INFORMATION AND COMMUNICATION TECHNOLOGY APPLICATION'S USAGE IN HOTEL INDUSTRY

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ABSTRACT

Hotel's information and communication technology (ICT) has affected society and its surroundings in many ways. Most of hotels in this world use ICT as to ease their tasks such as taking reservation, room management, telecommunication, and guest accounting. In Malaysia, hotels have started to use ICT application as an important strategic asset. ICT has been rapidly changed or enhanced from time to time and many hotels invest a lot of money to ensure that they have the latest technology. By using quantitative approach, this paper analyzed the levels of usage of ICT applications used in Room Division and Food and Beverage Department of hotels. Through self-administered questionnaires, 350 respondents from 28 five stars hotels in Kuala Lumpur were approach using random stratified sampling. It is appear that room division department has the highest level of ICT usage. This outcome had significant implication to the hotel operators on how to prioritize the importance of the hotel's ICT application.

Keywords: *ICT applications, level of usage, room division, food and beverage*

INTRODUCTION

Technology has affected society and its surroundings in many ways. In many countries, technology has helped develop more advanced in economies such as today's global economy and allowed the rise of a leisure class. As the technology grows day by day, we would probably admit it does give impact in our daily life. Moreover, information technology dramatically changes with new features and capabilities, moving away from the data processing era to strategic information systems era. Technology is commonly known as information and communication technology (ICT) is applied in the hospitality industry as an important strategic asset (Cho and Olsen, 1998). Most of hotels in this world use ICT as to ease their tasks such as taking reservation, room management, telecommunication, and guest accounting. According to DiPietro (2010), ICT has been rapidly changed or enhanced from time to time and many hotels invest a lot of money to ensure that they have the latest technology. Even though ICT seems to give positive impacts, ICT might also cause negative impacts as well. As what mention by Sigala (2003), by fully depends on technology use will not generate the maximum result.

Many organizations have gradually increased their investment in information technology for planning in order to boost the efficiency of their business processes, support management decision-making, and improve productivity (Kim et al. 2006). Moreover, improving productivity is the main role of information technology (IT) in the hotel industry, while information resources have long played an important role in conducting successful hotel operations (Ham, Woo and Jeong, 2005). Next, by implementing IT systems has resulted in decreased costs, greater productivity and increased revenues in the hotel industry (Siguaw, Enz and Namasivayam, 2000; Huo, 1998), improving customer service and business operations (Sweat and Hibbard, 1999; Barcheldor, 1999; Van Hoof, Verbeeten and Combrink, 1996).

There are numerous hotels that apply technology in their operation. It is a challenge for the organization to adopt new technologies and learn how to use them to build a better system, at

the same time to prioritize which systems are the most important one. The introduction of these systems can modify job design and restructure users' work environment in different behaviors. Some impacts of the new technology may have dysfunctional consequences for users, which may sabotage the main objective for implementing the new technology or system. Effects of a new system or technology could include changes in stress, job satisfaction, quality of work life, and other work related outcomes with important consequences for the productivity and efficiency of operations. In this study, the researchers will focus on the level of usage of ICT applications that available in 5-star hotels located within the Kuala Lumpur areas.

LITERATURE REVIEW

ICT Applications in Hotel Industry

Many researchers have wondered that the operation of information technology (IT) in the lodging industry has increased productivity, reduced costs, improved service quality, improved guest satisfaction and long-term profitability (Cobanoglu, Corbaci, and Ryan, 2001). ICT offers several advantages for hotels of all sizes. One of the advantages is increased effectiveness due to cost decrease and revenue expansion. Another advantage is higher quality customer relationships due to the possibility of personal contact services and dialogue with the customer (Wang, 2008). For instant, customers can respond questions about their personal preferences for rooms, and regarding on this information, a customer receives services at the hotel that are adapted to his or her preferences. Given the benefits that IT offers to the lodging industry, the wide use of technology would appear to be an expected conclusion (Siguaw, Enz and Namasivayam, 2000)

ICT Applications in Room Division Department

Nowadays, many organizations in hotel industry have progressively invest in information technology (IT) consecutively to boost the efficiency of their business process, support management decision-making and enhance their productivity. According to Ham,

Kim and Jeong (2005) as well as Lam, Cho and Qu (2007), they said that since IT has been apparent to have remarkable return in competition, hotel industry have broadly relies on IT to improve their employees' productivity and efficiency, as well as customer satisfaction. Many researchers have instituted that there is positive connection between IT investment and organization productivity and performance (Byrd & Turner, 2001; Powell & Dent-Micallef, 1997; Rai, Patnayakuni, & Patnayakuni, 1997). However, according to Davis (1989) and Davis, Bagozzi and Warshaw (1992), although there are positive effects and advantage, there will be barriers of external factors that influenced the acceptance of IT and new IT would not be fully accepted.

Hotel Front Office System (HFOS)

The most typical IT tool in hotel organization is hotel information system (HIS). According to Ham, Kim and Jeong (2005), HIS can be divided into four categories which are front office system, guest-related interface, restaurant and banquet management system and back office system. But among these, hotel front office system (HFOS) is the most important system in HIS especially in room division department. This is because its operate 24 hours a day and 365 days a years. Usually, service employees used this system at the point of contact with the customer and hotel employees must use HFOS regardless of their personal desires (Kim, Lee, & Law, 2008).

In addition, Bailey and Pearson (1983) as well as Eldon (1997) said that HFOS offers information in a useful format and the information is clear. They also said that the system supplies accurate and sufficient information to the users. This was supported by Ahn, Ryu and Han (2004) told that HFOS offer an up-to-date, relevant and necessary information to the user which will satisfied the users need. In other word, HFOS offer a variety of information to frontline employees and provide a safe and swift transaction time in order to decrease the time spend on the system and increase the time spend on customer service. The system also was designed using an easy to understand language and technology (Kim, Lee, & Law, 2008).

Last but not least, to ease the use of HFOS, the manager and HIS practitioners must supervise by providing a swift support in case a problem happen and provide training to help the employees to understand and utilised the HFOS without problem. Employees must know the benefits of HFOS which are better job performance and operational efficiency.

ICT Applications in Food and Beverage Department

As information technologies grow, firms used computer information systems to assist them in attaining their business, strategic and competitive goals. According to International Quality and Productivity Center (2001), as firm develop improvement in the new Digital Economy, organizations are relying on their IT departments to plan, build up, and install on-line solutions. Firms nowadays especially hotels are using IT to unite with their stakeholders such as consumers, suppliers, workers and management.

Restaurant Management Information System (RMIS)

As stated by Kearns (1997), information technology (IT) and management information systems (MIS) are identical terms. They are just a set of interconnected computerized mechanism that work mutually to collect, retrieve, process, store and distribute information for the reason of facilitating planning, control, coordination, analysis and decision-making in firm (Laudon and Laudon, 1998). IT is usually used for order processing, accounting and marketing in foodservice. In hotel, the information system that commonly used in restaurant is restaurant management information system (RMIS).

Restaurant Management Information Systems (RMIS), according to Choe (1998) as well as Huber (2003), is a system that shore up the management in their decision-making processes as well as in traditional financial reporting, variance reporting and forecasting. RMIS have been used to develop store performance in many ways. For example producing reports that help in managerial decision-making, reducing food delivering times, improving service

quality, producing forecasts that aid managers in ordering, planning food production and scheduling labor. Zhang and Lado (2001) said that by well deploying RMIS at operational level, companies may develop and force their unique operational resources and capabilities.

Last but not least, according to Choe (1998) also, RMIS is regularly not only in wide-scoped such as external, nonfinancial information and future-oriented material, but it also in timely and aggregated manner like diversity of ways to present data or sum data within period of time or areas of interest.

METHODOLOGY

The nature of this research adopts the descriptive design research, and conducted in quantitative manner because it is targeted to examine and measure the level of usage of ICT application in hotels. A quantitative approach was used to gather the data by distribution of questionnaire to the sample that has been determined. It involves gathering numerical data using structured questionnaires to collect primary from individuals. The unit of analysis is hotel because the study is to identify the most frequently use ICT application in hotel industry. This research is cross-sectional in nature because the data will be gathered just once over a period of months. The research will be take place at the 5 stars hotels around Kuala Lumpur. This study focused on 5 stars hotel in Kuala Lumpur because Kuala Lumpur has the highest number of 5 stars hotels compare to other states in Malaysia. For the study population, this research use sample of 5-star hotels employees in Kuala Lumpur. From the recent record, there are 97 hotels in Kuala Lumpur with 28 hotels are 5-stars rating (Tourism Malaysia, 2011). The researchers choose the convenience sampling and distributed 350 questionnaires to 28 hotels that involved in this study. 175 employees were randomly chosen for Food and Beverage Department while another 175 employees were also randomly chose for Room Division. This is meant that 12 to 14 employees were involved in each hotel or 6 to 7 employees for each department in each hotel.

FINDINGS

Response Rate

The researchers distributed a total of 350 questionnaires to the employees who work in Food and Beverage (F&B) department and Room Division of the 5-star hotels around Kuala Lumpur with a purpose of data collecting. Out of 350 questionnaires, both researchers only managed to collect 235 questionnaires; 116 questionnaires from Room Division and 119 questionnaires from Food and Beverage. There was no missing value in any of the survey. The total percentage of respond rate that the researchers got was 67.1%.

Respondent's Background Profile

Information that could be found in the background profile was the respondent's gender, age, education, department, experience, and position. Frequency and percentage value of the profiles were used against all demographic profile.

Out of 235 respondents, 41.3 % which was 97 respondents were male. Meanwhile, the balance which was 58.7 % or 138 respondents were female. It also represent that majority of employees in 5-stars hotels were female. Besides that, for age, with the highest percentage of 63.8%, goes to under 29 years old. Followed by range of 30 to 39 years old with 25.1%. Next was the range of 40 to 49 years old with 9.8%. Lastly, 50 years old and above with 1.3%. Based on this information, it was clear that number of employees with ages under 29 years old were very high compared to the other three groups.

Then, it is education, 44.7% respondents already complete college or university with diploma and degree level. Follow behind, 23.8% for those who were only entered college and university. At the percentage of 18.7%, goes to those who completed secondary or high school. Next was completed postgraduate degree with 10.2% and lastly 2.6% representing those who their education level was less than secondary or high school. Here, shows that majority of the

employees in the 5-star hotel in Kuala Lumpur were holding certificates of diploma and degrees. Next, from the department table, the difference of both departments only 3 persons. The Room Division with 49.4% while Food and Beverage with 50.6%. This shows that the number of employees in both departments were quite balance. For experience, the highest percentage was 0 to 2 years with 37.9%. Followed by 3 to 4 years with 31.1%, 18.3% were 5 to 6 years and 9.4% represent those who have 7 to 10 years working experience in hotel industry. From this table, it shows that many employees were actually lack of experience in the hotel industry. For position, the highest percentage was entry level with 39.6%. 38.3% for supervisor level, followed by assistant manager with 14% and lastly the manager level with 8.1%. This shows that nowdays most of the employees in the 5-star hotels were in entry level.

Mean Scores and Standard Deviation of ICT Application Dimensions

This section analyzed and examined the means scores and standard deviation of each items of independent variables in the questionnaire. This items based on 6-point of Likert scale (1 = never, 2 = very low, 3 = low, 4 = occasionally, 5 = high and 6 = very high).

Table 1: Result of Mean and Standard Deviation of Room Division

		Reservation	Check in / out	Room status	Guest info	Guest account
N	**Valid**	116	116	116	116	116
	Missing	0	0	0	0	0
Mean		4.91	5.08	4.90	4.76	4.65
Std. Deviation		1.060	1.026	1.008	.984	1.073

In Room Division, there were five ICT application systems that were frequently used being analyzed. The application or systems were reservation system, check-in or out system, room status system, guest information system and guest accounting system. Based on table 1, it showed the result of mean scores and standard deviation of room division ICT application. The mean scores result was in the

range of 4.65 to 4.99. The highest mean score was 5.08 (SD = 1.026) which was check in / out system. This show most of the respondent agree that this system is the most frequently use application system in hotel. Then, it followed by reservation system with mean score 4.91 (SD = 1.060). Next it is room status system with 4.90 (SD = 1.008), guest information system with 4.76 (SD = 0.984) and lastly the least frequent usage was guest accounting system with 4.65 (SD = 1.073). Meanwhile, for standard deviation, it shows that the most constant answer was guest information system with 0.984. This was due to it has the lowest value of standard deviation.

Table 2: Result of Mean and Standard Deviation of Food and Beverage

		Menu Management System	Sales analysis	Beverage Control System	Cost Control
N	Valid	119	119	119	119
	Missing	0	0	0	0
Mean		4.65	4.92	4.76	5.05
Std. Deviation		1.005	.825	.965	.812

Besides that, for the frequencies of usage level in Food and Beverage's ICT application, there were four items being analyzed. The items were menu management system, sales analysis system, beverage control system and cost control system. The result of means score was in the range of 4.65 to 4.97. As shown in table 2, the highest mean scores was 5.05 (SD = 0.812) which is cost control system. Most of the respondent agreed that cost control system was the most frequent application or system being used in hotel. Next, it is follow by sales analysis system with mean score 4.92 (SD = 0.825), beverage control system with 4.76 (SD = 0.965), and finally, it is menu management system with mean 4.65 (SD = 1.005). Meanwhile, for standard deviation, the most constant answer and the lowest value is cost control system with 0.812.

Table 3: Result of Compare Mean and Standard Deviation of Both Dimensions

		Room Division	Food and Beverage
N	Valid	116	119
	Missing	0	0
Mean		5.30	4.82
Std. Deviation		.879	.759

Finally, it was the comparison between mean scores and standard deviation between Room Division and Food and Beverage (F&B) department. This test was to find which department used the most frequent ICT applications in hotel. In table 3, it shows that it was only 0.48 slightly different between this two department. The Room Division was the most ICT application usage in the hotel with a mean score 5.30 (SD = 0.879). On the other hand, Food and Beverage show that their mean score was 4.82 (SD = 0.759). Meanwhile, in term of standard deviation, Food and Beverage department show the lowest value with 0.759 and it was the most constant variable.

CONCLUSION

Summary of the Findings

The researches need to determine the most significant attributes and variables in ICT application dimensions. The results were examined through comparing the mean score of each variables and attributes. Based on table 4.3, the highest level of usage item under Room Division ICT application is Check-in/out System with a mean score of 5.08 compare with other variables. The results supported Wang and Wang (2010) study. According to them, hotel just send a text message to guest's mobile phone asking the guest if they would like to begin the check-in/out process and the hotel would do it immediately. In addition, the availability of a check-in/check-out system in room division can decrease paper costs and reduce the labor requirements of the hotel (Sirirak, Islam and Khang, 2011). However, this result was opposing Ham, Kim and Jeong (2005) finding. They noted that this item was the unimportant item. Meanwhile in Food and Beverage ICT Application, the highest level

of usage item was cost control with mean score was 5.05. This result is consistent with Ham, Kim and Jeong (2005) study. Based on them, food and beverage outlet that implement IT, executed significantly better than other outlets in term of cost control and profitability. The result of each dimension were determined right after analyzed each of the item. It appears that the most important dimension was Room Division ICT application. The mean score for room division was 5.30. The most important variable was concluded from this finding. Ham, Kim and Jeong (2005) stated that by installing computer applications in the room division department, likes reservation management, room-management and guest accounting modules, can enhanced hotels performance.

Implication

This study provides knowledge based on the important of ICT applications used in hotel that can help managers to prioritize which system that needs to be emphasized. The findings showed that the usage of ICT application in Room Division is crucial since it is the first thing that represents the service of the hotel to the customer. Furthermore, the check in/out is the most important item in the room division section and it is one of the essential function for room division pertaining to guest service. From this study, the researchers do hope that it can help the managers of hotels use the finding as guidance for them to prioritize the ICT application in their hotel. Since the usage of ICT applications were important in 5-stars hotels, the 3 and 4-stars might also apply the same technology applications in order to improve their hotels' performance. Lastly, the researchers also hope that it could contribute to the academicians and researchers theoretically.

Limitations and Recommendations for Future Research

Along the process of this study, the researchers encounter few limitations regarding on the studies. This limitation could be highlighted so that it can be considered for the future research. The limitation was this study only contributing on the most important ICT applications that applied in Room Division and Food and

Beverage Department. The study limits information on the relationship and influences between the ICT applications that available in the hotel and hotel performance. Furthermore, from the respondents' data, other information such as comparison between experience and position could be done. By doing these, varieties of results will be gained, and it is highly recommended for further studies.

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