

## Customer Experiences with Hotel Smartphone – A Case Study of Hong Kong Hotels

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### Abstract

Competition in the hotel industry is intense in Hong Kong. Providing personalized services through the latest technology is a comparative advantage that hotels can pursue. Recently, many hotels have started to provide complementary “handy smartphones” to guests and have received a positive feedback. This study explores the experiences of customers on the complementary “handy smartphones” provided by hotels and identifies the factors affecting the actual smartphone usage behavior. A survey of 121 hotel guests was conducted on seven major aspects of “handy smartphones” in four Hong Kong hotels. Results revealed that guests were mostly satisfied with the free smartphone provision of hotels. Price, security, and connectivity were among the important aspects leading to the actual usage of these smartphones. Recommendations on the enhancement of “handy smartphones” are provided.

**Keywords:** smartphone; hotel; Hong Kong; customer experience

### 1 Introduction

The number of smartphone users has rapidly increased in the recent years of the technological era. Statistics from eMarketer (2014) shows that the number of smartphone users worldwide has reached 1.64 billion, and this number is expected to increase by 32% to nearly 2.16 billion in 2016. Given their affordable price, advanced technology, and usage convenience, smartphones are used daily for different socializing, information searching, and online purchasing activities. Thus, many businesses have become mobile-centric to capture such a market.

A smartphone is a must-have item for many travelers. The research team of InterContinental Hotels Group reported that 67% of travellers use smartphones daily during trips (InterContinental Hotels Group, 2014). In the late 2013 survey by Google, checking news and weather respectively ranked as the first and second popular smartphone usage activities, followed by activities related to information search and socializing through various social networking sites (Google, 2014).

To fulfill the needs of guests on Internet access during their hotel stay, many of such

establishments have provided in-room WiFi services either as a complementary service or as an additional amenity with a small charge. Guests who also want to be connected outdoor through their smartphones while travelling around the city normally hire a portable WiFi device prior to departure from their home country or upon arrival at their destination. Guests with such a preference can also purchase a prepaid SIM card with Internet access; the price of this SIM card varies from one country to another. However, travelling to destinations with language barriers and where users cannot be connected with their original phone numbers may be frustrating. Considering these limitations, some hotels in countries such as Hong Kong, Singapore, and Thailand have started to offer “handy smartphones” to in-house guests since 2014.

“Handy smartphones” are brought to travellers by Tink Labs in 2013. Tink Labs claimed to be the first technology company providing in-bound travellers a comprehensive mobile travel platform around the globe (Tink Labs, 2014). Hotel guests can enjoy unlimited free-of-charge local and international calls to such countries as Australia, China, Japan, the UK, the USA. Furthermore, more than 40 apps are preloaded in each “handy smartphone” in several categories, including social networking (e.g., Facebook and Weibo), news and information (e.g. BBC News and weather), basic utilities apps (e.g. gallery, camera, clock, and calculator), and games (e.g. Angry Birds) and entertainment (e.g., movie and music) (CNN Travel, 2012). With regard to connectivity, unlimited 3G Internet access, Bluetooth, WiFi hotspot, and USB tethering support are enabled. In-bound travellers are the targets of this service; thus, city guide, attraction, and restaurant recommendations as well as various coupons and discounts of products and services are preloaded in each “handy smartphone.” Guests can also install apps according to their own preferences (GIGAOM, 2013).

Hotels can customize their “handy smartphones” to cater their target market in terms of dock, hotel home screen, technical integration, content, push messaging, reporting, and so on. Different plans, designs, and features are provided for partner hotels (Tink Labs, 2014). These “handy smartphones” could offer several advantages to hotels by providing guest engagement and product promotions that hopefully will increase revenue and enhance customer service. As a recent innovation in the industry, how well this product offering satisfies hotel guest and the factors affecting its usage behavior remain to be studied. Basing from a case study of four hotels in Hong Kong, this study aims to investigate the actual usage experiences of hotel guests on the different aspects of these “handy smartphones” and how their usage is associated with various demographic and other factors. Such findings would help hotel practitioners formulate their marketing strategies and further improve their product offerings in the near future.

## **2 Background**

### **2.1 Development of Smartphone**

Mobile phone development can broadly be divided into three stages: dumb phones,

feature phones, and smartphones. Dumb phones only provide voice communication and text communication (SMS); hence, this section focuses on feature phones and smartphones.

Feature phones are an advanced version of dumb phones and are embedded with user applications such as games, multimedia, digital camera, or video streaming (Mohammad and Ahson, 2006). Keyboard and additional function keys are normally found on feature phones. Users could install additional software on their phones through web browser on the basis of the Global System for Mobile Communications and Universal Mobile Telecommunications System (Schiefer and Decker, 2008). A feature phone designed with one or a few stand-out features becomes a “camera phone,” “music phone,” and so on. Feature phones are usually more expensive than dumb phones because of the former’s additional capabilities (Goswami, 2013). Although smartphones are more convenient to use than feature phones, Hatfield (2014) summarized several reasons why feature phones are still needed by some individuals. One major reason is using a feature phone as a backup when the smartphone is stolen or broken. Users with a tight budget and elderly are often the major markets for feature phones.

Being the evolved version of feature phones, smartphones provide more features. The multi-tasking feature of smartphones is one of the significant developments explaining their being “smart.” As expected, these highly sophisticated smartphones are more expensive than feature phones. Apart from normal voice and text communication, email and WiFi connectivity, social networking functionality, and 3G/4G network compatibility with dual or quad-core processors are also enabled in smartphones. The new and enhanced features available in smartphones include content transfer by NFC technology and navigating or locating friends through the GPS. Given their other useful and powerful capabilities such as editing and sending documents, recording HD videos, and enhancing image quality, smartphones to some extent could almost be regarded as a mini Notebook computer (Goswami, 2013). Another notable feature of smartphones is that data entry with the keyboard is replaced with a touch-sensitive display triggered by either fingers or a pen.

## **2.2 Values of Smartphone to Travelers**

Despite the oversupply of information on the Internet, researchers found that most travelers behave rationally. They would normally first gather the information available, compare with various information sources, and select the one with the most credibility before making their final decisions (Fodness and Murray, 1998). At present, smartphones provide an alternative platform for travelers to search for information. Some scholars have identified four characteristics concerning mobile technology, which could offer a huge potential for tourism practitioners to add values on their product/service. These characteristics are ubiquity, personalization, flexibility, and dissemination (Siau et al., 2001). Compared with traditional wired connection or Notebook devices, mobile technology has the advantages of being mobile and flexible to conduct tasks more effectively. Wang, Park, and Fesenmaier (2012) also revealed that smartphones can mediate touristic experiences by changing tourist behavior and

emotional states such as coping with unexpected situations and provide excitement.

The benefits and flexibilities offered by mobile technologies are partly attributed to the rapid development of numerous travel applications that are readily available on smartphones. A number of studies have attempted to group these travel applications into various categories. Grün, Werthner, Pröll, Retschitzegger, and Schwinger (2008) first classified these applications into 12 categories based on the nature of services offered, namely, accommodation; emergency, safety, and security; entertainment; gastronomy, navigation and orientation; news; practical information; shopping; sports; tourist attractions; transportation; and weather. Subsequent research by Kennedy-Eden and Gretzel (2012) distinguished travel-related applications into seven categories, namely, navigation (GPS and route search); social (social networking and communication); mobile marketing (contests/awards, alerts, and discounts); security/emergency (medical emergency and information); transactional (finance/banking, tickets/reservation, and shopping); entertainment (games, video/TV, music, e-reader, photography, and fantasy sports); and information. Wang and Xiang (2012) conducted a similar study based on a survey of 300 users, which identified 12 categories of smartphone (iPhone) apps that support travel. These are flight information managers, destination guides, online travel agencies, facilitators, attraction guides, entertainment, food finders, language assistants, local transportation guides, augmented reality, currency converters, and tip calculators.

### **2.3 Smartphone Usage Behavior**

Choudrie et al. (2014) divided user groups in terms of smartphone feature usage into those aged below and above 50 years. The top five smartphone features used by the below-50 age group were making calls, taking photos, browsing websites, using social networks, and text messaging. For the over-50 age group, the top five smartphone features used were making calls, text messaging, e-mailing, taking photos, and browsing websites.

Owing to the high demand for smartphone use during travel, an important hotel selection criterion for most travelers is the availability of complementary WiFi and basic in-room facilities that can support their usage of their own mobile devices. Despite such a high demand, a survey conducted by Marr (2012) on 152 respondents revealed that actual smartphone usage during foreign travel dropped significantly compared with usage in home countries because of high charges on data roaming overseas. Most of the respondents opted to switch off data services (95%) and use only calling or texting functions (81%) when traveling abroad. To avoid roaming charges, 53% of the respondents used money-saving measures such as free WiFi services provided by hotels and 37% used a local country/area SIM card as an alternative. Personal data security is also a major concern when using mobile services such as online payments. Other major issues related to smartphone use during travel are insufficient WiFi access, followed by weak signal coverage, slow connectivity, low battery life, and complex hardware configuration (Hanrahan & Krahenbuhl, 2012).

## 2.4 Conceptual Model

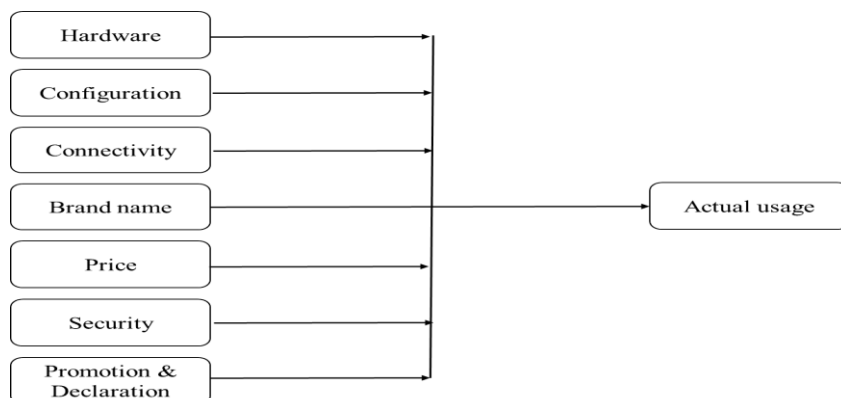


Figure 1. Conceptual Model

Although smartphones provided by hotels may not be the same as the devices owned by travelers, prior studies on smartphone usage behavior can be used as references to construct a research framework. The present study proposes a conceptual model (Figure 1) of the factors that influence the actual usage of smartphones provided by hotels to their guests. These factors include hardware configuration, connectivity, smartphone brand, price, security, product promotion, and declaration on terms and condition.

## 3 Methodology

With reference to prior literature, a questionnaire was initially designed with 18 measurement items that correspond to seven major aspects to examine the factors that affect usage of hotel handy smartphones. To enhance the accuracy and reliability of the questionnaire, the researcher conducted a pilot test involving students of the School of Hotel and Tourism Management at The Hong Kong Polytechnic University. After revision of the questionnaire text, the final version was designed in both English and traditional Chinese. The questionnaire has two screening questions on whether the hotel guest was 18 years old or above and whether the guest would use the “handy smartphone” provided by the hotel during his/her stay. The questionnaire consisted of five sections. The first three sections asked the respondents to indicate on a seven-point Likert scale their levels of actual satisfaction, perceived importance, and actual usage, which correspond to the seven aspects of handy smartphones during their stay in a particular hotel. The fourth section examined the willingness of the hotel guests to pay for such a service, and the last section collected the demographic data of the respondents in terms of gender, age, educational level, purpose and length of stay, and nationality. Statistical software package SPSS (version 23) was used to conduct data analysis.

The samples for this study were the in-house guests of the hotels that offered handy smartphones to their guests. Four invited hotels (two 5-star and two 4-star) agreed to participate in the survey. The data were collected from guests who accomplished the questionnaire placed at the front desk or in guestrooms, as well as at the lobby where the researcher was present from February 16, 2015 to March 27, 2015. A total of 121 usable responses were collected.

#### 4 Findings and Discussion

Among the 121 respondents, 41 were from the two 4-star hotels and 80 were from the two 5-star hotels. The proportion of males and females was almost evenly distributed. Majority (45.5%) of the respondents were in the 26-to-35 age group. Over 80% of the respondents had bachelor or higher educational degrees. Most of the respondents traveled for leisure (n=89; 73.6%). More than three-fourths stayed in the hotel for two to four days.

In terms of nationality, 20 respondents were British, 17 were Chinese, 13 were Australian, and 13 were Korean. Asian respondents accounted for almost half of the responses (n=58; 47.9%), followed by Europeans (n=32; 26.4%) and Americans (n=17; 14%).

Tables 1 and 2 present the actual usage satisfaction and importance ratings of hotel guests on various aspects of handy smartphone usage during their stay. Regarding satisfaction levels, out of the seven major aspects, six had overall mean scores between 5.33 and 5.99, which showed that the respondents were mostly satisfied with the smartphone provided. These factors were hardware, configuration, connectivity, price, security, and promotion. For specific items within these factors, the item “price – free of charge” ranked highest with a mean value of 6.68, followed by “hardware – screen size” (5.88) and “connectivity – WiFi” (5.84). “Brand name” (4.75) was the only factor with a mean rating below 5. Regarding the importance of these smartphone factors, price was the most critical factor in actual usage with a mean value of 6.41; security and connectivity were also critical factors with mean values of 6.31 and 6.12, respectively. Interestingly, “brand name” had the lowest mean score of 3.82 although it was rated as the least satisfactory item. This result implies that the smartphone brand may have a minimal effect on actual usage, and that the brand may matter only in relation to security and function at a reasonable cost.

**Table 1.** Mean Ratings of Satisfaction with Smartphone Factors (n=121)

Smartphone Aspects	Mean	Std. Deviation
Hardware – Specification	5.73	1.041
Hardware – Screen size	5.88	1.115
Hardware – Color of handy	5.29	1.200
Hardware – Battery life	5.45	1.354

Hardware – Weight	5.51	1.239
<b>Mean Average</b>	5.57	–
Configuration – Operating system	5.28	1.134
Configuration – Storage	5.29	1.083
Configuration – Display	5.49	1.111
<b>Mean Average</b>	5.35	–
Connectivity – 3G	5.78	1.173
Connectivity –WiFi	5.84	1.118
Connectivity – Bluetooth	5.28	1.253
Connectivity – Call quality	5.76	1.096
<b>Mean Average</b>	5.67	–
Brand name – Brand	4.75	1.199
<b>Mean Average</b>	4.75	–
Price – Free of charge	6.68	.580
Price – Deposit	5.29	1.417
<b>Mean Average</b>	5.99	–
Security – Data privacy	5.78	1.208
<b>Mean Average</b>	5.78	–
Promotion – Introduction / demonstration	5.31	1.257
Promotion – Terms and conditions	5.35	1.078
<b>Mean Average</b>	<b>5.33</b>	–

**Table 2.**Importance of Smartphone Aspects (n=121)

<b>Smartphone Aspect</b>	<b>Mean</b>	<b>Std. Deviation</b>
Hardware	5.42	1.413
Configuration	5.19	1.540
Connectivity	6.12	1.077
Brand name	3.82	2.017
Price	6.41	.963
Security	6.31	1.183
Promotion	5.21	1.349

As shown in Table 3, with regard to the 14 features of the handy smartphone, more than 70% of the respondents indicated “mapping and navigation” as one of the most frequently used features during their travel. Approximately 60% used the “phone calls” and “travel guide/itinerary” features. More than 30% indicated that they often used the smartphone to browse websites (37.2%) and connect to social networks (33.1%). The least frequently used features were “voice search” (0.8%) and “currency exchange” (0.8%).

**Table 3.** Most Frequently Used Features (n=121)

<b>Features</b>	<b>Frequency</b>	<b>Percentage</b>
Mapping and navigation	87	71.9
Making phone calls	71	58.7
Travel guide/itinerary	71	58.7
Browsing websites	45	37.2
Using social networks	40	33.1

E-mailing	31	25.6
Taking photos	29	24.0
Translation	27	22.3
SMS/text messaging	20	16.5
Calculator	18	14.9
Using VoIP	18	14.9
WiFihotspots	18	14.9
Downloading applications	5	4.1
Filming videos	5	4.1
Playing games	4	3.3
Voice search	1	0.8
Currency exchange	1	0.8

Although all the mobile smartphones in the 4 surveyed hotels were provided free to the guests, 38% of the respondents were willing to pay a daily fee. Among these respondents, most (26.1%) were willing to pay HK\$50 per day. On the opposite side, 2 respondents (4.3%) among the total 121 indicated their willingness to pay only HK\$5 per day. Overall, only 17.3% of the respondents were willing to pay a daily fee of above \$50. These findings imply that most hotel guests regarded the provision of smartphones as a welcome service that they would pay for if necessary.

Two independent sample t-tests were conducted to analyze how the satisfaction and importance levels of various smartphone aspects would vary with gender (Table 4). Female guests were found to have significantly higher satisfaction level than male guests on the factors “connectivity – Bluetooth” with a mean value of 5.58 Vs 4.97 ( $t = -2.77, p = .006$ ) and “connectivity – call quality” with a mean value of 5.95 Vs 5.65 ( $t = -1.99, p = .049$ ). Compared with male users, female users in general were relatively less interested in technical aspects (such as Bluetooth) of smartphones; thus, the former group may be satisfied more easily as long as the device is functioning. This finding is reflected in the significantly lower mean score (5.92) on the importance of “connectivity” as perceived by female guests compared with male guests ( $t = 2.19, p = .032$ )

**Table 4.** t-test Results on Significant Effect of Gender on Satisfaction and Importance Levels of Smartphone Aspects

Variable	Smartphone Aspects	Mean (s.d.)		t-test for Equality of Means		
		Male	Female	t	df	Sig (two-tailed)
Satisfaction	Connectivity – Bluetooth	4.97 (1.25)	5.58 (1.20)	-2.77	119	.006
	Connectivity – Call quality	5.56 (1.18)	5.95 (.98)	-1.99	119	.049
Importance	Connectivity	6.34 (.82)	5.92 (1.25)	2.19	119	.032



From the perspective of the purpose of stay, the t-test results in Table 5 indicate that leisure guests (mean = 5.92) had a significantly higher satisfaction level than business guests (mean = 5.38) on the factor “connectivity on 3G” ( $t = -2.30, p = .023$ ). The probable reason is that business guests generally have a greater need to stay connected constantly with their clients or companies. The smartphones of business guests are often considered as an essential communication channel; thus, these guests are likely to be more demanding than leisure guests with regard to 3G connectivity.

**Table 5.** t-test Results on Significant Effect of Purpose of Stay on Satisfaction Levels of Smartphone Aspects

Variable	Smartphone Aspects	Mean (s.d.)		t-test for Equality of Means		
		Business	Leisure	t	df	Sig (2-tailed)
Satisfaction	Connectivity – 3G	5.38 (1.31)	5.92 (1.09)	-2.30	119	.023

One-way ANOVA was conducted to determine how the satisfaction and importance levels of smartphone factors vary with the age of hotel guests and hotel star rating (Table 6). Two significant relationships were identified. First, a significant relationship was observed between the age group and satisfaction level for the factor “hardware – weight” ( $F = 2.294, p = .049$ ). A post-hoc test showed that guests in the 66-and-above age group had a significantly higher level of satisfaction (mean = 6.33) than those in the 18-to-25 age group (mean = 4.93). Although all the mean values were above the 3.5 midpoint, the younger group of customers consisted of users who were generally experienced in using the latest smartphone models and therefore might be more demanding than older users with regard to the portability of the hotel-issued smartphone. Interestingly, the youngest group had the lowest mean value on the perceived importance of “data security” (mean = 5.36), which was significantly lower than that of the 26-to-35 age group (mean = 6.49). Owing to a limited number of cases that were classified in terms of specific nationalities and educational levels, the ANOVA test could not be conducted reliably using these two demographic variables. Lastly, hotel star rating did not have any significant effect on the satisfaction or importance level indicated by guests with regard to various smartphone aspects.

**Table 6.** ANOVA Results on Significant Effect of Age Group on Satisfaction and Importance Levels of Smartphone Aspects

Variable	Smartphone Aspects	Sum of Squares	df	Mean Square	F	Sig.
Satisfaction	Hardware – Weight	16.71	5	3.341	2.294	.049
Importance	Security	15.95	5	3.19	2.412	.04

## 5. CONCLUSION

The competition in the hotel industry is fierce. To remain competitive, hotels have to differentiate and add value to their products and services. The results of this study show that offering complimentary “handy smartphones” to guests is a promising way for hotels to keep up with the growing need to satisfy market demand. Of course, with the fast pace of technological change, constant market research and evaluation have to be conducted to fine tune both the smartphone hardware and the services in accordance with the needs and tastes of the target market. Thus far, studies on how smartphone usage relates to tourist perception and marketer expectations on mobile marketing are limited (Kim and Law, 2015). Notably, the use of smartphones during travel is also indirectly shaped by travel scenarios and personal characteristics (Wang, Xiang, and Fesenmaier, 2014).

In general, most hotel guests involved in the present study were satisfied with the hardware and features of the given smartphone. The highest mean and importance score on “price – free of charge” suggested that the complimentary offer was a pleasant surprise for the hotel guests. Front desk staff should exert further effort to promote the benefits of using the handy smartphone. Some hotel employees may be trained in using the smartphone so that they can assist guests in using such a device anytime. Although majority of the survey respondents are willing to pay for smartphone services, continuing the current free services and enhancing the features may be beneficial.

Regarding the features, navigation and travel guides are among the popular ones; thus, up-to-date applications related to these aspects should be installed. As guests are likely to take the device with them during their travel, the hotels may consider providing portable smartphone chargers for rent. Such a service will ensure sufficient battery power for whole-day usage of smartphones, especially if the guests use power-consuming features such as website browsing and navigation. Hotels still have a huge potential to promote their own facilities and services through smartphones although such a feature is not frequently used at present. By integrating the hotel services with the guest database, the hotel can offer highly personalized and customized services on the mobile platform in the near future.

Smartphone connectivity to the Internet through various means is another major concern of hotel guests. Thus, hotels have to consistently ensure fast and reliable WiFi connection within their premises. Hotels that cater to business travelers are likely to have a majority of male customers. The findings showed that male guests rated connectivity more highly than female guests did but the former were less satisfied with this aspect than the latter. Hotel managers may have to constantly ensure that the hardware specifications and capacity are sufficient to meet the growing demand for wireless connection at the hotel.

From the perspective of the smartphone provider, which in this case is Tink Labs, the findings suggested that the brand name of the handy smartphone may not be as critical as its technical performance. Thus, investment should be increased to improve the

hardware performance in terms of weight, speed, and design, as well as to enhance the software in terms of developing useful new applications. Further cooperation with current and future potential hotel clients may be necessary to identify and develop effectively customized products in the near future.

In conclusion, the initial investment costs for hotels to provide complimentary smartphones to their guests are undoubtedly high. These costs include not only the rental agreement charge set by the smartphone provider and the ongoing customized mobile application development, but also the potential revenues that are foregone, such as those for international calls and Internet connection. Additional expenses could be incurred in relation to loss and damage of smartphones as well as staff training. Nevertheless, such devices can facilitate personal guest management and internal product communication/promotion, which in turn could generate positive word-of-mouth on various social media platforms. With the fast development of sophisticated mobile technology and rising expectations of international travelers, the benefits could outweigh the costs in the long run.

The present study has certain limitations. The small sample size indicates that the findings cannot be generalized to the entire market. With the relatively short history of smartphones being offered by hotels, comprehensive comments on usage experiences are limited. Thus, future studies can expand the scope of the survey to other countries to generate a larger sample size.

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