless laptops, IPod/MP3 players, and GPS systems was not the highest, they had the highest percent of use on vacations. For desktop computers and PDAs, incidence of use exceeded the number diarists who reported taking these on vacation or having them available. This may be due to not being aware of IT available at accommodations or at friends and family's homes, which were cited as popular Internet access locations (see Table 11), suggesting vacationers who may not have planned to use the Internet did so because

**Table 8. IT Equipment Brought and Used on Vacation (T = 264 trips)**

| | Brought | | Used | |
|---|---|---|---|---|
| | T | % | T | % |
| Digital camera | 184 | 69.7 | 167 | 90.8 |
| Cell phone with/without camera | 172 | 65.2 | 160 | 93.0 |
| Laptop computer with wireless access | 52 | 19.7 | 50 | 96.1 |
| Cell phone with Internet | 46 | 17.4 | 24 | 52.2 |
| IPOD/MP3/MP4 | 33 | 12.5 | 31 | 93.9 |
| Desktop computer | 31 | 11.7 | 75 | [a] |
| Global positioning device in vehicle | 23 | 8.7 | 21 | 91.3 |
| Laptop computer | 18 | 6.8 | 41 | [a] |
| Personal digital assistant with Internet | 14 | 5.9 | 9 | 64.3 |
| Personal digital assistant | 6 | 2.3 | 7 | [a] |
| OnStar service in vehicle | 6 | 2.2 | 5 | 83.3 |
| Pager | 5 | 1.9 | 2 | 40.0 |

[a] More than 100% – Used technology that they did not bring, e.g., in hotels or at friends'/relatives' homes.

it happened to be available to them, supporting spillover behavior. For those who brought a cell phone or PDA with Internet, low percent of use was reported perhaps due to no or poor Internet service. Vacationers most commonly brought/had access to two pieces of IT equipment, although eight percent reported taking none.

In everyday contexts, the place of Internet access was assessed across seven types of locations and an ''other'' option. Table 9 shows the locales and rates of access over the 20-plus months of data collection (September 2005 to May 2007) from which several observations can be made. First, home and work are the most common sites and this remained constant. Second, café and library access are up slightly, which may reflect the increasing availability of Internet in these locations, especially wireless. Indeed the most obvious trend in the data shows an increase in use of wireless devices to access the Internet with wireless laptop up 10% and wireless handheld (PDA) tripling. ''Other'' places used for Internet access in everyday life mainly included retail businesses and homes of friends or family. An added question in the later monitoring questionnaires shows a trend of increasingly searching for wireless Internet access in both home and vacation contexts, with vacation being consistently higher by 11 to 18 percentage points. These data suggest travel at the forefront of mobile technology use and illustrate a reverse spillover effect from vacation to home contexts at a key point in time (2006-2007) prior to major diffusion of mobile technology. Findings in Tables 7–9 provide evidence for research question three that unique Internet user groups exist and most portable devices owned by the panelists were brought on trips. Spillover of technology equipment and use from everyday life to vacation contexts was fairly prominent.

**Table 9. Place of Internet Access for Everyday Contexts**

| Access Location | PQ Sept.05 n[a] = 189 % | M1 Jan. 06 n = 184 % | M2 May 06 n = 176 % | M3 Sept.06 n = 182 % | M4 Jan. 07 n = 187 % | M5 May 07 n = 172 % |
|---|---|---|---|---|---|---|
| Home | 94.2 | 95.7 | 96.6 | 92.3 | 95.7 | 95.9 |
| Work | 55.0 | 56.0 | 57.4 | 52.7 | 56.1 | 56.4 |
| Library | 22.8 | 16.8 | 22.2 | 20.9 | 20.3 | 25.6 |
| Wireless laptop | 16.9 | 16.3 | 19.9 | 20.3 | 26.2 | 27.3 |
| Café | 10.1 | 10.3 | 9.7 | 8.8 | 10.7 | 13.4 |
| School | 4.8 | 6.5 | 6.3 | 6.0 | 4.3 | 4.1 |
| Mobile with PDA | 6.3 | 8.7 | 6.8 | 8.2 | 11.8 | 18.6 |
| Other | 3.7 | 4.3 | 8.0 | 9.9 | 11.8 | 3.5[b] |
| Look for *wi-fi* | n/a[c] | n/a | n = 166 % | n = 172 % | n = 180 % | n = 169 % |
| Everyday | – | – | 20.1 | 21.5 | 22.8 | 24.9 |
| Vacation contexts | – | – | 31.3 | 34.1 | 40.1 | 38.1 |

[a] Numbers vary because includes only repondents who used Internet in previous 4 months.
[b] Other decreased for M5 because hotel/lodging was added as a response option (19.8%).
[c] n/a = not asked.

In addition to the types of access sites, the variety or number of Internet access places used also changed over the study period. Approximately one-third of respondents used only one site in 2005 but by May 2007, this dropped to 16%. A paired t-test was applied to examine for change over time. Results from questionnaire wave tests show significant increases in mean pair differences in later stages (i.e., pairs four, five, and six). Pairs four and five represent later stages of the study and support an accelerating rate of Internet access locations by users. As shown in Table 10, the largest difference occurred between the first measure in September 2005 (M = 2.15) and the last measure (M = 2.61) in May 2007 (pair six Q-M5).

Place of Internet access while on vacation was also examined. Presented in Table 11 are the number and percentage of panelists who used a location at least once during their trip. For vacationers who used the Internet, commercial lodging was the most popular place to access it. Homes of friends and family comprised the vast majority of the large ''other'' category with repeated mentions for university/college/school, other types of accommodations (e.g., campground/RV park), an airport, and a workplace. Interpreting private and commercial lodging as the ''home base'' of tourists, one can readily observe the spillover of Internet usage from home to vacation contexts. More directly comparable home to vacation locations are cafés and libraries, with both being used less on vacation than at home. The ''hot spot'' was used by vacationers more often than the named locations in Table 11 at a time when wireless was much less widespread, supporting the previously reported finding of looking for *wifi* more often on vacation than at home (see Table 9). Travel information centers were used minimally for Internet access by the panelists on these particular trips.

Findings in Tables 9–11 answer research question four and provide evidence of similar Internet place access while on vacation compared

**Table 10. Paired Samples t-test on Number of Home or Work-based Internet Access Locations over Time – by Season**

| Test Comparison Time | | Mean diff. | SD | t | df | p |
|---|---|---|---|---|---|---|
| Pair 1 | Profile Questionnaire<br>Monitor 1 | −0.165 | 1.016 | −0.219 | 181 | 0.827 |
| Pair 2 | Monitor 1<br>Monitor 2 | 0.105 | 0.775 | 1.776 | 170 | 0.078 |
| Pair 3 | Monitor 2<br>Monitor 3 | −0.055 | 0.955 | −0.736 | 163 | 0.463 |
| Pair 4 | Monitor 3<br>Monitor 4 | 0.210 | 1.056 | 2.641 | 175 | 0.009[a] |
| Pair 5 | Monitor 4<br>Monitor 5 | 0.232 | 1.026 | 2.931 | 167 | 0.004[a] |
| Pair 6 | Profile Questionnaire<br>Monitor 5 | 0.521 | 1.200 | 5.638 | 168 | 0.000[a] |

[a] Significant at the $p < 0.01$ level.

**Table 11. Place of Internet Access on Vacations**

| Location [a] | All trips T = 264 | | Spring 06 t = 47 | | Summer 06 t = 64 | | Fall 06 t = 43 | | Spring 07 t = 51 | | Summer 07 t = 59 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | n | % | n | % | n | % | n | % | n | % | n | % |
| Hotel/Motel/Lodge | 71 | 27.9 | 10 | 21.2 | 14 | 21.9 | 9 | 20.9 | 22 | 43.1 | 16 | 27.1 |
| ''Hot Spot'' | 17 | 6.4 | 3 | 6.4 | 5 | 7.8 | 1 | 2.3 | 4 | 7.8 | 4 | 6.8 |
| Car/vehicle | 10 | 3.8 | 2 | 4.2 | 1 | 1.6 | 4 | 9.3 | 2 | 3.9 | 0 | 0 |
| Public Library | 12 | 4.5 | 2 | 4.2 | 3 | 4.7 | 0 | 0 | 0 | 0 | 7 | 11.9 |
| Café | 11 | 4.2 | 2 | 4.2 | 2 | 3.1 | 3 | 7.0 | 2 | 3.9 | 2 | 3.4 |
| Travel Info Centre | 10 | 3.8 | 0 | 0 | 5 | 7.8 | 2 | 4.6 | 2 | 3.9 | 1 | 1.7 |
| Other | 86 | 32.6 | 14 | 29.8 | 20 | 31.3 | 19 | 44.1 | 14 | 27.5 | 19 | 32.2 |

[a] Note: could check more than one location.

to everyday environments, as well as an increasing diversity of places where individuals access Internet in everyday living.

## CONCLUSION

Beyond planning and decision making influences of IT on individual's vacation activities, of broader interest in this research is how these results can advance understanding of the relationship between IT in everyday life and vacation contexts in a rapidly changing technological society, and also provide guidance to tourism providers on avenues to supply information effectively across vacation phases. The specific objectives of this paper were to: (a) identify trends in access and use of IT in everyday life and vacation contexts over time; (b) evaluate factors that distinguish the type and level of IT use on a vacation; and (c) develop new and/or extend traditional theoretical and methodological approaches to high technology travel information search and use across multiple phases of a vacation experience. To address these objectives, diffusion of innovation and spillover theories provided conceptual cornerstones; relevant literature was reviewed to understand historical and current knowledge on information technology, information search, and vacations; four research questions were answered; and vacations were examined as multi-phase behaviors using a longitudinal panel study design.

Our trend findings, based on a two-year study between 2005 and 2007, found convergence of rapid technological changes and IT behavioral changes (e.g., increase in non home based Internet access locations and of individuals using multiple sites; increase in use of wireless devices and higher use of wireless while travelling than at home). The results also showed meaningful IT adopter groups based on IT ownership and Internet use that, as expected, changed over time. By end of the study period, significantly fewer panelists were in

the low tech group and significantly more were in the high tech group. The higher tech group latterly was associated with higher education and younger age. The disappearance of income as a distinguishing factor supports the trend toward less costly IT equipment and services, hence greater accessibility. Furthermore self-perceptions of technology use and IT ownership illustrated the expected separation across adoption groups but this was not the case for Internet use, perhaps pointing to the impending ubiquity of Internet use. The final comparative measures of IT ownership also signaled a possible polarizing of ownership between ''low'' adopters and all others, even though they were the only group to increase (show change in) ''their IT ownership compared to their friends'' across the two years of the study.

The type and level of IT use on a vacation was quite variable noting that on 40% of trips the Internet was not accessed and the highest percentage (42%) accessed the Internet for one-quarter or less of their vacation duration; only nine percent accessed the Internet more than three-quarters of their vacation duration. Internet access was found to be unrelated to destination but trip purpose (VFR and pleasure/business combination trips higher than pure leisure vacation) was influential. Behavioral (vs self-perception) differences among IT adopter groups were not pronounced early on in the study time frame except for the high tech group more likely to book a flight and bring wireless laptops on vacation with them. The later time frame saw no differences in Internet access behaviors; but for IT equipment brought/used on vacation the more basic equipment (cell phone with no wireless/camera function; desktop computer) was indicative of low and medium tech groups. These findings suggest a pattern of higher tech panelists with mobile accessibility versus lower tech panelists using stationary technology and access; thus, reinforcing the self-perception ratings for IT ownership.

The aim of extending traditional theoretical and methodological approaches to high technology travel information search and use across multiple phases of a vacation experience was enabled by the study methodology. The vacation diaries provide an *in situ* versus retrospective approach to examining vacation technology activities, while the longitudinal panel enabled analyses over time to highlight IT diffusion and behavioral spillover patterns in vacation and everyday life contexts. These results support ''domestication'' of the Internet (Haythornthwaite, 2001) – its prevalence in home environments and considered spillover of these behaviors to a vacation context. Findings also point to a potential spillover from vacation IT behavior to home, with wireless use initially more prevalent in vacation settings, supporting bi-directional spillover (Chesley, 2005). At the point in time when this study occurred, there was no equipment or access available at destinations that was likely unavailable at home for tourists. Tourists were already familiar with information communication technologies. The finding of higher incidence of Internet access for VFR trips versus pure leisure trips could suggest a more likely setting for retained behaviors than more unfamiliar environments, and would support Currie's (1997) proposition on spillover of routine behaviors.

Future research on technology and tourists might focus on the following topics: vacation satisfaction with or without technology, technology users across a wider demographic, and identifying consumer trip planners in collaboration with destination marketing organizations and planners not using DMO assistance. A next step for our research is to examine how satisfaction maybe influenced by various levels of technology use during planning and on vacations. While our research attempted to identify a population of diverse vacation types and technology skills via destination marketing organizations, we found the demographics of this population underrepresented young adults. These younger adults may be unfamiliar with the information and planning services of a DMO and may use other Internet information providers to access destination information. This limitation is related to the final topic for future research. Future research needs to identify a comprehensive list of trip planners that includes those who contact DMOs; those who access information and reserve transportation, accommodation and travel services using other types of Internet sources; and everyone else who travels but does not use the mentioned planning styles, to be able to describe more fully tourists' planning, decision making, and trip stages.

Contributions of the study design and findings to tourism scholarship are substantial notwithstanding the parameters of timing scope that need to be considered. This work included Canadian residents only for efficiency of communication over a lengthy study time frame. The panelists were from a population of information seekers/trip planners who traveled so they are tourists and not representative of the general population. They were also a somewhat older sample and this lack of age variability may have masked potentially more pronounced effects, yet diffusion and spillover effects were detected. Like many tourism questionnaires, self-assessment measures must be trusted and lastly, the maximum of 10 days of reporting on vacations may have limited the patterns of IT behavior revealed in this study.

The timing of the research (2005-2007) was just in advance of the rapid IT penetration trends and the findings herein documented and foreshadowed, albeit to a lesser extent, IT adoption, diffusion, and spillover seen recently with the advancement of the Internet's connectivity through wireless and mobile 3G/4G technologies. In such a rapidly changing field academic study remains challenged to keep pace. More importantly, this study's longitudinal design and the application of diffusion and spillover theories add to our understanding of the increasing domination of IT in tourism, and how everyday IT use, skills, and ownership contribute to that infiltration. Haythornthwaite (2001) postulates that with the shrinking of the ''digital divide'', differences in usage increase in importance. The results here shed clear light on the changing nature of IT behavior in everyday life and its use across vacation experience phases. A

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## REFERENCES

Anderson, B., & Tracey, K. (2001). Digital living. The impact (or otherwise) of the Internet on everyday life. *American Behavioral Scientist, 45*(3), 456–475.

Assael, H. (1984). *Consumer behavior and marketing action.* Boston: Kent Publishing Company.

Berger, S., Lehmann, H., & Lehner, F. (2003). Location based services in the tourist industry. *Information Technology and Tourism, 5*, 243–256.

Boswell, W., & Olson-Buchanan, J. (2007). The use of communication technologies after hours: The role of work attitudes and work – life conflict. *Journal of Management, 33*, 592–610.

Buhalis, D. (2003). e-tourism. *Information technology for strategic tourism management.* Harlow, England: Pearson Education Ltd., Prentice Hall.

Buhalis, D., & Licata, M. C. (2002). The future eTourism intermediaries. *Tourism Management, 23*, 207–220.

Chesley, N. (2005). Blurring boundaries? Linking technology use, spillover, individual distress, and family satisfaction. *Journal of Marriage and Family, 67*, 1237–1248.

Christodoulidou, N., Brewer, P., & Countryman, C. (2007). Travel intermediaries and metasites: A comparison of customer perception. *Information Technology and Tourism, 9*(3/4), 227–243.

Clawson, M., & Knetch, J. (1966). *Economics of outdoor recreation.* Baltimore: Johns Hopkins University Press.

Crompton, J. (1979). Motivation for pleasure vacation. *Annals of Tourism Research, 6*, 408–424.

Currie, R. (1997). A pleasure – tourism behaviors framework. *Annals of Tourism Research, 24*, 884–897.

Dann, G. (1996). Tourists' images of a destination – An alternative analysis. *Journal of Travel and Tourism Marketing, 5*, 41–55.

Dillman, D. (2000). *Mail and internet surveys: The tailored design method.* New York: Wiley.

Doolin, B., Burgess, L., & Cooper, J. (2002). Evaluating the use of the Web for tourism marketing: A case study from New Zealand. *Tourism Management, 23*, 557–561.

Frew, A. (2000). Information technology and tourism – A research agenda. *Information Technology and Tourism, 3*, 99–110.

Frew, A. (2002). Information and communications technology research in the travel and tourism domain: Perspective and direction. *Journal of Travel Research, 39*(2), 136–145.

Gitelson, R., & Crompton, J. (1983). The planning horizons of information used by pleasure vacationers. *Journal of Travel Research, 21*(3), 2–7.

Green, N. (2002). On the move: Technology, mobility, and the mediation of social time and space. *The Information Society, 18*, 281–292.

Gretzel, U., Yuan, Y. L., & Fesenmaier, D. R. (2000). Preparing for the new economy: Advertising strategies and change in destination marketing organizations. *Journal of Travel Research, 39*(2), 146–156.

Haythornthwaite, C. (2001). Introduction: The Internet in everyday life. *American Behavioral Scientist, 45*(3), 363–382.

Hossain, E., Chow, G., Leung, V., McLeod, R., Mišić, J., Wong, V., & Yang, O. (2010). Vehicular telematics over heterogeneous wireless networks: A survey. *Computer Communications, 33*(7), 775–793.

Iso-Ahola, S. (1982). Toward a social psychological theory of tourism motivation: A rejoinder. *Annals of Tourism Research, 9*, 256–262.

Jeng, J., & Fesenmaier, D. (1997). Facets of the complex trip decision-making process. In *Proceedings of the 28th travel and tourism research association conference* (pp. 31–41). Norfolk.

Jun, S., Vogt, C., & MacKay, K. (2007). Relationship between travel information search and travel product purchase in pre-trip contexts. *Journal of Travel Research, 45*(3), 266–274.
Jung, H. T., & Butler, R. (2000). Perceptions of marketing managers of the effectiveness of the Internet in tourism and hospitality. *Information Technology and Tourism, 3*, 167–176.
Kah, J. A., Vogt, C., & MacKay, K. (2008). Online travel information search and purchasing by Internet use experiences. *Information Technology and Tourism, 10*(3), 189–199.
Kim, H., & Fesenmaier, D. R. (2008). Persuasive design of destination websites: An analysis of first impression. *Journal of Travel Research, 47*(3), 3–13.
Kim, H., & Schleisser, J. (2007). Adaptation of story-telling to mobile information service for a site-specific cultural tour. *Information Technology and Tourism, 9*(3/4), 195–210.
Krug, K., Abderhalden, W., & Haller, R. (2003). User needs for location based services in protected areas – Case study Swiss National Park. *Information Technology and Tourism, 5*, 235–242.
Kukafka, R., Linfante, A., Johnson, S., & Allegrante, J. P. (2003). Grounding a new information technology implementation framework in behavioral science: A systematic analysis of literature on IT usage. *Journal of Biomedical Informatics, 36*, 218–227.
Law, R. (2002). Across the C's: commerce, convergence, communications and change ENTER 2001 held in Montreal, Canada in April 2001. *Journal of Travel and Tourism Marketing, 12*, 97–101.
Lee, J., Soutar, G., & Daly, T. (2007). Tourists' search for different types of information: A cross-national study. *Information Technology and Tourism, 9*(3/4), 165–176.
Manes, G. (2003). The tetherless tourist: Ambient intelligence in travel & tourism. *Information Technology and Tourism, 5*, 211–220.
Nysveen, H. (2003). The importance of risk-reducing value added services in online environments: An exploratory study on various segments of leisure tourism. *Information Technology and Tourism, 6*, 113–127.
Nysveen, H., Methlie, L. B., & Pedersen, P. E. (2003). Tourism web sites and value-added services: The gap between customer preferences and web sites offerings. *Information Technology and Tourism, 5*, 165–174.
O'Brien, P., & Burmeister, J. (2003). Ubiquitous travel service delivery. *Information Technology and Tourism, 5*, 221–233.
O'Grady, M. J., & O Hare, G. (2002). Accessing cultural tourist information via a context-sensitive tourist guide. *Information Technology and Tourism, 5*, 35–47.
Oorni, A. (2003). Consumer search in electronic markets: An experimental analysis of travel services. *European Journal of Information Systems, 12*, 30–40.
Pan, B., & Fesenmaier, D. (2001). A typology of tourism related web sites: Its theoretical background and implications. *Information Technology and Tourism, 3*, 155–166.
Pearce, P. (2005). *Tourist behaviour: Themes and conceptual schemes*. Clevedon: Channel View.
Rasinger, J., Fuchs, M., & Hopken, W. (2007). Information search with mobile tourist guides. *Information Technology and Tourism, 9*(2/3), 177–194.
Richards, G. (1999). Vacations and quality of life: Patterns and structures. *Journal of Business Research, 44*, 189–198.
Rogers, E. M. (2003). *Diffusion of innovations* (5th ed.). New York, NY: Free Press.
Rogers, E. M. (2004). A prospective and retrospective look at the Diffusion Model. *Journal of Health Communication, 9*(S1), 13–19.
Rudström, A., & Fagerberg, P. (2004). Socially enhanced travel booking: A case study. *Journal of Information Technology and Tourism, 6*(3), 211–221.
Ryan, C. (2003). *Recreational tourism demands and impacts*. Clevedon: Channel View.
Selwyn, N., Gorard, S., & Furlong, J. (2005). Whose Internet is it anyway? Exploring adults' (non)use of the Internet in everyday life. *European Journal of Communication, 20*(1), 5–26.

Sharma, S. K., Kitchens, F. L., & Miller, P. (2003). Overcoming language barriers with flexible services architecture: A tool for travellers. *Information Technology and Tourism, 5*, 203–209.
Sigala, M. (2004). Reviewing the profile and behaviour of Internet users: Research directions and opportunities in tourism and hospitality. In J. E. Mills & R. Law (Eds.), *Handbook of consumer behavior, tourism, and the Internet*. Binghamton, NY: Haworth Hospitality Press.
Spennemann, D. (2006). The Internet and daily life in Australia: An exploration. *The Information Society, 22*, 101–110.
Staines, L. G. (1980). Spillover versus compensation: A review of the literature on the relationship between work and nonwork. *Human Relations, 33*, 111–129.
Stevanovic, P. (2011). *Professional and personal lives of psychologists: Spillover, family functioning, and life satisfaction*. Unpublished doctoral dissertation. Chicago, IL: Loyola University.
Stewart, W. (1998). Leisure as multi-phased experiences: Challenging traditions. *Journal of Leisure Research, 40*(4), 391–400.
Stewart, W., & Hull, R. (1992). Satisfaction of what? Post-hoc versus real-time construct validity. *Leisure Sciences, 14*, 195–209.
Tierney, P. (2000). Internet-based evaluation of tourism web site effectiveness: Methodological issues and survey results. *Journal of Travel Research, 39*(2), 212–219.
Tjostheim, I., Tussyadiah, I., & Heom, S. (2007). Combination of information sources in travel planning a cross-national study. *Information and Communication Technologies in Tourism, 4*, 153–162.
Umlauft, M., Pospischil, G., Niklfeld, G., & Michlmayr, E. (2003). LoL@, a mobile tourist guide for UMTS. *Information Technology and Tourism, 5*, 151–154.
van Raaij, W., & Francken, D. (1984). Vacation decisions, activities, and satisfactions. *Annals of Tourism Research, 11*, 101–112.
Vogt, C., & Stewart, S. (1998). Affective and cognitive effects of information use over the course of vacations. *Journal of Leisure Research, 30*(4), 498–520.
Vogt, C., & Stewart, S. (2001). Response problems in a vacation panel study. *Journal of Leisure Research, 33*(1), 91–105.
White, N., & White, P. (2006). Home and away in a connected world. *Annals of Tourism Research, 34*(1), 88–104.
Wilensky, H. L. (1960). Work, careers and social integration. *International Social Science Journal, 12*, 543–560.
Wood, E. (2001). Marketing information systems in tourism and hospitality small- and medium-sized enterprises: A study of Internet use for market intelligence. *International Journal of Tourism Research, 3*, 283–299.
Xiang, Z., Gretzel, U., & Fesenmaier, D. (2009). Semantic representation of tourism on the Internet. *Journal of Travel Research, 47*(4), 440–453.
Yoo, Y., Tussyadiah, I., Fesenmaier, D., Saari, T., & Tjostheim, I. (2008). Emergent distributive narratives in spatiotemporal mobility: An exploratory study on mobile 2.0 services. In *Proceedings of the 41st Hawaii international conference on system sciences*.
Zins, A. (2007). Exploring travel information search behavior beyond common frontiers. *Information Technology and Tourism, 9*(3/4), 149–164.

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