

AN ANALYSIS OF THE GAP IN THE PERCEPTIONS OF HOTEL MARKETING MANAGERS AND BUSINESS TRAVELERS REGARDING INFORMATION TECHNOLOGY FACILITIES IN HOTEL GUESTROOMS IN HONG KONG

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This article reports on an analysis of the perceptions of business travelers and hotel marketing managers regarding in-room information technology (IT) facilities in hotels. Usable data were analyzed for 650 business travelers and 40 hotel marketing managers in the Hong Kong Special Administrative Region (China). One-Way ANOVA and independent *t*-tests were employed to examine significant differences between preferences and demographic variables and to examine whether there was a significant difference between the way business travelers and the managers rated the importance of in-room IT facilities. This study found that “adequate jacks and plugs,” “satellite/cable TV,” and “high-speed Internet access” were ranked by business travelers as the top three in-room IT facilities, whereas hotel marketing managers perceived “high-speed Internet access” to be the most important IT facility to business travelers, followed by “adequate jacks and plugs” and “satellite/cable TV in room.” Both business travelers and hotel marketing managers indicated there was a strong demand for hotels to provide assistance to guests who make use of IT devices in their room. However, over 50% of hotel marketing managers stated that their hotels had encountered difficulties in providing some of the IT services because of limited budgets and fast-changing technology.

Key words: Business travelers; Marketing managers; Guestrooms; Information technology; Hotel IT facilities; Hong Kong

The stunning speed in the development of new technology has inevitably changed many aspects of the hotel industry. In general, hotel executives nowadays use information technology (IT) mainly to (1)

increase efficiency and employee productivity, (2) improve guest services, and (3) serve as a source of revenue (Namasivayam, Enz, & Siguaw, 2000). It is not uncommon for hotels to use the Internet to take

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room reservations and provide information to guests, to purchase F & B supplies through the Web, and to utilize e-mail for internal communication to enhance the productivity of employees and improve the efficiency of the hotel's operation. Furthermore, IT is used to enhance guest services, and some in-room IT facilities such as a fax, Internet connections, and a central computer are also available for the use of guests.

Technology also plays an important role in the life of business travelers. A study carried out by the Bass hotel group has found that 65% of business travelers take their notebook computers, and more than half of them use it to check their e-mail and communicate with their companies ("Dawning of a New Era," 1999). Business travelers now expect first-rate telecommunication services in their rooms, similar to those available in their work places so that they can turn their hotel rooms into an efficient, usable office. Throughout the years, a number of studies have shown that the "availability of business facilities" occupies a very high priority when customers are making a decision about which hotel to use (Bauer, Jajo, & Wise, 1993; Burris, 1991).

In addition to providing a business center, many hotels are upgrading their guestroom business services (Koss-Feder, 1996). They have installed fax machines, satellite and cable TV, computer hook-ups, e-mail connections to the Internet, interactive TV, and even mobile phones in bedrooms to enhance their competitive edge. There is no doubt that in-room technology will continue to be a high priority in all hotel properties that continually upgrade their guestrooms, both for the efficiency and the comfort of their guests. However, what in-room IT facilities and services do business travelers perceive as being the most useful and important? What kinds of IT facilities and services do they expect to find in their hotel rooms today? Do hotel marketers really understand the needs of their customers when designing in-room IT facilities? Van Hoof, Verbeeten, and Combrink (1996) stated that most hotel managers are not technologically competent. They also argued that a lack of willingness and ability on the part of managers, as well as financial constraints, have caused hotels to fail to fully implement and use IT in their businesses. This implies that it might be difficult for hotel managers to understand the actual needs of their guests with regard to in-room IT fa-

ilities. To consistently deliver a high quality of service, hotel managers need to view quality through the eyes of the customer, as there can be a significant difference between consumer expectations and management perceptions of consumer expectations (Parasuraman, Zeithaml, & Berry, 1985). Therefore, it is important for hotel managers to rethink the use of technology across all segments of the product and service mix being offered to customers (Olsen & Zhao, 1997). This study assessed the relative importance of the in-room IT facilities as perceived by business travelers and hotel marketing managers to identify any existing service gap. Specifically, this study addressed the following questions:

1. How do business travelers implicitly assess the relative importance of selected in-room IT facilities?
2. How do hotel marketing managers think business travelers implicitly assess the relative importance of selected in-room IT facilities?
3. In assessing the relative importance of hotel in-room IT facilities, what are the similarities and differences in the perceptions held by business travelers and hotel marketing managers?

Business Travel in Hong Kong

The Hong Kong Special Administrative Region (SAR) is one of Asia's leading tourism destinations. According to estimates by World Tourism Organization (WTO) released in January 1999, Hong Kong was ranked 18th globally and second in Asia, after Mainland China (with arrivals of 24 million) in terms of visitor arrivals. The organization forecasted that Hong Kong would rank fifth among the world's top tourism destinations in 2020, after China, France, the US, and Spain (WTO, 1999). Also Hong Kong Hotels Association in 2000 reported that around 85% of the hotel business in Hong Kong was from overseas visitors. Additionally, hotel bills consistently contributed approximately 30% of total tourism receipts in Hong Kong. This indicates the significant contribution of the hotel industry to Hong Kong's tourism industry.

According to the Hong Kong Tourism Board's (2000) report, that year visitor arrivals to the Hong Kong, SAR surpassed the 13 million mark and the average hotel occupancy rate was 83%. Fifty-eight

The final version of this article is published in *Tourism Review International*, 8, no. 1, p. 17-31. The percent of the 13,057,477 visitors were senior white-collar workers and 30% had come to Hong Kong for the purpose of business and to attend meetings. In fact, a Five-Year Marketing Plan was formulated in 1999 to capture this high-yield segment of the market (Hong Kong Tourist Association, 2000), and the Hong Kong Tourism Board unveiled a marketing plan priority to improve arrivals for business travelers who are more likely than leisure travelers to use hotel facilities (Weaver & Oh, 1993).

Preferences of Business Travelers

A business traveler is defined as an overseas or domestic visitor who stays overnight away from home for the purpose of conducting business. According to Beioley (1991) and R. C. Lewis, Chambers, & Chacko (1995), this definition embraces general business trips, incentive groups, and people attending conferences and exhibitions. Business travelers are less price sensitive than leisure travelers and are high-yield customers for hotels. For instance, incentive travelers to the Philippines spend an average of US\$1,200 in the country and stay for 5.6 nights (Asian Association of Convention and Visitors Bureau, 1995), while those to Singapore spend an average of about US\$2,500 (Mehta, Loh, & Mehta, 1991). In recognition of its high yield, Hong Kong has also been pursuing this market for the past 20 years. While business travelers make up a high percentage of hotel customers, they have very different requirements from leisure travelers. Cleanliness, the comfort of mattresses and pillows, and the quality of towels are rated highest by business travelers (Taninecz, 1990), whereas the safety and security of the hotel (Clow, Garretson, & Kurtz, 1994; Marshall, 1993), room rates (R. C. Lewis, 1985), and personal interactions (Parasuraman, Zeithaml, & Berry, 1988) are considered important by their leisure counterparts. Women business travelers are more inclined to eat in the hotel restaurant when they are traveling by themselves and appreciate the hotel's fitness facilities (Withiam, 2000). Both business and leisure travelers consider employee attitude, location, and rooms as important in affecting their selection of hotels (Barsky & Labagh, 1992). Because the room is one of the key attributes in selecting a hotel, studying the importance of in-room IT facili-

ties in the eyes of business travelers is significant. Little attention has been paid to the business traveler's perceptions of different IT facilities in hotel guestrooms. This is despite the fact that past researchers have placed a great deal of emphasis on studying the hotel selection criteria of different market segments such as business travelers, frequent travelers, conference planners, and leisure travelers (Ananth, Demicco, Moreo, & Howey, 1992; Clow et al., 1994; Knutson, 1988; R. C. Lewis, 1985; Marshall, 1993; Weaver & Oh, 1993), and we therefore know that business travelers have a long list of requirements for hotel services. These include: convenience for business, a good reputation, friendly staff, clean and comfortable surroundings, safety and security, personal care amenities, wake-up calls and prearranged check-in, free cable and newspapers, free local telephone calls and no surcharge for long-distance calls, a family restaurant, on-premise parking, and no-smoking rooms. This study addresses the gap in the research and sheds further light on the preferences of business travelers when they stay at a hotel.

Differences in Perception

Much of the research on service quality has been conducted within the model of service quality developed by Parasuraman et al. (1985, 1988, 1991). The SERVQUAL model ascertains the level of service quality based on the following five key dimensions:

1. reliability: the ability to perform the promised service dependably and accurately;
2. tangibles: the appearance of physical facilities, equipment, personnel, and communications materials;
3. responsiveness: the willingness to help consumers and to provide prompt service;
4. assurance: the knowledge and courtesy of employees and their ability to convey trust and confidence;
5. empathy: the provision of caring, individualized attention to consumers.

The model also identifies where gaps in service exist and to what extent. The gaps are generally defined as:

- Gap 1: the difference between what customers expect and what management perceives they expect;
- Gap 2: the discrepancy between managers' perceptions of customers' expectations and the actual specifications they establish for service delivery;
- Gap 3: concerned with the difference between the service provided by employees of the business and the specifications set by management;
- Gap 4: when the promises communicated by the business to the consumer do not match the consumers' expectations of those external promises;
- Gap 5: the difference between the consumers' internal perceptions and expectations of the services (Zeithmal, Parasuraman, & Berry, 1990).

The first four gaps affect the way in which service is delivered, and the existence of these four gaps leads to the extent of Gap 5. The focus of this study is Gap 1. Knowing what customers expect is possibly the most critical step in delivering high-quality services. Sometimes Gap 1 occurs because companies overlook or underestimate the need to fully understand the expectations of customers. Therefore, companies may provide services that do not match their customers' expectations. Important features are left out and the levels of performance on the features that are provided are inadequate. This gap may be considerably larger in the hotel industry, where services have few clearly defined and tangible cues. This gap is pertinent to a critical question: "Do hotel marketing managers understand what business travelers expect from the IT facilities in guestrooms?" The perceptions of marketing managers about what business travelers expect from the service should ideally be congruent with the expectations expressed by business travelers. Most marketing managers have the authority and responsibility to set service priorities and to design and develop standards for services quality. Therefore, to provide high-quality services, it is important that hotel marketing managers understand the expectations and perceptions of their guests regarding the services and facilities provided, such as the in-room IT facilities. By knowing what in-room IT facilities are impor-

tant to business travelers, marketing managers can devise sales strategies to more effectively promote the facilities. In addition, based on their understanding of the customers' needs, they can influence the decision of top management on whether to install or reduce some IT facilities in the rooms. If marketing managers do not fully understand what their guests expect, they might trigger a chain of bad decisions, resulting in perceptions that the hotel's services are of poor quality.

In fact, a number of studies have shown that there are considerable differences between customers and management in the hotel industry in expectations of service quality. Nightingale (1986) found very strong evidence that the perceptions of management regarding service quality frequently differ from the perceptions of customers, colleagues, and staff. R. C. Lewis (1987) found that hotel management believed that guests expected more than they in fact did. Certainly, investing a large amount of money to install different IT facilities in hotel guestrooms does not mean that a hotel is providing quality services if some of these services are not perceived as important by guests. The importance of high-yield business travelers, in addition to the impact of the hotel industry on Hong Kong's economy, necessitates this study of gaps in the perceptions of marketing managers and business travelers regarding IT facilities in hotel guestrooms.

Role of Technology in Hotel Guestrooms

Because customers tend to place a greater value on organizations that utilize IT than on their competitors (Hewson, 1996; Senker & Senker, 1992), it is generally believed that IT has a positive impact on a company's performance, although hotels have been cautioned to be careful about replacing employees in favor of technology (Urigo, 1996). Technology is viewed as a means of enhancing the competitive power of a company (Daussauge, Hart, & Ramanantsoa, 1992).

As a competitive differentiator, technology does give the hotel industry a chance to improve service quality (Poon, 1993; Sheldon, 1997). Olsen and Zhao (1997) also concur with the view that technology represents opportunities to gain a competitive advantage in the hotel industry because it is one of the few methods that, if properly developed and man-

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aged, cannot be easily copied. Hoteliers can utilize technology in a number of ways, from taking guest reservations to offering different IT facilities to in-house guests. Specifically, hotels can aim to capture business travelers with technology, as this segment of customers is under greater pressure than ever to be productive even when traveling abroad (Koss-Feder, 1996). For instance, the Island Shangri-la Hong Kong was the first hotel in Hong Kong to provide PC-based video teleconferencing services to meet the needs of today's business travelers (Hensdill, 1996). Hotels are now also bringing the Internet and other tools of the modern office into guestrooms. In Hong Kong, The Best Western Rosedale on the Park projects itself as a "cyber boutique hotel" and tries to enhance the experiences of guests through the effective use of technology (Ronson, 2001). The importance of in-room technology was further underlined when the Jarvis Hotels Group introduced its "Showcase" bedrooms, which include high-speed access to the Internet, direct access to the customer's own office-based computer, and a hands-free speaker phone with ring-back and call diversion. In addition, its advanced TV system facilitates on-demand information on railways, planes, and cars. Nevertheless, not all hoteliers agree that it is a good idea to put more machinery into a hotel guestroom and make guests feel as if they were sleeping in an office (Andrew, 1997).

On the basis of an intensive review of the literature, and input from focus groups and professionals, 10 in-room IT facilities were included in the survey of the perceptions of business travelers and hotel marketing managers. These 10 in-room IT facilities were:

- A speaker-equipped telephone for hands-free or conference calls.
- A mobile phone for guests to use outside the hotel.
- A pager that sends messages to guests whenever they leave their room.
- An in-room fax machine.
- High-speed Internet access.
- Personalized Internet e-mail addresses in the room.
- A central computer to provide a wide range of information.
- Satellite/cable TV.

- An integrated TV and Internet system.

- Adequate jacks and plugs for IT equipment.

Methodology

A descriptive cross-sectional research design was used in this study. The survey for business travelers was part of the Omnibus Survey carried out by the School of Hotel and Tourism Management at the Hong Kong Polytechnic University during the period October 2000 to November 2000. The Omnibus Survey was initiated to integrate a number of small projects into a large-scale project to maximize outputs by the better use of resources. A total of 13 projects were ultimately included in the survey. The studies ranged from previsitation searches for information, to the actual travel experiences in Hong Kong, to postvisitation assessments of Hong Kong in different aspects such as audits of service quality. This module focused on international business travelers' perceptions of IT facilities in hotel guestrooms. The questionnaire used to collect data from business travelers was first developed in English and then translated into Chinese. The Chinese questionnaire was double-checked by the project investigator and the project manager responsible for Omnibus Survey, both of whom are proficient in English and Chinese, to ensure that the exact meaning of the questions was captured in an English-Chinese translation. Prior to the actual running of the survey, the questionnaire was pilot tested with university lecturers, industry managers, and tourists at the airport to check for ambiguity, misunderstanding, and confusion over terms and questions. The results of the pilot test provided valuable information about the design, wording, and measurement scales of the questionnaire. Modifications to questions and layout were made prior to the administration of the actual survey. After the pilot test, the interviewers, who are all bilingual, reviewed all of the questions for validity and exact comparability. The respondents had to satisfy certain qualifying conditions prior to the formal commencement of the interview. The filtering questions excluded residents of Hong Kong, transit passengers who did not leave the airport terminal, and others who were not residents of one of the seven target source markets (i.e., mainland China, Taiwan, Singapore, the US, Canada, Australia, and Malaysia). These countries represent some of Hong

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Kong's major Asian and Western inbound markets. Out of a nonrandom sample of 2100 people who were interviewed at restricted areas of the departure lounge at the Hong Kong International Airport with the assistance of the Hong Kong Tourist Association and the cooperation of the Hong Kong Airport Authority, 650 respondents identifying themselves as business travelers were asked which hotel in-room IT facilities they perceive to be the most important.

Hotel marketing managers working at upscale hotels in Hong Kong were surveyed via self-administered mail questionnaires. The sample of marketing managers was selected based on a list of hotels published by the Hong Kong Hotels Association. Questionnaires were sent to a total of 78 hotel mar-

keting managers in Hong Kong. After several follow-up calls, 40 usable questionnaires (51%) were eventually returned.

The data collection instruments for business travelers and marketing managers both contained 10 attributes on the respondents' perceptions of the installation of different IT facilities in hotel guestrooms. Business travelers were asked to indicate the level of importance, ranging from 1 ("very unimportant") to 5 ("very important"). The following two questions were also included to determine whether business travelers had encountered any difficulties: "Have you experienced any difficulties when using in-room IT facilities?" and "Is it essential for a hotel to offer to help you use the in-room IT facilities?" Hotel mar-

Table 1

Comparison of Means (Independent *t*-Test) for the Importance of In-Room IT Facilities

	Mean for Asian (<i>n</i> = 307)	Mean for Non-Asian (<i>n</i> = 337)	<i>t</i> -Test Value	Significance Value	Comparisons
Country of residence					
Speaker-equipped telephone for hands-free or conference calls	3.00	2.71	2.69	0.007	Asian > Non-Asian
Mobile phone for guests to use outside the hotel in Hong Kong	2.94	2.94	0.30	0.976	—
Pager that sends out messages to the guest whenever he/she leaves the room	2.35	2.48	-1.15	0.249	—
In-room faxes	3.44	3.10	3.14	0.002	Asian > Non-Asian
High-speed Internet access	3.71	3.88	-1.65	0.099	—
Personalized Internet e-mail addresses in room	3.29	3.11	1.53	0.127	—
A central computer to provide a wide range of information	3.67	3.56	1.04	0.299	—
Satellite/cable TV in room	3.90	4.01	-1.25	0.213	—
Integrated TV and Internet system	3.46	3.22	2.29	0.023	Asian > Non-Asian
Adequate jacks and plugs for IT equipment	4.10	4.08	0.19	0.847	—
Total	3.39	3.31	1.15	0.252	
	Mean for 3 Nights or Less (<i>n</i> = 417)	Mean for More Than 3 Nights (<i>n</i> = 232)	<i>t</i> -Test Value	Significance Value	Comparisons
Length of stay in Hong Kong					
Speaker-equipped telephone for hands-free or conference calls	2.86	2.81	0.44	0.662	—
Mobile phone for guests to use outside the hotel in Hong Kong	2.84	3.11	-2.22	0.027	Over 3 nights > 3 nights or less
Pager that sends out messages to the guest whenever he/she leaves the room	2.38	2.48	-0.87	0.384	—
In-room faxes	3.24	3.31	-0.62	0.537	—
High-speed Internet access	3.73	3.91	-1.65	0.099	—
Personalized Internet e-mail addresses in room	3.12	3.32	-1.63	0.104	—
A central computer to provide a wide range of information	3.59	3.63	-0.38	0.707	—
Satellite/cable TV in room	3.94	3.99	-0.63	0.529	—
Integrated TV and Internet system	3.36	3.30	0.54	0.592	—
Adequate jacks and plugs for IT equipment	4.07	4.10	-0.36	0.723	—
Total	3.31	3.40	-1.20	0.232	

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Marketing managers were asked to indicate how they thought business travelers would implicitly assess the relative importance of the 10 selected in-room IT facilities, by using the same scale ranging from 1 ("very unimportant") to 5 ("very important"). The managers were also asked to indicate if their hotels were equipped with the listed in-room IT facilities. Questions to identify similarities and differences in the perceptions held by the two different groups were also posted. They included such questions as: "Do you think your guests may encounter difficulties in using the above-mentioned in-room IT facilities?" and "Is it essential for your hotel to help your guest use the in-room IT facilities?" An additional question was asked on the kinds of problems hotels faced when providing the service to business travelers. The last section of the questionnaire included questions of demography and classification.

The collected data were analyzed by employing the Statistical Package for the Social Sciences (SPSS) program. Descriptive statistics were used. The mean, standard deviation, and frequency were calculated to determine the distribution and ranking of each attribute. One-Way ANOVA and independent *t*-tests were employed to examine significant differences and correlations between preferences and demographic variables, and to examine whether there were any significant differences in the way business travelers and hotel marketing managers rated the importance of in-room IT facilities in hotels.

Table 1 continued

	Mean for First-Time Visitors (<i>n</i> = 169)	Mean for Repeat Visitors (<i>n</i> = 479)	<i>t</i> -Test Value	Significance Value	Comparisons
First-time and repeat visitors					
Speaker-equipped telephone for hands-free or conference calls	2.73	2.89	-1.29	0.197	—
Mobile phone for guests to use outside the hotel in Hong Kong	2.87	2.97	-0.73	0.464	—
Pager that sends out messages to guest whenever he/she leaves the room	2.53	2.38	1.18	0.239	—
In-room faxes	3.05	3.34	-2.36	<i>0.019</i>	Repeat visitors > First-time visitors
High-speed Internet access	3.78	3.80	-0.23	0.815	—
Personalized Internet e-mail addresses in room	3.06	3.25	-1.47	0.141	—
A central computer to provide a wide range of information	3.60	3.61	-0.06	0.949	—
Satellite/cable TV in room	3.94	3.97	-0.35	0.728	—
Integrated TV and Internet system	3.27	3.36	-0.68	0.500	—
Adequate jacks and plugs for IT equipment	3.97	4.12	-1.46	0.146	—
Total	3.28	3.37	-1.18	0.239	
	Mean for Male (<i>n</i> = 455)	Mean for Female (<i>n</i> = 192)	<i>t</i> -Test Value	Significance Value	Comparisons
Gender					
Speaker-equipped telephone for hands-free or conference calls	2.86	2.79	0.62	0.537	—
Mobile phone for guests to use outside the hotel in Hong Kong	2.89	3.05	-1.30	0.196	—
Pager that sends out messages to guest whenever he/she leaves the room	2.40	2.48	-0.70	0.484	—
In-room faxes	3.28	3.24	0.32	0.749	—
High-speed Internet access	3.81	3.76	0.46	0.650	—
Personalized Internet e-mail addresses in room	3.17	3.24	-0.50	0.616	—
A central computer to provide a wide range of information	3.60	3.62	-0.12	0.905	—
Satellite/cable TV in room	3.94	4.01	-0.71	0.459	—
Integrated TV and Internet system	3.29	3.44	-1.32	0.186	—
Adequate jacks and plugs for IT equipment	4.09	4.06	0.23	0.820	—
Total	3.33	3.37	-0.49	0.626	

The mean value is based on 5-point Likert scale, where 1 = very unimportant and 5 = very important. Significance level at 0.05 is shown in italic.

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Respondents' Profile and Findings

From the findings, it was noted that 70% of the business travelers who responded were male. Almost 74% were repeat travelers to Hong Kong, while more than 60% had stayed in Hong Kong for 3 nights or fewer. Fifty-two percent held a college diploma/university degree, while 21% held postgraduate degrees. The largest groups of respondents came from the US (29%) and Taiwan (20%), followed by those from Mainland China (12%), Australia (12%), Canada (11%), Singapore (10%), and Malaysia (6%).

Differences in the Importance of IT Facilities in Hotel Guestrooms According to the Demographic Variables of Business Travelers

The *t*-test and one-way ANOVA results indicate that there are statistically significant differences in the perceptions of the respondents on the level of importance of IT facilities in the guest rooms of upscale hotels, depending on their age, educational level, country of residence, annual household income, length of stay, and whether they were first-time travelers or repeat travelers (see Tables 1 and 2). In general, the provision of a mobile phone, fax machine, central computer, and adequate jacks and plugs in guestrooms were perceived as being more important by younger groups than older groups. Business travelers with a higher level of education perceived high-speed Internet access, a personalized Internet e-mail address, a central computer, and adequate jacks and plugs as being more important than those with lower levels of education. Business travelers from mainland China and other Asian countries preferred to have a speaker-equipped telephone, a fax machine, and an integrated TV and Internet system more than their Western counterparts. The in-room fax machine was perceived as being more important by lower income groups than higher income groups. Business travelers staying longer perceived the mobile phone as being more important than those who stayed in Hong Kong for a shorter length of time. Compared with first-time visitors, repeat business travelers perceived in-room fax machines as being more important.

As shown in Table 3, when asked what hotel in-room IT facilities are most important to them, nearly 78% of the business travelers indicated "adequate jacks and plugs for IT equipment" as the top item

(4.08). The second most important in-room IT facility was the "satellite/cable TV in room" (3.96), while the third was "high-speed Internet access" (3.80). On the other hand, "a pager that sends messages to guests whenever they leave their room" (2.42) was considered the least important facility. Table 4 indicates that over 80% of the business travelers stated that they had not experienced any difficulties when using the listed in-room IT facilities. However, 75% of them pointed out that it was essential for the hotel to offer a customer help in using the facilities. One hundred and twenty-seven people (nearly 20%) stated that they had encountered difficulties when using the facilities, with more than 40% of these complaining that "inadequate jacks and plugs for IT equipment" was still the main problem, followed by the "Internet connection."

Conversely, hotel marketing managers thought that business travelers would perceive "high-speed Internet access" (4.45) as the most important in-room IT facility, followed by "adequate jacks and plugs for IT equipment" (4.41) and "satellite/cable TV in room" (4.18). Only 59% of managers indicated that "high-speed Internet access" was provided in their hotels. In addition, 87.2% of them believed that their hotels provided "adequate jacks and plugs for IT equipment" to their business travelers, while nearly 95% of the hoteliers had installed "satellite/cable TV" in guestrooms. As with the business travelers, "a pager that sends messages to guests" (2.38) was rated as the least important IT facility in a room. Over 40% of marketing managers thought that their guests might encounter difficulties when using the in-room IT facilities and 75% stated it was essential for hotels to offer to help business travelers use the facilities.

The Gap in the Perceptions of Marketing Managers and Business Travelers

Some significant differences were found between the way business travelers and hotel marketing managers rated the importance of in-room IT facilities in hotels. Out of the 10 in-room IT facilities that were listed, five were rated significantly higher by marketing managers than by business travelers. These were "high-speed Internet access" (4.45), "a central computer to provide a wide range of information" (3.71), "an integrated TV and Internet system that allows

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Table 2
Comparison of Means (One-Way ANOVA) for the Level of Importance of In-room IT Facilities

Group No.	Factors	Sample Size	Speaker-Equipped Telephone	Mobile Phone	Pager	In-Room Faxes	High-Speed Internet	Personalized Internet E-mail	Central Computer	Satellite/Cable TV	Adequate Integrated TV/Internet	Jacks and Plugs
Age groups												
1	25 or less	31	2.77	3.45	2.58	3.29	4.03	3.10	3.58	4.19	3.16	4.29
2	26-35	215	2.96	3.11	2.47	3.46	4.11	3.36	3.83	4.00	3.50	4.24
3	36-45	177	2.93	2.84	2.37	3.24	3.80	3.12	3.60	3.99	3.35	4.19
4	46-55	156	2.67	2.85	2.35	3.15	3.53	3.12	3.48	3.89	3.21	3.92
5	56 or above	69	2.67	2.65	2.49	2.90	3.35	3.01	3.25	3.80	3.17	3.62
	ANOVA (sign. value)		0.196	0.031	0.814	0.035	0.000	0.291	0.009	0.387	0.183	0.000
	LSD multiple comparison		—	G1 > G3, G4, G5 G2 > G5	—	G2 > G4, G5	G1 > G5 G2 > G3, G4, G5 G3 > G5	—	G2 > G4, G5	—	—	G1 > G4, G5 G2 > G4, G5 G3 > G4, G5
Education level												
1	Less than or completed secondary/high school	76	2.83	2.88	2.29	3.09	3.13	2.75	3.36	3.78	3.16	3.71
2	Completed college/university/ diploma degree	433	2.84	2.99	2.42	3.34	3.87	3.34	3.69	4.01	3.43	4.13
3	Completed postgraduate degree	138	2.81	2.79	2.48	3.11	3.91	2.97	3.46	3.91	3.16	4.14
	ANOVA (sign. value)		0.970	0.349	0.612	0.129	0.000	0.000	0.036	0.197	0.059	0.012
	LSD multiple comparison		—	—	—	—	G2 > G1 G3 > G1	G2 > G1, G3	G2 > G1	—	—	G2 > G1 G3 > G1
Country of residence												
1	Mainland China	75	2.97	3.13	2.49	3.53	3.76	3.48	3.80	4.11	3.77	4.19
2	Other Asian countries	232	3.01	2.88	2.31	3.41	3.69	3.22	3.62	3.84	3.36	4.07
3	Non-Asian countries	337	2.71	2.94	2.48	3.10	3.88	3.14	3.56	4.01	3.22	4.08
	ANOVA (sign. value)		0.027	0.433	0.302	0.006	0.240	0.128	0.342	0.079	0.005	0.713
	LSD multiple comparison		G2 > G3	—	—	G1 > G3 G2 > G3	—	—	—	—	G1 > G2, G3	—
Annual household income												
1	US\$10,000-29,999	119	3.06	3.03	2.41	3.61	3.80	3.46	3.77	3.88	3.63	4.03
2	US\$30,000-49,999	102	2.78	2.83	2.28	3.12	3.78	3.13	3.49	3.95	3.33	4.06
3	US\$50,000-69,999	105	2.86	3.04	2.54	3.31	3.89	3.14	3.73	3.84	3.23	4.18
4	US\$70,000-99,999	108	2.82	2.82	2.32	3.02	3.76	3.30	3.63	4.05	3.12	4.07
5	US\$100,000 or above	170	2.76	2.94	2.50	3.29	3.92	3.07	3.47	4.07	3.30	4.17
	ANOVA (sign. value)		0.426	0.712	0.535	0.017	0.835	0.177	0.213	0.356	0.056	0.793
	LSD multiple comparison		—	—	—	G1 > G2, G4	—	—	—	—	—	—

Significance at the 0.05 level is shown in italic.

Table 3 The final version of this article is published in *Tourism Review International*, v. 8, no. 1, p. 17-31.

Comparison of Means (Independent *t*-Test) for the Importance of In-Room IT Facilities for Business Travelers and Marketing Managers

IT Facilities in Guestroom	Business Travelers Mean (<i>n</i> = 650)	Marketing Managers Mean (<i>n</i> = 40)	Diff.	Sig.	Business Travelers (Rank)	Marketing Managers (Rank)
Adequate jacks and plugs for IT equipment	4.08	4.41	0.33	0.472	1	2
Satellite/cable TV in room	3.96	4.18	0.22	0.949	2	3
High-speed internet access	3.80	4.45	0.65	<i>0.002</i>	3	1
A central computer to provide a wide range of information	3.61	3.71	0.10	<i>0.033</i>	4	4
Integrated TV and Internet system	3.34	3.51	0.17	<i>0.034</i>	5	5
In-room faxes	3.27	3.50	0.23	<i>0.043</i>	6	6
Personalized Internet e-mail addresses in room	3.20	2.90	-0.29	<i>0.000</i>	7	8
Mobile phone for guests to use outside the hotel in Hong Kong	2.94	2.63	-0.31	0.003	8	9
Speaker-equipped telephone for hands-free or conference calls	2.84	3.43	0.59	<i>0.000</i>	9	7
Pager that sends messages to the guest whenever he/she leaves the room	2.42	2.38	-0.04	0.003	10	10

Significance at the 0.05 level is shown in italic.

guests to access Internet content while watching TV” (3.51), “an in-room fax machine” (3.50), and “a speaker-equipped telephone for hands-free or conference calls” (3.43). Conversely, three facilities were rated significantly lower by marketing managers than by business travelers. They were “a personalized Internet e-mail address in the room” (2.90), “a mobile phone for guests to use outside the hotel” (2.63), and “a pager that sends messages to guests whenever they leave the room” (2.38).

The above-mentioned findings are summarized under the following three areas: good matches,

underperception by hotel marketing managers, and overperception by hotel marketing managers.

Good Matches

There were five good matches between the perceptions of business travelers and hotel marketing managers of in-room IT facilities in hotels:

1. Both business travelers and hotel marketing managers implicitly assigned a rather low weight to “a pager that sends messages to guests

Table 4

Views of Marketing Managers and Business Travelers Generic Difficulties in Using and Providing In-Room IT Facilities

	Marketing Managers		Business Travelers	
	Yes (%)	No (%)	Yes (%)	No (%)
Question 1:				
Have you experienced any difficulties when using the above-mentioned in-room IT facilities? (question for business travelers only)			18.7	81.3
Do you think your guests may encounter difficulties in using the above-mentioned in-room IT facilities? (question for hotel marketing managers only)	45.0	55.0		
Question 2:				
Is it essential for a hotel to offer to help you use the in-room IT facilities?	75.0	25.0	75.6	24.4
Question 3:				
Are there any other in-room IT facilities that you consider essential, but are not listed above?	13.5	86.5	6.0	94.0
Question 4:				
Has your hotel encountered any difficulties in providing the in-room IT facilities to your customers? (question for hotel marketing managers only)	42.5	57.5		

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1. Whenever they leave the room (ranked 10 by both business travelers and hotel marketing managers).
2. Both business travelers and hotel marketing managers perceived "a central computer to provide a wide range of information," "an integrated TV and Internet system," and "an in-room fax" as moderately important (ranked 4, 5, and 6, respectively).
3. The majority of business travelers and hotel marketing managers both indicated that it is essential for hotels to offer to help guests to use the in-room IT facilities (75.0% and 75.6%, respectively).

Underperceptions

In comparison with business travelers, hotel marketing managers underperceived the relative importance of the following five hotel in-room IT facilities:

1. While hotel marketing managers recognized the importance of "adequate jacks and plugs for IT equipment" and "satellite/cable TV in room" (ranked 2 and 3), business travelers placed an even higher weight on these facilities (ranked 1 and 2).
2. Over 40% of business travelers considered "adequate jacks and plugs for IT equipment" as the major problem encountered when using in-room IT facilities, but only 26.7% of marketing managers perceived this as the major problem.
3. "Personalized Internet e-mail address in room" (2.90), "a mobile phone for guests to use outside the hotel" (2.63), and "a pager that sends messages to guests whenever they leave the room" (2.38) were all ranked significantly lower by marketing managers than by business travelers.

Overperceptions

There were six areas of overperception by marketing managers in considering the preferences of business travelers:

1. Business travelers weighted "hi-speed Internet access" (rank 3) as less important than marketing managers expected it would be (rank 1).

2. About 18% of business travelers indicated that they might encounter difficulties in using in-room IT facilities, while 57.5% of marketing managers thought they would.
3. In terms of significant differences, marketing managers rated five facilities significantly higher than did business travelers. These facilities were "high-speed Internet access" (4.45), "a central computer to provide a wide range of information" (3.71), "an integrated TV and Internet system that allows guests to access Internet content while watching TV" (3.51), "an in-room fax machine" (3.50), and "a speaker-equipped telephone for hands-free or conference calls" (3.43).

Table 5 indicates that hotel marketing managers had encountered some difficulties in providing the listed in-room IT facilities. Fifty percent of them indicated that a limited budget had hindered efforts to provide good-quality IT facilities to guests. Other major obstacles to providing good services to customers were the difficulty of coping with fast-changing technology (15.5%), a lack of support by the owners of the hotel (11.5%), and a lack of manpower (11.5%).

The Top Three Factors

Surprisingly, the results suggest that most business travelers considered "adequate jacks and plugs" to be the most important IT facility in hotels, whereas hotel marketing managers ranked it as the second most important. As indicated in Table 6, more than 40% of the 127 business travelers who had encountered difficulties in using the in-room IT facilities stated that the major problem was "inadequate jacks

Table 5
Challenges Faced by Marketing Mangers in Providing In-Room IT Facilities ($n = 17$)

Problems	Frequency	Percentage
Limited budget	13	50.0
New technology changes too quickly	4	15.5
Lack of support by owner/management	3	11.5
Lack of manpower	3	11.5
Maintenance	2	7.7
High guest expectations	1	3.8

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Specific Difficulties Faced by Business Travelers and Hotel Marketing Managers when Using In-room IT Facilities

	Frequency	Percentage
Difficulties cited by business travelers (n = 127)		
Inadequate/unsuitable jacks and plugs for IT equipment	52	40.9
Problem with Internet connection	35	27.6
User friendliness of IT facilities	16	12.6
Different voltage	6	4.7
No IT facilities in room	9	7.1
Problem with in-room telephone	2	1.6
Others	7	5.5
Difficulties cited by hotel marketing managers (n = 23)		
Problem with in-room telephone	3	13.3
User friendliness of IT facilities	7	30.0
Problem with Internet connection	2	8.7
Inadequate/unsuitable jacks and plugs for IT equipment	6	26.0
Technical background of guest	1	4.3
Different version of software/model of hardware used by guests	5	21.7

and plugs,” including multielectrical conversion plugs, computer connection cables, power cord extensions, and so forth. Most of the business travelers commented that the jacks and plugs that are provided are not suitable for use, because different plugs are used in different systems in different countries. They also felt frustrated about the difficulties they encountered in finding the switch for the plugs and the inconvenience of using jacks and plugs.

Hoteliers spend a lot of money installing different kinds of IT facilities in their guestrooms. However, they may forget the most fundamental element—the jacks and plugs—as only 26.7% of marketing managers perceived this to be the major problem. Although 87.6% of the marketing managers believe that they are providing adequate IT facilities, hotel management should pay attention to these basic elements, while striving hard to offer different IT facilities.

For business travelers, “satellite/cable TV” ranked as the second most important facility, as they need to access global news and financial information that may play a key role in their business activities. Although 95% of the managers indicated that their hotels had installed satellite/cable TV, hotel management should monitor the programs and include more channels if possible. Those hotels that have not yet installed satellite/cable TV are highly recommended to do so, if they want to capture the market for business travelers.

Business travelers, especially those with a higher level of education, also valued the Internet service provided by hotels, as indicated by the number three ranking given to “high-speed Internet access,” whereas hoteliers rated it as the most important in-room IT facility. Providing basic Internet services is not good enough, and the speed of access to the Internet is another area that hoteliers need to improve upon to minimize the frustration of guests. Only 59% of the hotels responding to the survey had taken measures to provide a high-speed service. Because over 25% of the 127 business travelers with difficulties complained about connection problems as well as the slow speed of access, extra effort is needed to manage the service well, even though most hotels leave it in the hands of specialist providers. Where budgets allow, hoteliers should consider providing broadband Internet connectivity in the comfort and privacy of the guestrooms.

Providing Value-Added Services

As shown in Table 4, more than 75% of the respondents indicated that it is essential for a hotel to offer to help them use the in-room IT facilities. This view was also echoed by hotel marketing managers (75%). Hotel guests may experience problems connecting to the Internet or not know how to use the Internet service in the room. Further, Table 6 indicates that nearly 13% of those business travelers with

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difficulties complained about the lack of "user friendliness of the IT facilities." Thirty percent of hotel marketing managers who expected that guests would encounter difficulties using the IT facilities also indicated the lack of user friendliness of IT facilities as a problem. Included in the list of problems were: difficulty in operating the facilities, no detailed instructions, not compatible, language problem, the TV Internet is hard to use, and difficulty in moving around the IT facilities in the relatively small guestroom. This further confirms the study by Van Hoof, Verbeeten, Combrink, & Collins (1995), which showed that only 39.9% of respondents felt that guest-operated devices such as the in-room IT facilities were used effectively. In these do-it-yourself applications, hotel guests need to learn how to use the system, so the hotel's management should ensure that guests are comfortable with the delivery of IT-based services and will benefit from simple and carefully designed interfaces.

To improve service, it is also recommended that hoteliers introduce 24-hour-a-day computer support service for guests. Hotel management may consider providing the service by creating a new staff position—the cyber relations officer/manager (CRO/CRM) who offers assistance in setting up the business traveler's computer, and connecting it to the hotel's telephone and power systems. Training is inevitable to equip hotel employees with the necessary skills and knowledge to provide the augmented service by supporting word-processing and spreadsheet packages, Web browsers, scanners, and other software to guests. The suggested value-added services are important to business travelers, who are normally under constant pressure to produce high-quality work during the short period of their stay in a hotel.

Budget Control

Half of the hotel marketing managers indicated that their hotels could not provide good in-room IT facilities to guests mainly because of limited budgets. Hotel marketing managers facing tight budgets may consider not installing a central computer, an integrated TV and Internet system, a fax machine, and even a speaker-equipped telephone, although some are preferred by travelers from mainland China and other Asian countries, as these IT facilities are

only moderately important to business travelers, but are overemphasized by managers. In fact, business travelers normally travel with their own notebook computers, which they will use to connect to the Internet and communicate with their companies or business partners as long as adequate jacks and plugs are provided. Therefore, hotels with limited resources can focus on improving the above-mentioned "top three factors" to attract or retain their business travelers.

Both business travelers and marketing managers also regarded a pager that sends messages to guests whenever they leave the room as a relatively low priority in the bundle of in-room IT facilities. It is clear that hotels still providing such a service should consider terminating it to save costs, as people seldom use pagers to communicate since the invention of the mobile phone.

In addition to the in-room IT facilities listed in the questionnaire, it seems that the demand for in-room printers is growing, as more than 30% of the business travelers urging the need for additional facilities wanted to see this device installed in rooms. In view of the keen competition in the hotel industry nowadays, management should consider installing printers, even if a loss of revenue generated from photocopying services can be expected.

Conclusions

Hotels can ill afford to ignore the absolute importance of "tangibles-related" aspects such as IT facilities in guestrooms that influence business travelers' assessments of service quality. The assessment of the gap in the perceptions of hotel marketing managers and high-yield business travelers of IT facilities in hotel guestrooms in Hong Kong SAR helps to determine whether marketing managers have clear perceptions of what business travelers expect of the facilities. By using descriptive statistics, ANOVA, and independent sample *t*-tests, this study found that "adequate jacks and plugs," "satellite/cable TV," and "high-speed Internet access" were perceived as the top three in-room IT facilities by business travelers; hotel marketing managers perceived "high-speed Internet access" as the most important IT facility to business travelers, followed by "adequate jacks and plugs" and "satellite/cable TV." The findings also revealed areas of matches and

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mismatches between the perceptions of business travelers of in-room IT facilities and those of hotel marketing managers.

The results—five good matches, five underperceptions, and six overperceptions—show that hotel marketing managers in Hong Kong might need a better understanding of the expectations of business travelers. A lack of such understanding may contribute to the extent of the gap in service quality (Gap 5, as mentioned above). To minimize Gap 1 (the difference between what customers expect and what management perceives they expect), hotel marketing managers should try their utmost to keep in constant touch with their business travelers to gain first-hand knowledge of their expectations and perceptions. Past research has indicated that managers traditionally have the least contact with guests and do not get the opportunity to experience firsthand what their guests want (Coyle & Dale, 1993; Zeithaml et al., 1990). Marketing managers may also consider spending time in the front line of their hotel, such as in the front desk and housekeeping department, to collect information and interact with personnel who are in regular contact with guests, as this is an important channel through which managers can learn about the expectations of guests. Direct interaction with hotel guests and hotel front line staff will add clarity and depth to a manager's understanding of the expectations and needs of the hotel's guests and thereby reduce the size of Gap 1.

The conclusions of this study are relevant to the management of hotels that consciously include business travelers as a target segment and want to increase repeat patronage among this group. Knowing how travelers perceive the quality of services and facilities is the means by which hoteliers can achieve a competitive advantage, differentiate themselves from competitors, increase customer loyalty, enhance their corporate image, improve business performance, retain existing customers, and attract new ones (B. R. Lewis, 1993; Watson, McKenna, & McLean, 1992). This study may provide some insights to help managers in the industry better understand the needs of business travelers, and thereby to employ possible measures to keep them satisfied, thus improving business opportunities. Finally, one limitation of the study should be addressed. The samples of hotel marketing managers were drawn exclusively from hotels in Hong Kong based on the

The results should therefore not be generalized to include hotel marketing managers from other parts of the world, and the findings should be limited to the population studied.

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