An Assessment of Tourist Demand and Use for travel guides:
A focus on the use of new technology such as SMARTPHONES and downloadable "APPs"

A visitors snapshot of travel guide use for Ireland.

The US family

Demographics	A family- (Mother retired, father a Pharmacist, the two sons' doctors and the daughter and son in law both Ophthalmologists).
Motivation	Notre Dame v Navy Game and VFR
Transport	Two hire cars.
Duration	7 days
Travel guide use	New Irish Travel guide books bought in US. Travel information printed at home prior to departure from the internet.
	A wide assortment of brochures and free maps from Irish travel information centers.
	A Sat Nav was hired with the rented cars.
	All but one had a smart phone or mobile device with roaming switched off.
	Phones used for photos and to upload and share information in free Wi-Fi areas.
	Many generic travel apps tripadvisor etc, 2 had downloaded Discover Ireland App before travelling. No other specific Irish travel apps downloaded.
	A set of walkie-talkies were in use to communicate from car to car while traveling around, these were also bought in the US. A creative way to get around roaming charges!

The Conference traveler

Demographics	Male 45-54, from GB
Motivation	Came to Ireland for work (conference) adding 3 days to VFR in Galway
Transport	Ferry and company car
Duration	5 days
Travel guide use	No guide book
	Smartphone with roaming switched on (company picking up bill plus expected to be contactable on work phone)
	Travel Apps being used, trip advisor etc.

The Weekend Break

Demographics	Two Female teachers 25-34 from Kerry
Motivation	Weekend getaway spa retreat and cycle greenway before going back to work.
Transport	Private car
Duration	2 days
Travel guide use	No guide book
	Smartphones with roaming switched on.
	Many Apps in use such as Facebook only relevant Irish Travel apps was Trip advisor. However Travel apps for other destination (i.e.) Barcelona still on phones from last visit. Roaming switched off when traveling out of Ireland.

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Table of Contents

List of Figures

List of Tables

1.0   Introduction

The use of Smartphone technology, social media and downloadable applications ("apps") for mobile devices is growing rapidly, to the point where online use from mobile devices is expected to surpass traditional computer internet use by 2014. This has become increasingly apparent in the world's largest industry – travel and tourism. As a result, many destinations and Irish tourism business are developing travel apps. This research forms an important baseline study to inform tourism stakeholders on visitor's use of travel guides, particularly with regard to mobile devices such as "Smartphones", as well as downloadable "apps". The results give tourism business an understanding on travel guide use and the visitor experience. There has been a significant rise in Irish tourism providers creating travel apps. With over a half million apps today, most people avail themselves of 30 or so, and of that 30, only about ten are used regularly. Many apps seem to reflect an approach that resembles early websites, copying hard copy versions, without taking advantage of the unique opportunities mobile applications offer.

This report was commissioned by Fáilte Ireland in order to identify and assess how domestic and international visitors use traditional travel guides with a focus on the use of mobile devices such as "Smartphones", as well as downloadable "apps" when traveling in general and within Ireland.

Valuable enterprise development and market access information from this applied research project is identified for tourism enterprises, local and regional authorities, as well as for Fáilte Ireland. This is specific to identification of visitor travel guide use, possible barriers to be overcome and options for future development, particularly as it relates to the use of traditional traveller information sourcing vs. future growth and options for technology based application solutions (e.g. apps for mobile devices such as Smartphones). Regional Authorities and tourism enterprises will gain valuable insight and guidance with regard to technology based application development and importantly lessons learned regarding what to avoid.

2.0   Definitions and Abbreviations

For the purposes of the survey, 'Smartphones' are defined, based on a similar study conducted by Napier University, as "mobile phones with advanced computing and connectivity, for example, iPhones, Blackberries and those using the Android operating system."

An "App" is an abbreviation for "application" and in the smartphone and mobile device world it is the popular consumer shorthand for downloadable mobile applications in smartphones and tablets after Apple debuted the iPhone 3G in 2008, PCMag (2012).

Augmented Reality (AR) apps can be defined as a live, direct or indirect, view of a physical, real-world environment whose elements are *augmented* by computer-generated sensory input such as sound, video, graphics or GPS data. (Yovcheva, Buhalis, Gatzidis, 2012). A recent report further illustrates:

> *As well as a familiarisation tool, technology will be able to offer an alternative experience of a place. Augmented reality and gamebased applications could make a qualitative difference to travel. Through the camera lens of a mobile device, locations could be seen from a completely different perspective: their physical appearance could be augmented with photos, videos or sounds from the past – or from an alternative, simulated reality. (From Chaos to Collaboration: How transformative technologies will herald a new era in travel* (Stubbings and Curry, 2012).

Tourists for the purpose of this study have been identified and targeted as holidaymakers, with a key focus of the study centering on major tourist attractions around the country.

3.0   Background and Linkage to Current Projects

There is currently very little international information and knowledge regarding smartphone use in the travel and tourism industry, particularly as it relates to visitor use of smartphones and related technology versus more traditional travel guides. In fact there has been no related published research within the Irish context. The Fáilte Ireland (2012) visitor attitude survey currently gather tourism information for choosing Ireland as a destination, however this may need to collate information on smartphone and app usage in the future. Based on the identification of this important knowledge gap the concept for this project resulted from key issues highlighted during the Fáilte Ireland 2011 Industry Education Research Forum and the discourse and outcomes from County Sligo Tourism Strategy Review Group (CSTSR) and Fáilte Ireland North West.

Looking outward the Tourism Ireland report (2011) in this area highlights the growth and use of Smartphones

Fig 1   Growth in Smartphone usage
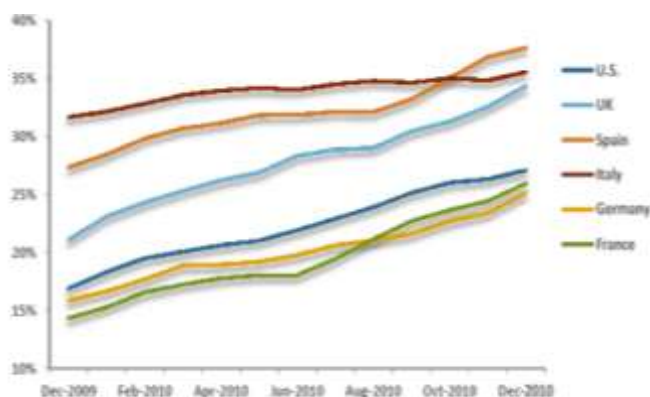
Source: (Tourism Ireland, 2011)

Italy and Spain have the highest percentage of Smartphones adopted by the market with Italy starting high and then slightly decreasing. Spain began their adoption of Smartphones quite strongly and increased rapidly. Rapid growth in smart phone usage will impact consumers in a number of ways:

- Smartphones will be the new credit card
- Consumers will grant access to make personal data
- Location based marketing will grow
- Online and offline shopping will seamlessly merge
- Mobile transactions will grow
- Consumers will pay for more mobile services
- Mobiles will be the battle ground for loyalty

Internationally, similar research projects were reviewed and integrated where appropriate in order to increase the robustness of the results, and to identify gaps and solutions. One relevant research project for example, is the following at the Napier University (2011): *An Assessment of Tourist Demand and Use for downloadable "APP"s for SMARTPHONES and Mobile Device.* However, this project, while allowing for an international perspective, is not specific to tourists within Ireland, and it was based on a smaller sample size. Other studies cited within this survey and noted in the bibliography are also relevant with regard to global trends but not locally specific.

4.0   Research Aims

The research goals for this applied research project are to identify and assess how domestic and international tourists use travel guides, particularly with regard to mobile devices such as Smartphones, as well as related next generation technology such as downloadable apps when traveling in general and within Ireland. The data gathered will help identify key market travel guide trends, such as social media use while travelling, and in doing so help to inform the need to improve and develop new apps and functionality for the tourism industry. The research also identifies any potential barriers to using mobile devices and travel apps encountered by tourists such as availability of wifi, roaming charges and reception.

As a result of existing linkages with regional and national industry stakeholders and tourism authorities, these authorities and associated industry sectors will be able to implement recommended solutions in order to be on the cutting edge of new technology if needed and enhance product awareness for domestic and international visitors. New solutions or enhancement of existing solutions may also be expected to enhance the visitor experience while here in Ireland.

5.0   Methodology

Based on existing team experience combined with literature review of existing relevant studies and research reports, a questionnaire was developed in order to obtain data through on-site surveying that would help address the research aims and objectives. The draft survey questions were then reviewed by IT Sligo Department of Marketing, Tourism and Sport, Fáilte Ireland head office, Fáilte Ireland North West and Sligo County Council. This linkage will also prove valuable in the dissemination of results and recommendations. Surveying occured at several major tourism attractions across the country during peak vistor times in 2012. Survey sites included:

Table 1   Travel App survey sites

Strandhill, Sligo	Enniscorthy Co Wexford
Drumcliff, Sligo	New Grange
Westport Tourist Office	Bunratty
Croagh Patrick Visitor Centre, Murrisk	Clifden
Kylemore Abbey	Glendalough/Dublin
Cliffs of Moher	Kilkenny Castle
Dingle	Rock of Cashel
Ballyhoura	Clonmacnoise
Fota Island	Muckross House - Killarney

Researchers utilised a purposive sampling technique to ensure a comprehensive cross sample of tourists. Electronic methods of data collection were avoided in order to capture possible future movements and trends from tourists who may not be currently utilising mobile devices or have access to electronic surveys. A total of 1100 surveys were distributed, however due to the nature of the data collection, which was very time consuming and intensive, the uptake of self completed questionaire was low. However this was counteracted by interviewer completed approach which also allowed the researcher to get closer to the data and identify trends within the study. Due to the poor weather only 63% of expected survey returns were achieved. Desk research complimented on and offline surveying of domestic and international tourists across multiple sectors and demographics, with a focus on use of technology applications, as well as more traditional sources of tourism information (e.g. travel guide books).

Integration and assessment of the results, followed by report development, delivery and dissemination followed. Below table 1.2 provides a summary of the work and associated timeline:

Table 2	Research Timeline

Activity												2012
	j	f	m	a	m	j	jy	a	s	o	n	d
Task 1: Existing Research Project Review	2	3	4	5	6	7	8	8	9	10	10	10
1a) Desk review & assessment of existing similar research projects	x	x										
Task 2: Identify and Develop Research questions												
1a) Meet with local authorities and industry partner stakeholders		x	x									
2a) Engage with Fáilte Ireland for input into identification of relevant questions			x									
3a) Develop proposed research questions and methodology			x	x								
4a) Vet proposed questions with stakeholders and finalise				x								
Task 3: Survey Visitors												
4b) Breakdown of visitor demographs and by region					x							
4c) Onsite surveys(offline)						x	x	x				
Task 4: Assess Survey Results												
5a) Integrate Results from Surveys and Research Reviews								x	x			
Task 5: Report Development & Delivery												
6a) Develop Report, including Impact Assessment								x	x	x	x	
6b) Report Delivery and Dissemination (Publishing, etc.)										x	x	x

## 6.0	Publications and Dissemination

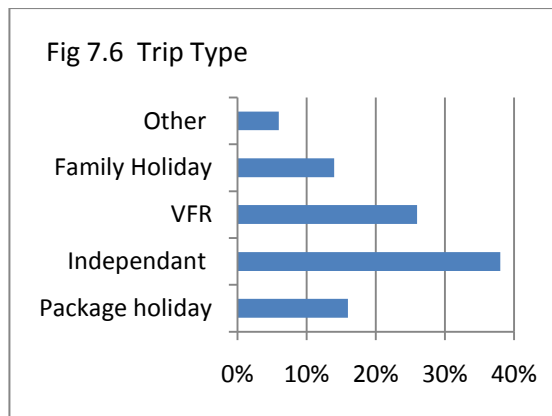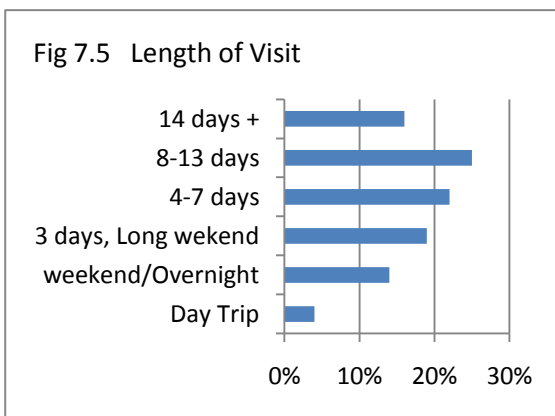The results and applied industry recommendations are published and disseminated in a number of ways:

- A publication and conference presentation at Tourism Hospitality Research in Ireland Conference (THRIC) 2013. Research in Ireland Conference: Ulster Business School, University of Ulster.

  - *Hanrahan, J. and Krahenbuhl, P. (2012) Tourist Demand and Use for travel guides: a focus on the use of new technology such as downloadable "APP"s for SMARTPHONES and Mobile Devices. Tourism Hospitality Research in Ireland Conference (THRIC) 2013. Research in Ireland Conference: Ulster Business School, University of Ulster.*

- An industry report will feed back into the wide tourism industry but specifically the Fáilte Ireland Business support sector and County Sligo Tourism Strategy Review Group (CSTSR).

- A working group presentation at 2011 Fáilte Ireland Industry Education Research Forum 2012.

7.0 Key Findings

The key findings of the report are discussed in context of the current theory and applied tourism practice in the field. The discussion of the findings will flow from the basic demographic of the participants to the use of hard copy traditional guides onto the use and adoption of travel apps. This is then reviewed with a reflection of the barriers associated with travel apps as identified by the tourist.

7.1 Visitor Profile

The primary visitor profile data gathered and used during analysis included gender, age, nationality, what country they travelled from, length of trip and trip type. Below is a summary of the results of those surveyed:

Fig 7.1 Gender

Fig 7.2 Age

Fig 7.3 Nationality

Fig 7.4 Country traveled from

Fig 7.5 Length of Visit

Fig 7.6 Trip Type
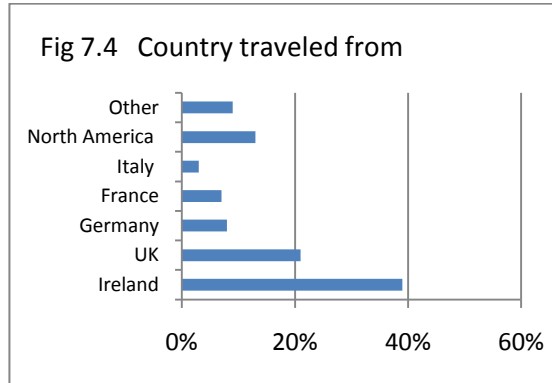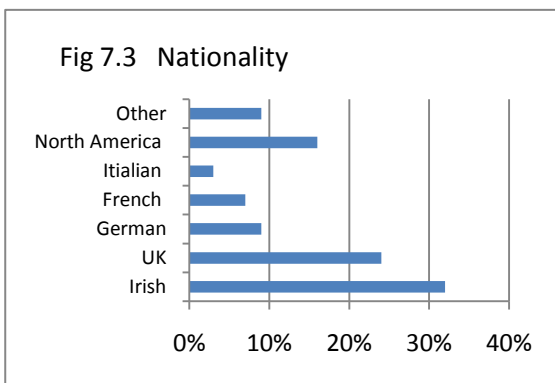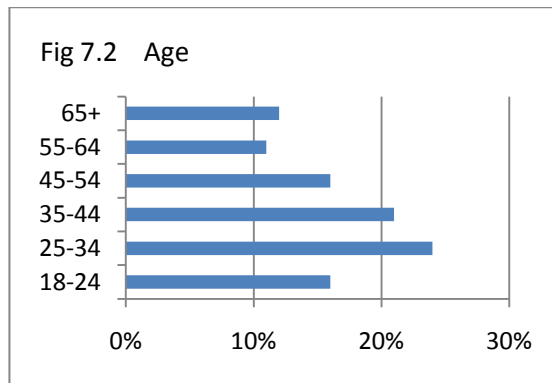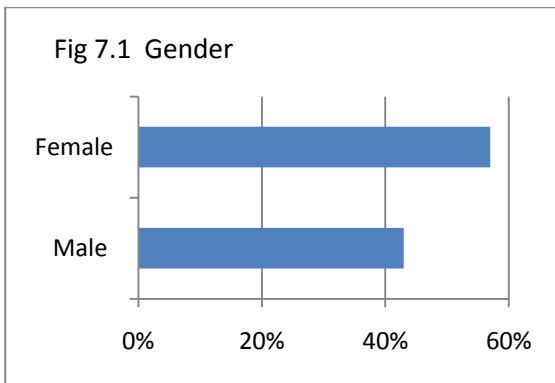
The visitor demographic generally reflect the current Fáilte Ireland and Tourism Ireland visitor profiles. Domestic tourists represented the largest percentage of travelers (fig 7.3), which is significant because domestic smartphone use would typically not be subject to most of the barriers that other nationalities would face, such as roaming charges. These charges would however be encountered by the second largest group traveling from the UK. Furthermore the third largest group
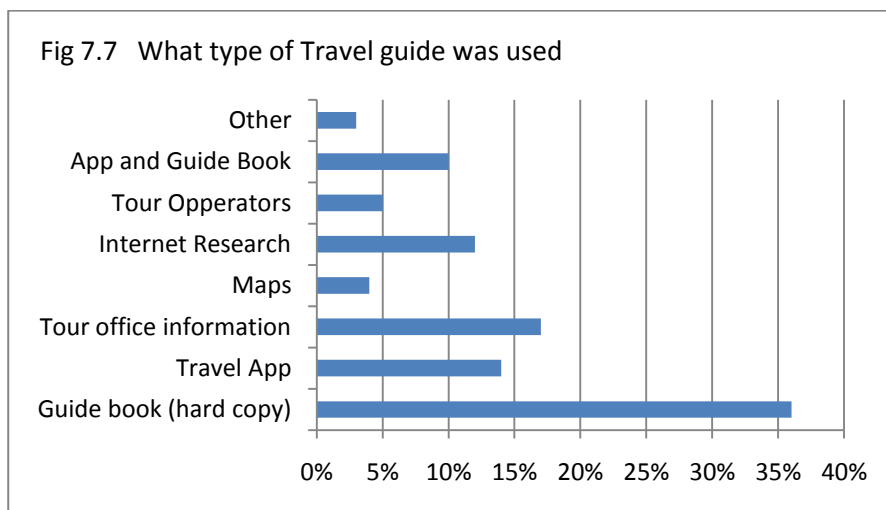
7

of visitors was from the US. These visitors tended to have the most significant barriers to entry, including extremely high overseas rates and some incompatible technology. In the middle categories were other European nationalities, who would tend to have middle of the road barriers to use. In the "other" category the top respondents were Australia, New Zealand and South Africa, who showed similar tendencies as visitors from the US. These considerations affected both the amount of use and variation in the type of use of mobile devices between domestic and foreign visitors, as explored in the *Smartphone and Mobile Device Use* section below.

Length of stay also corresponded to type of trip, with longer stays tending to be independent travelers, who represent nearly 40% of visitation within the survey sample.
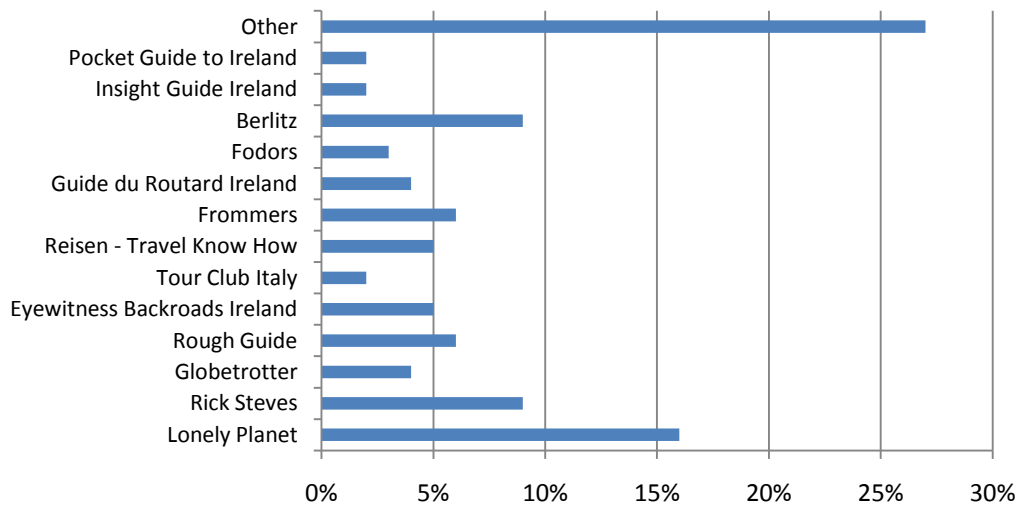
7.2   Travel Guide Use

The majority of respondents said they are using a travel guide of some sort. With the most frequent type of travel guide cited being traditional guide books (37%). This highlights the importance still placed by tourists on hard copy or tangible travel guides. Perhaps this should be tracked in longitudinal research in the future to identify changes as smartphone technology becomes more common place. The second highest response category was tour office information, which was not a part of the original list of answers but was added due to the high frequency (17%) of responses that resulted while surveying. This highlights the importance of tourist offices for visitors to Ireland. The third highest category at 14% was travel apps. Initial speculation was that this would be considerably higher. However considering how new these are to the tour guide market they are making a considerable impact in a very short space of time. The use of internet research is still quite high with some tourists displaying evidence of computer printouts of travel information, again highlighting the desire for tangible travel information. The combined categorical response of "Book and app" provided the response rate of 10%. The frequency by type of travel guides used is summarised below:

Fig 7.7   What type of Travel guide was used

Category	Value
Other	3%
App and Guide Book	10%
Tour Opperators	5%
Internet Research	12%
Maps	4%
Tour office information	17%
Travel App	14%
Guide book (hard copy)	36%

7.3   Travel Guide Books

The research captured a vast array of travel guide books. This is evident in Fig 7.8 below which indicates the percentages of most popular choices for travel guide books cited. Noting that, Eyewitness, Rough Guide, Guide du Routard Ireland and Frommers were popular with Lonely Planet and Rick Steves being cited as twice as common as most other guides:

Fig 7.8   Name of travel guide book

Travel guide	Percentage
Other	~27%
Pocket Guide to Ireland	~2%
Insight Guide Ireland	~2%
Berlitz	~9%
Fodors	~3%
Guide du Routard Ireland	~4%
Frommers	~6%
Reisen - Travel Know How	~5%
Tour Club Italy	~2%
Eyewitness Backroads Ireland	~5%
Rough Guide	~6%
Globetrotter	~4%
Rick Steves	~9%
Lonely Planet	~16%

The majority of the respondents were either *very satisfied* or *satisfied* with their guide books. Almost all purchases occurred in their home country, the majority of books were published in 2011 or 2012, and nearly 50% of them were purchased at a price range of €20-29. This indicates that people who use traditional travel guide books still like to flip pages rather than tap screens and are willing to pay for high quality guidebooks. This may pose a threat to travel guides in the future or be a pricing opportunity for travel apps which are low cost or free. This is summarised in the Fig 7.9 to Fig 7.12 below.

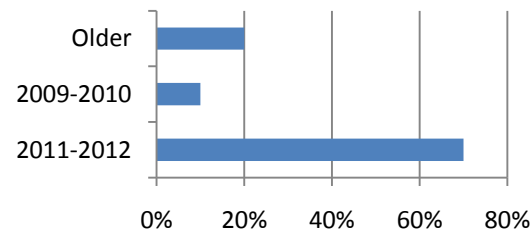**Fig 7.9   Year Guide Book published**

Year	Percentage
Older	~20%
2009-2010	~10%
2011-2012	~70%

Fig 7.10   Price of Guide Book

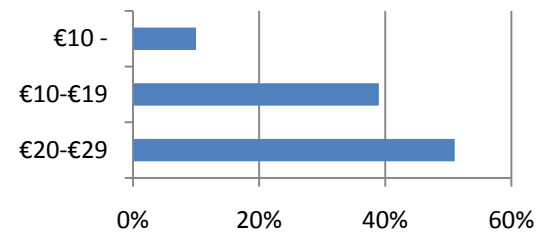| Price	Percentage
€10 -	~10%
€10-€19	~40%
€20-€29	~50%

Fig 7.11 Where was the book aquired

Location	Percentage
Home country	~95%
Ireland	~3%
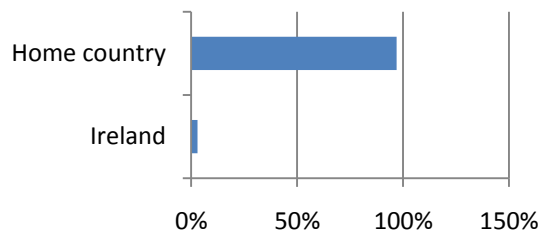
Fig 7.12   Book Satisfaction

Satisfaction	Percentage
Disatisfied	~5%
So so	~18%
Sastisfied	~53%
Very satisfied	~25%
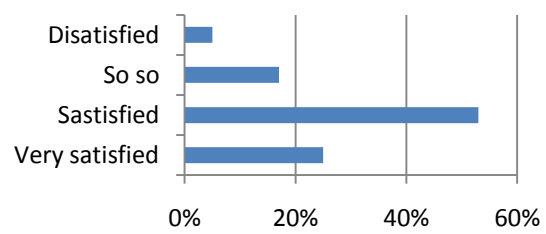
7.4   Smartphone and Mobile Device Use

The key differentiator between respondents for the purposes of this project is related to whether or not they owned a smartphone or other relevant mobile device (e.g. IPad, ITouch, etc.). For those who answered "no" to owning a smartphone the survey ended after the travel guide questions and for those who answered "yes" the survey continued on to the end regarding additional questions

9

related to Smartphone use. Furthermore 55% of respondents stated that they do *not* own a related mobile device. This, however, may be closely tied to age, noting that a third of respondents were in the over 50 age category, which may tend to have lower smartphone ownership and use frequency. The older the age category the less likely they were to use a smartphone. Of those who did not own a Smartphone, 34% said they intended to own one in the future and use it while traveling and 33% said they were not planning to, as highlighted in the below charts.

Fig 7.13   Own a Smart Phone

Fig 7.14   If no, do you intend to purchase one and use it travelling?
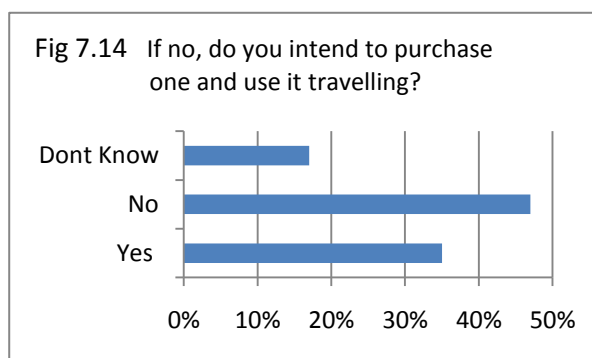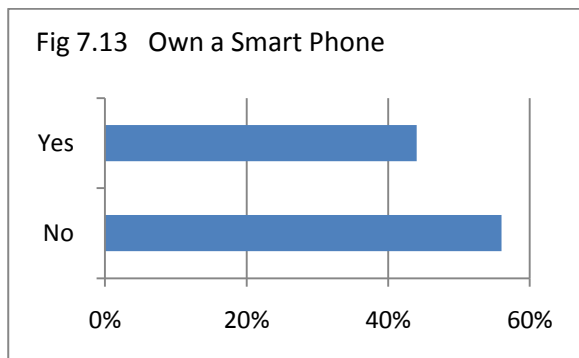
Visitors from the US had the highest percentage of Smartphone ownership (64%), followed by Italy and Canada (50% respectively), the UK (44%), Ireland (41%), France (32%), and Germany (29%).

Other reports confirm these figures globally. According to the ITB World Travel Monitor:
- Up to *40% of international travelers own a smartphone with internet, e-mail and other functions;*
- *57% have a conventional mobile phone;*
- *Over 40% of smartphone owners use their devices to get destination information;*
- *34% of business travelers / 26% of leisure travelers use them to make booking changes during their trip;*
- *As many as 37% of international leisure travelers say they use mobile social networks*

Targeting Innovation (2012)

Although 45% of respondents in this study *do* own a smartphone, the rapid growth of this technology means that these figures will most likely increase significantly in the coming years. All trends and related reports point toward a full smartphone/mobile device market and an eventual phase out of more traditional mobile phones in the coming years, so in the future most mobile phone purchases will include smartphone technology.

For individuals who own smartphones or other related mobile devices, close to 55% of respondents said that they use their device while travelling in Ireland, and 31.5% of the respondents said that they booked *an* element of their trip using their mobile devices.

7.15   Do you use your smartphone while travelling

7.16   Did you book any element of your trip on your smartphone
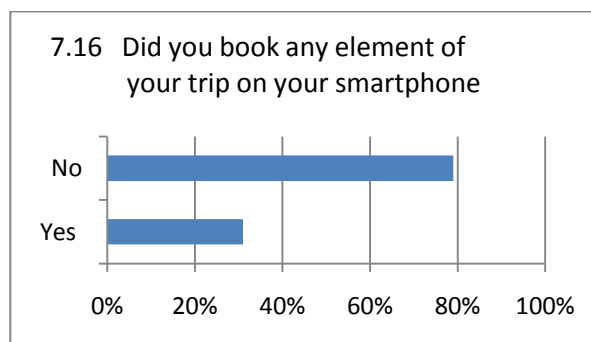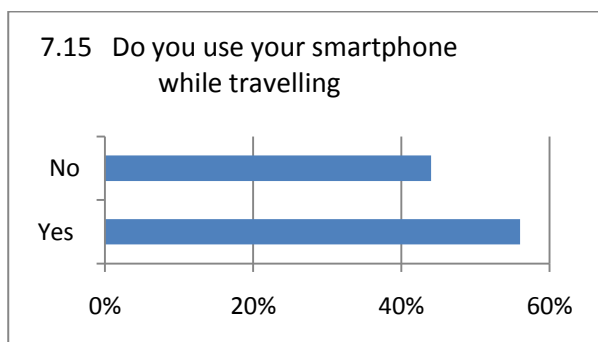
This includes contacting travel providers directly that visitors may have discovered while researching on their mobile device. While booking travel on smartphones and related mobile

devices is in its infancy - as other reports highlight consumer concerns such as personal information security - the growth in mobile bookings is rapidly on the rise. From a recent PhoCusWright report:
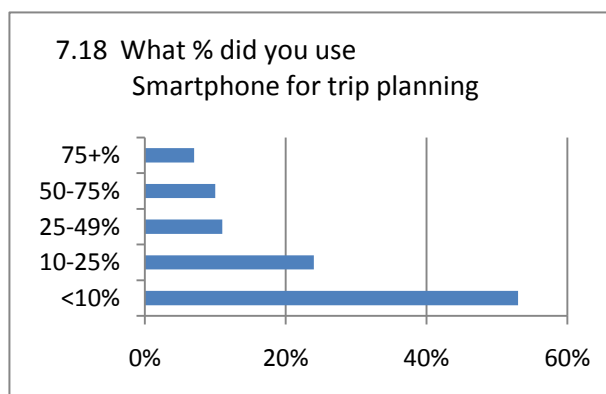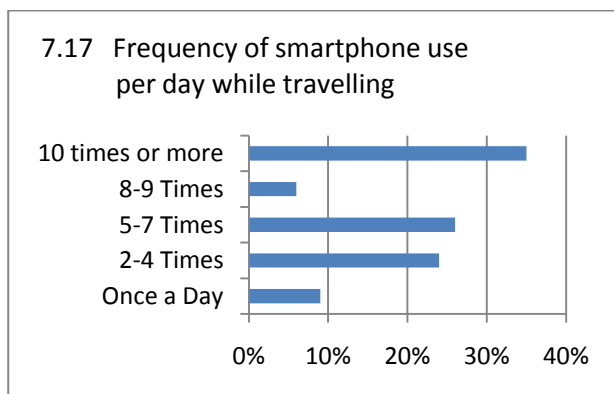
Growing from zero just a few years ago, U.S. mobile leisure/unmanaged business travel gross bookings reached nearly US$2.6 billion in 2011, representing 2.4% of the U.S. online travel market. By 2013, that share is projected to grow to 6.5%, when mobile bookings (excluding managed corporate bookings) will represent 2.6% of the total U.S. travel market, PhoCusWright (*2012).*

The report goes on to state that U.S. Mobile Travel Bookings are to Top $8 Billion by 2013.

InterContinental Hotel Group (IHG) exemplifies this rapidly evolving trend, having recently reported a nearly 1,000 percent increase in room night bookings from mobile devices in just over a year. The group went from under $1 million in monthly revenue to $10 million in just over a year. In the first five months of 2011, IHG had already surpassed its 2010 total number of room night bookings from mobile devices. Most guests (65%) who book through a mobile device are staying at IHG hotels the same night or within one day (Travelmole, 2012). This highlights the growing importance of short term purchasing when travelers are already in a destination.
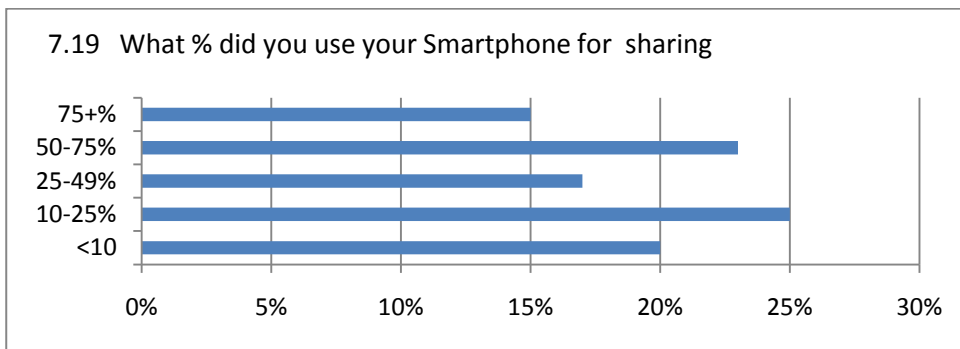
Regarding frequency of smartphone/mobile device use, the "once a day" traveler was just over 9%, with an increased representation of moderate users (2-4 times per day at 24% and 5-7 times per day at 25%), before dropping off to 5% for the 8-9 times a day users. Then the figures spiked with the greatest frequency being in the ten plus times per day category (34%). This spike in high use is related to domestic users who would naturally use their mobile phones more as there are no roaming charges, as well as business travelers who need to remain connected and whose company pays the bill.

When asked about mobile use related to trip planning (pre-trip), in holiday use (versus for example, using other more traditional sources of information such as travel guide books), and vacation sharing (for example social media that could be during or after the trip), there was a broad range of responses. With regard to trip planning, 52% of respondents used their mobile devices - including iPads - under 10% of the time, versus other trip planning activities such as traditional computer internet research, using travel agents, etc. Furthermore 24% used their devices 10-25% of the time, so the combined categories mean that 76% of all respondents used their mobile devices less than 25% of the time. This is consistent with a recent PhocusWright report: "Empowering Inspiration: The Future of Travel Search" that cited information sources of decision to visit the Destination websites via traditional computer included the following frequency: US - 47%, UK - 48%, Germany - 52%. However, websites or applications via mobile device were only: US - 8%, UK - 8%, Germany – 7%, (Rheem, 2012).

7.17 Frequency of smartphone use per day while travelling

7.18 What % did you use Smartphone for trip planning

When tourists were asked about what percentage they would assign to using their mobile device for vacation sharing (e.g. social media), the usage figures spread out even further with a much higher
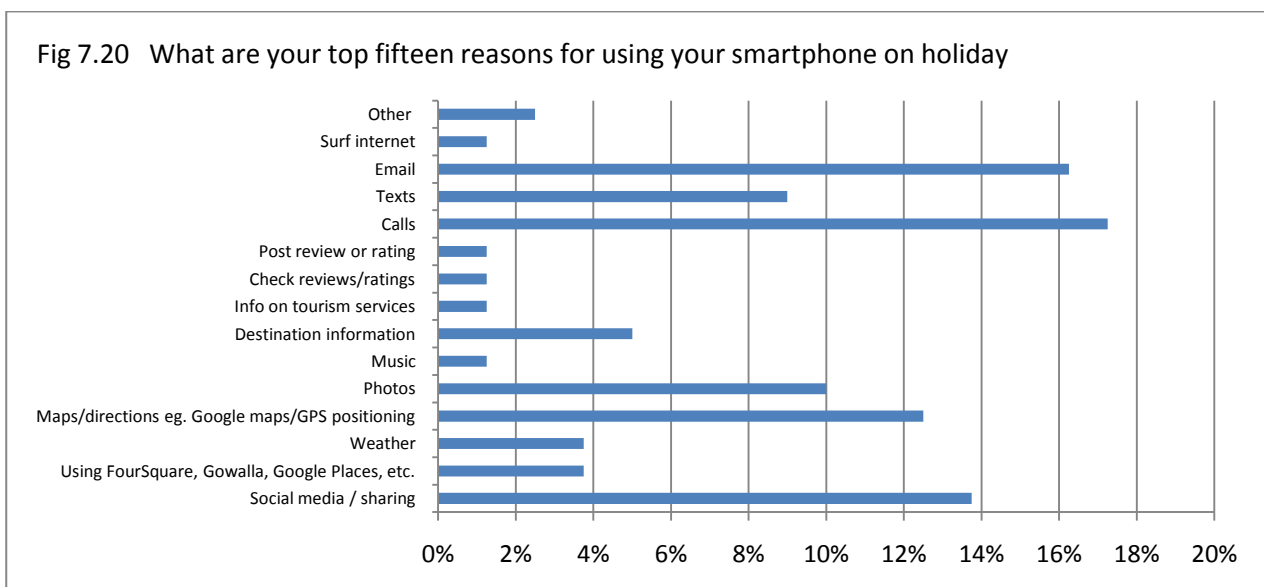
indication of mobile device use for the likes of sharing their travel experience, for example taking and sharing photos on facebook, twitter and emailing.

7.19 What % did you use your Smartphone for sharing

Categories (top to bottom): 75+%, 50-75%, 25-49%, 10-25%, <10

x-axis: 0% to 30%

When smartphone users were asked about their top 5 reasons for using their device while on vacation, responses varied but showed some identifiable characteristics. Among the most commonly cited smartphone use activities while travelling in Ireland include:

- Social media / sharing
- Accessing maps/directions eg. Google maps/GPS positioning
- Taking photos
- Accessing travel information
- Accessing destination information
- Making calls
- Sending texts
- Checking / Sending Emails
- Surf internet
- Music

Below Fig 7.20 summarises the top fifteen responses for smartphone use while travelling in Ireland:

Fig 7.20 What are your top fifteen reasons for using your smartphone on holiday

Categories (top to bottom): Other, Surf internet, Email, Texts, Calls, Post review or rating, Check reviews/ratings, Info on tourism services, Destination information, Music, Photos, Maps/directions eg. Google maps/GPS positioning, Weather, Using FourSquare, Gowalla, Google Places, etc., Social media / sharing

x-axis: 0% to 20%

While variation in responses can be explained by demographic differences such as age and gender, they also vary between domestic vs. other European visitors, and even more so related to tourists from further abroad such as the US and Australia. Irish holiday goers, who have few barriers to use other than perhaps Wi-Fi coverage and battery life, tended to use their smartphones across the full range of uses as they would at home, for example calls, texts and emailing. Visitors from Europe, and increasingly with tourists from further abroad, who face increasing barriers, used their

smartphone devices in different and more limited ways. For example, taking photos and listening to music or playing games increases – especially with American respondents - whereas social media use or looking up directions decreased and occurred when the user found a free or low cost Wi-Fi access zone, for example in their hotel. These are important considerations as it relates to development of new smartphone and related mobile device applications and solutions. It also highlights challenges and opportunities in addressing these barriers, for example in creating or incentivising free Wi-Fi zones, which currently exists in other destinations.

These findings were consistent with other relevant reports:

> *There are significant differences in the way smartphone users use their phone when travelling in their home country and when abroad…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,* Napier University (2011).

Social media use had a high response rate with both domestic and foreign travelers. Supporting this, the ITB (International Tourism Board) World Travel Trends Report 2010-2011, notes that "Around the world more and more travelers are using social media. In the USA, about 52% of the 152 million adult leisure travelers – 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 Trip Advisor 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." (ITB, 2010) This was highlighted in a similar survey report by Napier University which found that "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" (Smartphone Use by Tourism and Travel Consumers, Targeting Innovation Ltd. 2012). This is an important consideration for development of future solutions, particularly as social media converges with app technology in the near future.

7.5 Barriers to Smartphone/Mobile Device Use

As discussed above, barriers to mobile device use such as smartphones are relatively low for domestic travelers, increasing for other European visitors, and becoming increasingly pronounced for travelers from further abroad such as the US, Canada, Australia, China and South Africa. The below Fig. 21 summarise the frequency of the top responses to the question about limits to smartphone use while travelling in Ireland:

Fig 7.21   What reduces your smartphone use on holiday
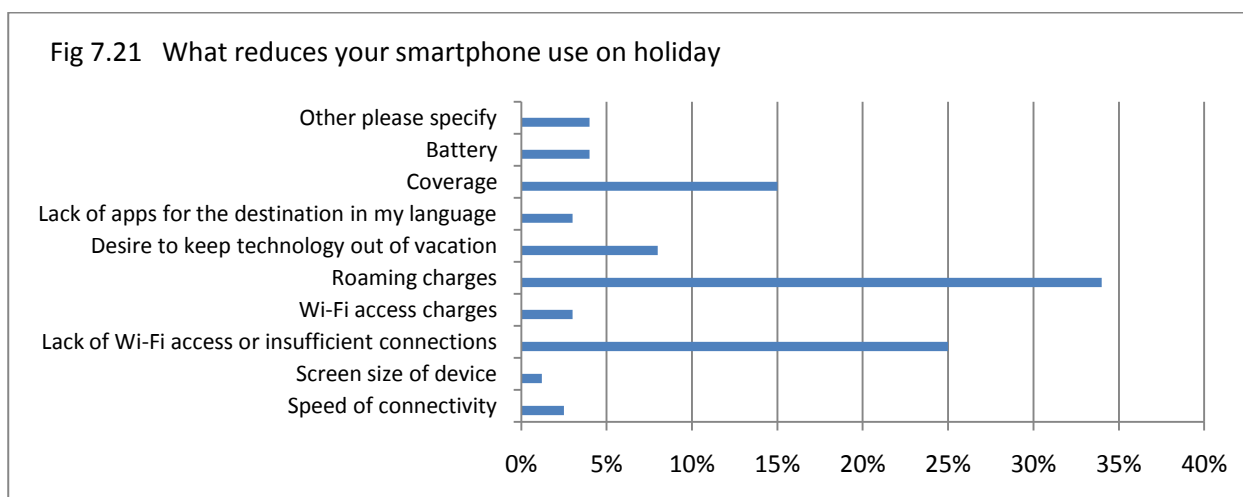
Roaming charges are identified in this study as the biggest barrier 34% to Smartphone/Mobile device Use. According to Kroes (2012) European Commission, Vice President for the Digital Agenda:

> *"Consumers are fed up with being ripped off by high roaming charges. The new roaming deal gives us a long-term structural solution, with lower prices, more choice and a new smart approach for data and Internet browsing. The benefits will be felt in time for the summer break - and by summer 2014, people can shop around for the best deal."*

This may be somewhat addressed for EU travelers as from 1st July 2014, customers will have the option to shop around for the best deal and sign up for a separate mobile contract for roaming, which may be different from their domestic mobile provider, whilst keeping the same phone number. Each time the customer crosses a border, his or her phone will switch to the network of the roaming provider which they have chosen, without any further action on their part. Customers will also have the option to directly select a local mobile network for data roaming in the country they are visiting (see IP/11/835). Furthermore as from the 1st July 2012, virtual mobile operators and resellers, who do not have their own networks will immediately have the right to access other operators' networks at regulated wholesale prices in order to provide roaming services (together with national services) to their customers. This will already create more competition between operators, and so increase the incentives for them to offer customers more attractive roaming prices and services (Europa, MEMO/12/227, 2012). This is the first time the European Union has tackled the high cost of roaming at its root, by introducing pro-competitive structural change into the heart of the market. However, it is important to note this will only relate to EU travelers.

The lack of Wi-Fi access and insufficient connections has been cited by the travelers as the second largest barrier 25%. Here the solution is in the hands of the various tourism stakeholders to promote, communicate and develop a network of available Wi-Fi spots for tourists. The coverage in rural tourism areas has been identified as the third largest 15% barrier followed by a desire to keep technology out of the traveler's vacation at 7%. However the cost saving measures being employed by tourists to keep technology in their vacation far outweigh this barrier.

With regard to smartphone use related cost saving measures employed while travelling in Ireland, the following activities were found to be significant:

- 64% switch off some or all services (e.g. turn off roaming)
- 49% limit their devices to calls / texts only
- 17% use local country sim card or an international package
- 68% use other cost saving measures to avoid roaming such as free Wi-Fi zones
- 27% use no cost saving measures

7.6 "App" Use

As mentioned above in the *Travel Guide Use* section, only 14% of respondents said that they were using downloadable "apps" on their mobile devices. However, of the 45% of respondents who do own a smartphone or related mobile device, when questioned about how they find out about travel apps, just over twenty 20% of them said they *do not* use travel apps. This indicates that travel app use in Ireland may be in its infancy. However is expected to develop significantly as the technology is growing rapidly and evolving quickly in terms of functionality, user value and market. It also suggests that travelers with mobile devices such as smartphones are using their devices for a broad range of activities such as social media, as highlighted in the *Smartphone & Mobile Device Use* section above. For respondents who do use apps, over 40% find out about them from the "app store" on their mobile device, which includes apps that already exist and are complimentary with

the device. Respondents between 25-49 years old were the most likely to find apps from the app store.

Fig 7.22   How do you find travel Apps

Fig 7.23   When are you most likely to download a Travel App
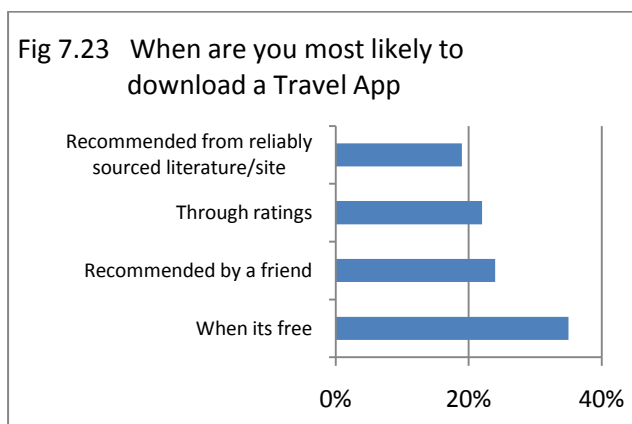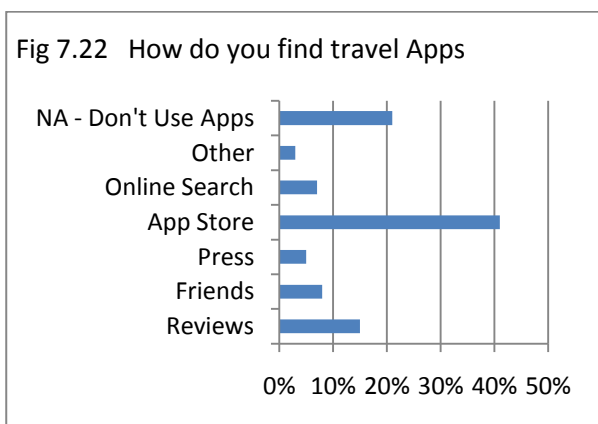
Other notable responses to how those surveyed found out about apps include through reviews and online search. Although over 20% of respondents said that they are most likely to download an app "When it is free", there is a much more even spread among other categories such as when they are "Recommended by a friend", "Through Ratings" and "Recommended from reliably sourced literature or website." This indicates that price is not necessarily the most important factor in deciding to download an app, though it is significant.

Of the apps identified by respondents (See Fig 7.24), those most commonly cited include Google Maps, Lonely Planet Ireland, Dublin Pocket Guide, Trip Advisor, Triposo, Tripit, foursquare and several others. Less common but cited is the Discover Ireland app. Although the research has identified dozens of Ireland specific travel apps available, none of them were regularly cited other than the Lonely Planet Ireland app. Due to the low level of overall app use response rate during the surveying, and because of the large volume of travel apps available, a larger sample size would be useful in order to more clearly identify travel related app use. The rapid evolution and growth of this technology suggests that a scaled up survey in a more mature market may more accurately reflect consumer interests and trends. In addition, since smartphone and app users tend to be younger, the percentages will increase as the younger demographic groups age, so it may be helpful to target younger visitors in order to better identify future trends.

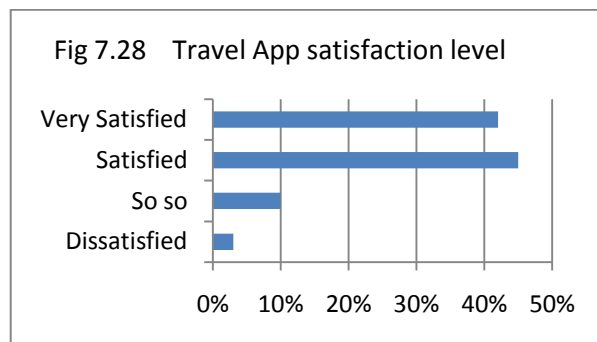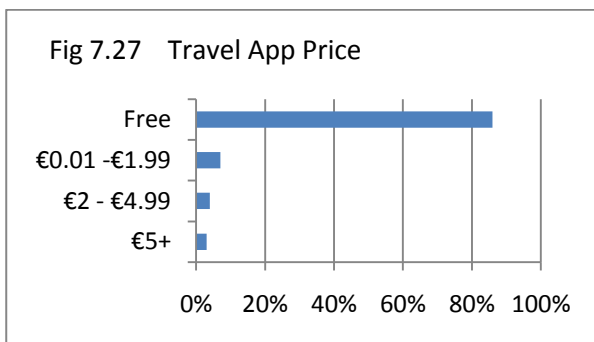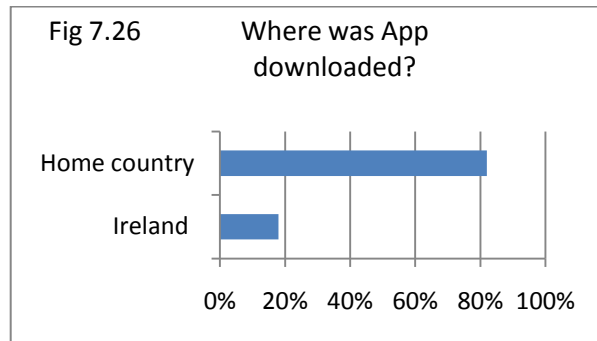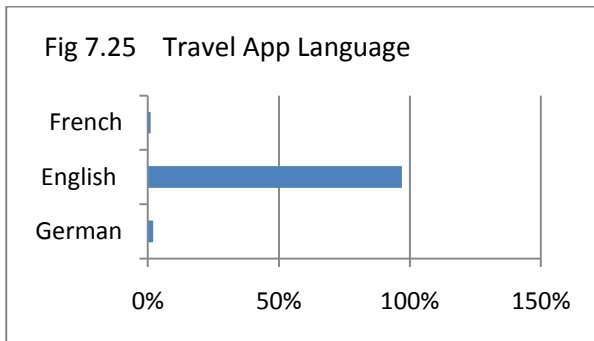Fig 7.24   What Travel Apps are you using on holiday
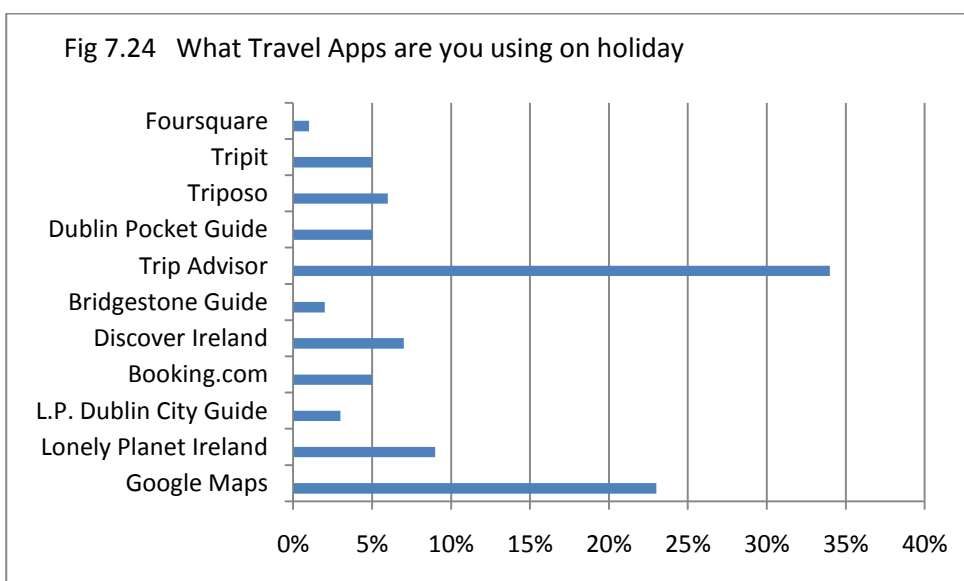
Other recent studies indicate that navigation related apps are popular. As identified by Marr, (2012), Adobe's Mobile Experience Survey of October 2010 noted that "80% of its research respondents

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" (Adobe, 2010).

As summarised below, the vast majority of smartphone users who downloaded apps said they were downloaded in their home country (eighty %), meaning prior to the trip, and 96% of the app users responded that their apps were in English. 88% of travel app users said that they were "Very Satisfied" or "Satisfied" with their app.

Fig 7.25   Travel App Language

Fig 7.26   Where was App downloaded?

Fig 7.27   Travel App Price

Fig 7.28   Travel App satisfaction level

In terms of price, while close to 85% of app users said their app was free. The relatively low cost of travel apps may be due to the number of free apps available to travelers visiting Ireland.

Table 3   Cross section of Travel App prices

It is noted for example that the Lonely Planet travel app for Ireland was €1.79 compared to €20.91 for the hardcopy. Furthermore over 92% of the travel apps identified by this research were free, see

table 7.1 above. It is worth pointing out that most apps are still quite basic in nature and as this develops with more features and perhaps A.R. the cost of these apps may rise.

When smartphone users were asked if they use Augmented Reality (AR) apps, only 9% said yes, 58% said no, and 33% said they don't know. This indicates that augmented reality "lens" approach to travel related smartphone use is still in very early stages in terms of technology and awareness. This area is expected to be the high-tech future of Smartphone travel use. It may also be reflective of the fact that most consumers don't understand what an "augmented reality" app is, so many of them may be using it without knowing they are doing so. A recent report commissioned by Amadeus Group helps to describe the technology is already being applied and why it will become more mainstream:

> *At a very functional level, it (augmented reality) will help people make the most of an unfamiliar place. Intelligent translation services and augmented reality applications that overlay information about the physical world around us are currently available in only a small number of areas and used by only a small number of people. Over the next decade, however, improvements to both the technologies – for example, natural language processing – and the enabling infrastructure should significantly expand their use Stubbings and Curry (2012).*

The same report goes on to use the example of how an augmented reality app brings the Berlin Wall back by allowing "anyone to see exactly where the wall once stood 21 years ago using the Layar app. An average of 175 unique users per week take a look at The Berlin Wall via Layar."

It is expected that AR apps will not only make travelers lives easier in finding location based information (for example where to find a bank or to eat), but also enrich the travel experience by adding to the existing physical world virtual static or dynamic images of past, present and future, as well as valuable information (for example a story related to a particular period in time).

8.0   Recommendations

It is inevitable that Smartphone and mobile app technology will become the norm. Related mobile devices are already conventional, although the body of knowledge related to the broad range of how and why different types of travelers use their mobile devices is extremely limited, particularly as it relates to Ireland. Nevertheless, challenges have been identified and opportunities exist in addressing existing barriers and or creating new solutions. Highlighted recommendations as a result of this study include the following:

- **Don't forget about traditional travel guide use** such as guide books. At least for now more traditional guides still dominate or at least compliment this market. Additionally, the more popular travel guides that are going toward online app technology (e.g. Lonely Planet) still create content in many traditional ways, primarily by an author visiting the place and writing about it. So as a destination – as well as independent travel providers - reaching out directly or through your guests to these authors and publishers will prove valuable.

- **Cost of travel guides.** Tourists are spending money on hard copy traditional travel guides. However in costing a travel app it would be important to recognise that travellers tend to download more free travel apps than those you pay for. In many cases the average cost of travel guide was over 200% more expensive than the travel apps. For example, Lonely Planet travel app for Ireland was €1.79 compared to €20.91 for the hardcopy.

- **Create or incentivise free Wi-Fi zones**. This currently exists in other destinations and a lack of free Wi-Fi zones in urban Ireland is frustrating to some visitors, as confirmed when

researchers spoke with visitors while surveying. Key tourist towns should consider creating a social and tourist hub within the community, such as within a mixed commercial residential neighbourhood. Individual businesses with free Wi-Fi zones also stand to benefit. However, a balancing act in allowing and facilitating visitors to be "unplugged" is an important element in helping visitors to leave their work at home and connect more with their experience.

- **Promote free Wi-Fi zones.** Once free Wi-Fi zones are in place it is essential to communicate this to tourist. It may be worth changing the traditional adage for tourists demands from: "A Loo, a View and a Brew"
"A Loo, a View, a Brew, and Wi-Fi too"

- **Tourist offices should be plugged in** and make the visitor experience more interactive. Consideration should be given to the provision of a free to low-cost Wi-Fi zone. Electronic virtual displays or online access to Ireland specific tourism information would bring Ireland up to the forefront of 21st Century visitor experience enhancement with regard to tourist offices. It would also help to alleviate queues in some busy tourist offices.

- **Charging stations will help with business.** Outlets for charging the often drained smartphones, iPads, and even laptops are a welcome site to travelers. Make them available and obvious.

- **Get familiar with the technology–** don't throw resources at app development or other online solutions without a thorough understanding of the market, existing technology and how it is being used. Although tourists will increasingly own and use smartphone technology and apps, including augmented reality programmes, the technology is evolving at lightning speed, as is the variety of ways people use them. Market feasibility assessments are highly recommended before jumping into new enterprise solution development.

- **Update on an ongoing basis.** Although a relatively new concept for most tourism managers, try mange your app like your website. Ask your app providers to allow you to make regular updates.

- **Collect data from your travel app**. Ensure you collect vital statistics such as number of enquiries and bookings made via the app.

- **Promote your app** well, it is noted that over 80% of the travel apps were downloaded in the tourists home country. This research also highlights that visitors are most likely to download an app when it is free and second most likely to download an app when it is recommended by a friend. So the power of buzz or word of mouth is still a key factor in app selection.

- **Integration of Social networking, reviewing and sharing is *King*.** People love to connect, including a strong desire for fellow traveler perspectives. This includes not just friends and family but also anonymous traveler reviews and advice in making travel decisions, setting expectations, enhancing experience and sharing that experience during and after a trip.

- **If you have the finance to invest in this area consider next generation functionality.** Although a relatively new, unknown solution for visitors to Ireland, as confirmed in this study, AR apps were virtually non-existent a couple of years ago and now they are growing quickly, with most reputable mobile device / app related sources pointing toward this trend. Other identified trends include mobile travel booking and payment systems, as well as location-based services such as mobile check-in, boarding passes, etc. This evolving technology is already profoundly changing travel and tourism service delivery.

- **Develop enterprise solutions based on target demographics and related use patterns.** Type of travel (for example business versus leisure travel, and package holiday versus independent travel), age, and domestic versus international visitors, among other variables, dictate a lot. This includes the convergence of apps and social media considerations, as well as creating solutions that filter through a world already filled with information overload to provide concise and valuable information and needed services for travelers (for example a boarding pass check-in). Convenience before complexity is the key.

- **Always think about independant travel service providers.** Ireland is built upon independant and family owned accommodations, activity providers, tour operators, food service and other tourism providers. All marketing and visitor experience enhancement enterprise solutions should be developed with this in mind in order to support the sustainable development of these small scale providers by connecting travellers directly to them in a positive, experiential way. Mobile technology can help or hurt SME's versus larger online aggregators depending on how it is used.

9.0   Conclusion

By identifying and assessing how domestic and international visitors use travel guides - particularly traditional travel guides versus mobile devices such as smartphones and apps - when travelling within Ireland, this project has identified enterprise level, regional and national authority challenges and opportunities. Next generation smartphone technology is rapidly emerging and soon to be the norm, although it is a very young field and traditional guides (including tour operators and guide books) remain strong. There are also many barriers to mobile device use, particularly for non-domestic travellers, as well as barriers to the development of effective enterprise solutions.

This study found that while only about 45% of domestic and international visitors to Ireland owned Smartphone/mobile device, the percentages will continue to increase rapidly over time to the point of full market saturation. For individuals who already own smartphones or other related mobile devices, close to 55% of respondents said that they use their device while travelling in Ireland, and 31% said that they booked *an* element of their trip using their mobile devices. These numbers are expected to increase significantly in the future, identifying the need for a better understanding of how travelers use their mobile devices. For example, this study and related research also found that users are extremely cautious of high roaming charges, transferring personal / financial information via their mobile, and are frustrated by a lack of Wi-Fi access when travelling.

While this rapidly evolving field of next generation travel and tourism related technology is in its infancy and there is very limited information on user visitor trends, we do know that it is the future of tech travel, including downloadable apps, and particularly augmented reality apps. We also know that there are tens of thousands of travel related apps globally, dozens of Ireland specific apps that have been identified, yet *very* few of them were identified as being utilized by visitors within Ireland. This suggests that the development of future solutions should only occur with a thorough understanding of the market and that in order to gain improved insight, an expanded research project related to this topic should be considered. If Ireland is to capture a highly elusive, growing market of people who are already inundated with aggressive online and mobile outlets and strategies, it must do its best to understand who is already doing what in order to identify the gaps and capture its target audience. Perhaps best summarised in a recent report, mobile solutions "must strive to adapt to the consumer on the go, and strike the right balance between simplicity and rich functionality. The key to success in this early stage of mobile development is to tailor the experience with a custom fit for mobile needs – serve the right product to the right customer at the right price at the right time" (Rheem, 2012).

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