Our mobile future: how smartphones will transform visiting experiences.

ABSTRACT

The purpose of this research was to understand how ‘Smartphone’s’ (mobile phones which have increased computing abilities and connectivity) are beginning to impact on tourist’s behaviour processes and experiences. Whilst previous studies have sought to understand the influence of online social media on trip planning behaviour, there is a gap in research on the extent to which mobile digital applications shape tourist experiences. Specifically, the research asked which, and at what points in the visitor experience, consumers use a range of digital media applications and online networking/information tools for tourism. The study consisted of an online survey of UK consumer’s. The research found that owners of a Smartphone were more frequent travellers, they were heavier users of social networking media, and they used their Smartphone devices for a range of travel related activities including information search, location and directional tools and booking travel during their trips. The study also found significant differences in terms of the types of applications thought to be useful for potential Smartphone users compared to current users. The study provides many insights into travel behaviour and raises questions for further research. The impact for marketing amongst travel service providers and place markets is discussed.

ACKNOWLEDGEMENT: This work is supported by Horizon Digital Economy Research, RCUK grant EP/G065802/1. The authors acknowledge the kind assistance and contribution to the project made by Experian UK, including Tom Bendon, Stacy Hunsdon, and Colin Grieve.
INTRODUCTION

Tourism is an information intensive activity, information has been called the ‘lifeblood’ of the industry (Sheldon 1997), many studies have sought to understand the role that information search plays in decision-making (Fodness and Murray 1997), and the importance of information in successful tourism destination and industry marketing initiatives. Research has also focused on the importance of technology as the delivery channel of information, and in particular research has centred on the Internet as a medium for information as well as a sales/distribution channel for tourism products and services (Buhalis 1998). However, research in tourism has tended to overlook the role of technology in the tourist experience particularly how technology can shape experiences in situ, and there has been very little research on the emerging use of mobile internet-enabled technology and applications/services in tourism. The increasing adoption of Smartphone’s and the developing range of contextually aware 3G/4G enabled Internet applications provides a rich potential to impact on tourist experience. Therefore the aims of this study were to understand if and how Smartphone’s were being used in different stages of the tourism experience and to identify which applications were found to be useful or potentially useful to tourists.

Although there have been some studies on the application of mobile digital internet infrastructure and software for tourism, they are generally rare, are often presenting findings of prototypes or conceptual discussions. The majority of extant research has been undertaken within computing, geo-spatial science, and museology disciplines, with little attention from the tourism or marketing fields. A few studies have examined the potential business applications of mobile digital Internet technology, looking at adoption factors and satisfaction, however very recently we have witnessed a huge growth in: a, the uptake of Smartphone’s in the marketplace; and B, the number of travel-related applications available for use on Smartphone devices. The idea of ‘always on’ and ‘always present’ Internet services is rapidly becoming a reality and presents major challenges and opportunities for tourism businesses and destinations in an ever increasingly competitive visitor market environment. According to research by the Neilsen Company, Smartphone penetration in the UK currently stands at 12%. However this figure is very out of date and according to ‘ComScore Mobilens’ data, the numbers of Smartphone subscribers grew by 70% in the UK for year on year rates comparing three month to end of January 2010 with the same period in 2009 (Mashable/Mobile magazine 2010). Therefore current adoption rates are likely to be around 20-25% of the UK market and still rapidly growing as a proportion of all mobile phones sold.

Intuitively, location-based mobile Internet applications providing travel services could serve a number of purposes and the first section of this paper outlines existing research in this area, leading to a typology of these mobile applications being proposed. The study consisted of an online survey, which was sent out to a large database of UK consumers email addresses in September 2010. The survey sought to understand the current level of Smartphone ownership amongst consumers, their use of social media and Internet technology at different points in tourism planning and trip/post-trip experiences in order to compare users with non-users. The survey also asked which types of Smartphone applications tourists used in different types of trips. The findings indicate that Smartphone ownership rates generally reflect the current level of adoption in the UK market. Current users are early adopters and their use of Smartphone technology is consistent with their high usage of the Internet and social media in their daily lives. The study findings indicate the potential for mobile digital applications to completely transform tourist experiences in the future and the paper concludes with a
discussion on the marketing implications for tourism service providers and destination marketers.

THE TOURIST AND MOBILE TECHNOLOGY

Future computing environments promise to free the user from the constraints of stationary desktop computing altogether, yet relatively few researchers have investigated how mobile applications will effect human mobility and sociality. The history of interaction shows that the adoption of new technology usually brings about a radical revolution in the way humans use and view technology (Abowd et al, 1997). Tourism offers a prime context in which to explore the application of mobile technology and there have been numerous studies that have investigated the role of mobile information and other PDA based systems in tourism through technology acceptance or diffusion of innovations (Cheong and Park, 2005; Kwon and Zmud, 1987). Other studies have investigated the potential for mobile commerce (m-commerce) in an era of ubiquitous acceptance of cell-phones across globalised markets. Such studies argue that m-commerce offers great flexibility for the tourism industry both to suppliers and travelers. Users can surf the web, check e-mail, read news, pay transactions, and quote stock prices using handheld devices. However, Lee and Mills found that tourists were more likely to repeat purchase and use mobile Internet services when they were satisfied with the product and service offered and in this there was room for improvement before m-commerce can be fully optimized in the tourism industry (Lee and Mills, 2010).

Kim, Park and Morrison (2008) also investigated the acceptance of mobile technology for tourism drawing on the ‘Technology Acceptance Model’ (TAM) and arguing for the importance of interactive mobile technology in particular for tourism and hospitality services in the future. They argue that: “M-commerce not only extends the benefits of the Web, but also allows for unique services enabled by the convergence of the Internet with mobile technologies. Travel service providers will find new ways to increase customer loyalty, generate supplemental revenue streams and reduce operating costs.” (2008: 394). This study found that perceived usefulness and ease of use were important factors affecting respondent’s intentions towards mobile technology. Usefulness was a stronger determinant in intentions to use mobile technology. This was a useful study in the context of a nascent market for applications. Their research, conducted in 2007, was prior to the launch of the first Apple iPhone for example and prior to the plethora of travel and hospitality related digital mobile applications currently available across a range of supporting platforms.

A number of issues can be identified: there is a lack of research on the Smartphone market; issues with supply, including a technological shift towards applications that depend on open source, and a shift from hardware capabilities to software and content; in terms of the tourism industry a rapidly evolving marketplace with untested business models and uncertain outcomes or revenue creation opportunities; and in terms of tourism destination marketing, a lack a keeping pace with the rapidity of change or an understanding of how these types of applications might impact on place marketing in the future.

TYPES OF MOBILE DIGITAL APPLICATIONS IN TOURISM

In the course of this research we attempted to categorise and evaluate the potentials for all types of mobile applications currently available to the market:

Transport planning apps (e.g. Trainline, Flight track). These applications allow users to track flight information in many locations in real time, helping them to share information on travel
disruptions with other users and to make alternative arrangements. What’s On guide/Event listing apps (e.g. buzzd). These applications allow users to upload/download information on events and activities in your current location and to rate/recommend places and events. These types of applications can increase tourists sense of spontaneity, encourage new forms of sociality and enhanced word of mouth has the potential to increase users sense of authentic experiences and interactions within destinations, beyond sanctioned guides.

Travel planner applications (e.g. TripIT, Tripcase, TripDeck). Different to the transport planning applications described above, these apps perform integrated itinerary management functions including flights and car hire, hotel and restaurant reservations, and meetings, which are synchronized to the users i-calendar. These types of applications perform the traditional function of the tour operator and allow users to have an easy to manage online itinerary.

Accommodation planning applications (e.g. hotels.com, hotelpal). These types of applications function as a location-based tourist information centre service for accommodation services. Users are able to locate Hotels within their current location and compare prices, quality levels and other features, as well as book accommodation. These types of applications assist with users information search processes, enabling shorter planning times and increased flexibility and choice.

Tour guide applications (e.g. UK Travel guide, NY Travel guide). Generally consist of city guides containing recommendations for restaurants, shopping, attractions, nightlife and possibly some augmented reality services. These applications can replace paper guidebooks and add value since the information is constantly updated, often includes the reviewers of other visitors as well as sponsored information, which is easy to use and relatively cost-effective.

Directional services (e.g. Google maps, Navmii). Can offer complete satellite navigation software designed for a mobile platform, or a simple map service to help users find their way through and about their location. These types of applications offer simple solutions to tourists seeking to find their way around a city or tourism destination and will offer search functions, distances, and other information.

Location based social-networking applications (e.g. Gowalla, Foursquare). These types of applications have the potential to offer important social opportunities for tourists, helping them to identify friends and contacts in their location and to discover opportunities to experience different aspects of a destination. This could enhance the feeling of connection with a place, and lead to more authentic visitor experiences (off the beaten track). These applications are based on the principle that users ‘check-in’ – allow others to see their location – and share information about what they are doing with other subscribers. Users receive rewards and can play games, adding value to the visitor experience.

Attraction applications (e.g. ThrillSeeker, London Museum guide). These types of applications have often been developed to deliver an enhanced visitor experience at a particular site or attraction. Some, such as the London Museum Guide includes an augmented reality feature, which allows users to point their camera phone at a location and additional information is overlaid onto the viewfinder to create a more interactive user experience and add additional quality to the interpretation of an artifact or location.

Company specific applications (e.g. British Airways, Lufthansa). These applications allow users to view and manage their bookings and other information that the company may hold about them. Airlines can provide customers with boarding cards to their mobiles, and these applications are very useful for companies to manage their customer relationships.

Tourist assistance applications (e.g. eCurrency, language translator). These types of applications provide supporting services for travelers including spoken language translation
and translation services using the camera function. These services can facilitate tourist experiences and enable new types of tourist interactions. Social-networking applications (e.g. Facebook, Twitter). These types of applications are also available on mobile platforms, which allow users to share information, photographs and experiences about places with their friends. Users can join groups and these sites have the potential to create new forms of destination marketing.

Whilst the enabling features of mobile applications outlined above seem to suggest overwhelmingly positive benefits for users and service providers alike delivered by this technology, the flood of new applications is at a very early stage, and too early to judge what types of effects the technology will have on visitor experiences. Visitors may rely too heavily on their phones and social interaction may decrease. Guidebooks written by ‘authoritative’ voices may disappear in favor of superficial, user-generated evaluations. Spontaneity may increase and planning times diminish, but this may increase costs as the industry may struggle to manage capacities and revenue yields over the longer term.

METHODOLOGY

For this study an online survey methodology was adopted. In general, online surveys have compared favourably to traditional mail methods (Schonland and Williams 1996; Tierney 2000; Dillman 2007). With these factors in mind the research team designed the survey to be short (14 questions), relatively simple and easy to follow, using SurveyMonkey software incorporating calm colours and icons. The survey was tested and found to take no longer than 5 minutes to complete.

The research was undertaken with assistance from Experian UK, a leading global information services with a UK consumer database of 45 million people. Experian sent out an email invitation to the survey, including a link to the SurveyMonkey web address, to a representative sample of around 105,000 UK consumers during September 2010. This volume is standard for UK consumer market research campaigns of this type because of the generally low response rate (normally less than 1%). Table 1 identifies the click through percentage, which provides a more accurate picture of the response rate. A total of 3,503 respondents opened the email of which 780 clicked through to the survey link. This yielded a total response of 635 respondents completing the survey. We do recognise the limitations of this approach and the fact that the respondents profile is not representative of UK consumers/population as a whole. However, despite these shortcomings, the data did yield a significant response and broadly corresponded to Smartphone ownership percentage rates in the UK currently.

RESULTS

General information about tourist’s use of the Internet: According to the survey, emailing daily (79.7%) has been the most frequent used activity on Internet. Surfing the Internet for information search on news, sports and weather reports has been ranked second on daily usage (47.2%). As for the tourism related use of the Internet, purchasing travel related products and purchasing tickets of events are normally used once a while by majority.

Smartphone applications: Different types of applications and their uses on different type of trips by Smartphone users were investigated. The highest use of any application by respondents is for domestic trips i.e. either business or leisure. It is believed that because of heavy international roaming charges by telephone companies prohibits uses of those services
when abroad. In domestic leisure trips category, the maximum number of responses were given to directional services (71) followed by transport applications like train line, flight track etc. Looking beyond that category then, many respondents use directional service applications on domestic business trips as well. In international trip, company specific (18) and tourist assistance (23) are the two most used applications.

Comparisons between smart phone user and non-user: According to the frequency analysis, the results regarding how often people use Internet for each activity are not normal distributed. So we performed a Mann-Whitney test to test whether people who have or don’t have smart phone are significantly different in terms of the frequencies they use the Internet for different activities. The test indicates that the frequencies of Internet using for different activities (i.e. Information search, Emailing, Social-networking, Download music, movies, Financial, News, Sports, Weather reports, Purchase travel related services, Purchase tickets for events) are all significantly different (p<0.05) between smart phone user and non-user. Crosstab analysis was used to find out the patterns of smart phone users and non-users. The results suggest, in general, smart phone users are heavier Internet users. There is a significantly higher propensity for Smartphone users to use the Internet for information search, emailing and reading news based on daily use. There is also a significantly higher propensity for Smartphone users to use financial services, purchasing travel related service and purchasing tickets for events based on weekly basis. It is worth noting that more than half non-Smartphone users never use the Internet for social networking (52.7%) or download music (59.5%), which is much more compared with smart phone users (social network 27.2%, download music 25.2%) although this could be attributed to the higher age profile of respondents to this survey.

In addition, the Mann-Whitney test was also used for testing if there is any difference between smart phone users and non-users regarding the channels they use to share their travel experience and information. Uploading pictures and social networking channels are much more popular among smart phone users (uploading pictures 25%, social networking channel 7.4%) compared with non-users (uploading pictures 10.7 %, social networking channel 3.7%). This might because smart phone makes picture uploading and social networking online more convenient. Smart phone users take more trips per year for both business and leisure purpose. More than 20% smart phone users take more than 12 business trips per year while less than 10% non users do. Around 25% smart phone users take more than 9 trips for leisure whereas only 5% non-users take so many trips.

As for the possibility of using a Smartphone for various applications in the future, significant differences are found in three applications between smart phone users and potential users. The three applications are for travel planning, tour guide and attraction specific apps (p<0.05). Potential Smartphone users hold more positive attitudes concerning potential use of their Smartphone for these three applications.

CONCLUSIONS

The study found that Smartphone applications were used in a range or contexts, in terms of information search and trip planning, in the context of destinations to find out directions and information in situ, and in terms of sharing information and experiences online through social networks in post trip evaluation stages. However, there is currently a limit in the uses of the full range of mobile digital applications amongst this study’s respondents. The research compared Smartphone owner’s behaviour in Internet use with non-users and we argue that current Smartphone users are early adopters of the technology but that future users found
different types of applications more appealing than current users. This may be a result of the demographic trends as Smartphone’s become more widely available to a younger audience.

References


Gregory D. Abowd , Christopher G. Atkeson , Jason Hong , Sue Long , Rob Kooper and Mike Pinkerton. (1997). Cyberguide:. A mobile context-aware tour guide. 3 (1), 421-433


Kim, D-Y., Park, J., and Morrison, A.M. 2008. A Model of Traveller Acceptance of


accessed on 18/10/10.
