Smartphone Use by Tourism and Travel Consumers

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1.   INTRODUCTION

Targeting Innovation Ltd helps the private sector develop innovative products and technologies, supports the commercialisation of research, and develops creative solutions for the public sector. Targeting Innovation works regionally, nationally and internationally from its offices in Glasgow, Leeds and Aberdeen.

The company has been involved with many new technologies since its inception 18 years ago, and has a long history of working with technology based businesses at the early stages of product and market development. Client organisations working with the company can benefit from its excellent network of contacts covering larger corporate organisations, various private funding providers, as well as a range of professional services required by early stage businesses.

George Boag, chief executive of Targeting Innovation, states: "*Smartphone technology and the associated software represent a great opportunity for many industry categories but none more so than travel and tourism. This study shows just how much impact smartphones are already having on travel and tourism and shows how this is likely to grow with time.*"

Dr Shuna Marr, Lecturer and Undergraduate Programme Leader for Tourism at Edinburgh Napier University and Lesley Judge MSc, MCIM, Chief Executive of Smart Tourism in Edinburgh shared their findings with Targeting Innovation Ltd having undertaken the research required to compile this specialist report. We are very grateful to them for their excellent work.

2. EXECUTIVE SUMMARY

This investigation aimed to add to the scant body of knowledge about smartphone use in tourism by examining how early adopters of smartphones use their phones as consumers. For the purposes of the survey, 'Smartphones' were defined as "mobile phones with advanced computing and connectivity, for example, iPhones, Blackberries and those using the Android operating system." Travel was defined as "being abroad or in your home country, an awayday or a fortnight's holiday, for business or leisure." The study gathered data using a mix of qualitative and quantitative research. The opening qualitative data was gathered using three innovative, online, in-depth, focus groups of heavy smartphone users. Based on the focus group findings, a larger survey was undertaken using an online questionnaire that drew 152 responses from across 5 continents.

With reliable sources suggesting that there are 4bn mobile phones in use around the world, of which over 1bn are smartphones, the key finding of this study is that there are significant differences in the way smartphone users use their phone when travelling in their home country and when abroad. We found that three-quarters of those surveyed had used their smartphone when travelling abroad in the previous 12 months. When they are travelling in their own country, there was a tendency to use a broad range of functions on a frequent basis.

However, roaming charges and data download charges prompted two thirds of users to switch off some or most of their data services and limit their phone to call or text only when travelling abroad. This has obvious implications for the development and scope of smartphone tourism apps. The survey delivers a detailed picture of how, where and when smartphone users take advantage of the various applications available to them while travelling and an indication of which applications are most used and why.

3.   BACKGROUND

The tourism industry is very interested in how smartphone users are generating geo-tagged content, especially around location based services. However, there is a paucity of published academic or commercial research studies because of the recent nature of the technology. Using a mix of qualitative and quantitative research, the study was designed to discover how travellers and tourists were using their mobile devices, particularly smartphones, before and during their journeys for both business and holidays.

This investigation thus aimed to add to the scant body of knowledge about smartphone use in tourism by examining how early adopters of smartphones use their phones as consumers. In addition to its theoretical implications, the results have practical use to the industry: by identifying what impact users' smartphone usage holds for tourism stakeholders and technology designers who wish to develop apps for smartphones or iPads and other mobile devices.

4.   METHODOLOGY

The study gathered data initially using qualitative and then quantitative research. The opening qualitative data was gathered using three innovative, online, in-depth, focus groups of heavy smartphone users, which took place asynchronously over week-long periods, using a closed discussion forum. A pilot study established and refined the methodology, followed by two further focus groups, running concurrently over a week: one group of 6 people aged between 18-25, and a second group of 9 aged over 26 (this included users up to aged 65). The age distinction was designed to establish if there were any noticeable differences in opinions or usage among those who would have travelled previously without a smartphone.

The findings from this rich data established the main types of usage for these tourism and travel consumers; grouped in relation to their location, information gathering, booking and travel arrangements and social networking while travelling. Based on the focus group findings, a larger survey was undertaken using an online questionnaire administrated through SurveyMonkey®, targeting people who had a smartphone and had travelled either in their home country or abroad at least once in the previous year.

The questionnaire had 40 questions gathered in 4 sections, mostly tick boxes, although most questions allowed for open responses if anyone wished to expand on an answer. These sections related to respondents' demographics, travel habits, whether they had travelled for business and/or leisure, whether their phone use differed depending on whether they were travelling in their home country or abroad and what types of functions they used it for. The questionnaire was circulated through online networks and organisations and drew 152 responses from across 5 continents, including 54% from the UK and Ireland, 24% from the Americas, 16% from Asia or Australasia and 13% from mainland Europe.

5. CONTEXT

The International Telecommunication Union (ITU) stated on 15 September 2011[1] that: "*The spread of mobile networks in developing countries remains buoyant, with 20% growth in mobile subscriptions over the past year and no signs of a slowdown. In developed countries, on the other hand, mobile cellular penetration has reached saturation, with average penetration now over 100% at end 2010, compared with 70% in developing countries. With more than five billion subscriptions and global population coverage of over 90%, mobile cellular is practically ubiquitous.*

Mobile broadband ('3G') services are also spreading quickly; by end 2010, 154 economies worldwide had launched 3G networks. Wireless broadband Internet access remains the strongest growth sector in developing countries, with mobile broadband growing by 160% between 2009 and 2010. Conversely, the number of dial-up Internet subscriptions has been decreasing rapidly since 2007."

Microsoft Tag indicated in March 2011[2] that there are 4bn mobile phones in use around the world and that over 1bn are smartphones. Gartner's research[3] suggests that global mobile connections will reach 5.6 billion in 2011, up from 5 billion connections in 2010.

As travellers have embraced the Internet as a source of tourism and travel information and as a way of booking tourism and travel tickets easily and cheaply, so they have migrated comfortably to accessing this same web-based information through their mobile devices. It has been a logical step from that to travelling with mobile devices, especially phones, to ease their access to travel and tourism services whilst away from home and to utilise social media to enhance the experience.

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[1] Source: www.itu.int/net/pressoffice/press_releases/2011/31.aspx
[2] Source:
http://tag.microsoft.com/community/blog/t/the_growth_of_mobile_marketing_and_tagging.aspx
[3] Source: http://www.gartner.com/it/page.jsp?id=1759714

For example, the ITB World Travel Trends Report 2010/2011[4] notes that; "*Around the world more and more travellers are using social media. In the USA, about 52% of the 152 million adult leisure travellers – or some 79 million people - already use social media. US social media users tend to be active on Facebook, read other social sites, use the internet intensively for travel information, check out hotels on TripAdvisor and use online travel retailers such as Travelocity and Expedia. But only a low 20% rely on social sites for leisure travel information and websites are trusted much more than social networks.*"

Adobe's Mobile Experience Survey of October 2010[5] noted that that 80% of its research respondents accessed maps and directions from their mobile device in the previous 12 months and half researched places and destinations, while about a quarter of the respondents had initiated travel bookings from their mobile devices.

The location-based services market for mobile devices is showing exceptional growth as demand burgeons. A Juniper Research report[6] predicts the global mobile location-based services (MLBS) market will exceed $12bn in value by 2014, driven by increased apps store usage, smartphone adoption and new hybrid positioning technologies. Currently there are differences between North America, where MLBS use is comparatively high, and Europe, where it is lower. Growth will be further facilitated by the deployment of a high capacity network infrastructure and increases in mobile internet adoption, providing greater opportunities for browser-based services. In the UK, France and Germany five out of the 10 best selling iPhone apps in 2009 were related to navigation or MLBS[7].

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[4] Source: http://www.itb-berlin.de/media/itb/itb_media/itb_pdf/worldttr_2010_2011~1.pdf
[5] Source: http://www.keynote.com/docs/news/AdobeScene7_MobileConsumerSurvey.pdf
[6] Source: https://www.juniperresearch.com/reports/mobile_location_based_services
[7]Source: http://www.gsa.europa.eu/go/news/opportunities-abound-in-growing-location-based-services-market

There are also a number of factors limiting market growth: world-wide only 4% of adults are using location-based services[8]; many people feel uneasy about giving their physical location away; and services are geared to densely populated, urban places. According to the ITB World Travel Monitor(ibid): "*as many as 40% of international travellers already own a smart phone with internet and e-mail access and other functions, while 57% have a conventional mobile phone (2% still do not have a mobile phone), more than 40% of smart phone owners already use their devices to get destination information, and 34% of business travellers / 26% of leisure travellers use them to make booking changes during their trip. As many as 37% of international leisure travellers say they use mobile social networks.*"

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[8] Source: http://www.spinsucks.com/social-media/four-challenges-facing-location-based-services/

6. RESEARCH ANALYSIS

The online questionnaire was specifically about how people use their smartphones when they travel. For the purposes of the survey, 'Smartphones' were defined as "mobile phones with advanced computing and connectivity, for example, iPhones, Blackberries and those using the Android operating system." Travel was defined as "being abroad or in your home country, an awayday or a fortnight's holiday, for business or leisure."

The questionnaire was completed by 152 respondents, split 53% female and 47% male. In terms of age: 35% were aged 18-34; 35% were 35-44 and the remaining 30% were 45 or older. All participants owned at least one smartphone while 23 of them owned two or more. The smartphones themselves were a fairly representative range of models:

Phone Brand	Business Use	Personal Use	Business & Personal	Total[*]
Blackberry	8	3	16	27
iPhone	7	17	63	87
Android e.g. HTC	1	11	23	35
Other				15

Note: some owners had more than one smartphone and the most common "other" brand was Nokia (9 users).

It is interesting to note that the respondents felt that the make of phone mattered – 60% stated that the brand was important to them. For example one person commented: "Build quality and usability are essential." Another participant, this time from the online discussion group, clarified: "I've had every incarnation of the iPhone and would struggle to move away from Apple. I'm not one of these obsessed fans that seem to be associated with the Apple brand, but I do find the iPhone incredibly useful. The iPhone has replaced many other gadgets into one handy device that helps me manage my life. It's made some tasks easier, some tasks more accessible and opened up other tasks that I hadn't even considered before."

Their choice of mobile network varied from Vodafone and O2 (about a quarter each) to Orange (14%) with the remaining third of respondents using a variety of other platforms including Telstra (Australia) and Verizon or AT&T (USA). Just over half of the participants own at least one other mobile device including a mix of netbooks, ipads and other tablet PCs along with Kindles and 20 have iPod Touch Wi-Fi portable media players.

In total, three-quarters of those surveyed had used their smartphone when travelling abroad in the previous 12 months and 80% had travelled overseas or in their own country; 75% in another country in their continent and 70% in another continent. Two-thirds travelled for a combination of business and leisure and the majority of the remainder for leisure only. On average the group had taken 6 leisure and 5 business trips of at least one night away during the previous year. The most common trips away from home included:

1. family holidays (67%)

2. overnight stay away from home (53%)

3. city breaks (53%)

4. day trips (53%)

It is notable that, in this group, more women travelled for business but they took fewer trips per year than men.

In response to the question: "how important is being able to access social networks via your smartphone when you are travelling?" we noted the following answers:

How important?	Travelling in own country	Travelling abroad
Extremely important	24%	10%
Very important	11%	6%
Quite important	16%	18%
Not very important	18%	11%
Not important at all	16%	22%
Don't know or no comment	19%	19%

When they were asked what affected how they used their smartphone when travelling abroad, fully three-quarters mentioned roaming charges; a little over half noted concerns over data download charges and one-third cited network coverage. One individual commented "I don't use roaming but buy local SIM cards instead." Another noted: "I was in Thailand for 2 weeks for my sister's wedding and I didn't use my iPhone at all, mainly because I was paranoid about getting charged for using different services." In a more detailed response, one of the online discussion members explained: "It really depends on location. If I am overseas I always make sure to switch the data connection on my phone off so I don't get hit with a ridiculous phone bill when I come home. However, what I do to keep in touch is use the Wi-Fi function in my iPhone and always try and connect up whenever I can to stay in touch and post pictures and things that way, which means all the fun of being online with none of the price hit."

Another group member recalled:" I did have my mobile phone with me when I went to visit my sister at her bush camp in Zambia a few years ago, and while I didn't use it I kept it switched on to use as an alarm clock. One night as I was in my tent we both jumped as we heard my text message alert coming from my bag - as far as we were aware there was no reception in the bush and all calls were conducted by satellite phone so my phone suddenly picking up a signal came as a big surprise. I was sworn to secrecy about the signal 'sweet-spot' so that guests would disturb everyone's safari holidays by using their phones constantly."

Some 15% had not travelled abroad since owning a smartphone. The survey included five sets of detailed questions on how the smartphone was used during travelling. The results of these were as follows, with percentages of those who travelled only, rather than all respondents:

1. Use of smartphone in relation to a trip for the following functional activities.

Activity	Travelling in own country	Travelling abroad
Making telephone calls	97%	70%
Texting/MMS	94%	78%
Internet search	92%	46%
Sending and receiving email	92%	52%
Writing/checking documents & 'tasks'	49%	17%
Instant messaging	34%	15%

The male users in this survey used their smartphones more frequently for calls, texts and emails when travelling abroad than the female respondents. Interestingly, British and non-European respondents, whilst travelling in their own country, mostly use their smartphones for all listed activities (95-100%): making telephone calls, texting and MMS, internet search, sending and receiving emails, writing/checking docs and task-type activities and instant messaging. When they travelled abroad, these respondents making calls reduced by 20-30%, and texting fell by 10-20%, internet search halved, sending and receiving email reduced by one third, task type activities reduced by two thirds, and instant messaging also halved. The mainland European group, however, use their smartphones for calls and texts more consistently when abroad as well as in their own country – possibly as a response to lower call and text rates, or mobile provider bundles.

The picture for someone who has relocated to a foreign country is a little different as this online group member explained: "I live in the UK since 2006 and I am Chinese. I start using the smartphone since 2004 when I am still in China. However, since I come to Britain, I use the smartphone much heavier than before. The reason is firstly I need the phone for Google maps; secondly, I need to communicate with my family and friend by using Google Talk and other IM software; and thirdly, I need the dictionary to check the words I don't understand. The smartphone for us became the main media for entertainment. The social network here (like Twitter and Facebook) we don't use very much because most of our

friends are in China. We prefer to use the Chinese Tsina instead of Twitter and Renren instead of Facebook."

2. Use of smartphone in relation to a trip for the following leisure activities.

Activity	Travelling in own country	Travelling abroad
Taking photos	96%	76%
Filming videos	60%	38%
Downloading/watching videos e.g. Youtube	50%	7%
Watching TV/Films	20%	4%
Playing games	55%	34%
Listening to music	67%	46%

As with the use of functional activities (above) there is a difference between mainland Europeans and the rest of the respondents. All leisure activities were popular in the user's own country, particularly taking photos, watching and downloading videos and watching TV however, in contrast to the British and non-European groups, when travelling abroad, 85% of mainland Europeans still used their smartphone to take photos, 70% to film videos, 64% to play games and 76% to play music. Although these activities may not involve data download or roaming charges, they still show a far more sustained and active use of the smartphone when travelling than the other two groups with higher response rates for these questions.

From this study, it appears that male smartphone users are prepared to listen to music download videos and watch films/tv whether they are travelling at home or abroad, and this differs from women in the sample, whose usage dropped for the majority of leisure activities.

3. Use of smartphone in relation to a trip for the following social networking.

Activity	Travelling in own country	Travelling abroad
Social media activity via Facebook, Twitter, Blogs or similar	78%	45%
Using FourSquare, Gowalla, Google Places or similar	28%	12%
Sharing interests and opinions with group members	22%	6%

The marked drop in usage of social media when abroad is even greater with the non-European respondents than the Europeans. In their own country, all of the non-European contributors accessed their SM networks via smartphone frequently through the day – but this dropped to only a third accessing them at all when users travel abroad. One female member of the online discussion group said: "I started using FourSquare mainly because I was curious professionally - how could I use it in my job.... But now there's part of me that likes using it personally - seeing what's nearby and what weird and wonderful places I can find. I like getting tips from others via the tip functionality. I must admit that I am wary about telling everyone where I am at every waking moment so I publish my location sparingly."

4. Use of smartphone in relation to a trip for the following location/information activities.

Activity	Travelling in own country	Travelling abroad
Checking weather	83%	40%
Used Google maps and GPS positioning to use your smartphone like a satnav	82%	37%
Checking prices /timetables	78%	34%
Locating services around your location such as attractions, restaurants	67%	30%
Checking reviews/ratings	46%	18%
Displayed a digital ticket/boarding pass for admission to an event or to board a flight	25%	16%
Scanned a barcode while shopping to get additional info on a product	22%	2%
Posting a review or rating	14%	2%
Scanned and used a QR code to get a discount on a purchase	10%	1%
Purchased an item or received a coupon from a "smart poster" containing an electronic tag or barcode	6%	1%

This type of location functionality continued to be used by male respondents when travelling abroad in a much higher proportion than women, whose numbers dropped, on average, to only a quarter of comparative usage when travelling abroad.

For example one male commented in the qualitative research discussions: "I use Google Maps extensively when I'm travelling, to find where I am and where local streets/venues/restaurants are. I have used Google maps abroad over Wi-Fi, and it's very useful. When I am in a country where I have 3G access I no longer carry around a map of the city I'm in; which can go wrong when you are in the middle of nowhere and you have no reception."

Another male observed: "When I am in a city I do not know that well, I have used my iPhone to help me find places and bars using something simple like Google Search or various apps like 'Around Me' to find everything from Cash machines to taxis. Basically it's a life saver and I don't know where I would be without it." A female discussion group member responded to that with: "Second to social networking the function I use most on my phone is the Google maps, it is a total lifesaver. When I'm travelling I also love the app 'Vicinity', from the sounds of it it's similar to "Around me". It locates you using GPS and then can tell you where the nearest cash machine, petrol station, hotel, bar or shop is and it will give you directions to it using Google maps. I've used that umpteen times to help me out when I'm in a strange city and need to find an AMT."

Another male online discussion member added: "I like the concept of augmented reality and think there's definitely future in this technology. For me, I see it as another way to navigate around - for example the 'Around Me' app on iPhone. I've used this before with augmented reality to ensure I'm going in the right direction and it's a clever use of the camera and GPS technology and although I think it needs a bit of work."

A Chinese visitor to the UK outlined his experience: "Last week, we went to Liverpool and it was our first time to that city. We went by train and we needed the HTC smartphone to lead us to the hotel first and then show us some where to eat and then take us to our destination. All these preparations I finished on the train. When we got off the train, I used the Google voice-guided walking navigation to the hotel. It is really accurate, turn by turn and the voice guidance is handy. I don't have to gaze on my phone all the time. Time to have something to eat. We opened the Qype app and it showed the best reviewed place to eat near us and Google walk navigation led us there."

To understand whether the quality of performance of a smartphone has impact on its use during travel, the participants were asked if any of the following were significant in terms of affecting their experience of using a smartphone or preventing them from using it whilst travelling:

Performance Issue	Number Concerned
Screen size of device for mobile web browsing	56%
Speed of connectivity	65%
Insufficient or poor Wi-Fi connections	61%
Wi-Fi access charges in hotels/accommodation	66%
Roaming charges	77%
Data download charges	70%

However, the study found that smartphone users are unhappy if they cannot get a signal when travelling, as one female discussion group member explained "In those horrible dark moments of my life where there is no 3G signal, eventually I will give in and go look at local tourist information boards or leaflets; but I really hate doing that as you first have to find the information place, then you find that the information is often out of date, you end up carrying about lots of different bits of paper and you don't usually get as much information as if you'd just visited the website."

The questionnaire asked those who did not use their smartphone abroad or chose not to use data services from their smartphone when travelling abroad, how they made contact and/or kept in touch with people. This question applied to 55% of the participants; these 85 responded as follows:

1. 45 used local internet and email services;

2. 29 used Skype®;

3. 26 used a local sim card;

4. 20 used a local internet café.

5. 7 used any available Wi-Fi connection, usually a free one.

6. There were 17 others; e.g. one person "used roaming for voice calls and texts, but use free Wi-Fi (hotel/Starbucks/Apple Store etc) for data use."

It is of note that the proportion of male respondents using local internet and email services while travelling was higher than that of the females, although the use of Skype® was similar between the genders.

Given the concern noted over the possible cost penalties of using a smartphone overseas, the questionnaire went on to prompt respondents about cost saving measures they employ, with the following results:

Cost Saving Option	Yes	No	Don't Know	Total
Switch off some or all data services	95	21	5	121
Limit phone to calls and/or texts only	81	28	7	116
Use sim card of the local country/area	37	55	8	100
Use money-saving measures to avoid roaming charges	53	28	15	96

An example of the problems experienced by travellers came from a male participant in the online group who wrote: "Friends of mine from Mexico went to London this year. They were using a smartphone for everything: maps, directions, tickets, restaurants using the supposedly "international" apps from the iPhone. But after two days, they realised that the costs of using these apps was huge, because they were charged roaming costs even for apps, so they stopped using their mobiles and searched for a UK sim to use temporarily."

The survey then went on to ask respondents whether they would be prepared to receive targeted adverts and/or special offers delivered directly to their smartphone from organisations that offer such a service. The responses were as follows:

	Before a trip	During a trip, for local offers	After a trip, based on previous travel purchases
Yes	24%	24%	11%
No	44%	43%	49%
Don't Know	32%	33%	40%

There were a number of comments in response to this question, typified by the following selection: "As long as I don't feel harassed;" "I hate being bombarded with information, I just delete and don't read;" "Not sure about receiving junk adverts on my smart phone. There is enough in my inbox." However, some were more positive like the person who noted: "I'm also open to the idea of geo advertising. I think as long as it's not intrusive and you've almost 'opted' to receive it."

Social Network Use

As a group, the respondents use a fairly typical profile of social media including:

1. Facebook – 86%
2. LinkedIn – 64%
3. Twitter – 51%
4. YouTube – 47%
5. Flickr – 27%

Most participants access social networks while travelling, although less often when abroad as the following response shows.

Regularity	Travelling in own country	Travelling abroad
Frequently throughout the day	30%	8%
Once or twice a day	15%	11%
Several times a week	14%	9%
Seldom	14%	14%
Not at all	8%	22%
Don't know/no answer	19%	36%

There are clear concerns about the extra cost of accessing social media when travelling in other countries. For example one comment was "it would probably rate higher when travelling abroad if there was no additional cost." Another noted "I want to but it's too expensive."

As with other smartphone functions the study noted differences in how the genders are using their phones when travelling. The sample of women was much more likely than the men to curtail their use of social media when abroad, typically halving their use of these services. More men used location-based services via their smart-phones both in their own country and even when abroad compared to women. There was also less of a drop in numbers between the number of men sharing interests and opinions in their own country and doing the same via smart-phones when travelling abroad, compared to women smart-phone users. This has interesting implications for how men and women use and access social networks via their smartphones when travelling in their own country and abroad.

Main reasons for using social networks whilst travelling (however they may be accessed):

Activity	Travelling in own country	Travelling abroad
To let people know what I am up to	32%	20%
To share my travel experiences with friends & family	33%	22%
To check up on what my friends & family are doing	45%	24%
To find new products & services which are good for travel	17%	8%
To check reviews, get information on where I am & where I am going	23%	10%
To post reviews on where I am & what I am experiencing	14%	9%

To elicit a more detailed picture of the use of social media whilst travelling, participants were asked: "In relation to your travel habits for leisure and/or business, do you consider your smartphone an important travel gadget for any of the following?"

Activity	When travelling on business	When travelling for leisure	When travelling in home country	When travelling abroad
Staying in touch with family and friends	65%	72%	72%	63%
Staying in touch with colleagues and work	60%	27%	50%	37%
Seeing where other people are	17%	25%	25%	18%
Working/studying on the go	40%	16%	34%	23%
Sharing and accessing information	38%	36%	41%	26%
Sharing and accessing content - e.g. photos	24%	38%	35%	26%
Helping me manage my life via tools and apps	35%	35%	36%	26%
Helping to orientate me and what I need to find in a place	39%	43%	42%	26%
Providing access to entertainment/recreational info	24%	35%	32%	21%
Helping me to plan my travel activities in advance	34%	39%	34%	24%
Helping me to make decisions & get answers	28%	30%	30%	21%
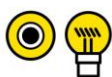
For the majority of users in this survey, the most important use of the smartphone seems to be to keep in touch with family and friends across all criteria, irrespective of type of activity or where the user is. A British female respondent remarked: "I use social networking a lot on my phone. I've got the Facebook and Twitter apps and check them regularly. It's great when you're away on trips to keep people updated and I in turn like to be kept up to date with where friends/family are travelling too." Another person commented "When smart phones eventually get faster processors then when that day comes I will no longer need to carry a laptop with me." A third online group member noted: "I use Twitter for tweeting a mixture of rants, staying in touch with friends and people in online marketing, linking to my own website and blog, and tweeting photos of silly things I see when I'm out and about."

The survey specifically asked whether the respondents had ever booked or would ever book travel services via social networking sites such as Facebook or a social media and user-generated content site like TripAdvisor.

While 10% had actually booked through a social networking site a further 40% said they might do so in future and only 13% said they definitely would not. One online group member observed: "I did use the TripAdvisor during a recent holiday as I was curious to see if there were any reports on a particular restaurant we planned to visit – there were – and they were bad enough to stop us going."

Although it did not feature in the list of the main social media services used by our group, we asked specifically how they felt about location-based services such as FourSquare.

Opinion	Response
I already use them - I'm a big fan	7%
I have used them - but I have some reservations	13%
I might use them if they became more common	14%
Not sure what they are	23%
No I'm not likely to use them	22%
Don't know/no comment	21%

Quite a few respondents made concerned comments about these services such as "Don't see the point in them. I think it's a bit dangerous to let people know where you are every minute of the day and your flat lies empty!" One observed: "I use FourSquare to tweet my location from time to time. I'm not a huge user of this service and if I'm honest I'm still trying to find a real tangible use for that side of the technology. It's useful to get personalised 'tips' and 'recommendations' from friends and strangers too on where to go when you're in a certain area, but beyond that it does seem a bit odd to constantly announce where you are."

We also asked how the respondents felt about using augmented reality applications when travelling to learn more about things around you - e.g. pointing their phone at buildings to get more information. It has been reported that the Trip Advisor augmented reality app for Ipad is their best-seller. However, only 14% of our sample had ever used augmented reality applications and most of them infrequently. On the other hand, just under half said that they had never used these applications but would be willing to do so.

Making Reservations

To discover the uses of a smartphone as a booking and payment device while travelling, the respondents were asked whether they had ever used their smartphone to book or pay for reservations for any of the following in relation to a trip:

Activity	Undertaken
Hotel room	23%
Cinema/concert/theatre tickets	16%
Bus/Train journey	15%
Airline ticket	10%
Car Hire	4%
Visitor attraction/Museum/Gallery	3%
Day tour	2%
Other	4%
None of these	64%

One contributor commented: "I consider it a very valuable service, but still prefer to check, plan and book my tickets from my desktop PC; the screen is bigger and I feel more comfortable to sit and focus, consider all possible options and only then make such decisions." Another stated: "Never booked; just gotten boarding pass or tickets on to the phone. I book everything well in advance and booking via smartphone seems to be a last minute." A British male expanded on these thoughts, observing: "I've never made a booking using a mobile. For me personally, I find purchasing decisions of that nature require an information search on a PC. What would make me change that opinion? I don't really know. I think the comparison tools are evolving at such a rate that in another year or so it'll be just as easy to compare prices on a smartphone as it is on a PC, but for now I'm not convinced."

An Asian contributor summarised his views: "I prefer to gather information by using the PC, because the speeds are good, the screen is good, the inputs are good. For me, I think the most important functions on a smartphone are the GPS, wireless email and entertainments, and maybe searching some particularly urgent information."

They were also asked whether they had paid for travel bookings via smartphone using any of the following methods:

Booking Payment	Undertaken
Website accessed via mobile internet	21%
Secure mobile website of the service provider	11%
Secure payment via an app	10%
Email	5%
Not booked using a smartphone	74%

Most have not used a smartphone to book, as one person noted: "No, but I have paid for apps from the app store. It is not that I have a negative opinion about accommodation websites that offer such services, it is just that I still have not come into a situation where I actually MUST buy my tickets, or pay for something through my iPhone."

Given the possible security issues the participants were also asked how concerned they were regarding security when making payment transactions from their smartphone:

Level of Concern	Response
Extremely concerned	16%
Very concerned	9%
Quite concerned	20%
Not very concerned	28%
Not at all concerned	6%
Don't know/No answer	22%

The survey went on to probe these concerns in more depth by asking respondents whether concerns about security had prevented them from making payment transactions via their smartphone to date. A quarter said that concerns about security had prevented them from making payment transactions via their smartphone; 43% did not share this concern and the remaining third were either unsure or did not answer. However, a follow up question established that a half of those who had security concerns, or were not sure, said they would be happy to use their smartphone to make a booking or payment for travel services if the environment was guaranteed to be secure. In the words of one contributor: "I haven't used it as I'm unsure how safe or otherwise it is." A similar remark was made by a female member of the online discussion group who said: "I haven't booked anything via my phone but have used it to look up information. I'm not entirely comfortable with putting credit card details etc online via the smartphone."

The online discussion group featured an observation by a male Latin American that "I still don't trust too much paying with a mobile, from the point of view that a mobile stores information that can be used by someone else if the mobile gets lost." A British female replied "I don't use my phone to book things either. It's not the payment thing that worries me but the size of the screen. I would worry that I had missed something important." A British male added "I have used the mobile to pay and to check in for a flight. It worked perfectly, no problems at all. The only thing that I would say is that it's a little worrying handing your phone to airport staff to scan the barcode, in case they drop it."

Another female in the online group added: "If I were to find myself stranded and in need of a hotel, for example, I would have no problem with booking on my phone, like a friend of mine who was in London on business and decided at the last minute to stay overnight. He went to a nearby hotel and requested a room. They were only prepared to offer him rack rate - an eye-watering £380. So he sat down with his iPhone and booked a room at the hotel on laterooms.com for an altogether more reasonable £85. I think he rather enjoyed approaching the same receptionist to check in a couple of minutes later!"

Future Forecasts

The survey encouraged contributors to make any predictions on how they see smartphone use changing in the future and received a mix of comments, mostly very positive, including the following, in no particular order:

- "My phone is already indispensable and I only see me using it more in future."

- "I will become evermore dependent on the device to manage all of my communications."

- "More use as a greater number of apps becomes available."

- "As improvements are made I may take them if they are applicable to my life."

- "We need a bigger screen and bigger keys for typing, because us baby boomers are all getting older and more short-sighted!"

- "I see me using my phone more and more as it becomes ever more main stream. One day I fully expect it to replace my normal computer usage. As charges come down and it becomes more secure I expect to be sending payments by smartphone."

- "I'd like to see something in between the size of an iPhone and an iPad so that it would fit in my handbag."

- "If destinations provide free Wi-Fi in urban areas the visitor experience will be much improved and smartphone use abroad will become much greater. I think that devices offer a great way to search for flights, hotels etc but I still like to return to my laptop to make the final booking as the screen is just too small."

- "More use, cheaper cost, more flexibility when using in other countries and continents."

- "I can see tourism information and booking functions rapidly moving to smartphone capability."

- "Things like using them for boarding flights: barcodes are an incredible development and the only way they're going is to become more and more important."

- "I would use it more if there was a better battery, better 3G and improved keyboard."

7. CONCLUSION

Even heavy smartphone users, especially from Europe and North America, remain cautious about making full use of their devices when travelling outside their own country. Apprehension about roaming charges and data download charges prompted two thirds of users to switch off some or most of their data services and limit their phone to call or text only when travelling abroad. There appears to be a good opportunity for smartphone marketers and mobile networks to boost revenue if they can calm these concerns by offering more attractive solutions for travellers.