

# MOBILE IN TRAVEL

## REPORT SERIES 2016-2017



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# WELCOME

Welcome to our Mobile in Travel Report Series and thank you for choosing EyeforTravel's research.

Mobile technology is the key disruptive influence in the travel industry. The possibilities it affords and the demands it is creating are challenging every aspect of the travel journey. There is now an expectation for instantaneous information that can be accessed by consumers whenever they desire it through the mobile web and apps.

In order to deliver this experience travel brands need to conduct an enormous amount of work behind the scenes. Building, optimizing and maintaining a mobile strategy can quickly become a costly exercise. However, few, if any, brands can operate without mobile web or native apps if they do want to win the customer's booking.

The Mobile in Travel Report Series seeks to give travel brands all the tools they need to succeed in this sphere, from understanding consumer trends to the nuts bolts of app construction. This report series will allow you to comprehensively understand mobile in travel through:

- ✓ The current state of the m-commerce in travel.
- ✓ Mobile search and purchase behaviors.
- ✓ A complete understanding of mobile web and native apps and their inherent advantages.
- ✓ Answering whether mobile web or native apps are more important.
- ✓ Investment strategies.
- ✓ Mobile website construction.
- ✓ The cost of app development and how to build successful apps.
- ✓ Driving app downloads and keeping apps on users' phones.
- ✓ Understanding how partnerships in travel aimed at mobile are changing.
- ✓ Ensuring mobile content and payment is secure and trusted.

We hope that this research enables you to improve your brand's mobile offering and create an optimal customer experience.

## **Alex Hadwick**

Head of Research, EyeforTravel

# ABOUT

We bring together everyone in the travel industry, from small tech start-ups to international hotel brands, to form a community working towards a smarter and more connected travel industry.

Our mission is to be the place our industry goes to share knowledge and data so that travel and tech brands can work collaboratively to create the perfect experience for the modern traveler.

We do this through our network of global events, our digital content and our knowledge hub - EyeforTravel On Demand.

## Our Values

We believe the industry must focus on a business and distribution model that always puts the customer at the center and produces great products. However, to deliver an outstanding travel experience, the strength, skills and resources of all partners in the value chain must be respected and understood.

At EyeforTravel we believe the industry can achieve this goal by focusing on a business model that combines customer insight with great product and, most importantly, places the traveler experience at its core.

At our core we aim to enable the above by valuing impartiality, independent thought, openness and cooperation. We hope that these qualities allow us to foster dialogue, guide business decisions, build partnerships and conduct thorough research directly with the industry.

These principles have guided us since 1997 and will continue to keep us at the forefront of the industry as a vibrant travel community for many more years to come.

## Our Services

Our events are the heart of EyeforTravel. These draw in experts from every part of the travel industry to give thought provoking presentations and engage in discussions. It is our aim that every attendee takes back something new that can help their business to improve. This might be in the fields of consumer insight

Alongside this we provide our community with commentary, reports, white papers, webinars and other valuable expert-driven content. All of this can be accessed through one place - the On Demand subscription service.

We are always expanding the content we make, so please get in touch if you want to write an article for us, create a whitepaper or webinar, or feature in our podcast.

## EyeforTravel by the Numbers

**60,000+ database contacts**

**2,500+ annual event attendees**

**100,000+ monthly online reach**

**1,000+ online conference presentations**

# ACKNOWLEDGMENTS

*We would like to thank the following people and organizations for their invaluable comments and help with putting together this report.*

**Daniel Craig** | Senior Director of Mobile, Hotels.com  
**Jake Davis** | Design Director, Developer, Pocket App  
**Hugh Griffiths** | Interim Chief Executive, Pocket App  
**Elke Rosak** | Mobile Services Manager, Lufthansa  
**Glenn Stress** | Director of Digital for North America, Starwood Hotels and Resorts  
**Rory O'Sullivan** | Mobile Product Manager, Momondo Group  
**Breffni Horgan** | Head of Product and Design, Hostelworld  
**Michael Bayle** | Head of Mobile, Amadeus  
**Ilicco Elia** | Head of Mobile, DigitasLBi  
**Fabrizio di Martino** | Social, Mobile and Programmatic Manager, IHG Europe  
**Alastair Campbell** | Strategic Advisor to Chelsea Apps Factory  
**Ryan Matzner** | Director of Business Development, Fueled  
**Nick Black** | Co-Founder and Chief Executive, Apadmi  
**Jason Tan** | Founder and Chief Executive of Sift Science

We also thank: Lyft's Chief Business Officer, David Baga, Amanda Richardson, Vice President of Product for Hotel Tonight and Jim Pickell, President of HomeExchange.com for their comments to a panel debate at the EyeforTravel San Francisco Summit 2016; Yenyi Fu, Director of Mobile Product at TripAdvisor for her comments at EyeforTravel's San Francisco Summit 2016; and Simrat Sawhney, a Travel and E-commerce Specialist at Facebook in APAC, for her comments at an Eyefortravel panel for TDS Asia 2016.

Our thanks is also extended to SimilarWeb for supplying results from its report "Trends in the Online Travel Industry 2015-2016", Jumpshot for its analysis of web and mobile traffic for top travel sites, Hotels.com for supplying the results of their mobile travel tracker, and mobile marketing consultancy Somo.

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# EXECUTIVE SUMMARY

## Chapter 1 - Modern Mobile Consumers

- Mobile subscriptions were estimated at 7.6 billion in 2015, with some 4.7 billion unique subscribers. The global subscriber base will reach 5.6 billion people by 2020, accounting for over 70% of the world's population, according to GSMA
- The penetration of subscribers globally stands at 63%, with rates ranging from 43% in sub-Saharan Africa to 85% in Europe
- Smartphone sales hit their highest growth in 2010, with 73% growth, and have been slowing
- Smartphone penetration has reached its highest level worldwide in South Korea, with 88% of the total population owning a smartphone, compared to 72% in the US, 68% in the UK, 67% in Canada, 60% in Germany and 58% in China, according to a survey by Pew Research Centre
- Asked to name where they saw the greatest opportunities in 2016, 79% of travel executives named mobile and 23.5% app development.
- When travel executives were asked how much they expected their mobile budget to increase over the next two to three years, 40% said it would increase by a fifth, under a third thought it would rise by half and 16% predicted it would rise by more than 50% (see Figure 2). No executives though that their budget would fall
- In 2020, the arrival of 5G connectivity is expected to create connection speeds up to a hundred times faster than current 4G and with much greater capacity
- Globally, 42% of people have booked a hotel on mobile, rising to 53% for under 30s, according to Hotels.com
- Some 76% of travelers named their mobile device as their number one travel accessory, while 42% have made a same day hotel booking thanks to their mobile with 14% booking their hotel in the airport departure lounge
- Nearly half of travelers say their mobile is the primary way of finding interesting spots, events and restaurants while they are away. 28% say they only select a hotel if it has free WiFi

## Chapter 2 - Mobile Web Vs Native Mobile App

- Apple chief executive Tim Cook announced in June that there were two million apps in its App Store and that there have been 130 billion app downloads since 2008. The app store has paid out more than USD50bn in revenue to developers
- Some of the top airline apps cost upwards of GBP1 million, but it provides a powerful brand experience that offers a good return on investment for large businesses
- The hybrid app offers a cheaper solution as a mobile website that is wrapped up as an app and can be marketed on an app store and downloaded by customers
- The mobile web is compatible across devices, so a single website can reach users across different platforms and browsers and a mobile website can be updated easily
- Web apps are easily searchable on Google and other search engines and these results can appear in industry lists and directories. Mobile web apps have huge reach and are often viewed by many people.
- Mobile web apps are lower cost and easier to build and maintain compared to native apps.
- HTML5 is optimized for the creation of mobile and responsive websites and offers offline caching
- It supports audio and video, where earlier versions required third party players such as Adobe Flash Player, QuickTime and Silverlight to play audio and video.
- One of the major effects of HTML5 is that it has allowed brands to create apps that work across different platforms but that are actually websites playing inside the app – or hybrid apps.
- Hybrid apps provide the advantages of both web apps and native apps. Hybrid apps are built like mobile websites using web technologies such as HTML, CSS and JavaScript, but they are hosted inside a native application that uses a mobile device's Web View
- They can access the device's camera, accelerometer, contacts and more. However, they often lag behind native apps in their smoothness
- Hybrids offer the marketing advantage of giving a brand a presence in an app store
- Native apps offer the advantages of platform-specific design, ease of use and they help carve out a space on a user's mobile phone, which is a powerful piece of branding
- They are usually smoother and more usable than web apps or hybrid apps, tap easily into a wide range of the mobile device's functions, and work offline
- A huge advantage of native apps is being able to access all the features of a smartphone and gaining consent to access critical information, such as geolocation and social media profiles



- Native apps have greater use among regular and higher spending customers and, since they are already occupying space on the phone, they are more likely to be used repeatedly
- ComScore research showed that in June 2015, Americans spent two hours a day on their mobile apps - three hours for millennials. Half of that time was spent in just one app - usually Facebook – and 88% of that time was spent on the top five apps, usually including Facebook, YouTube, and a mail app
- Just 1% of the time spent on apps is on travel apps
- People are spending long hours on mobile apps - according to ComScore, 54% of all digital time in the US is spent on apps
- US mobile browser traffic is twice as great as mobile app traffic, according to a report last year by Morgan Stanley
- For researching a holiday just under a quarter of UK travellers said that they used a smartphone as their primary research device and just over a quarter used a tablet. For Germans this fell to 14% and 12%, respectively
- In total for the UK this means the majority of UK consumers use smartphones and tablets over desktops and laptops in the research phase
- In terms of digital sales, however, desktop remains dominant in both countries, accounting for 80% of air and hospitality sales in Germany and 57% of accommodation sales and 60% of flight sales in the UK
- In the US eMarketer estimates that in 2016 mobile devices will account for 36% of travel sales by value
- Criteo's estimates 29% of bookings for the US are from mobile, 28% for the UK, and 15% for Germany
- In the UK, two thirds of mobile device flight sales were through browsers and nearly three quarters of accommodation sales
- A 2016 study by comScore and Expedia Media Solutions found that when UK travel information was accessed through mobile, the majority was run through browsers, at 64% of minutes
- On average, there are two to three months in the UK, three to four weeks in Germany and three to six months in the US between booking transportation and departing, leaving a long period where consumers can use mobile devices to consume travel media and plan activities to undertake during their vacation.
- In our research we found that UK consumers use a different device from their main research device to book travel around 25% of the time; Criteo found that during Q1 2016 in the US a third of travellers made cross-device bookings
- The lesson for travel brands is that they can boost engagement with customers through their apps by creating an engaging experience and offering some strong content. However, it is advisable to have a strong web presence first to capture visitors as they browse the mobile web

### Chapter 3 - Perfecting the Mobile Web

- The impetus to having a mobile-friendly website received a huge boost in April 2015 when Google launched an update known colloquially as "mobilegeddon". This boosted search rankings for sites deemed to be mobile-friendly and relegated those that were not
- "We have a responsive website so it adapts to whatever device it is accessed on. We did have two different websites for desktop and mobile, which became painful to maintain and update, as we had to develop everything twice.... 45% of our bookings are made on mobile devices with 26% of bookings made on our apps" - Breffni Horgan, Head of Product and Design, Hostelworld
- Think about what users can achieve with their thumbs on their mobiles and make sure that the site is simple enough to mimic this.
- "Brands need to start by asking what is the most important piece of information the customer needs to know at that point in the purchase funnel and how do we design so it is front and foremost? That gives you the core of what people want to do then you add on the different add on to make a more beautiful experience" - Illicco Elia, Head of Mobile, DigitasLBI
- "If the objective is to promote content, and let the purchase or the delivery of the service happen in a shop for example, mobile responsive is the best solution. Otherwise an app gives the best results, due to the advanced capabilities offered by the development tools. A hybrid solution with a responsive website and an app is definitely the best option for larger businesses, because this allows the product to leverage on the strengths of each platform to provide the best possible service" - Fabrizio di Martino, Social, Mobile and Programmatic Manager for IHG Europe
- Google is introducing what it calls Instant Apps, which allows users to access a page of a native app via the web and promoting a new technology called Progressive Web apps. These allow developers to build websites that load quickly and act in similar ways to native apps, for instance allowing swipe right technology. The website can be copied onto the user's home screen, so they can interact with it just like an installed app



#### Chapter 4 - Perfecting the Native App

- According to estimate gathered by EyeforTravel the average cost to develop an airline app with booking, check-in, flight data and loyalty scheme is GBP290,000
- According to estimate gathered by EyeforTravel the average cost to develop a hotel app with reservation, check-in, check-out, payment, hotel information and loyalty scheme is GBP284,000
- However, much depends on whether the back office systems are ready to be integrated into the app, such as Property Management Systems (PMSs)
- Brands need to take into account that the app development is just the upfront cost. The app needs to be regularly updated and the content managed and data processed
- Travel brands should always start building apps from customer needs and avoid superfluous features
- "It can confuse if you launch with too much at once ... what happens when a new iOS update comes along, when new phones are launched, or a new platform is launched? How does it integrate with new wearable tech?" Nick Black, Co-Founder and Chief Executive, Apadmi
- "We (Starwood) are rapidly approaching the point where almost 50% of our website traffic is going to be through mobile devices, phones, mobile web apps and tablets - not for bookings but page views." Glenn Stress, Director of Digital for North America, Starwood Hotels and Resorts
- 75% of Platinum Starwood Preferred Guest loyalty scheme members have downloaded and interact with the Starwood app and 50% of Gold members
- An airline app should be simple and easy to navigate, including check-in, flight data and flight bookings with the boarding pass stored. Extras could include a frequent flyer program
- A hotel app should include the basics of booking, check in, check out, payment, a link to a customer loyalty scheme and room service. Extras could include hotel services and booking restaurants and activities. APIs can be used to incorporate extras service and content (see Chapter 6)

#### Chapter 5 - Get Downloaded and Become Sticky

- Factors that can influence the visibility of the app in the store include the number of downloads it achieves, the star ratings it gets from reviews and the way it is named and presented.
- App promoters need to use appropriate keywords in the titles of their apps - which might even include a competitor's name - to make sure the app surfaces in a variety of searches, e.g. Hotel Tonight, has the full name "Hotel Tonight - Great Deals on Last Minute Hotels for Travel, Vacations and Getaways" in the app store

- Brands should offer regular updates and release them frequently to the app stores to improve the app but also to give customers more chances to review the app
- "We find that if we respond to customers on Google Play in their native language, 80% of the time they will change their review." Breffni Horgan, Head of Product and Design, Hostelworld
- "We have seen gravitational success for the apps of our airlines when an airline launches a promotion unique to that channel. A lot of our Asian and African channels have done this where a particular promotion would only be purchased through the mobile channels." Michael Bayle, Head of Mobile, Amadeus
- A quarter of apps are discovered through web search but travel apps are more likely to be discovered this way, with 30% respondents using web search to find their apps
- Apple announced before its Worldwide Developer Conference in summer 2016 that it was planning to overhaul the App Store, introducing a paid-for ad at the top of search results
- Apple said that 65% of app downloads are driven by search
- Google's research found that the most effective ad format amongst respondents who reported downloading an app via an ad were social media ads. 49% reported being driven to a download through this format versus 45% for websites and 43% for video ads
- CheapFlights has launched Facebook Messenger chat bot to people can ask questions such as "where can I go that is really hot?"
- Yenyi Fu, Director of Mobile Product, TripAdvisor, told EyeforTravel's San Francisco Summit 2016, that a user with the app is three times more likely to write reviews than a mobile web user
- TripAdvisor's research showed that users plan their next day in their hotel room using a map. They use maps three times more in location compared to when they are at home. Once in destination, they use the app more often, perhaps opening it three, five or seven times a day.
- TripAdvisor therefore built offline content that they could use without internet access. The "near me now" button, which uses TripAdvisor ratings to pick the best of what is nearby, has been made contextual, for example showing places for breakfast in the morning hours.
- "On Android we do a partial release, we ship 10% and make sure all the performance metrics are met and then we go to 100%." Yenyi Fu, Director of Mobile Product, TripAdvisor,

## Chapter 6 - Partnerships and Data Sharing

- Uber is the leading app for partnerships in the travel industry:
  - Uber has struck a deal with Hilton to integrate the two brands' apps. Hilton guests can order an Uber from the HHonors app, though travelers must have both apps on their phones.
  - IHG Rewards club members can sign up to Uber using an IHG promo code to get USD20 off an Uber and earn 2,000 IHG Rewards Club points, which can be used toward a future stay.
  - Flyers with the American Airlines' Executive Platinum status or AAdvantage Aviator MasterCard get a USD25 coupon off an Uber ride
  - The United Airlines app, allows passenger to book a trip, check flights status and order an Uber
  - Hotels.com recently integrated Uber into its Android app, so customers can book an Uber during their stay
- Priceline and TripAdvisor created a partnership in 2015 to share TripAdvisor's Instant Booking facility
- Southwest Airlines is collaborating with the ride app Lyft
- In Asia, messaging services WeChat and Line are becoming much more transactional. Michael Bayle, Head of Mobile, Amadeus, says the opportunities for data sharing are "phenomenal."
- Bayle says it has mechanisms to share data to allow different providers in the travel chain to interact. "Where I have booked three events, airline, taxi and hotel reservation, and like dominoes, when one goes wrong, they all go wrong, how will the car service know I'll be late, or the hotel know that I'll be frustrated when I arrive? In WeChat, those systems are very fluid and apps can capture that data and then signal back to headquarters that these events will happen. In Apple iOS or Android, that is not either technically possible nor for privacy reasons. We find the phenomenon of data sharing very active in Asia."
- Companies have developed off-the-shelf solutions that allow apps to communicate with specific areas of other apps in a similar way to clicking on a web link
- Facebook and Google are also working on deep link technology to boost search inside apps, opening up the possibility of further partnerships between travel providers

## Chapter 7 - Mobile Security

- A report by Juniper Research predicts that cybercrime will cost the global economy USD2.1 trillion by 2019, which it says is "almost four times the estimated cost of breaches in 2015"
- Mobiles are vulnerable to attacks from the mobile web, from apps and through networks such as WiFi connections.
- Many of the security threats and data breaches affecting travel brands have come through raids on back-end data, with information from property management systems being stolen through cyberattack
- A major attack occurred in June 2016 when JTB, one of Japan's largest travel agencies, announced that data from nearly eight million customers had been compromised after an employee opened an infected email
- HEI, which operates hotels for Starwood, Marriott, Hyatt and Intercontinental, admitted that malware designed to collect credit card data was found on its systems. The malware affected some 20 hotels in total
- Apps can fall victim to malware or spyware but security experts say some of the biggest problems arise from individuals falling victim to phishing scams where they give away log-in data or account numbers. There are also "malicious apps" are specifically designed to commit fraud
- Data breaches tend to be from back office systems, compromising tens or hundreds of thousands of details at once, rather than picked up piecemeal from individual mobile phones.
- Alternatively security risks lie with consumers, who often do not have secure email account passwords
- Starbucks admitted in 2014 that its app-stored passwords and usernames on the mobile device in clear text which was not encrypted, so users would not have to re-enter their password every time they bought a coffee. That allowed anyone with access to the phone to see the details by connecting the phone to a computer.
- Brands are advised not to store sensitive information, such as passwords or credit card details, directly on the mobile device. But if they do, they should be stored securely, either in the encrypted data section of the iOS keychain or the encrypted storage in the internal app data directory on Android
- The development of fingerprint security technology makes it difficult for malicious actors to access a mobile phone

# 1. MODERN MOBILE CONSUMERS

## 1.1. Introduction

Mobile has transformed our world in just a few years, unleashing new ways of connecting, consuming and working. Mobile devices, whether smartphones, tablets or wearables have become the portals through which we approach the world. They hold our most personal details and help us navigate through physical spaces, social networks and shopping.

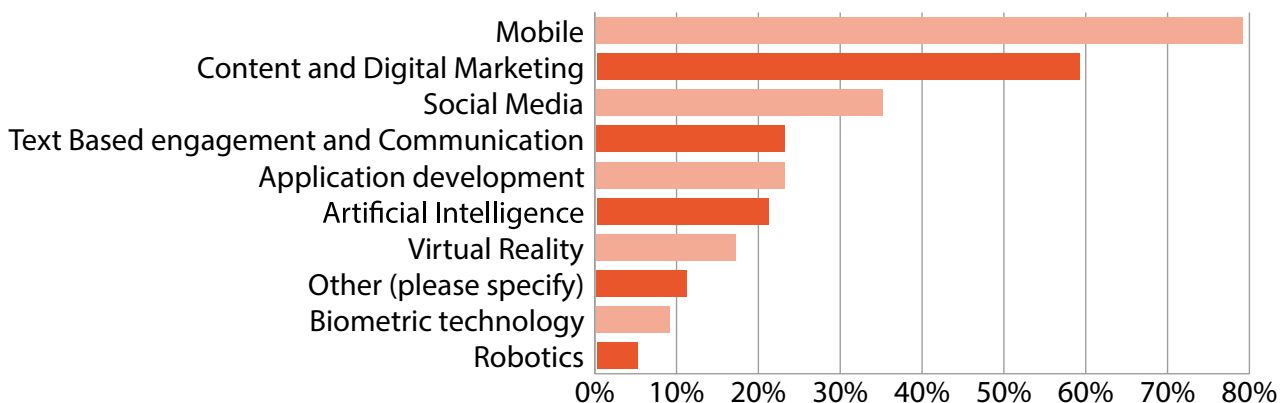
Travelers are using mobile devices for everything from researching destinations and booking flights, to accessing rooms through mobile-enabled keyless entry. The travel industry has begun to unwrap the huge possibilities that mobile devices offer for transforming the industry over the years to come.

## 1.2. Travel Industry Outlook for Mobile

For the travel industry, mobile has been an enormous focus, particularly in the last two years. Reaching consumers on mobile is seen as an area of enormous opportunity, allowing the potential for unfettered and unprecedented access to the consumer.

In a survey of 183 European travel industry executives conducted by EyeforTravel in mid-2016, mobile emerged as an area of huge interest (see Figure 1). Asked to name where they saw the greatest opportunities in 2016, 79% of the travel executives named mobile, while 59% mentioned content and digital marketing, and 35% said social media. App development, which is of course linked to mobile, was in fourth place with 24% (EyeforTravel Marketing and Mobile Strategies to Engage the Connected Traveller, 2016).

Figure 1: Greatest Areas of Opportunity for Travel Executives



Source: EyeforTravel Marketing and Mobile Strategies to Engage the Connected Traveller, 2016

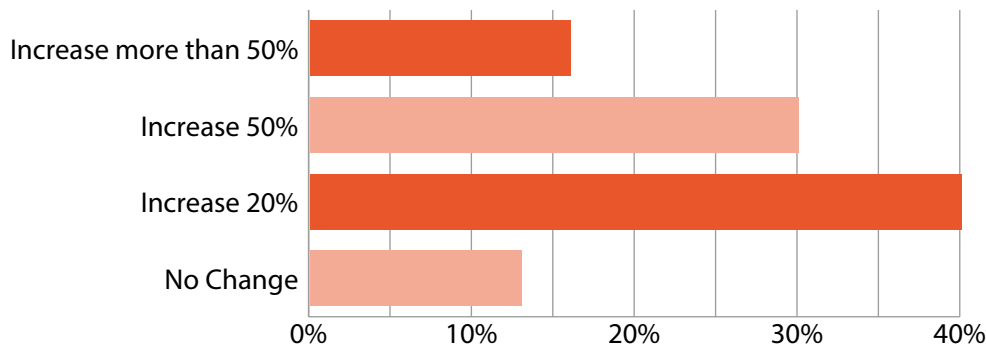
*Table 1: Tick Three Areas That You Think Will Be the Greatest Opportunity or Focus for You in 2016*

Answer Options	Response Percent
Mobile	79.0%
Content and Digital Marketing	58.8%
Social Media	35.3%
Application Development	23.5%
Text Based Engagement and Communication	23.5%
Artificial Intelligence	21.0%
Virtual Reality	16.8%
Other (please specify)	10.9%
Biometric Technology	9.2%
Robotics	5.0%

Source: EyeforTravel Marketing and Mobile Strategies to Engage the Connected Traveller, 2016

When they were quizzed on how much they expected their mobile budget to increase over the next two to three years, 40% said it would increase by a fifth, under a third thought it would rise by half and 16% predicted it would rise by more than 50% (see Figure 2; EyeforTravel Marketing and Mobile Strategies to Engage the Connected Traveller, 2016). Strikingly, no executives thought that their budget would decrease over this time frame (see Table 2).

*Figure 2: How do you expect your mobile / digital budget to change in the next 2-3 years?*



Source: EyeforTravel Marketing and Mobile Strategies to Engage the Connected Traveller, 2016

*Table 2: How do you expect your mobile / digital budget to change in the next 2-3 years?*

No Change	13.4%
Increase 20%	40.3%
Increase 50%	30.3%
Increase more than 50%	16.0%
Decrease	0.0%

Source: EyeforTravel Marketing and Mobile Strategies to Engage the Connected Traveller, 2016

This raises the question of how these rapidly increasing budgets will be spent. On improving the mobile web experience? Or creating new and better native apps? Travel brands need to think carefully before rushing in and spending their precious marketing budgets as there is not a one-size-fits-all approach. Although a mobile presence is critical for any travel brand that wants to work independently from the online travel agents, it can be an expensive and time consuming affair to get right and maintain, especially in the face of a highly competitive environment.

Retailers and brands talk about moving to a “mobile first” world where most transactions and engagements occur on smartphones, tablets and wearables. However, some argue that this forces customers down the mobile path. Brands need to allow customers to access their services on a wide range of devices and through multiple platforms rather than fixating on mobile. Customers will use desktops or laptops, tablets, mobiles large or small, and they may have phablets, smartwatches or Apple TV. Travel providers need to work out the digital journeys that their customers take and make sure they offer an effective, seamless way of helping them achieve their goals. That is not so much a mobile-first world as a customer-first world.

That said, the use of mobile devices to research, purchase, and access travel products has rocketed over the past five years and is set to continue.

The big questions for businesses today are about how to thrive in the mobile world and make sure that they give customers what they want and need through these devices. Mobile commerce is expanding rapidly, but its growth lags behind the rising amounts of time we spend on our mobiles. Typically, people spend most mobile time connecting through social media, using their Facebook, YouTube, Snapchat or Pinterest apps, rather than shopping. Furthermore, the path to making sales via mobile is rocky, with many people still preferring to complete their purchase on desktops.

### 1.3. Smartphone Adoption

Mobile growth has hit its peak in the developed world and – if anything – is slowing somewhat. On our planet of some 7.4 billion people, mobile subscriptions were estimated at 7.6 billion in 2015, with some 4.7 billion unique subscribers and operator revenues of some USD1 trillion, according to GSMA Intelligence (GSMA, 2016).

The penetration of subscribers globally stands at 63%, with rates ranging from 43% in sub-Saharan Africa to 85% in Europe. But, overall, new subscriber rates are slowing due to saturation in developed markets and the difficulties of connecting low-income populations in developing markets. The global subscriber base will reach 5.6 billion people by 2020, accounting for over 70% of the world’s population, according to GSMA (GSMA, 2016).

Smartphones are responsible for 80% of mobiles sold in the first quarter of 2016, according to the Ericsson Mobility Report, and it predicts that in Q3, smartphone subscriptions will surpass those for basic phones for the first time.

But, while new subscriptions are low in the mature markets of Western Europe and North America, there has been significant growth in India, the Asia-Pacific region outside China, and Africa, according to Ericsson (Ericsson, 2016).

Worldwide mobile phone sales are healthy, though slowing. In the first quarter of 2016, some 335 million smartphones were shipped worldwide, only 600,000 higher than the figure a year before, according to IDC’s Worldwide Quarterly Mobile Phone Tracker (IDC, 2016).

The research company calls this “the smallest year-over-year growth on record.” IDC attributes these flat sales to smartphone saturation in developed markets and notes declining sales from market leaders Apple and Samsung. As Roberta Cozza, Research Director at Gartner, said in a report in June 2016: “The smartphone market will no longer grow at the levels it has reached over the last seven years.” She said smartphone sales hit their highest growth in 2010, with 73% growth (Gartner, 2016).

Smartphone penetration has reached its highest level worldwide in South Korea, with 88% of the total population owning a smartphone, compared to 72% in the US, 68% in the UK, 67% in Canada, 60% in Germany, and 58% in China, according to a survey by Pew Research Centre in 2015 (Pew Research Centre, 2015).

Many of these countries are leaders in outbound tourism. The top six outbound markets by number of trips in 2015 were Germany, USA, UK, China, France, and Canada, according to World Travel Monitor (ITB, 2016). So there is clearly plenty of opportunity for travel brands to boost their mobile participation in these markets.

The picture over the next five years is one of ever-greater adoption of smartphones, particularly in the developing world, while most people in developed countries who want one will have one. This will pave the way for the global spread of two highly transformative new technologies, the Internet of things, which connects together billions of objects via embedded sensors, and 5G. This could have a huge impact on the travel industry, allowing consumers to connect with transport and accommodations in new and seamless ways.

Time spent on mobile devices (smartphones and tablets) is increasing rapidly as people use these devices to engage with their social media apps such as Facebook, Twitter, Snapchat, Tinder and LinkedIn.

The non-voice time spent on mobiles in the US increased from 46 minutes a day in 2011, to 2 hours 54 minutes a day in 2015. This is greater than the 2 hours 12 minutes a day spent on desktops and laptops, according to eMarketer, but remains lower than the time spent watching television, which eMarketer put at 4 hours 11 minutes a day in 2015 (eMarketer, 2015).

It seems like the increases are not about to end. In 2020, the arrival of 5G connectivity is expected, heralding a new epoch in mobile, with connection speeds up to a hundred times faster than current 4G and with much greater capacity. This should provide a huge boost for new technologies accessed via mobile phones such as virtual reality worlds and chatbots, which can understand natural language conversations in written and spoken English. Travel brands are already testing out these new developments. The incredible success of the new Pokémon Go app shows that there is plenty of mileage in augmented reality systems on mobile, where virtual images are superimposed on the real world.

Brands are under pressure to make their mobile experiences as good as the best - so they need to be able to match the likes of Pokémon Go, Facebook and Snapchat. Alongside this, there may be new devices, technologies, platforms, and services that arise to completely change the game again. Travel companies – indeed all businesses – need to be ready to adapt their strategies to the next unforeseen technological breakthroughs which could disrupt their business.

## 1.4. Mobile Usage Patterns and the Rise of M-commerce

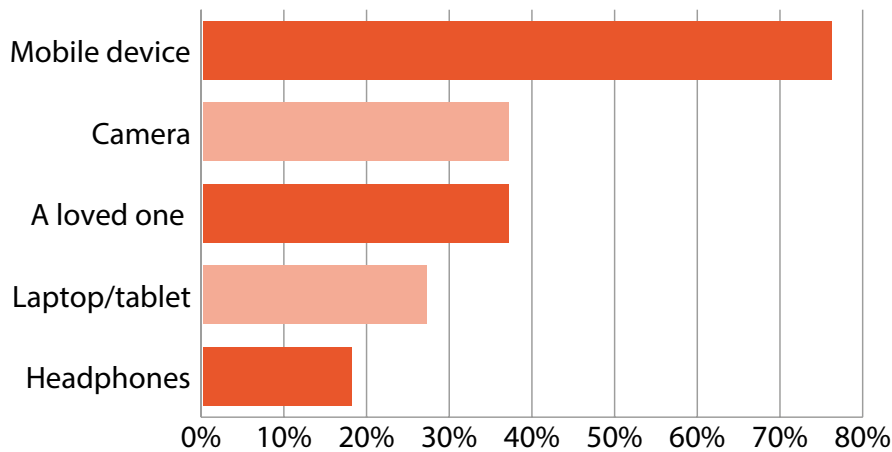
Mobile has transformed the way people book accommodation. Globally, 42% of people have booked a hotel on mobile, rising to 53% for under 30s, according to the Hotels.com mobile travel tracker (Hotels.com, 2016).

This is a global study of 9,200 travelers across 31 countries. It also found that over a quarter of people said they booked a hotel while in bed and 10% while on the toilet.

Some 76% of travelers named their mobile device as their number one travel accessory, while 42% have made a same day hotel booking thanks to their mobile, with 14% booking their hotel in the airport departure lounge (see Figure 3; Hotels.com, 2016).

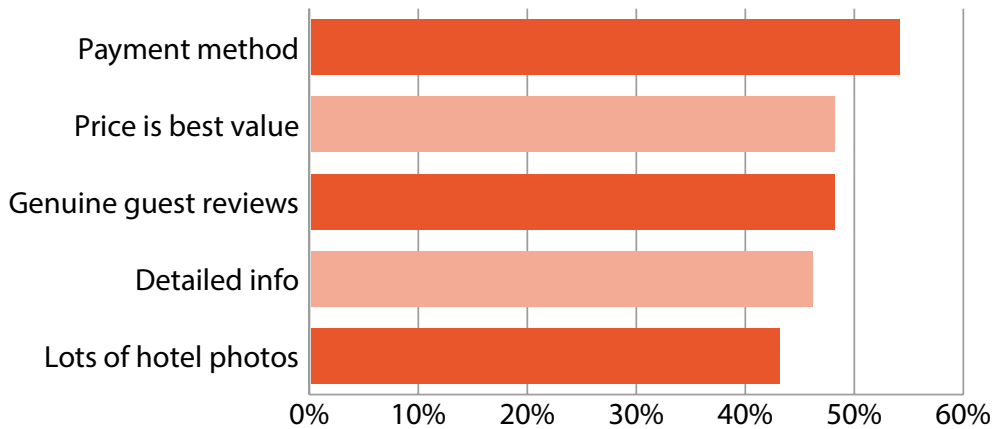
Nearly half of travelers say their mobile is the primary way of finding interesting spots, events, and restaurants while they are away. And 28% say they only select a hotel if it has free Wi-Fi (Hotels.com, 2016).

Figure 3: Top Five Travel Accessories



Source: Hotels.com, 2016

Figure 4: Most Important Factors When Booking on Mobile



Source: Hotels.com, 2016

Meanwhile, analysts SimilarWeb have noted a huge trend toward mobile usage in the travel industry as people become more comfortable using their mobile devices to research and book their travel plans on the go. Its report "Trends in the Online Travel Industry 2015-2016" analyzed the behavior of leading travel sites in the US between March 2015 and March 2016.

They found that mobile web traffic was increasing almost across the board, with the exception of travel recommendation sites. Hotels and accommodation and OTAs both saw double digit rises in US mobile traffic over the year to March 2016. Airlines and cruise sites saw less impressive growth, but still reasonable, of 4.2% and 5.4%, respectively (SimilarWeb, 2016). They attribute the fall in traffic to travel recommendation sites to more mobile traffic for these sites coming proportionally more from apps, which was not measured in the research. Overall, for all of these types of sites mobile traffic is now estimated to be close to or more than half of all traffic, underlining how crucial it is.



*Table 3: Share of Mobile Web Traffic for Hotels and Accommodations, Airlines, OTAs, Cruise, and Travel Recommendation Sites in the US 2015-2016*

	March 2015	March 2016	Change
Hotels and Accommodations	47.9%	54%	12.8%
Airlines	45.1%	46.9%	4.2%
OTAs	43.8%	49.3%	12.5%
Cruise	49.7%	52.4%	5.4%
Travel Recommendation Sites	54.4%	51.7%	-5%

Source: SimilarWeb, 2016

Interestingly, SimilarWeb also found that, for all of these categories of sites, mobile engagement statistics – pages per visit, duration – were down for mobile sites but broadly up for desktop sites. This is a potential sign that more consumers are using app sites or downloading apps to complete their bookings, as there are considerable discrepancies. For example, mobile web pages viewed per visit on desktop for hotels and accommodation rose nearly 50% over the period, duration of visit rose 12.47%, and the bounce rate fell by 17.26%, but pages per visit on mobile fell 6.32%, duration decreased by 4.74%, and bounce rates fell under 1% (SimilarWeb, 2016). Overall, OTAs performed better in these metrics on the mobile web than airlines and hotels and accommodation. Outgoing referral traffic was also down across the board as brands attempted to keep and complete the booking on their own sites.

The entire digital world seems to be empowering customers to make their own decisions about purchases rather than relying on advertising and paid search rankings. Smartphones are personal research tools that are creating a generation of well-informed and agile consumers who are gaining increasing independence and confidence.

## 1.5. Mobile Commerce

Mobile commerce is on the rise, though its growth has been patchy in the travel industry. People have tended to use mobiles more as research devices in their downtime when waiting for a bus or at an airport. Many people prefer to finish making their purchases on the larger screens offered by tablets, desktops, and laptops.

A Goldman Sachs forecast estimated that global mobile commerce sales will reach USD626 billion by 2018 and Statistics MRC forecasts that the global market will be worth USD1,067 billion by 2022 (Evigo; 2014; medGadget, 2016). If correct, this is vast growth from the estimated USD155 billion sold in 2015 by the 500 largest m-commerce retailers according to Internet Retailer (Internet Retailer, 2015).

These figures are for purchases made purely through mobile but, in fact, the path to purchase in e-commerce comes via multiple channels and devices. Some 40% of e-commerce transactions involve multiple devices along the path to purchase, and around a third of those are completed on mobile, according to Criteo in its Q4, 2015 State of Mobile Commerce Report (Criteo, 2016).

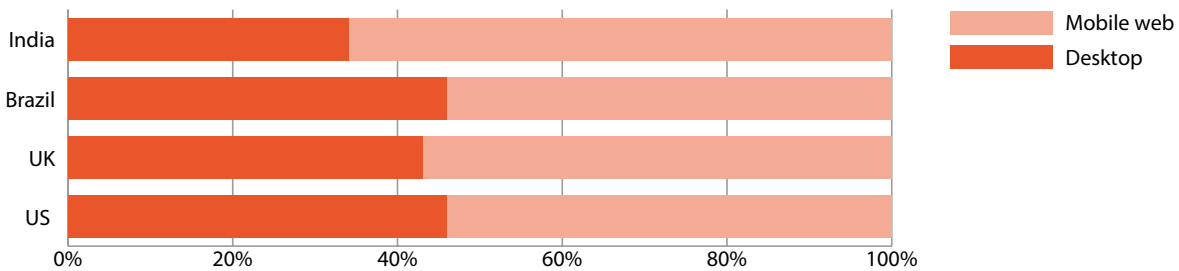
In terms of the entire online retail environment, dedicated shopping apps dwarf the mobile web “at all points on the path to purchase, from browsing products to the sale itself,” says Criteo’s report. Its figures show that shoppers using mobile apps browsed 286% more products than mobile web shoppers (Criteo, 2016).

In the UK, m-commerce has overtaken e-commerce for the first time this year, according to IMRG. Desktops and laptops accounted for 49% of sales, tablets for 33%, and smartphones for 18%. This increase in m-commerce shows that consumers are more confident and are using mobiles with bigger screens, while retailers are credited by IMRG with taking steps to make the mobile shopping experience more seamless. And as Tina Spooner, Chief Information Officer at IMRG, said: “We increasingly use our smartphones for managing so much of our lives, it is only logical that completing purchases on retail sites would gravitate over to these devices as well.” (IMRG, 2016).

### 1.5.1. M-Commerce and Travel

Mobile devices are playing a huge role in researching travel and holidays, according to a survey by Jumpshot. It analyzed web and mobile traffic for top travel sites TripAdvisor, Expedia, Booking.com, Priceline, Airbnb and India's MakeMyTrip in the first quarter of 2016, using its 100 million-strong global panel of consumers.

Figure 5: Percent of Mobile Web vs Desktop Daily Visitors Across Selected Top Travel Websites by Region

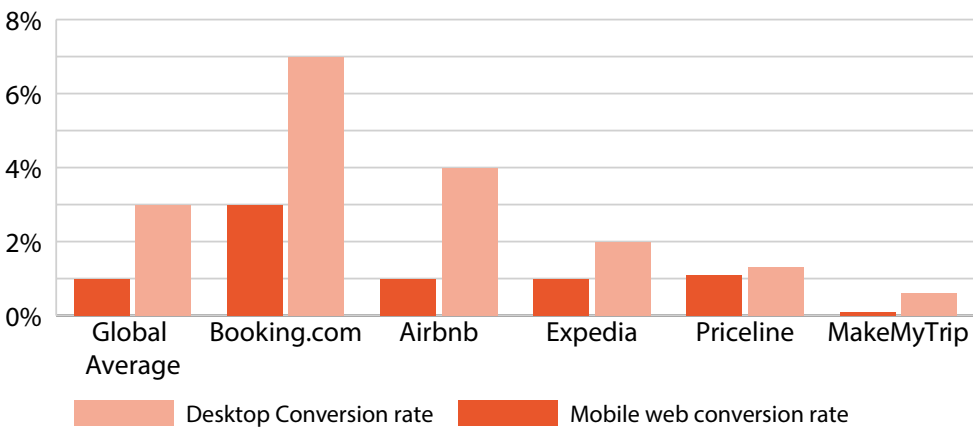


Source: Jumpshot, 2016

According to the research the mobile web is in the ascendancy. In all four regions analyzed – the US, UK, Brazil and India – it found that all of the travel sites analyzed received the majority of their daily visits via mobile web.

However, when it came to splashing the cash people were more likely to buy on desktops. The average conversion rate for all sites on desktop was 2.7 times higher than on mobile browsers. Globally, the travel sites had a conversion rate of 3% on desktop and 1.1% on mobile browsers for accommodation bookings. However, Booking.com had more than double the global average conversion rates with a 2.6% mobile web conversion rate and a 6.5% desktop conversion rate. The report attributes the success of Booking.com to: “A combination of savvy digital marketing, persuasive design, ease-of-cancellation and intuitive user interfaces.” (Jumpshot, 2016).

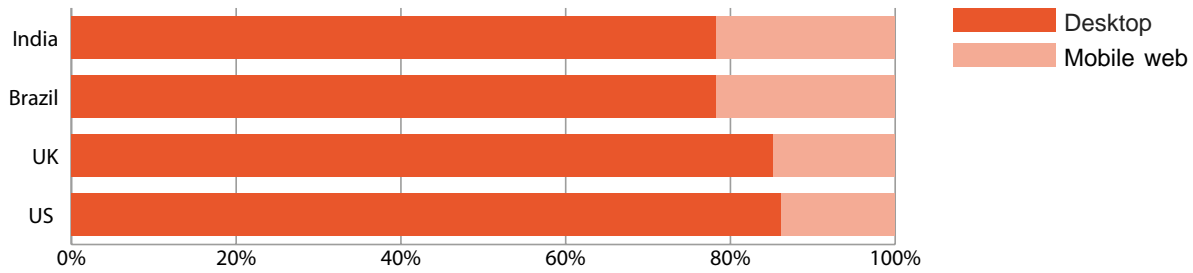
Figure 6: Global Conversion Rates for Accommodation Bookings Made on Desktop and Mobile – Global Average and Selected Key Sites



Source: Jumpshot, 2016

Not only is conversion better on desktop – which has been found widely in other research – but when it comes to the booking phase, far more accommodation purchases are made on desktop. For accommodation bookings, about 80% of conversions were on desktop. In the US, just 14% of bookings are made on mobile web. This rises to 22% in Brazil and India (Jumpshot, 2016). However, it should be noted that these percentages do not account for in-app purchases, so mobile is likely to have a somewhat higher market share (see Section 2.3 for more).

Figure 7: Percent of Desktop vs Mobile Web Accommodation Bookings Across the Top Travel Websites by Region

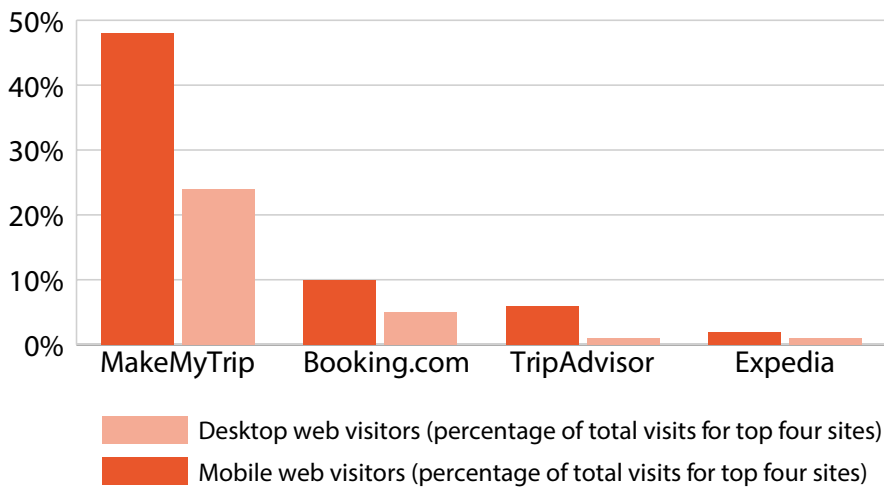


Source: Jumpshot, 2016

In India, we can see the greatest difference, with visits to leading travel sites conducted on mobile about two thirds on the time (see Figure 5). When this is broken down into the top four sites for India, we can see that for Booking.com and TripAdvisor this rate is even stronger, with double the number of visitors originating from mobile for Booking.com and a ration of 6 to 1 for TripAdvisor (see Figure 8; Jumpshot, 2016).

Indeed, it is Asia-Pacific that will be a huge driver of m-commerce, particularly in the case of travel. M-commerce accounted for 25% of digital sales in India, Indonesia, Malaysia, Philippines, Singapore, Thailand, and Vietnam, according to Criteo (Criteo, 2016). China’s rates of both e- and m-commerce has been staggering and it is one of the most innovative m-commerce markets, particularly with regard to social media apps (see Section 6.2). These countries have not gone through the same technological development phases as Western countries and mobile was always the critical device for accessing the Internet. We can expect global mobile transactions in travel to increase more rapidly as the middle classes of these countries grow, accelerating the slower transitions seen in countries such as Germany (see Section 2.3 for more on German booking patterns).

Figure 8: Distribution of Daily Visitors for Top Four Indian Travel Sites



Source: Jumpshot, 2016

## 2. MOBILE WEB VS NATIVE MOBILE APP

Mobile usage is soaring, with the amount of time spent on smartphones and tablets overtaking the hours spent on desktop - and even expected to eat into TV watching. Given this, how should travel brands engage their customers on mobile devices? Do they need to spend heavily on creating high quality native apps? This requires separate versions - one for the iOS operating system on Apple iPhones and iPads and another for Android operating systems. Or is it enough to have a well-executed mobile website which works across different devices?

Creating dedicated native apps is an expensive business – with some of the top airline apps costing upwards of GBP1 million – but they provide a powerful brand experience which offers a good return on investment for large businesses. Smaller companies, however, will think twice about investing in native apps.

Airlines often have regular business and leisure users, but for the majority of consumers, travel is an occasional activity, so they are reluctant to download an app onto their phone to use, at most, three or four times a year. Many brands feel that having a strongly-designed mobile website will enable them to engage with occasional visitors and they can then encourage them to download a native app.

A third option is mid-way between the expense of a native app and ease of use of a website. This is the hybrid app, essentially a mobile website which is wrapped up as an app and can be marketed on an app store and downloaded by customers. However, these rarely offer the seamless experience of native apps.

The world of apps is increasingly crowded. After Apple launched the App Store in 2008, apps were largely in the gaming and entertainment arena. But by the time the Google Play app store launched in 2012, many brands felt they needed to have a native app, even if only to prove they were in tune with the times. But some believe we have reached 'peak app'. Apple Chief Executive Tim Cook announced in June that there were two million apps in its App Store and that there had been 130 billion app downloads since 2008. The App Store has paid out more than USD50 billion in revenue to developers (The Verge, 2016). This makes it tough for any app to stand out, both in the App Store and on users' phones.

There is evidence that some brands are thinking again about their use of native apps and are looking to boost the mobile web as a way of luring one-off visitors and appearing in search results. With many brands launching high quality "responsive" websites, which are usable on a variety of devices - desktop, tablet or mobile - some travel brands are wondering whether they can shift spending away from native apps toward creating a powerful mobile web experience.

Lyft's Chief Business Officer David Baga told a panel debate at the EyeforTravel San Francisco Summit 2016: "I think it is the beginning of the resurgence of the web experience."

Meanwhile, Amanda Richardson, Vice President of Product for US late-booking brand Hotel Tonight, said: "One of the things that we've seen is just app fatigue. There are three million apps out there so how do you get users to engage and give you a try? Apps are getting bigger and there's less storage space and we have seen a continued rise in mobile traffic to our website so we decided last September to take a try at launching mobile web. Our strategy was to date before getting married, date on the web experience then convince you to engage with the app."

## 2.1. What Are the Advantages of Mobile Web Apps?

Mobile web apps are not really applications at all, they are websites with the clarity and simplicity of an app. They are accessible on the mobile web browser by typing in the URL, storing them in favorites or via a search or social link. They run on the browser and are typically created using the HTML5 programming language.

The mobile web offers users an immediacy, relevance and ease of navigation that encourages consumers to come back again and again. In terms of travel, the role of mobile web is largely at the top of the purchase funnel as people use it to undertake general research. Although it can also be used for purchasing, people typically prefer to use a desktop, laptop or tablet for this.

The mobile web has numerous benefits for travel brands. It is compatible across devices, so a single website can reach users across different platforms and browsers. A mobile website can be updated easily - simply publish the edit and it is visible. To upgrade native apps, by contrast, an update has to be pushed to users who then need to download it.

Web apps are easily searchable on Google and other search engines and these results can appear in industry lists and directories. Mobile web apps have huge reach and are often viewed by many people.

And, of course, the great advantage is that mobile web apps are lower cost and easier to build and maintain compared to native apps. This is a strong pull for smaller companies or those who are just dipping their toes in the mobile market.

### 2.1.1. How HTML5 Has Changed Mobile Web.

Web apps took off after the release of HTML5, which has been developed over the past eight years. HTML5 is optimized for the creation of mobile websites and apps, and responsive websites that can be read across different devices are easily built using HTML5. And it offers offline caching so that once it is loaded on a mobile site, if the signal goes down, the user can still use various elements of the website.

HTML5 has significant advantages over previous versions of HTML. It supports audio and video, whereas earlier versions required third party players such as Adobe Flash Player, QuickTime and Silverlight to play audio and video.

One of the major benefits of HTML5 is that it has allowed brands to create apps that work across different platforms but that are actually websites playing inside the app. These hybrid apps have enabled many brands to develop apps without having to go to the expense of building separate versions for iOS and Android.

As Jake Davis, Design Director at developer Pocket App, explains: "HTML5 apps used to have various performance issues. They used to work OK on iPhones, but Android phones struggled because of the varying levels of processing power so the pages wouldn't fully load up all the time. Sometimes you would destroy the veil of it being a native app because you could watch the page load up, so even a low tech user would notice the buffering. Now HTML5 is a lot better because the technology has got further and the processing power of all these devices is way higher than just a few years ago, and HTML5 has developed more hardware functionality with plugins and platforms."

### 2.1.2. The Capabilities of the Modern Mobile Web

Mobile web has improved in terms of its speed and functionality in a few short years, progressing through 3G to 4G and heading for superfast 5G sometime around 2020. Travel brands are thinking again about their mobile strategies. Given that the long tail of travel customers may only use a booking service at most a few times each year, they may be reluctant to download an app to their phone. So brands are increasingly looking at creating mobile websites which deliver the core functions of a native app.

### 2.1.3. Hybrid Apps on the Mobile Web

Hybrid apps provide the advantages of both web apps and native apps. Hybrid apps are built like mobile websites, using web technologies such as HTML, CSS and JavaScript. But they are hosted inside a native application that uses a mobile device's Web View, a type of browser window. So, these apps can run across different types of devices – iOS or Android – without needing to be designed specifically for each. And they can access the device's camera, accelerometer, contacts and more. However, they often lag behind native apps in the smoothness of their transitions between different hardware. So, moving from one area of the app to another requiring a change of access from, say, camera to contacts, can be slow and clunky, with buffering similar to waiting for a web page to load.

Hybrids offer the marketing advantage of giving a brand a presence in an app store – something many consumers would expect to see – without requiring as much investment as a native app. Some businesses create hybrid apps as a stopgap measure as a way of figuring out the requirements they need for a native app.

German airline Lufthansa has a hybrid app which has sophisticated functions and which customers are happy to have on their phones, says Mobile Services Manager Elke Rosak. She says more bookings come from the apps than the mobile web portal, though both attract a similar number of visitors.

The flight booking and check-in are linked to back end services via the web portal, but the native part of the app allows customers to store personal data in the app, such as passport or visa details. This native information in the app is taken over to the booking flow or the check in flow which makes booking and check in much easier than starting from the portal, she says.

"The users would love to have a more native approach, since it is so much faster and everything. However, as we want to spread the app offer to the widest number of users of operating systems, we would have to program everything natively into iOS and Android separately. It would be a lot of cost and maintenance to have native content in all our apps really up to date and functioning correctly. That is why we decided to go for the hybrid approach so that we can maintain, for example."

"We have a customer feedback tool in our app and [we] are not getting much negative feedback. Once in a while we do have feedback that it would be nice if it were more native yes, but in general I don't see that our customers are really that unhappy with it. That doesn't seem to be a major concern."

## 2.2. What Are the Advantages of Native Apps?

Native apps offer the advantages of platform-specific design, ease of use and they help carve out a space on a user's mobile phone, which is a powerful piece of branding. Users download them from the Apple App Store or Google Play for Android devices and they are easily launched with a click. They are usually smoother and more usable than web apps or hybrid apps and they tap into a wide range of the mobile device's functions, such as camera, compass, notifications, and swipe gestures. Many of the options on native apps can work offline.

Native apps have greater use among regular and higher spending customers and since they are already occupying space on the phone, they are more likely to be used repeatedly.

### 2.2.1. A Captive Consumer – the Value of Having Consumers Use the App as a Primary Touch Point and to Repeatedly Reference Them.

Once an app is installed on a user's phone, it is assumed that they will then be likely to use it with frequency. This allows the brand to build up a relationship with the consumer and access data about their behavior. However, with the saturation of apps, it is difficult to become one of the native apps that users regularly open. ComScore research showed that in June 2015, Americans spent two hours a day on their mobile apps – three hours for millennials. Half of that time was spent in just one app – usually Facebook – and 88% of that time was spent on the top five apps, usually including Facebook, YouTube, and a mail app. People typically have dozens of apps on their phones but use a small number of them, with the rest used infrequently (comScore, 2015). Jim Pickell, President of HomeExchange.com, told the 2016 EyeforTravel

Summit in San Francisco that just 1% of the time spent on apps is on travel apps. “Apps tend to appeal to power users and loyal customers,” he said. But he warned: “If you launch an app with the most loyal customers and they are not happy with it, they may not come back.” Meanwhile, Glenn Stress, Director of Digital for North America at Starwood Hotels and Resorts, told EyeForTravel: “We see our app as a real privilege to be on someone’s phone so we want to add value. We design it for our power users, we are less concerned about downloads, more about engagement, particularly with our elite members, our road warriors. 75% of our Platinum SVG (Loyalty scheme) base has downloaded and interacts with our app and 50% of Gold members.”

### 2.2.2. Data Gathering from apps.

A huge advantage of native apps is being able to access all the features of a smartphone and gaining consent to access critical information such as geolocation and social media profiles. The power of this data is enormous. It can be used to build up a picture of consumer journeys – how they come to purchase your products – and also to improve the user experience.

Rory O’Sullivan, mobile product manager at Momondo Group, which operates Cheapflights.co.uk, says: “You are nothing without the data. If you don’t know what your customers are doing and how they are interacting with your products, you can’t make conscious decision to be able to act on that and understand them. Without a decent tracking solution and analysts who can delve into this in detail, it is difficult. You are making judgements based purely on your own thinking.”

“We’ve recently changed the filters in our app, so what we’ve been able to do is measure the impact of that change, has there been a positive or negative impact on the users getting through to the next phase? Are they getting through quicker? So we know the same amount of people are using filters, but they are finding it easier to use. They are making the same number of changes as they were before but it is done in a shorter period of time, so it is more effective to get the user the flights that they want.” He says Cheapflights has a business intelligence team and a product analyst to make sense of the data. He says they use data to offer clever additional services, so when a user opens the app, they use the location data to detect where they are so they can pick out the nearest departure airport.

“It is one thing having access to that data and another to find ways of using it to benefit the user. You have so much data on location, whether they are connected to Wi-Fi or not, that you have got to pick the right piece to focus on.”

### 2.2.3. User Experience

Native apps are faster to download and display content and can carry out more complex operations. This does not require an Internet connection.

## 2.3. Which is Winning and Does it Matter?

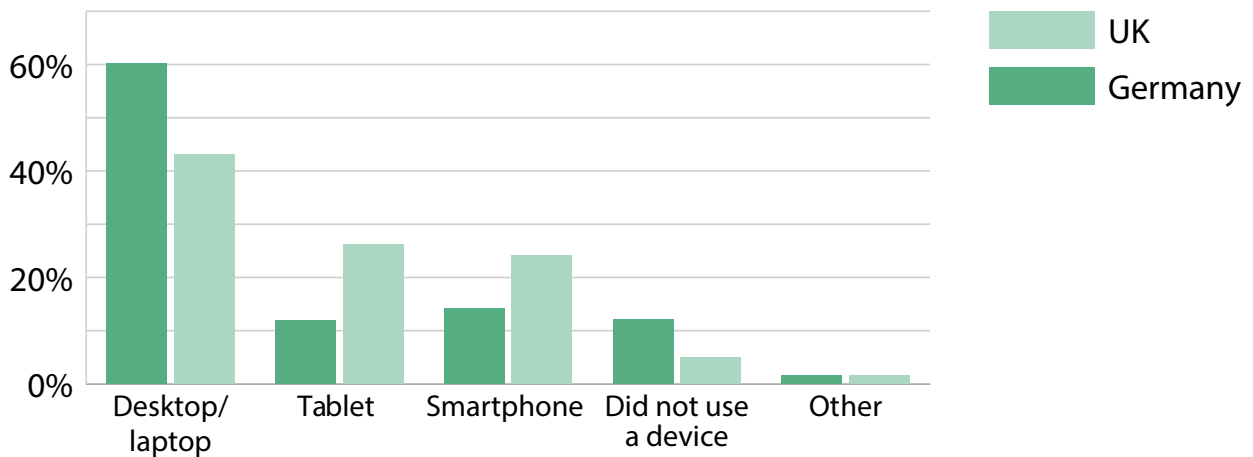
People are spending long hours on mobile apps – according to comScore, 54% of all digital time in the US is spent on apps (comScore, 2015). However, the mobile web is also attracting many unique visitors. US mobile browser traffic is twice as great as mobile app traffic, according to a report last year by Morgan Stanley (VentureBeat, 2015). So, people are spending time on social media and gaming apps, but when they go on the mobile web, they will be visiting ten or fifteen different sites in a few minutes.

These stats are for the overall web environment, however, and it is important to dig deeper to understand how consumers are shopping for travel products specifically. When EyeForTravel surveyed UK and German consumers in mid-2016 we found that mobile – meaning smartphones and tablets – were important components, especially during travel research, but this decreased as users moved over to purchase and was highly variable between the two countries. For researching a holiday, just under a quarter of UK travelers said that they used a smartphone as their primary research device and just over a quarter used a tablet. For



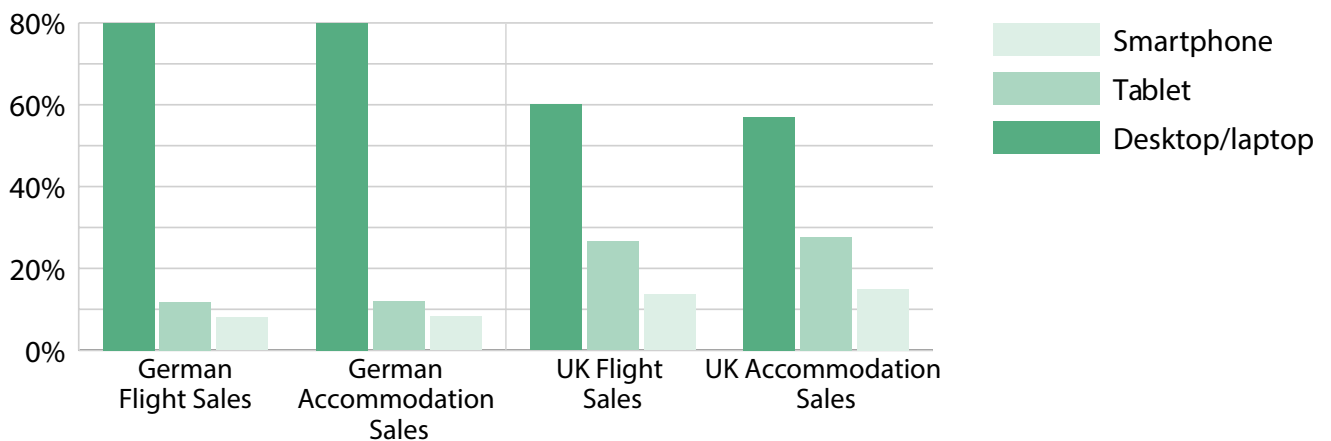
Germans this fell to 14% and 12%, respectively (see Figure 9). In total, for the UK this means that mobile is now more important than desktop in the research phase. In terms of digital sales, however, desktop remains dominant in both countries, accounting for 80% of sales in Germany and 57% of accommodation sales and 60% of flight sales in the UK (see Figure 10). In the US, eMarketer estimates that in 2016 mobile devices will account for 36% of travel sales by value (eMarketer, 2016). Criteo's estimates of mobile sales for the three markets above are 29% of bookings for the US, 28% for the UK, and 15% for Germany (Criteo, 2016).

Figure 9: Devices Used to Research and Plan Journeys in the UK and Germany



Source: EyeforTravel's UK Consumer Survey 2016; EyeforTravel's German Consumer Survey 2016

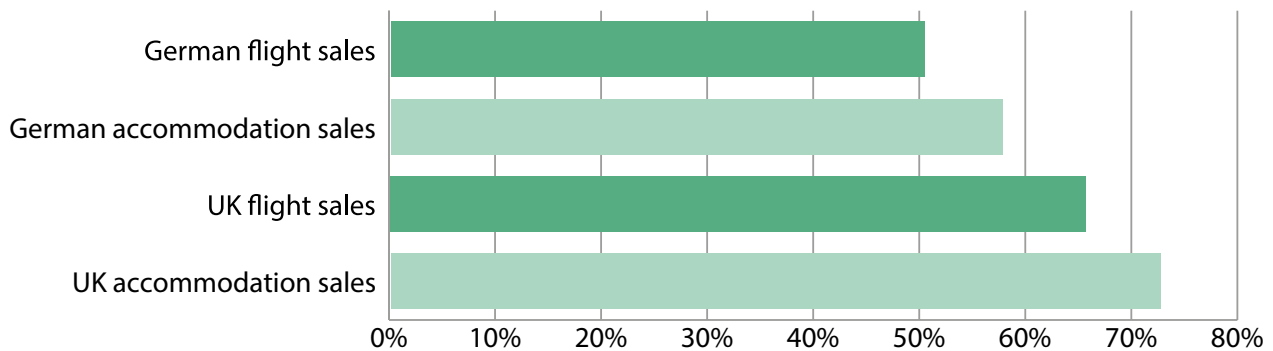
Figure 10: Digital Travel Bookings by Device Used in the UK and Germany



Source: EyeforTravel's UK Consumer Survey 2016; EyeforTravel's German Consumer Survey 2016

Critically though, there is also a disparity in the way users access travel among those who favor mobile usage. We found that for those consumers who purchased their last journey through mobile devices, they continued to favor browsers over apps in both markets overall. In the UK, two thirds of mobile device flight sales were through browsers and nearly three quarters of accommodation sales (see Figure 11). German consumers were more app friendly, although this came from a smaller pool of respondents overall (EyeforTravel's UK Consumer Survey 2016; EyeforTravel's German Consumer Survey 2016). It is also important to note that this shows smartphone and tablet bookings only and does not count the far larger share of desktop and laptop bookings, which occur on browsers.

Figure 11: Market Share of Browser Travel Bookings for Mobile Device (Smartphones and Tablets) in the UK and Germany



Source: EyeforTravel's UK Consumer Survey 2016; EyeforTravel's German Consumer Survey 2016

These figures largely concur with wider research. As can be seen in Section 1.5.1, Jumpshot also found that although the majority of traffic originates from mobile sources, the bookings were decidedly desktop-based. A 2016 study by comScore and Expedia Media Solutions found that when UK travel information was accessed through mobile, the majority was run through browsers, at 64% of minutes (Expedia Media Solutions, 2016), which is close to our booking figures for the UK (see Figure 11).

To further complicate this story, travel consumers are often cross-device in their travel purchase journey. Travel has a long tail, with consumers passively consuming travel content for long periods and then actively researching airlines and hotels for less than two weeks in the UK and Germany before they make a purchase (EyeforTravel's UK Consumer Survey 2016; EyeforTravel's German Consumer Survey 2016). This research is more complex and in-depth than for most consumer products, taking in a large number of searches and many sources. They then also have, on average, two to three months in the case of the UK, three to four weeks in Germany and three to six months in the US between booking their transportation and departing (EyeforTravel's UK Consumer Survey 2016; EyeforTravel's German Consumer Survey 2016; EyeforTravel, 2016a). They continue to think about their journey in this time, consuming media and planning activities to undertake during their vacation. It is therefore a process that is conducive to moving between devices, as there is not yet one app that can truly cover all of these areas comprehensively.

In our research we found that UK consumers use a different device from their main research device to book travel around 25% of the time (EyeforTravel's UK Consumer Survey 2016). Criteo found that during Q1 2016 in the US a third of travelers made cross-device bookings (Criteo, 2016). This cross-device behavior also favors browsers, particularly in more casual earlier phases.

The lesson for travel brands is that they can boost engagement with customers through their apps by creating an engaging experience and offering some strong content. However, it is advisable to have a strong web presence first to capture visitors as they browse the mobile web. A well-designed responsive website will be able to handle the majority of travel consumers who are looking and booking using desktops first, then mobile browsers and finally through apps. Furthermore, a browser site can redirect consumers to download the app if one is available. Travel brands should also design their app strategy with regards to their core markets, with a high degree of variation between device usage for travel booking in particular, but also app behaviors.

In the battle between native and hybrid apps, it seems that many of the biggest travel operators are opting for fully native apps in both the main operating systems of iOS and Android. Hybrid apps have been used by some larger organizations, though they tend to appeal to smaller players.

## 3. PERFECTING THE MOBILE WEB

### 3.1. Will Your Desktop Site Work on Mobile?

Established travel brands have built thriving businesses through desktop websites, but as consumers increasingly migrate to mobile, they need to offer them just as good an experience on their smartphones. When the mobile boom took off five years ago, many brands allowed their desktop websites to become their mobile point of entry too. They soon saw that a desktop site on mobile offers a poor experience – the copy is too small and needs to be expanded, making it difficult to navigate.

To deal with this, many brands started building sites specifically for mobile, so had two sets of templates and content to deal with – one for mobile and another for desktop. This became complex, time consuming and inefficient. Today, many are turning to responsive web design, which aims to create one website that is viewable no matter the device. A responsive site adapts to the viewing environment by using grids constructed using proportions rather than absolute size, and it contains fluid images.

The impetus to having a mobile-friendly website received a huge boost in April 2015 when Google launched an update known colloquially as “mobilegeddon”. This boosted search rankings for sites deemed to be mobile-friendly and relegated those that were not (BBC, 2015a). The update came in response to the growth of mobile, which is estimated to currently account for about a half of all web traffic. Those with separate mobile and desktop sites or who simply used their desktop site for the mobile web were penalized and fell down the rankings. Since the update was introduced, brands have looked to create mobile-optimized websites, often turning to responsive design.

Some sites are using an alternative to responsive design called adaptive design, which is slightly different. With responsive design, the web page is delivered to the user’s browser and the browser changes how the page appears in relation to the device. With adaptive design, the web page’s server detects what kind of device is accessing that page and loads a version of the site that is adapted to that device. This is somewhat more complex as it requires creating pages for different devices, though it avoids some of the loss of functionality that can accompany a responsive design. But, critics say that adaptive design tends to mean that the desktop website approach is dominant, whereas responsive design takes its lead from the mobile experience.

**“45% of our bookings are made on mobile devices with 26% of bookings made on our apps. We see the mobile web as a great source of acquisition, a way to capture first-time customers through the web, whether mobile, tablet or desktop - and will try and convert those customers to become app customers over time.”**

Breffni Horgan, head of product and design at Hostelworld, explains the brand’s experience with the mobile web:

“We have a responsive website so it adapts to whatever device it is accessed on. We did have two different websites for desktop and mobile, which became painful to maintain and update, as we had to develop everything twice. Then we had to do a lot of work when Google’s ‘Mobilegeddon’ came about as one of these websites, although mobile friendly was written in a way that Google couldn’t crawl, which wasn’t optimal

“We thought, right we need to go fully responsive, and looked at the best way to develop one and deliver to many.

“45% of our bookings are made on mobile devices with 26% of bookings made on our apps. We see the mobile web as a great source of acquisition, a way to capture first-time customers through the web, whether mobile, tablet or desktop - and will try and convert those customers to become app customers over time. We get them in the door with web then offer a really great experience on the app. When we look at lifetime value, we see a lot of value from app customers.”

### 3.2. How to Make a Site Responsive

In the airline business, Virgin America launched a responsive website in 2014, claiming it was the first responsive site for an airline (Virgin America, 2014). Previously, many in the industry had thought that an airline website was too complex to run responsively. For the redesign, Virgin stripped back all of the elements of a typical airline website and featured only the basic steps needed for a good user experience. For instance, it stripped out photos and replaced them with simple graphics to speed up load times. And it used a scroll down method so users could complete each stage of the booking process in an easy flow rather than having to use back and forward buttons. It claims that booking speed on mobile has doubled through these developments.

Michael Bayle, Head of Mobile at travel technology provider Amadeus, says a mobile website needs to be minimalist by nature and must deliver the user interface that is expected, such as swiping, buttons and scrolling. It needs to match the experience of the most popular sites, such as Facebook, which should be used as a paradigm for what is needed on a mobile website.

“Of course, you don’t have those functions on the desktop which is purely about clicks, so when creating mobile sites responsively, you need to go backwards. Think about what users can achieve with their thumbs on their mobiles and make sure that the site is simple enough to mimic this. So, use the thumb metaphor when building the adaptive site from the mobile rather than thinking of the desktop click metaphor and trying to apply it to mobile,” he says.

There has been a push in traditional retail businesses, including travel, to create an “omnichannel” strategy where the brand communicates with consumers through any touchpoint they use, be it mobile, tablet, desktop, physical store or telephone. Bayle says many executives fear that it is hard to make the experience coherent across all the channels and wonder how it will differ. But by having a responsive site, this worry disappears as it ensures the experience is the same on each device.

The challenges of mobile are easier for completely new brands than the legacy players as they can build their architecture using the latest technology from the very start, beginning with a responsive website rather than having to transfer from one system to another. This is one of the advantages of the new players such as Airbnb. For legacy brands however, they need to reinvent their technology, which is a complex task since it involves transferring content and functionality from one system to another, opening up the possibility of mistakes and errors.

### 3.3. Functionality, Features and Display

One challenge is transferring content from the desktop website onto the responsive site. Illico Elia, Head of Mobile at marketing and technology agency DigitasLBi, says the desktop website is designed with the expectation that the user is sitting at their desk next to a landline telephone. So, for instance, the desktop site might include a premium rate number for the user to call if they are experiencing any problems. When a marketer decides to create a mobile site, the content team will reason that they’ve already created the content, and can simply transfer it on to a different template or design it responsively using the same content, including that premium rate number. But if the mobile site user is in Germany, they will not be able to dial the number from abroad.

“That is sort of level of thinking you need, it is not just about the design of the site, it is what functions does it have? A mobile site has many more functions than a website. I could be on the way to the airport and wanting to check in, I could be in a foreign country and the flight is cancelled and I want to work out how to get home, I could be at the park looking after kids checking out some possibilities. Those are scenarios you rarely get with desktop but are relevant with the mobile device. So the design of the mobile site is less important than the functionality and features and detecting whether the user is in Germany and giving them an international call phone number.”

He says the advent of mobile means changing the way people think about travel services – it is more than just making a digital copy of your brochure and putting it on a mobile site.

“Brands need to start by asking what is the most important piece of information the customer needs to know at that point in the purchase funnel and how do we design so it is front and foremost? That gives you the core of what people want to do, then you add on the different add-ons to make a more beautiful experience.”

### 3.4. Adding Mobile Web Apps to Increase Functionality

Fabrizio di Martino, Social, Mobile and Programmatic Manager for IHG Europe, explains his thinking on mobile strategy and the choice travel brands face between prioritizing mobile web, native apps or a hybrid solution: "If the objective is to promote content, and let the purchase or the delivery of the service happen in a shop for example, mobile responsive is the best solution. Otherwise, an app gives the best results, due to the advanced capabilities offered by the development tools. A hybrid solution with a responsive website and an app is definitely the best option for larger businesses, because this allows the product to leverage on the strengths of each platform to provide the best possible service. One example could be: the app handles the booking flow, but the content is opened within the app as a browsing session of the responsive website. In this way the user experience is very good, the guest can barely notice the difference, but the back end can be refreshed more often without requiring a new app development."

Advances in the mobile web are making it an attractive alternative to creating apps. Consumers already have their mobile home screen full of apps and are reluctant to download more.

Alastair Campbell, a strategic advisor to Chelsea Apps Factory, who previously worked as Customer Markets and Strategy Director at glh hotels, says travel brands need to look at radical ways of capturing the imagination of customers on the mobile web. He worked on what he calls a world-first web app at glh hotels, allowing customers to book specific rooms at a hotel.

"Room selection has been one of the great hopes of the industry for a while. Some do that after you have booked, this is the first example where you don't book the hotel anymore, you book the specific room. Nowhere do you spend £400 without seeing it before you buy, except a hotel."

Mobile web apps are predicted to become more important over coming years as consumers tire of downloading native apps – many of which have poor functionality – and their screens become crowded. But the mobile web also has its drawbacks, such as long load times due to ads, scripts, and background processes which are slowing down the mobile web. The mobile web can also seem clunky and lacking in functionality compared to the ease and speed of native apps.

But the mobile web is upping its game. Google is introducing what it calls Instant Apps, which allows users to access a page of a native app via the web (Android Developers Blog, 2016), and promoting a new technology called Progressive Web Apps. These allow developers to build websites that load quickly and act in similar ways to native apps, for instance allowing swipe right technology. The website can be copied onto the user's home screen, so they can interact with it just like an installed app.

## 4. PERFECTING THE NATIVE APP

### 4.1. Who is Succeeding and Why?

Native or hybrid apps have become a must-have for many travel brands, allowing them to build close relationships with consumers and to become a powerful presence in their lives. So what makes for a successful native app strategy? This all depends on what the customers need from the app and how well it allows them to achieve this. This sounds obvious, but app developers have stories of brands spending years trying to develop endearing features on their apps which serve little purpose, before deciding they are wasting their time. As ever, travel brands need to start from customer needs.

The big names in the OTA sector have had glowing reviews for their apps, such as Hotels.com, Booking.com, Expedia and Kayak. These have tended to facilitate the customer experience rather than adding in additional functionality for the sake of it. That said, not all their updates have been well received, which shows what a prized and hard-to-achieve goal customer-centricity can be.

The major UK airlines such as British Airways, EasyJet and Ryanair have been commended by numerous observers for their apps, while in the US, JetBlue, Southwest Airlines, Alaskan Airlines and Fly Delta have topped reviewers' charts of airline apps. In the hotel sector, apps from the big chains have received plaudits from reviewers – the leading brands such as Hyatt, Marriott, Ritz, Starwood and Hilton have well thought of apps.

App Annie provided these rankings of the top downloaded free travel apps for the United States and United Kingdom on one day in August 2016.

#### TOP 20 FREE APPS ON US iOS STORE August 24th, 2016

1. Uber
2. Lyft
3. Yelp
4. Google Earth
5. Airbnb
6. TripAdvisor
7. United Airlines
8. Hopper – Airfare
9. Fly Delta
10. Southwest Airlines
11. Booking.com
12. American Airlines
13. Expedia
14. HomeAway & VRBO Vacation Rentals
15. GasBuddy
16. trivago
17. Gogo Entertainment
18. Amtrak
19. Hilton HHonors
20. My Disney Experience

#### TOP 20 FREE APPS ON UK iOS STORE, August 24th, 2016

1. TripAdvisor
2. Uber
3. Booking.com
4. Trainline – Live
5. Ryanair
6. EasyJet mobile
7. Airbnb
8. Google Earth
9. Planes Live Free
10. British Airways
11. National Rail Enquiries
12. Skyscanner
13. The AA
14. Tube Map London
15. Been
16. Trivago
17. RingGo
18. Ready Set Holiday
19. MyThomson
20. Arriva UK Bus App

Ryan Matzner, Director of Business Development, at app development agency Fueled, rates TripAdvisor as probably the best app in the travel area. He says it offers a good user experience, has timely data indicating a strong user base and it is updated regularly. He also highly rates all the apps from Priceline, including Booking.com and Kayak. He is a fan of the Hotel Tonight app and also points to an up-and-coming app called Overnight, which offers last minute rooms in people's homes. One of his favorite apps, he says, is SeatGuru, which maps and reviews airline seats to recommend the best ones.

Developers look closely at the comments and reviews on the App Store and Google Play to see how apps are received by users and how they are rated. These can give an insight into the performance of the apps and indicate the success of different updates. Apps which have been given glowing reviews can suddenly find that a new update creates a backlash among users who struggle to use the new system or find that it is less effective than previous versions.

An app that cause a splash in the industry when it first launched was from Canadian hotel chain Four Seasons, which has hotels in 39 countries (Four Seasons, June 2015). The app garnered headlines as the "app that does everything." Launched in 2015, the app allows customers to check in and out and book luggage pickups and airport transfers. It permits guests to make and manage bookings, customize their stay, asking for extra bedding and arranging a turndown service. It offers room service and the ability to book restaurants and the spa. It even allows guests to order personal care items such as toothbrushes and razors. Observers commented that Four Seasons was fairly late to the app game and that rivals had raced ahead with the functionality of their native apps. One particularly transformative development was Starwood Hotels introducing "keyless entry" through its mobile app, allowing guests to check in and use their mobile to open the door to their room. (See case study.)

Nick Black, co-founder and Chief Executive at app developer Apadmi, says the crucial thing when developing an app is for the brand to talk to consumers to understand what their priorities are from an app. It is all about getting the basics right before moving on to something more sophisticated, he says.

"It needs a realistic budget and time scale, brands need to engage with the developer and understand what are the key features the users engage with and is it something they are going to come back and use again and again? Brands need to do that with the first launch, do the analytics and then build version two and talk to consumers, ask them what they would like from it. This is all about customer engagement, it is about user testing, talking to consumers and finding out what they actually want from a service provider."

Apadmi has created a BlackBerry app for SkyScanner, plus other native apps for Hogg Robinson, Thomas Cook and e-commerce business Travelport, and apps for various tourist boards. Black advises that the best strategy is to launch a simple app to begin with and use the analytics from it to add functionality over time. "It can confuse if you launch with too much at once," he says. He advises that an app strategy is a long term investment that needs to be adaptable to new developments. "What happens when a new iOS update comes along, when new phones are launched, or a new platform is launched? How does it integrate with new wearable tech?"

A number of travel industry apps are integrating with the Apple Watch. British Airways offers Apple Watch boarding passes, which need to be downloaded onto the smartphone first and then stored in the wallet. The Apple Watch boarding pass can be scanned automatically at security and boarding gates. The Apple Watch screen will show flight number and route, departure time countdown, the flight status, departure gate and weather forecast at the destination.

However, many believe wearable tech, such as smartwatches linked to mobiles, has yet to really catch on with users, but believe it is worth pursuing developments in this area as it may become popular in the long term.

Native app development can be a complex business. It can mean designing apps specifically for different platforms, iOS and Android and even for tiny players BlackBerry and Windows. For iOS it could mean creating an app for iPhone, Mac, iPad, Apple TV and Apple Watch.



### 4.1.1. Case Study: Starwood Hotels and Resorts

Glenn Stress, Director of Digital, Americas, Starwood Hotels and Resorts.

Starwood Hotels & Resorts Worldwide launched the SPG Keyless room entry system in 2014 using a Bluetooth-enabled lock on each door. This allows guests on the group's Starwood Preferred Guest loyalty scheme to use their mobile app to open their hotel door. After making the system available at over 160 properties in more than 30 countries, the chain is now extending it to other hotels in Le Meridien, Westin, Sheraton, and Four Points properties.

Over 350,000 loyalty scheme members have registered for SPG Keyless, with Platinum members the most frequent users.

Other hotel groups are also introducing keyless entry, such as Hilton, Marriott International – which is merging with Starwood – Hyatt, and IHG.

Glenn Stress, Starwood's Director of Digital for the Americas, gave details of the hotel group's mobile app strategy for an EyeForTravel video in spring 2016. "Mobile is exponentially growing," he said. But he warned that travel brands need to ensure their apps are used regularly. Some 25% of users only use an app once and never return – they look, try it and if they experience a problem with its functionality, they will delete it.

He said most people will only use a dozen or so of the more than 25 apps they may have on their smartphone. He pointed to research showing that 80% of smartphone users have been frustrated by apps, finding that they take too long to load or simply don't work. "Your star rating in the app store can go down in a day and it can take six months to get it back, so it is really important to get that right," he said.

The aim is for mobile to streamline and make processes more efficient than desktop.

"We [Starwood] are rapidly approaching the point where almost 50% of our website traffic is going to be through mobile devices, phones, mobile web apps, and tablets – not for bookings but page views," he added.

He said the SPG apps are designed primarily for "road warrior" customers – Starwood's power users. Meanwhile, the iPad offers more of a lean back moment, allowing customers to explore various content rather than make transactions, and the Apple Watch app is not transactional but finds the key information users need, on their wrist, in the moment.

He says 75% of Platinum Starwood Preferred Guest loyalty scheme members have downloaded and interact with the Starwood app and 50% of Gold members.

The latest redesign was done about six months ago and the previous one two and a half years before that. He says best practice is to overhaul the app every two to three years. "People's mobile and app behaviors change and evolve, people are more used to navigating through phones than two to three years ago, so you can't stay with static navigation. We need to do stuff that mirrors popular apps, such as Facebook, that they use every day," he says.

**“ You can't stay with static navigation. We need to do stuff that mirrors popular apps, such as Facebook, that they use every day. ”**

He says SPG Keyless is designed for super users, so when they arrive they don't need to queue up and go through a script. It is for frequent stayers who don't need the personalization expected by other guests.

Starwood itself is not a customer-facing brand. It comprises 1,300 hotels across 11 branded hotel chains, such as W Hotels, Le Meridien, Sheraton, and Aloft. Stress says that when the app boom took off a few years ago, all the different properties wanted to have their own app. "The greatest thing, I think, of the design of the SVG app, is that it transforms within 24 hours of arrival into an app for that property. Twenty-four hours before arrival, you get a text alert welcoming you to the hotel, then the app takes on the overall appearance of that particular hotel. It pulls in local images, these are representative of what you are getting, this becomes the portal for you while you are in stay. Then when you check out, it goes back to SPG."

He says a common reason people delete apps is because they receive too many notifications, often delivered at inconvenient times. Also having a tedious registration process can be a turnoff and means people won't even sign into the app.

“The app is not about taking your website and forcing it into a mobile experience. It is about taking the top things, the functionalities that people are using the most on the web and presenting them in a mobile experience.

He advises against making “desperate appeals for ratings,” and to “put the guest first, not the customer. When we transform the app into on-stay, we are not bombarding them with offers, it is not all about transactions, it is more about engagement and the full end-to-end experience than pushing people to book through the app.” A key piece of advice he gives is to “remove the nonsense that doesn’t make any sense.”

Starwood was a launch partner for Apple Watch. The watch is tethered to the mobile phone so the watch app takes its cue from the phone app. Twenty-four hours before arriving you get an alert on the watch, it allows you to check in and activate the SPG Key, and you can check the point balance with the app.

## 4.2. What Features Should an Airline App Include?

Any airline considering launching an app should bear in mind the basics that users need to negotiate their flight known as the minimum viable product - check-in, flight data and flight bookings. As Lufthansa’s mobile and sales manager Elke Rosak, says: “I would say there is a minimum viable product that is absolutely the check in, the flight data, and flight bookings. If you have a frequent flyer program, a link to that and the timetable, that is the minimum function. The boarding pass should be stored in the app so you have it accessible even if you are not connected to the internet, otherwise an app doesn’t make sense in my opinion. In addition to the basic features, the Lufthansa App differentiates by offering a very personalized travel assistant on the app homescreen with real time push notifications concerning the booked flight, baggage tracking, and many more features.

“If you are talking about an app versus the mobile web, an app only makes sense if you offer services in the app that are not available on the mobile web. Some storage functions, offline information, or logic that the web cannot offer, are examples.”

## 4.3. What Features Should a Hotel App Include?

Any decent hotel app should include the basics of booking, check-in, check-out, payment, a link to a customer loyalty scheme and possibly the ability to order room service. Extras could include booking restaurants and hotel services such as spas.

**“ In the near future people will use their mobile device to handle everything: open the door of the room, make a request to the staff, pay and check out. We will look at companies who are not embracing these changes, as we would judge a car without the air conditioning, assisted steering or electric windows. ”**

However, some believe that the app should respond to all the needs that a hotel guest might have or they may feel it is inadequate. Fabrizio Di Martino, Social, Mobile and Programmatic Manager for IHG Europe, says: “I believe every single innovation that enhances the guest experience should be part of the app, because this is exactly what people are expecting. The bar has been raised by the likes of Uber, Waze, and Facebook, and nowadays the consumers are expecting the same quality in each mobile app.

Soon this will be a differentiator for consumers, as reviews are today. In the near future people will use their mobile device to handle everything: open the door of the room, make a request to the staff, pay and check out. We will look at companies who are not embracing these changes, as we would judge a car without the air conditioning, assisted steering or electric windows.”

However, some point out that these comprehensive apps need to be built up over time and through iterating functionality – testing, getting feedback and using this to upgrade the app over time.

#### 4.4. The Cost of Native App Development.

We spoke to four mobile app developers, Chelsea Apps Factory, Pocket App, Apadmi, and Fueled.com, and mobile marketing consultancy Somo for quotes of how much it would cost to develop an airline app and a hotel app with the features we have outlined above.

*Table 4: Average Cost of Developing an Airline App*

Features Required	Airline app with booking, check-in, flight data and loyalty scheme
Estimates given from developers	GBP 200,000
	GBP 200,000
	GBP 300,000
	GBP 300,000
	GBP 150,000
	GBP 600,000
Average Cost	GBP 290,000

*Table 5: Average Cost of Developing a Hotel App*

Features Required	Hotel app with reservation, check-in, check-out, payment, hotel information and loyalty scheme
Estimates given from developers	GBP 200,000
	GBP 200,000
	GBP 300,000
	GBP 120,000
	GBP 600,000
	GBP 600,000
Average Cost	GBP 284,000

Some estimates worked out the cost of app development for each platform – iOS and Android – at roughly the same, then doubled them to get the overall price. An app may need to be adapted to iPad, Apple Watch and Apple TV, as well as BlackBerry and Windows. And it may need to be translated into between 10 and 20 different languages. This all increases the costs of development.

Pocket App said its estimates often come in lower than other large developers as it does much of its own development in Mumbai, India with the lower costs that brings. The estimate for Fueled.com was in US dollars, so has been listed in pounds at the current, post-Brexit, lower exchange rates.

**“The biggest issue in the hotel industry is you are almost certainly using a third party PMS and whether or not you are allowed to go into that system is a matter for the provider. If you haven’t got integration to the PMS you are at the beck and call of the PMS supplier to get you integrated.”**

Alastair Campbell, a strategic advisor to Chelsea Apps Factory, who was previously Customer Markets and Strategy Director at glh hotels, says that the front-end build is probably about the same cost for both platforms.

However, he notes that much depends on whether the back office systems are ready to be integrated into the app, such as Property Management Systems (PMSs).

“You can build the app for GBP300k and you get the basic thing, subject to integrating it to the core hotel Property Management System. In that case we have to have an API structure in place, with that it is pretty easy and cheap to make all the relevant connections to the PMS. If you don’t have that, the biggest issue in the hotel industry is you are almost certainly using a third party PMS and whether or not you are allowed to go into that system is a matter for the provider. If you haven’t got integration to the PMS you are at the beck and call of the PMS supplier to get you integrated.”

And brands need to take into account that the app development is just the up-front cost. The app needs to be regularly updated and the content managed and data processed. For mobile-first providers such as OTAs, this can mean having teams of developers, designers and content managers for each platform. But for a small hotel chain or airline, much of this work can be carried out by existing digital staff.

## 5. GET DOWNLOADED AND BECOME 'STICKY'

After spending heavily on developing an app, brands need to spend further sums on maintaining, updating and promoting the app to get the maximum number of downloads. For the larger mobile-first brands this means creating teams of developers, designers, analysts and marketers for each platform, iOS and Android. For smaller brands, this work can be carried out by existing staff and farmed out to specialist agencies.

### 5.1. Optimizing Presentation for Google Play and the App Store

There are various ways of boosting downloads, from paid-for promotions and search strategies, to finding clever ways of making the app stand out in app stores. App Store Optimization (ASO) is about optimizing your app to make sure it shows up higher in the app store's search rankings, so people are more likely to go to your app page and download the app. Factors that can influence the visibility of the app in the store include the number of downloads it achieves, the star ratings it gets from reviews, and the way it is named and presented.

App promoters need to use appropriate keywords in the titles of their apps – which might even include a competitor's name – to make sure the app surfaces in a variety of searches.

For instance, Hotel Tonight, which allows users to find discounted hotel rooms up to seven nights in advance, goes under the full name in the App Store of "Hotel Tonight - Great Deals on Last Minute Hotels for Travel, Vacations and Getaways." On installing the app, it reverts simply to Hotel Tonight. But the long name helps boost the app in searches for a range of similar services, for instance for LastMinute.com.

Brands use subtle methods with varying degrees of legitimacy to boost their searchability. Brands can download their own apps to boost their league table rankings. There are various services and software available to carry this out. Some believe Apple has struggled to make the App Store easily searchable, as its core skills lie in creating quality software and devices rather than in the complex and specialist area of search. The quality of search is higher on Google Play, as search is the company's bread and butter, so one would expect them to offer a premium service.

Getting good reviews and star ratings can be important to get more downloads and move up the search rankings. Of course, the best way to get good ratings is to create an effective, bug-free app that helps users achieve the objective promoted by the app. As mentioned before though, in the search for positive reviews, brands offer regular updates and release them frequently to the app stores. This gives customers more chances to review the apps, and the apps can be improved upon over time, taking on board previous reviews and comments.

A useful feature on Google Play is the ability for brands to respond to reviews of their apps, though this feature is not available on the Apple App Store. As Breffni Horgan, Head of Product and Design at Hostelworld, says:

"We find that if we respond to customers on Google Play in their native language, 80% of the time they will change their review. So if someone complains about a bug or something you have introduced, once you have fixed it, go back to that customer and say, we are really sorry to hear you have had a problem but now we have fixed the problem and eight times out of ten they will actually update their ratings."

She adds that one of the biggest drivers of downloads can be getting the app featured on Google Play or the App Store. "We work really hard at that, making sure the app is really well designed, making sure that the native technologies for either Google or Apple are operating within their platforms and their devices, and if you can open a dialogue with them that is great, though not easy to do." Building relationships with Google and Apple executives can be achieved by attending the developer conferences they organize, Google I/O and Apple WWDC.

However, with millions of apps crowding into the app stores, getting any kind of stand-out with the store is difficult. Michael Bayle, Head of Mobile at Amadeus, says travel brands need to go beyond simply raising awareness of their apps, they need to actively encourage use. “We have seen gravitational success for the apps of our airlines when an airline launches a promotion unique to that channel. A lot of our Asian and African channels have done this where a particular promotion would only be purchased through the mobile channels.” He says there needs to be a real incentive for people to download an app, for instance by offering an acceleration of loyalty points. “There are all kinds of things the merchandizing team or customer relations team can play with when encouraging use of their mobile investment,” he says.

## 5.2. Improve Search Visibility

With the app stores crowded with travel apps and searches dominated by OTAs, it can be hard for smaller brands to stand out from the crowd, so they will often promote their apps through other media. If you search “hotel” in an app store – or on Google – the OTAs such as Booking.com, Expedia or Hotels.com sit on the top of search results, above the likes of Starwood, Marriott or other top brands.

Web search is an important way that people discover apps beyond the app store. Research conducted by Google, in conjunction with Ipsos MediaCT, surveyed nearly 8,500 consumers who had downloaded an app in the preceding week. The results found that a quarter of apps are discovered through web search. Travel apps reportedly indexed higher than average here, with 30% respondents using web search to find their apps (Google, 2015).

News sites such as the Guardian, Forbes and specialist sites such as PC Magazine, compile lists of the best apps for different sectors. So it is important to try and get your app on one of these lists. This means creating a public relations strategy for the app, making the app known to bloggers and social influencers, and promoting it in the press.

### 5.2.1. Paid-for Promotion

An element of paid promotion will be essential for boosting downloads and use of an app. Apple announced, before its Worldwide Developers Conference in summer 2016, that it was planning to overhaul the App Store, introducing a paid-for ad at the top of search results (Telegraph, 2016). Apple said there are hundreds of millions of searches on the App Store every week and that 65% of app downloads are driven by search. Introducing ads would mean apps could concentrate their advertising fire power in the place where they are actually discovered and downloaded, rather than through online or social media ads. Google Play features a carousel of ads on its homepage.

An ad strategy for apps is likely to look to reach a specific audience in media where they will be responsive to the message. App ads can appear on banners on websites or other apps, or as interstitials – pop-up ads within apps and webpages or on social media or in searches.

**“ We tease our apps on our desktop websites and in Google search results, so if you look for flights from Frankfurt to Barcelona, we offer the app icon to download if you don’t have it installed yet. ”**

Facebook offers very tight targeting of ads in its mobile app. Brands typically promote the app alongside their everyday communications. Elke Rosak at Lufthansa explains the airline’s app promotion strategy: “We tease our apps on our desktop websites and in Google search results, so if you look for flights from Frankfurt to Barcelona, we offer the app icon to download if you don’t have it installed yet.”

“And we have smart app banners – open your phone browser and got to Lufthansa.com, then the mobile website portal is displayed and on top it encourages you to download the app and that is only shown if the app is not yet installed on the phone. We encourage the customers very much.”

Google’s research found that the most effective ad format among respondents who reported downloading an app via an ad was social media ads, whereas 49% reported being driven to a download through this format, versus 45% for websites, and 43% for video ads (Google, 2015).

### 5.3. Communicating with the Consumer

One of the great benefits of apps is push notifications, which allow brands to open up a new stream of communication with consumers. They resemble an SMS alert on the phone's lock screen or home screen and can be used for giving news, updates or encouraging consumers to take an action, such as to use a coupon. Since they reach the app user on their home screen even if the app is not open, they are powerful tools that can cut through to a consumer.

Push notifications are a way for brands to speak directly to consumers without the message getting lost in a spam filter or unread in the inbox. However, they need to be timely or the user will simply turn off notifications for the app or delete the app from their phone.

On a functional level they can be useful for travel brands to remind travelers about their timetables in advance of their departure, especially if there are issues on the expected route. However, on a commercial level they are also useful to sell ancillary products post-purchase or post-download.

### 5.4. App Analytics

Analytics is a vital part of an app strategy. App stores provide brands with data about engagement, views, and downloads that can help them tailor their apps and marketing strategies to the needs of users.

For instance, measuring impressions can tell a brand how many times their app's icon has been viewed on an app store, then measure what proportion of views leads to a download. Measuring views of the app page and comparing these to the number of downloads can tell a brand whether the page is effective. Marketing campaigns can also be matched with downloads to measure their effectiveness. Engagement metrics, such as the number of sessions app users access and which parts of an app they use, can help inform updates and changes to the app.

The data tells brands about how people are using the apps, allowing them to create relevant updates, but they can also give some deep insights into the way consumers use and engage with the brand as a whole. As Daniel Craig at Hotels.com says: "Hotels.com is a data-driven company. This is how we make all of our key decisions, from high level strategy down to the color of a button. We hear lots about test and learn, but I can confirm it is key to our success in product and marketing. Take the opinions out of it and let the users tell you which is best. Combining it with smart user research to add in the 'why' is highly powerful."

Simrat Sawhney, a travel and e-commerce specialist at Facebook in APAC, told an Eyefortravel panel for TDS Asia 2016 that travel brands are in fierce competition for customers to open their apps on their phones. Using dynamic retargeting, brands can try to re-engage a customer on mobile who has stopped visiting them on a website, and the mobile strategy can be used to reactivate lapsed customers.

"Facebook has mobile analytics where you can actually see, so you can plug in your app and see where in the funnel people are dropping off, you can see cohort analysis of what types of people are using the app, what type of people are taking which type of action. So there is a lot of detail that is going into driving both discovery and app engagement, specifically with the large travel advertisers," she said.

Alastair Campbell, a strategic adviser to Chelsea Apps Factory, says analytics need to be used across all the channels that a customer uses. "It is one thing to know what somebody on the app is doing but the most valuable thing is to know the person's interactions across the app, the website check out, the guest survey, because once you can see a customer's end-to-end experience, you have the opportunity to personalize." He says personalized marketing can be delivered by using the analytics to anticipate the user's intentions. So, if a user seems to be trying to book a certain kind of hotel room, those types of rooms should be put to the top of the page. "Make it easy for them the way predictive text does," he says. Analytics can also inform the push marketing strategy, making the notifications relevant to each person. "Data analytics apply to helping the customer get done what they want to achieve and to feel they are having a warm, hospitable experience. Those are worth more than anything else, because people are deeply suspicious of tailored marketing."

App analytics need to be combined with other types of research to find out about users and their needs. Rory O'Sullivan, mobile product manager at Momondo Group, which operates Cheapflights.co.uk, says the main aim for any brand is to create products that users love. With so much data available from mobiles, from location data to whether they are connected to Wi-Fi, the challenge is deciding the right piece of



data to focus on. Cheapflights also runs focus groups and interviews to get insights into what users do. "It is about getting a wider understanding of the users. Look at Pokémon Go, there's a core branch of technology that people are playing around with and using and experimenting with that will become the norm for people in the future." These types of innovations are used to find new initiatives for engaging with customers. Cheapflights has launched Facebook Messenger chat bot to people can ask questions such as "where can I got that is really hot." And it has launched a system where users can search for flights across its sites and apps using an emoji, such as a koala to denote Sydney and a sushi emoji for Tokyo.

## 5.5. Case Study: TripAdvisor

Travel review brand TripAdvisor has one of the world's top performing travel apps, with 230 million downloads, while its website has some 350 million monthly unique users and 290 million reviews and opinions. Yenyi Fu, Director of Mobile Product, told EyeforTravel's San Francisco Summit 2016, that mobile app users are more loyal – a user with the app is three times more likely to write reviews than a mobile web user.

Outlining the brand's app strategy, she advises brands to "follow the user". TripAdvisor actually follows users around while they are taking trips, such as going to museums and restaurants, to see how they use the app.

"Other kinds of testing are important – understanding how the user is using the product and having everyone on the team understanding how it is used is super important for us. This has informed hundreds of tweaks."

The brand's research showed that users plan their next day in their hotel room using a map. So TripAdvisor built offline content that they could use without Internet access. The "near me now" button, which uses TripAdvisor ratings to pick the best of what is nearby, has been made contextual, for example showing places for breakfast in the morning hours. The brand looks at usage of the app from a number of perspectives, such as the ways people use the app at home when they are planning a trip, compared to when they are in destination.

For example, hotel bookings are made from home in planning mode, with users comparing lists. But when people are at their destination, they shift their mindset and become more conscious about the location. They use maps three times more in location compared to when they are at home. Once in destination, they use the app more often, perhaps opening it three, five or seven times a day.

One of TripAdvisor's greatest strengths is the sheer scale and amount of content it holds about hotels, restaurants and places to visit.

Fu said: "We really leverage that to drive more app downloads for us. So if you go to the TripAdvisor website and have the app installed we push you directly to the app, if you don't have the app installed at specific locations in the mobile web experience, we will push you to download the app – hey, it is much better to view this experience if you are trying to look at maps, for example, on the mobile app."

She says TripAdvisor uses a lot of AB testing – where two groups are tested, one with a new initiative, the other without, and the results compared.

"We build a culture around speed, scalability and the ability to rapidly test. The process we have come up with is where we are building constantly. Every time a software engineer writes a new bit of code, we merge it and we build. Every two weeks we take that build and do testing on that and ship it to the app stores.

"On Android we do a partial release, we ship 10% and make sure all the performance metrics are met and then we go to 100%. We also build into the infrastructure the ability to really do AB testing at scale. So the apps you have on your phone for TripAdvisor will regularly phone home and discover what tests should be running and what tests are turned off, so we can be doing AB testing at any time. We turn tests off if they are not working."

The company took a controversial decision to no longer allow users to write reviews on the mobile web to funnel them towards the app. There were worries that this would lead to a loss of reviewers, but she says that it was the right decision because app users are so much more loyal and engaged.

Source: EyeforTravel, 2016b



## 6. PARTNERSHIPS AND DATA SHARING

### 6.1. Partnerships Power

The explosion in data and digital technology has blurred the lines of competition between many services as companies look to piggyback on the success of rival brands. This has led to a focus on creating partnerships between brands, something which is becoming more relevant in the travel industry. Taxi-booking app Uber has struck recent deals with hotels and airlines, while Priceline and TripAdvisor created a partnership in 2015 to share TripAdvisor's Instant Booking facility (EyeforTravel, 2016b). This trend to what has been termed "co-opetition" is turning rivals into "frenemies" and reinventing the business models of many companies.

This is all about putting the customer center stage in the digital world. Brands are simply gateways for consumers to achieve their goals, so they need to remove obstacles to creating a seamless travel experience. But this means enabling customers to make use of either rival services or parallel products along the way. That may require finding a way of sharing the revenues or ensuring that both partners benefit in some other way.

### 6.2. The Potential of Data Sharing

Uber has built its business on creating partnerships across the mobile spectrum. A ride can be booked from within a hotel app while information about the hotel booking can be accessed from inside the Uber app.

Glenn Stress, Starwood Hotels Director of Digital for the Americas, told the EyeforTravel conference that the hotel group struck a partnership with Uber last year on its Starwood Preferred Guest mobile app which serves the chain's loyalty scheme. "They are a great partner for us, you get cross-over points for taking Uber around your stay 24 hours before and after, as well as in stay. So we wanted to make sure we had a seamless way to actually incorporate Uber into our app. You click on directions and contacts and right there is "Ride with Uber". When you click on that you get a pop-up saying "Go to the Uber app". If you are already in our app and looking at directions, there is a probability you will want transportation, so in that case we are happy to pass along that person in a seamless way. It is not about always aggressively marketing or driving things to the app. It is all about adding value in a seamless way."

Uber has struck a deal with Hilton to integrate the two brands' apps. Hilton guests can order an Uber from the HHonors app, though travelers must have both apps on their phones. Uber passengers can access the "view stay details" option in the Uber app, which takes them to the HHonors app, where they can check in. Guests can also set reminders to request an Uber and use the HHonors app to access a guide of restaurants, bars and other places that Uber riders frequently visit (Hilton Worldwide, 2016).

Intercontinental Hotels Group (IHG) has also jumped on board. IHG Rewards club members can sign up to Uber using an IHG promo code to get USD20 off an Uber and earn 2,000 IHG Rewards Club points, which can be used toward a future stay. Like Hilton, IHG guests can set Uber "ride reminders" before their stay, and starting this year, they will be able request a ride from within the IHG app through the Uber app.

Similarly, flyers with the American Airlines' Executive Platinum status or AAdvantage Aviator MasterCard get a USD25 coupon off an Uber ride. The United Airlines app allows passenger to book a trip, check flights status and order an Uber. Meanwhile, Southwest Airlines is collaborating with the ride app Lyft.

**“ We find the phenomenon of data sharing very active in Asia. ”**

Michael Bayle, Head of Mobile at Amadeus, is skeptical about the power of some of these tie ups: "Everyone puts out a press release around this – Marriott, Hyatt – that they have integrated Uber, so a hotel can keep the

user intertwining with their hotel app. But in reality, it is one thumb away, I question the long term viability of that – if I am an Uber user, I call up Uber myself."

He foresees opportunities for travel industry partnerships in messaging apps such as WhatsApp and Messenger. In Asia, messaging services WeChat and Line are becoming much more transactional and he says the opportunities for data sharing are "phenomenal."

WeChat has one billion users, mostly in China. Bayle says it has mechanisms to share data to allow different providers in the travel chain to interact.

“Where I have booked three events – airline, taxi and hotel reservation – and like dominoes, when one goes wrong, they all go wrong, how will the car service know I’ll be late, or the hotel know that I’ll be frustrated when I arrive?”

“In WeChat, those systems are very fluid and apps can capture that data and then signal back to headquarters that these events will happen. In Apple iOS or Android, that is not either technically possible nor for privacy reasons. We find the phenomenon of data sharing very active in Asia.”

Delivering a seamless, joined up experience in travel is certainly an aim for many travel brands. Where OTAs were once seen as big rivals and enemies of the airlines, over time the carriers have come to accept their existence and have found ways of working together. However, airlines have started to look to get more out of their relationships with OTAs. In 2015, Lufthansa announced that it would impose a Euro 16 surcharge on flights booked through third-party websites (BBC, 2015b). This affects tickets bought through Lufthansa, Austrian Airlines, Brussels Airlines and Swiss.

### 6.3. APIs and Integration

DigitasLBI Head of Mobile Ilicco Elia believes travel brands have to make their APIs and feeds widely available so customers can access information about prices and bookings from any site. “There is no reason I shouldn’t change my seat on a flight through TripAdvisor. It is more about cooperation than getting people to come to my site and application. The companies that will do well will expose their capabilities to as many people as possible.”

**“ It is more about cooperation than getting people to come to my site and application. The companies that will do well will expose their capabilities to as many people as possible. ”**

This creates a system of value creation where brands share revenue from operations carried out on their sites for other brands. For instance, hotel websites should advertise their hotels on Google maps by having a feed integrated with the app. The same feed could be supplied to British Airways and Thomson Holidays, “so you have four or five different sales funnels coming in,” he says.

Hotels.com Senior Director of Mobile Daniel Craig says the OTA works with a variety of companies, affiliates and distribution partners, and creates tie-ups to get value-added content on the site. “These arrangements bring more shoppers to our sites, which is a good thing. We are always open to exploring partnerships which make Hotels.com more useful and improve our customer’s experience with us.”

The OTA also partners with other providers to boost customer numbers. Hotels.com recently integrated Uber into its Android app, so customers can book an Uber during their stay. This was launched through a partnership with Button, the mobile app discovery platform. “Their marketplace offers a simple and efficient way to scalably build partnerships on mobile that add complementary services and drive revenue, all with a great user experience,” says Craig.

Button uses a technology known as “deep linking” which allows apps to communicate with specific areas of other apps in a similar way to clicking on a web link. The company styles itself as an “affiliate marketer for the app world.” For instance, restaurant booking app OpenTable has a Button inside the FourSquare app, so users can choose a table without leaving FourSquare, then click through to the OpenTable app to finish off the booking.

Button has formed partnerships with the likes of Uber, OpenTable, FourSquare and a number of delivery apps and there was speculation that it would also tie up with Airbnb. Other businesses offer similar solutions, such as Quixey and URX, which was recently bought by Pinterest. Facebook and Google are also working on deep link technology to boost search inside apps, opening up the possibility of further partnerships between travel providers.

There are various technologies that allow hotel brands to connect with customers. The CheckMate platform enables OTAs to link customers who have booked through them with the hotels they are going to stay at to specify their preferences and arrival times. Alice, the hospitality technology provider, offers an app which allows hotel guests to communicate with hotel staff. Expedia has invested in Alice, which is used in many Expedia partner hotels.

## 6.4. Case Study: Hostelworld

Hostelworld, is the leading global hostel-booking platform, teamed up with Gogobot to create customized travel experiences for its customers. The feature, called “My Trips” offers travelers relevant information about what to see and do in the Hostelworld App when they arrive at their destination.

Breffni Horgan, head of product at Hostelworld, explained that when the brand created its own native app after having had a hybrid app, it looked to perfect the app. It offered innovative features such as scanning users’ credit cards and storing details securely in their account for frictionless checkout and they developed fingerprint log in to make the experience as fast as possible.

“Then we thought what is next for the mobile app? How do we enrich the experience for customers, so we can actually communicate with them and enhance their in-trip experience based on what we know about the area and the hostel? One of the things we started looking at was content partnerships. So when someone lands in Rome, wouldn’t it be great if Hostelworld could tell them the top five things to do in and the top five places to eat? We spent a bit of time looking at different partners and given that we are very focused on hostels - we are not a general OTA - and we want to showcase hostels so it feels like the sort of content that we would write ourselves. When we found Gogobot we talked to them and looked at their data, their data was really nicely segmented so we would only surface information that was relevant to our customers who crave adventure, sociability and the real side of travel. What we do now is if you have a booking in say Rome, a couple of days before you get there, we will send you information about what the weather is like, what you should pack, the different things to do and places to eat in that particular location.

“And when you get there, the app actually changes and shows you that on your home screen, you’ll easily find directions to these things to do, where to eat and we also surface reviews from Gogobot about those interests.

“It is about using the strength of our partnerships to enhance the whole travel experience. It is a trial launched in April, we are pretty excited with how it is going so far.”

## 7. MOBILE SECURITY

### 7.1. The Security Picture - How Big is the Problem?

As mobile ownership grows and digitization spreads across the world, cybercrime, fraud and data theft are predicted to rocket. The travel industry is said to be in the front line of criminal hacking as the growth of the app economy and online booking makes it susceptible to a number of types of cybercrime.

### 7.2. What are the Costs?

A report by Juniper Research predicts that cybercrime will cost the global economy USD2.1 trillion by 2019, which it says is “almost four times the estimated cost of breaches in 2015” (Juniper Research, 2015). IBM’s Chief Executive, Chairman and President Ginny Rometty said that cybercrime could be the biggest threat to every company in the world (Forbes, 2015).

Part of the challenge of mobile security is the sheer breadth of sources from which attacks can be mounted. Mobiles are vulnerable to attacks from the mobile web, from apps and through networks such as WiFi connections. As mobile devices carry so much of our personal information, all travel brands need to be alert to the security issues that can arise. That said, many of the security threats and data breaches affecting travel brands have come through raids on back-end data, with information from property management systems being stolen through cyberattacks.

A major attack occurred in June 2016 when JTB, one of Japan’s largest travel agencies, announced that data from nearly eight million customers had been compromised after an employee opened an infected email (Japan Times, 2016).

Summer 2016 has seen a number of attacks on travel brands. HEI, which operates hotels for Starwood, Marriott, Hyatt and Intercontinental, admitted that malware designed to collect credit card data was found on its systems. This has put at risk the payment card data from tens of thousands of food, drink and other transactions at the hotels. The malware affected some 20 hotels in total (NBC News, 2016). In 2015, some customers complained about data being stolen from their British Airways Executive Club scheme accounts, though the company said it thought only a small number of loyalty club members were affected.

Some see mobile as an increasing area of concern with flights and hotels booked using fraudulent or stolen credit cards. Then there are fraudulent travel websites offering discounted flights and hotel bookings which take payments, then close down.

Apps can present many types of security issues for mobile devices. “Malicious apps” are specifically designed to commit fraud. Even some legitimate software can be exploited for fraudulent purposes. Apps can fall victim to malware, which performs actions when installed on your phone, such as giving an attacker control over your device. Spyware can collect private data from the mobile to be used in identity theft or financial fraud. Security experts say some of the biggest problems arise from individuals falling victim to phishing scams where they give away log-in data or account numbers.

Despite all of these threats, many app developers play down the risks of security breaches from their apps and from mobile phones in general. “In terms of an individual’s privacy, I think we are more secure now than we have ever been,” says Ryan Matzner, Business Development Director at Fueled.com.

With basic security practices, customers’ mobile data is extremely secure, he argues. Data breaches tend to be from back office systems, compromising tens or hundreds of thousands of details at once, rather than picked up piecemeal from individual mobile phones.

“But, by and large, most information is quite secure assuming precautions are taken – such as not having an obviously guessable password.”

The biggest security issue he sees is with users' email addresses, which are the master key to their lives. "If you forget the password for one of your services, you can usually reset that by going through your email account, so if your email account is insecure, that becomes your point of weakness through which everything else can be accessed. Sometimes people will establish an email account years earlier so their password might not be super secure, they might have security questions for resetting their password that are easily guessable or publicly searchable, such as which district did you grow up in, which is easily findable on anyone's Facebook page."

### 7.3. Basic Security Precautions

Starbucks admitted in 2014 that its app-stored passwords and usernames on the mobile device in clear text which was not encrypted, so users would not have to re-enter their password every time they bought a coffee. But that allowed anyone with access to the phone to see the details by connecting the phone to a computer. Brands are advised not to store sensitive information, such as passwords or credit card details, directly on the mobile device. But if they do, they should be stored securely, either in the encrypted data section of the iOS keychain or the encrypted storage in the internal app data directory on Android (CNN Money, 2014).

The development of fingerprint security technology makes it difficult for malicious actors to access a mobile phone.

When creating an app that links to booking systems for hotels or airlines, those back-end systems need to be secured against access from malicious players. APIs are another area where brands need to ensure they are adequately secured with encryption systems.

On the whole, having data that is well-encrypted is a basic precaution, and that encryption needs to be kept up-to-date as hackers can quickly catch up with, and foil, the latest protection systems.

### 7.4. Reducing Vulnerabilities

Machine learning is a way of teaching computers to learn from data in the same way as humans learn from past experience, but using software, statistics and data. This is a departure from the standard systems which use "rules-based" security, where a given set of criteria are fed into the system and if any breaches of the rules are spotted, the action is closed down.

Sift Science is a US digital security business which uses machine learning to anticipate fraud and cyberattacks. It has implemented its machine learning security systems with a number of travel operators and mobile apps. Founder and Chief Executive Jason Tan says mobile threats come in all shapes and sizes. Whatever problem can occur on a desktop can also happen on a mobile. This could include an account takeover, where an email purporting to come from a leading brand leads a user to a website and asks for security details. On mobile, Tan says many apps connect to APIs. If hackers can trace the source of an insecure API they can write code to access it, meaning the secure castle of the app has an open side door.

"On a mobile app you have an even smaller window of time to capture the attention of users and convert them into a paying customer or an engaged customer. You have to do it on a very small piece of screen real estate in seconds or minutes. Having a frictionless customer experience is critical but how do you balance that with risk and security and make sure you are only opening the doors for the right people at the right time?"

Businesses try to improve the customer experience by reducing the number of steps, clicks or swipes for the mobile user, but this can mean shrinking the security capability. Tan argues that using a machine learning system that builds up a knowledge of fraudulent threats and unusual activity is a powerful way of protecting mobile business strategies (see case study.)

Digital security experts say that after taking basic security precautions, the greatest risk to company data is from employees falling for scams and leaving the data exposed after working on it through their own device, which has limited security protection. Hiring a data security consultant is a way to ensure that the right steps are taken to protect data. Educating company staff about the precautions they need to take is a vital step, alerting to them to all the latest scams and giving them examples of companies that have been hacked. Some scammers seek to gain confidential data by pretending to be customers over the phone. They often work by catching employees off their guard.

Alastair Campbell, adviser to Chelsea Apps Factory, says: “We have some big security challenges coming down the pipe on the Internet in general and mobile in particular in transactions. It doesn’t really hit the hospitality sector first because most people pay through a credit card which is there to protect the consumer from any fraud.

“I would imagine, related to mobile transactions, security is going to start to become an issue, not so much with hotel apps, but with credit cards. I would agree security isn’t a huge issue for the travel industry, though my suspicion is financial security is going to become an issue and will affect us at some point.”

## 7.5. Case Study: Sift Science

Sift Science works with major travel apps to use machine learning to identify fraudulent activity. A leading mobile travel app has been downloaded millions of times on iPhone, iPad and Android and Windows Phones. With an eye to security, the app’s managers began quantifying the impact of fraud and found that it was a real and growing problem for their bottom line. They didn’t have a fraud solution in place, nor know how to start tackling the problem. Meanwhile, the company was seeing an increasing number of chargebacks where credit card operators were demanding they pay for fraudulent actions.

### Challenge: Predicting fraud before it occurs

The app’s business is based on an immediacy, which makes it impossible to assess each transaction for fraud – there simply isn’t time. A rules-based fraud solution would have been ineffective given the spontaneous transactions and the dynamic and rapid-fire nature of their fraud problem. Rules couldn’t keep up.

A way round this was to predict fraud before it happened, rather than reacting to it afterwards. Once a booking was made, the funds transfer immediately, making researching or canceling the transaction nearly impossible. The fraud problem was further complicated by the fact that they were experiencing multiple types of fraudulent behavior, ranging from chargebacks and credit card testers to referral code fraud.

The brand looked to integrate Sift Science into its app. They analyzed typical data fields like order and transaction information, allowing Sift Science to learn and detect the fraud unique to the app. Within weeks, the brand had implemented a powerful machine learning fraud prevention system with Sift Science that was customized, and it worked seamlessly with their internal fraud review team.

After six weeks of using Sift Science, the app’s fraud analysts said they were seeing “amazing” results. During that time, Sift Science’s fraud prediction accuracy improved as the app’s team taught the machine learning system about their fraudulent activity. Over time, the app’s Sift Scores became more accurate and they were able to determine if a user was bad or good, making it easy for their team to take quick and definitive action.

### Results

The app’s security team grew more efficient as Sift Science honed in on their unique fraudsters. Eventually they were confident enough to let the app automatically ban and decline users without any manual review by integrating Sift Science’s APIs into their app. The team now block 6.5 times more fraudulent orders automatically. Since implementing Sift Science, the app has seen their chargebacks drop by over 50%, while also reducing the time spent on manual reviews.

# METHODOLOGY

EyeforTravel conducted 14 focused, semi-structured and in-depth interviews between July and August 2016. These were conducted via email and phone to gather our case studies and comment throughout the paper.

EyeforTravel also conducted consumer and industry surveys to gather data for this research.

EyeforTravel conducted a UK consumer survey using an online panel obtained in conjunction with marketing research firm TapResearch. This survey was conducted between 1st of June 2016 and 18th June 2016. It was conducted entirely online. Overall 2,806 respondents began the survey and 2,268 completed the survey. There was a qualifying question where respondents who had not taken an international or a domestic vacation within the last 12 months were disqualified from further questions in order to have a group that could accurately answer travel-related questions.

The panel of respondents was designed to give a spread of UK residents that would be capable of representing the country in terms of age, gender, location, and income.

EyeforTravel conducted a German consumer survey using an online panel obtained in conjunction with marketing research firm TapResearch. This survey was conducted between 21st July 2016 and 31st July 2016. It was conducted entirely online. Overall 2,944 respondents began the survey and 2,193 completed the survey. There was a qualifying question where respondents who had not taken an international or a domestic vacation within the last 12 months were disqualified from further questions in order to have a group that could accurately answer travel-related questions.

The panel of respondents was designed to give a spread of UK residents that would be capable of representing the country in terms of age, gender, location, and income.

An industry survey – the EyeforTravel Marketing and Mobile Strategies to Engage the Connected Traveller, 2016 Survey – was conducted from 25th May 2016 to 17th July 2016. It gathered 183 respondents. It was targeted at individuals working in marketing and technology sectors within Europe from EyeforTravel's database of travel industry professionals. They self-identified as the following:

Hotel / Airline / Airport	26.1%
Travel Agent	8.4%
Tour Operator	10.1%
Intermediary – OTA, Metasearch	8.4%
Payments provider	1.7%
Technology or solution provider	20.2%
Railways/ Cruise / Ground transportation	4.2%
Other (please specify)	21.0%



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