Hotel Mobile Apps. The Case of 4 and 5 Star Hotels in European German-Speaking Countries

Asta Adukaite, Annina Melanie Reimann, Elena Marchiori and Lorenzo Cantoni

Abstract The importance of mobile internet for travel and tourism has been widely acknowledged, nonetheless the different typologies of mobile applications, their design and usefulness are still under researched. In order to contribute to such analysis, this paper studies the "supply side" of hotel mobile applications adopting two research approaches, which complement each other. First, it draws a comprehensive map of contents and services offered by 80 iOS mobile apps of 4 and 5 star individual hotels as well as hotel chains in European German-speaking countries. Second, beside such objective analysis, the point of view of hotel managers is considered, studying both those whose hotel/chain features an app, and those who are not or not yet offering one. The main drivers for publishing an app are: increasing the loyalty and promoting special offers as well as enhancing the interaction with the guests and providing information about the destination. The main reasons for not publishing an app are: perceived irrelevance for the business, absence of added value to the guests' satisfaction, difficulty to estimate the return on investment as well as lack of economic resources.

Keywords Hotel mobile applications · mTourism · Online communication · Mobile marketing

A. Adukaite (✉) · A. M. Reimann · E. Marchiori · L. Cantoni
Webatelier.net Faculty of Communication Sciences, Università della Svizzera italiana, Lugano, Switzerland
e-mail: asta.adukaite@usi.ch

A. M. Reimann
e-mail: annina.melanie.reimann@usi.ch

E. Marchiori
e-mail: elena.marchiori@usi.ch

L. Cantoni
e-mail: lorenzo.cantoni@usi.ch

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1 Introduction

Due to the growing penetration of smartphones worldwide, the significance of smartphone applications in the tourism sector is strongly increasing. In particular, it is possible to access a wide variety of tourism and hospitality related mobile applications (Wang et al. 2010) that, among other things, include gaming, music, communication, social media, news, and booking features (Millennial Media 2013). Whereas the topic of mobile applications in tourism has been extensively investigated by various scholars (Wang et al. 2011, 2010; Wang and Fesenmaier 2013; Kennedy-Eden and Gretzel 2012), only little research has been carried out so far in the field of mobile applications in the hospitality industry (Buhalis and Yovcheva 2013). According to Schaal (2012), mobile applications of an individual hotel may be perceived as useless by users as the existence of numerous mobile booking applications seem to replace their function. However, for the next years a major change is expected in the hospitality sector: the focus is likely to shift from the pre-consumption phase, consisting mainly of room bookings and room presentation, to the consumption stage, which is characterized by "during the stay functionalities" such as hotel room upgrades, dining reservations, spa reservations, room environment controls and TV controls (Buhalis and Yovcheva 2013; EyeforTravel 2013; Hotelmarketing.com 2013).

Therefore, this paper aims at contributing to the literature on hotel mobile apps by analysing the current offer in terms of contents and services of mobile applications of independent and chain 4 and 5 star hotels in Austria, Germany and the German-speaking regions of Switzerland. Moreover, this research investigates hotel managers' perspectives, providing insights into their attitudes towards and adoption of mobile applications, and studying their perceived level of effectiveness of the features of such applications.

Finally, besides the contribution of this research to investigate an emerging sector, namely mobile applications and hospitality, it is argued that the results may help hotel managers who are interested in designing a mobile application for their hotels. Moreover, hotel managers may find it useful to refer to this study to benchmark the current strategies used in adopting hotel mobile applications, and to check their offer against the currently most and least offered contents and functionalities.

2 Literature Review

2.1 Mobile Applications in Tourism

Smartphones often assist tourists in their travels (Kenteris et al. 2009; Wang and Fesenmaier 2013) and have a significant impact on the travel activity (Wang et al. 2010). Wang et al. (2010) argue that today's travellers are constantly seeking for

information in order to reduce their uncertainty and they make use of their smartphones as travel assistants throughout all trip phases. Especially before and during the trip, they rely on mobile technologies to simplify the travel by searching for information about transportation, accommodation, attractions and activities. Travellers also use smartphones in order to communicate with others through emails, calls, text messages and social media. Furthermore, the phones also represent self-entertainment tools for gaming, listening to music, photographing, sharing pictures, watching movies or reading news.

Looking at the supply side, several categorizations of the mTourism landscape (Kennedy-Eden and Gretzel 2012; Wang and Xiang 2012; Dickinson et al. 2012) have been proposed to unfold the complexity and diversity of the field. Kennedy-Eden and Gretzel (2012) have created two taxonomies, the first one with seven categories, based on the services travel-related apps provide, namely "Navigation", "Social", "Mobile Marketing", "Security/Emergency", "Transactional", "Information", and "Entertainment", which are again divided into several sub-categories. The second is based on the level of customization and classified in seven main areas, ranging from "Personal Preferences"—which indicates the highest level—to "Location Sensitive", "Security/Data Control", "Control through Web", "Content Addition", "Aesthetic Changes", and ultimately applications that cannot be customized in any way and that offer no sort of interaction (ibid.).

Besides studying conventional mobile tourist guides (Rasinger et al. 2007; Kenteris et al. 2011), scholars are also investigating location-based, context-aware (Höpken et al. 2010; Barragáns-Martinez and Costa-Montenegro 2013; Lamsfus et al. 2013), augmented reality (Yovcheva et al. 2012) applications, as well as mobile applications in the business context of various tourism suppliers such as airlines (Liu and Law 2013), theme parks (Brown et al. 2013), or hotels (Kim and Adler 2011).

2.2 Mobile Applications in the Hotel Industry

Little research has been done so far regarding mobile applications in the hotel industry; however, several hypotheses suggest that the usage of a hotel mobile application might strongly link the customer to the hotel's brand and that such an app might increase brand awareness, which, in turn, could lead to stronger loyalty towards the hotel's brand (Kim and Adler 2011). From the industry's perspective, the TripAdvisor 2012 Industry Index survey (2012) confirmed this hypothesis by revealing that 47 % of worldwide and 54 % of German hoteliers planned to interact with their guests by using mobile applications in 2012. The most recent developments regarding hotel mobile applications draw on features from the airline industry (EyeforTravel 2013), a sector that is well-known for being an early adopter (Liu and Law 2013). Moreover, a shift from the pre-consumption phase, which mainly consists of room bookings, to the consumption stage is becoming visible, through functionalities such as online check-in, hotel room upgrades, dining reservations, spa reservations, room environment controls and TV controls

(EyeforTravel 2012, 2013). In addition, it is expected that also ideas from the restaurant industry will soon be adopted, for instance pre-ordering room services that allow skipping the line (EyeforTravel 2013).

Several hotel chains, luxury resorts and 5 star hotels already offer mobile applications, whereas independent hotels' mobile presence still appears to be rather weak (Kopsa 2012; O'Rourke n.d.). Mobile applications are provided more frequently by hotel chains, possibly because they are often faster to adapt to new technologies thanks to higher marketing budgets and resources, and because their clients may use them for trips to various destinations. However, most of these hotel mobile applications only provide basic functions such as an overview of the chain properties, a booking system and loyalty-program management (Fossel 2013; Hotelmarketing.com 2013). Nevertheless, some outstanding hotel mobile applications exist: Ritz-Carlton's app, for instance, uses a GPS technology in order to recognize the guest when he/she arrives and to send him/her location-specific advice (Fossel 2013). Another good example is the "state-aware" design of Starwood's mobile application, which changes the display according to the customer's current consumption stage (Hotelmarketing.com 2013). Moreover, Holiday Inn has introduced an augmented reality app, which allows guests to see virtual Olympic and Paralympic athletes in their own hotel room or in the hotel lobby (Buhalis and Yovcheva 2013). Thus, guests can watch for example Nick Dempsey, Britain's best windsurfer, surfing on their beds with the bed sheet (McKenzie 2012). When it comes to bookings carried out through mobile devices, in 2012 mobile bookings accounted for 7 % of bookings through hotel-owned online channels, a figure that is 12 times higher than in 2010. However, it seems that mobile booking systems are mostly used for last-minute offers (Hotelmarketing.com 2013).

This paper aims at contributing to the so far limited literature on hotel mobile apps, especially with respect to individual hotels, by investigating the state-of-the-art of hotel mobile applications of 4 and 5-star hotels in Austria, Germany and the German-speaking regions of Switzerland.

3 Research Design

The research consisted of two main phases: (1) a contents and functionalities analysis of 80 iOS hotel mobile apps in European German-speaking countries to map current hotel mobile applications; (2) an online survey of hotel managers to understand current strategies applied in the implementation of hotel mobile apps.

Phase 1: Hotel Mobile Apps. Contents and Functionalities Analysis

The sample for the content analysis consisted of iOS (the mobile operating system developed and distributed by Apple Inc) hotel mobile applications available in the Swiss iTunes Store from March 4 to April 18, 2013. Hotel mobile applications were selected, firstly, by identifying the top 25 touristic destinations in European German-speaking countries (i.e. Austria, Germany and Switzerland) according to the overnight stays in 2011 and 2012. This analysis was based on the

statistics provided by Statistik Austria, Statistisches Bundesamt in Germany and Bundesamt für Statistik in Switzerland. In the second step, a search in the Swiss iTunes Store was carried out within the "travel" category by inserting the keyword "hotel" plus the name of a previously identified destination and the country. An example of a search is thus "hotel+Stuttgart+Germany". Among 136 dedicated hotel mobile applications that were retrieved by the system, only 4 and 5 star hotels were considered. The number of apps was consequently narrowed down to 89, among which 66 belonged to independent hotels (25 from Austria, 24 from Germany and 17 from Switzerland), and 23 to hotel chains, meaning that several hotels were contained in one app. After adding the criteria that the hotel chains had to be listed under the top 20 hotel brands in the ranking of worldwide brands in 2012 or 2013 provided by MKG Hospitality (Hotel Online 2012; MKG Hospitality 2013), and that the apps had to be dedicated to a specific hotel, 14 hotel chain smartphone applications remained. All in all, the final sample consisted of 80 apps.

The retrieved iOS applications were investigated with the help of an analysis grid designed to identify and rank the applications' contents and functionalities (Lizzi et al. 2013). This grid is based on indicators, i. e. types of content or functionality that should be relevant both for the domain and for the users (Cantoni et al. 2007). "Content" refers to information presented in the form of text, pictures, audio, or video; a "functionality" represents an action that can be performed by the user, such as searching or sharing (Lizzi et al. 2013). The list of relevant indicators for the domain of hotel mobile applications was determined by means of an explorative analysis, in which the inspectors browsed through a series of sample applications and identified their features with regard to contents and functionalities. These indicators were then bundled into categories and sub-categories. The final grid contained 124 indicators grouped into six main categories of contents and functionalities: (1) the hotel itself; (2) the booking process; (3) the destination where the hotel is located; (4) social media interaction; (5) extras; and (6) settings.

Following this, the authors inspected the identified applications' contents and functionalities by means of the created grid, indicating the presence or absence of an indicator in an application with the values 1 and 0 respectively. It is important to emphasize that the chosen approach does not yield any information on the quality of the contents and functionalities present in the investigated apps.

Phase 2: Hotel Managers' Perceptions Analysis

A survey design (online questionnaire) was chosen in order to investigate the attitudes of hotel managers towards and their adoption of mobile apps for their businesses. A panel of 1,504 hotel managers from 4 and 5 star hotels in Austria, Germany and Switzerland were contacted twice between June 3 and July 14, 2013. The contact list of hotels was provided by a Swiss tourism event agency. Additionally, the online questionnaire was sent to the 80 hotels that had been selected for the contents and functionalities analysis in the previous phase.

The survey included four sections: in section one the managers were asked to indicate if their hotel already had a mobile app or was planning to develop one and if not, what were the reasons; in section two, the respondents should provide information about their strategies in designing a hotel mobile application; in

Section three they were exposed to various hotel mobile app functions and functionalities, which had emerged from the first research phase, and they were asked to indicate the level of importance of the indicators for their strategy. All items in Sect. 3 were measured using a 4-point ordinal scale ranging from 1 (very important) to 4 (unimportant) and including the option "NA—not applicable". Finally, Sect. 4 consisted of demographic questions that would help understand better the respondents' profiles.

In total, 35 hoteliers completed the survey, which corresponds to a response rate of 2.26 %. It should be underlined that low response rates ranging from 1 to 20 % are common in organizational surveys (Anseel et al. 2010).

4 Results

4.1 A Map of the Hotel Mobile Apps' Features in the European German-Speaking Market

The contents and functionalities analysis resulted in 124 features/indicators present in the hotel mobile apps in the European German-speaking market. The most frequent indicator was "indication of hotel location" (present in 89 % of hotel mobile apps), followed by "rooms description" (81 %) and "restaurant menu" (84 %). Furthermore, 78 % of the analysed hotel mobile applications provided their contact information; a description of the room amenities was present in 74 % of the cases, followed by the presence of a photo gallery (73 %). The option of booking online was slightly less present, (69 %) together with the possibility to call or send an email (58 %) in order to book a room. Interestingly, 60 % of the hotel mobile applications contained information regarding conference facilities and allowed instantly to check the availability of the rooms in a specific time period. In general, attention was also devoted to specific facilities, such as restaurants, saunas, and bars, 59, 55 and 54 % respectively.

As for the least present indicators, most of them were part of the category "extras and social media", namely Facebook recommendation (8 %), blog (6 %), podcasts (6 %), mPostcard (6 %), online reviews (6 %), restaurant reviews (3 %), Foursquare (3 %), games (3 %) and newspapers (1 %), suggesting an early stage of interest by hotels in providing interaction with the guests through their mobile devices. Also indicators within the category "Destination" showed a rather weak presence (e.g. attractions (31 %), shopping (25 %), things to do in summer (20 %), snow report (6 %), ski-shuttle service (4 %), ski ticket prices (1 %), etc.), which indicates that features linked to the destination where a hotel is located still appear to be considered but less importantly. Moreover, only few hotel mobile apps presented information about last minute booking (9 %) and virtual tours (4 %).

In order to understand which business directions hotels from different countries are following with their mobile applications, an *ad-hoc* matrix was designed,

grouping the features into four main categories that had emerged from the contents and functionalities analysis.

Figure 1 depicts a business direction matrix, where the extreme points on the horizontal axis indicate if an application highlights information about the hotel *versus* the application focusing on information about the destination where the hotel is located. On the vertical axis the extreme points are: the application tends to conversion/booking *versus* the application tends to entertain customers.

The matrix reveals three clusters: the first cluster "hotel/conversion" is situated in the upper left square. These applications place emphasis on information about the hotel and on booking or, in other words, on the pre-consumption phase of travel and selling. The second cluster "conversion/destination" is situated in the upper right square. Applications in this cluster are destination- and booking-oriented, meaning that they provide extensive information about the destination but also stress the booking option. Many German hotels seem to focus on these two characteristics that are part of the pre-consumption and the consumption phases. The lower left square represents the cluster called "hotel/share and entertainment" with hotel mobile applications that are experience- and hotel-oriented. They primarily provide information about the hotel and offer entertainment and social media features in order to enhance the hotel stay experience. Therefore, these applications mainly focus on the consumption phase, more specifically on the stay at the hotel. The matrix suggests that it is chiefly Swiss hotels that use such a combination. The lower right square called "destination/share and entertainment" is a combination of providing information about the destination and entertainment and can be regarded as an information guide for the consumption phase. However, only one Austrian hotel is present in this square.

4.2 Hotel Managers' Perspectives on Using Hotel Mobile Apps.

Among the 35 hotel managers who completed the online survey, 25 were female and 10 male; 21 respondents were 40 years old or younger, 12 respondents were aged between 41 and 60 years; 16 came from Austria, 12 from Switzerland, and seven from Germany. The majority of respondents declared to work in the sales and marketing department (13), followed by managers (12), assistants/interns (4), and front office employees (3). Among the 35 respondents, 23 indicated to not provide a hotel mobile application, whereas the remaining 12 had a smartphone application for their hotel.

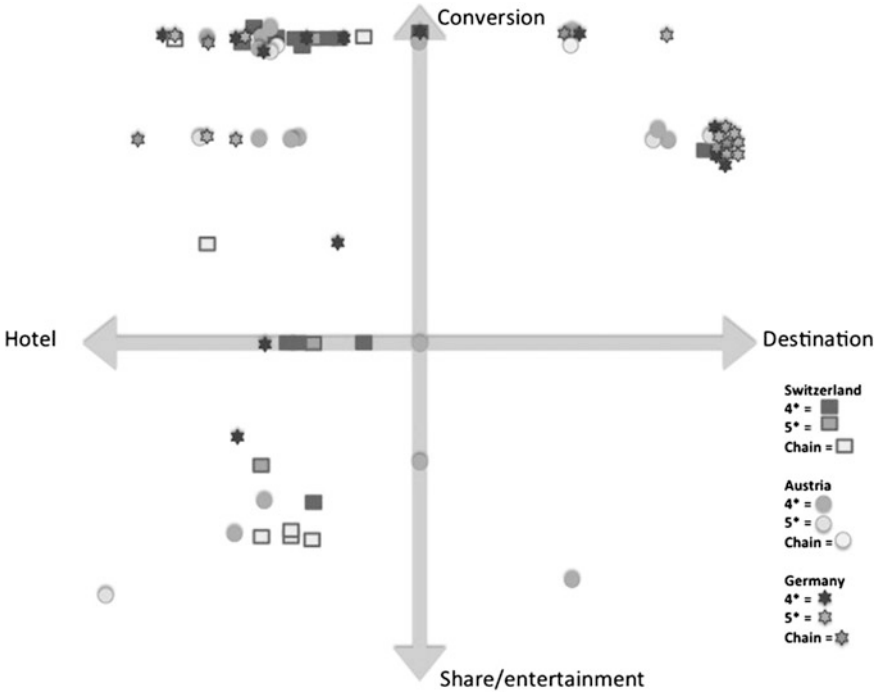

Fig. 1 Hotel mobile applications' business directions' matrix

4.3 Approach and Characteristics of Hotels Without a Mobile Application

All 23 respondents who reported not having an app come from independent hotels. 10 hotels are located in Switzerland followed by Austria (7) and Germany (6). Concerning the type of destination, most respondents (13) answered that their hotel was situated in a mountain destination, five belonged to a city hotel, and other five to hotels located close to a lake or a sea. Regarding the star rating, the majority of hotels (19) were categorized as 4 star or 4 star superior, and the remaining four hotels belonged to the categories 5 star or 5 star superior. As for the main audiences of the hotels, 20 hotels indicated to mainly attract couples, followed by families with children (15), groups (10), business travellers (9) and individual travellers (9).

Among the 23 respondents who answered that they did not have a mobile application, four planned to develop one within the next 12 months, while 19 hotels did not have and did not plan to develop a smartphone application. The main reasons why hotels had not implemented a mobile application were: (1) a smartphone application was not relevant for their business and would not add any value to their guests' satisfaction (10); (2) difficulty to estimate the return on

investment as an obstacle (8); (3) lack of economic resources to implement a mobile application (7). Six respondents provided specific reasons, key concepts of which are reported below:

- "Mobile applications are already out of fashion"
- "Word of mouth is better than mobile applications"
- "For an independent hotel an application is completely senseless. Everyone already downloads a lot of mobile applications and does not use them. On the other hand, a mobile version of a website is appropriate, we have it as well"
- "A mobile version of a website is a useful alternative to a mobile application for hotels since there is no need to install it and contents can be changed anytime without update"
- "First, we have to define how a mobile application can add value to the guest and afterwards we can start to think about the implementation"
- "Conservative attitude of the owner".

4.4 Perspectives of Hotels that have a Mobile Application

Eleven out of 12 respondents with a mobile application were working in independent hotels and only one in a chain hotel. 50 % of respondents (6) were located in Switzerland followed by Austria (5) and Germany (1). 8 respondents referred to their region as a mountain destination, three answered to work for a city hotel, and one described his/her hotel's region as a combination of lake and city. Regarding the star rating, the majority of hotels (10) belonged to the 4 star and 4 start superior category, whereas two respondents indicated that their hotels were rated as a 5 star. Concerning the main audiences of the hotels, nine of them mainly catered for couples, followed by business travellers (7), families with children (7), and groups (6). The least represented audience category was individual travellers with 4 responses.

Among the 12 respondents who declared to have a hotel mobile app, only five stated to track their mobile application downloads, indicating a download frequency of around 50 per month. Regarding the regularity of updates, seven hotel representatives claimed to update their hotel mobile application weekly or even daily, whereas five respondents said they would update it monthly or with a lower frequency. The majority of respondents (10) declared that their hotel mobile application was available in the iTunes Store. The second most frequent platform (8) turned out to be the Android market, followed by Blackberry (5) and Windows (4). All hotels offered their mobile application in German, whereas five of them give users the possibility to choose between German and English. One hotel mobile application was also available in Italian; other languages, such as French or Spanish, were not available.

Regarding the main goals that hotels seek to achieve with their mobile applications, 9 respondents stated that their hotel aimed at increasing customer loyalty

and at promoting special offers. Increasing interaction with the guests and providing information about the destination were the second most mentioned objectives (8), followed by "growth of bookings" (7) and "service quality" (6). Less pursued goals were "increase guest satisfaction" (3) and "add value to the guest experience by entertaining them" (2).

Results show a diverse use of mobile apps with regard to different publics. In particular, 11 out of 12 respondents are interested in reaching business travellers, followed by families with children and couples (10). With nine responses, individual travellers are the third most relevant audience group for hotels, whereas groups appear to be of less importance for most of them. Furthermore, the most significant target markets are domestic travellers (11), followed by neighbouring countries' travellers (5) and international travellers (4).

Concerning the usage of hotel mobile apps by guests, respondents declared that they had designed their mobile applications in order to reach the guests before they would book their hotel stay (9), and for the actual stay at the hotel (8). Half of the respondents (6) considered their smartphone application as useful for the phases between the guests' booking and their arrival at the hotel and after the stay at the hotel.

Based on the features found in the contents and functionalities analysis (first research phase), the hotel representatives were asked to indicate the effectiveness of the features corresponding to: (1) Hotel, (2) Destination, (3) Social media and entertainment. All respondents regarded the promotion of special offers and the description of how to get to the hotel as the most effective indicators. 11 respondents perceived general information about the hotel as important. Indicators referring to gastronomy, multimedia, room and table booking were considered significant by 10 respondents, a description of the rooms, provision of news and an overview of available conference facilities by nine, the room prices by eight respondents.

When looking at respondents' statements regarding information features about the destination where the hotel is located, results suggested an overall interest in the provision of such information. A total of 10 hotel representatives stated that providing information about summer and winter activities as well as events were important features. Also information about the destination in general (9), a webcam and weather forecasts (8), as well as sightseeing information (8) were rated as significant for a hotel mobile app.

Finally, the effectiveness assessment of features referring to social media and entertainment generally reveals that hotels perceive these elements as less important. However, all respondents declared that the possibility of sharing the hotel's webpage on Facebook was important, followed by the option to like the page (11). Inviting users to fill in an online review was also considered as a useful app feature (10). Only few hotel representatives (4) declared that games and newspapers were of importance to them. The least frequent indicators were podcasts and mPostcards, with three and two answers respectively.

5 Discussion and Conclusion

The analysis of the current offer in terms of types of contents and functionalities of mobile applications for independent and chain hotels in the European German-speaking market revealed that hotel mobile applications generally focused on informational and functional contents since the most frequently found indicators were related to hotel information and facilities, as well as to booking.

Moreover, indicators referring to the destinations where hotels are located also showed high frequencies, suggesting that hotels see the mobile application as an additional communication channel to enrich their clients' experience while at the destination. However, results indicated that hotels are not ready to design a smartphone application to directly communicate with the guests or to entertain them, although they mention interaction with their customers as one of the main goals of providing a smartphone application. Besides, these findings are substantiated by the two main identified clusters of hotels, one of which clearly concentrates on hotel information and booking, whereas the second one focuses on booking and information about the destination.

Concerning the hotel managers' perspectives on hotel mobile applications, it appeared that the majority of respondents' hotels did not provide a mobile application. Most frequently mentioned reasons for this choice were: a lack of relevance for their business, lack of clear indicators for estimating the return on investment, lack of money to implement mobile applications. However, among those who declared having implemented a hotel mobile application, the respective marketing goals appeared to be very diverse, and ranged from increasing loyalty, promoting special offers and growing bookings to increasing service quality. Likewise, the most important features for hoteliers were related to selling, as well as to information about the hotel and about the destination. Features associated with social media or entertainment were evaluated as unimportant except for Facebook and online reviews. To conclude, hoteliers currently design mobile applications to inform their guests about their hotel facilities and about the destination, and to invite them to book a hotel room.

6 Limitations and Future Research

Besides the contribution of this research to investigate an emerging study field, namely mobile technologies and hospitality, some limitations should be mentioned. Hotel mobile applications represent dynamic technologies that are updated and changed quite frequently. Consequently, the outcome of the analysis, which was carried out from March 4 to April 18, 2013, might not correspond to the current state of smartphone applications in the hospitality industry. Additionally, the small number of respondents to the hotelier survey limited the study, so that the results cannot be generalized. The low response rate may have been influenced by

seasonality: some of the hotels in the mountain destinations might have been closed when the survey was distributed. Moreover, the results could be biased since the survey was sent to the 80 hotels selected for the grid analysis that certainly had a hotel mobile application.

This research also indicates some future research directions. In particular, the perspective of the "demand side" should be investigated in order to understand the customers' standpoint regarding hotel mobile apps and their information needs. Moreover, other countries as well as hotels of ratings below 4 and 5 stars could be taken into consideration. Furthermore, the analysis of hotel mobile applications could be expanded to include other platforms such as Android, Blackberry, or Windows. Finally, the role and usage of destination and other tourism-related applications should be investigated in order to understand the peculiarities and added values impacting the decision-making process to download a hotel mobile application.

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