

# **Adoption and Diffusion of Internet and Web Technologies in Hotel Marketing: A Study of Hotels in Thailand and Australia**

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## DECLARATION

I, **Suree Khemthong**, declare that the PhD thesis entitled [Adoption and Diffusion of Internet and Web Technologies in Hotel Marketing: A Study of Hotels in Thailand and Australia] is no more than 100,000 words in length, exclusive of tables, figures, appendices, references and footnotes. This thesis contains no material that has been submitted previously, in whole or in part, for the award of any other academic degree or diploma. Except where otherwise indicated, this thesis is my own work.

Signature..



.....Date...31 Oct 2006.....

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## DEDICATION

*This work is dedicated to my mother, the greatest teacher of all,  
who is always in my memory all times.*

\* \* \* \* \*

## ABSTRACT

Despite the growing importance of the use of the Internet as a marketing tool in the hotel industry, the factors that affect the adoption of Internet and Web based marketing activities (IWMA) by the hotel industry have not yet been fully investigated. There have been no comprehensive studies about the facilitating and inhibiting factors that distinguish the differences between Thai and Australian hotels in their adoption and diffusion of IWMA. Therefore, the aim of this study was to make an effort to fill this gap by investigating factors affecting the successful adoption of IWMA in Thai and Australian hotels. Furthermore, a specific aim was to develop a conceptual model for the successful adoption and diffusion of IWMA by Thai and Australian hotels.

To investigate the factors affecting the adoption of IWMA, the analysis of hotel Web sites, a questionnaire survey of hotels and a series of confirming interviews of hotel managers were employed. Data were gathered from hotels located in three cities in Australia (Sydney, Melbourne and Brisbane) and in three provinces in Thailand (Bangkok, Phuket and Chiang Mai). For this study, the research process was conducted in three stages.

*The first stage* was an evaluation of the features and customers' information needs provided on a total of 206 Web sites including 107 Thai hotel Web sites and 99 Australian hotel Web sites. Descriptive statistics and the Chi-square test were used to analyse the differences in the features and customers' information needs provided on the hotel Web pages between Thai and Australian hotels. *For the second stage*, a quantitative survey methodology was used to test the model for the adoption of IWMA by Thai and Australian hotels. Data collected from the questionnaire survey of 143 Australian hotels and 152 Thai hotels were analysed and the hypotheses specific to the main model were tested using four statistical methods: multivariate analysis of variance (MANOVA); one-way analysis of variance (ANOVA); discriminant function analysis (DFA); and independent sample *t*-test. *In the last stage*, confirming interviews with eight senior hotel managers in both Thailand and Australia were conducted to provide detailed explanatory information to support the findings from the quantitative questionnaire survey.

The *findings from the first stage indicate that* Australian hotel Web sites provided a greater variety of features and information that met customers' needs than Thai hotel Web sites. *The findings from the second stage* are in line with technological innovation theories that organisational, technological innovation and environmental factors can influence innovation adoption in an organisation. For *Thai* hotels, organisational factors with regard to *size of hotel* and *organisational readiness*, technological innovation factors with regard to *perceive benefits* and *compatibility* and environmental factors with regard to *customers power* and *level of government support* had a significant effect on their adoption of IWMA. For *Australian* hotels, the findings indicate that 1) organisational factors with regard to *size of hotel*, *top management support*, *CEO's attitude* and *CEO's IS knowledge*, 2) technological innovation factors with regard to *compatibility* and 3) environmental factors with regard to *customers power*, *competition intensity* and *level of technology support* had a significant effect on the adoption of IWMA. Thus, the model for adoption of IWMA by Thai and Australian hotels delivered from this study consists of three main groups of factors including organisational, technological innovation and environmental. The *findings from the last stage* also provided support for the findings of the second stage that organisational, technological innovation and environmental factors influenced the use of IWMA in Thai and Australian hotels. For *Thai hotels*, the organisational factors, *organisational readiness* and the environmental factors, *level of the Government support*, were identified as playing a major role in the adoption of IWMA. For *Australian hotels*, installing advanced technologies was the most significant factor amongst organisational factors. *Competition intensity* and *customer power* were the external factors that had driven most Australian hotels to use IWMA.

This study contributes new knowledge to increase understanding of the benefits regarding the use of IWMA for hoteliers in these two countries since it is the first study to have empirically tested a model of adoption of IWMA in the context of hotels in Thailand and Australia. The model that was delivered from findings of this study can provide guidance for Thai and Australian hoteliers to evaluate and improve their use of IWMA. The findings of this study also have important implications for both hotel management and policymakers for developing the use of IWMA. Policymakers in each country need to communicate effectively with their hotels about their IWMA adoption intentions. Indeed, further investment in improving the communications infrastructure and creating environments for developing the use of IWMA is needed.

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## LIST OF ABBREVIATIONS

ANOVA	Analysis of Variance
AUS	Australia
B2B	Business-to-Business e-commerce
B2C	Business-to-Consumer e-commerce
CEO	Chief Executive Officer
CIOS	Customer Based Inter Organisational System
DF	Degree of Freedom
DFA	Discriminant Function Analysis
EDI	Electronic Data Interchange
GDS	Global Distribution System
H	Hypothesis
ICDT	Information Communication Distribution and Transaction
ICT	Information Communication Technology
IOS	Inter Organisational System
IS	Information System
IT	Information Technology
ITU	International Telecommunication Union
IWMA	Internet and Web Based Marketing Activities
KMO	Kaiser-Meyer-Olkin Measure of Sampling Adequacy
MANOVA	Multivariate Analysis of Variance
Q	Question
SIG	Significant
SME	Small and Medium Enterprise
SMHO	Small and Medium Hospitality Organisation
TAT	Tourism Authority of Thailand
THA	Thailand
UNCTAD	United Nations Conference on Trade and Development
URL	Uniform Resource Locator
WWW	World Wide Web

## **PUBLICATIONS FROM THE RESEARCH**

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# CHAPTER ONE

## INTRODUCTION

### 1.1 BACKGROUND

The widespread usage of the Internet and World Wide Web technologies to support or supplant traditional modes of marketing and selling products and services has recently become a significant revolution in business. In recent years, developments in the Internet have increased dramatically and many countries in the world have made efforts to improve their Internet services. Also, the boom in the online travel industry has proved to be as much a challenge as it is an opportunity for hotel businesses (Cai et al., 2004). The Internet allows potential customers to learn about a hotel's facilities by proxy and to compare prices without directly interacting with a hotel's representatives.

According to research reported by Jupiter Media Metrix (2002), the growth of travel revenues through the Web is significant, and it has been predicted that *online travel bookings* will grow from US\$ 24 billion (or 11% of all travel bookings) in 2001 to US\$ 64 billion (or 22% of all travel bookings) by 2007. More specifically, in the US online travel market, Jupiter Research (2005) predicted that US online travel bookings will grow from US\$ 57 billion in 2004 to US\$ 104 billion by 2010, at which time it will represent 34% of the total of US travel revenues.

The hotel industry, a major sector of the travel industry, is the fastest growing sector in the use of the Web for electronic commerce (Scowsill, 2004). During 2002-2005, the number of *hotel Internet bookings* grew from US\$ 6.3 billion (or 9% of all hotel bookings) in 2002 to US\$ 17.5 billion (or 20% of all hotel bookings) in 2005 (PhoCusWright, 2002). Also, Carroll and Siguaw (2003) and Scowsill (2004) report that *hotel Internet bookings* constitute the second largest segment of online travel, and one in every five hotel bookings were made online in 2005. Starkov and Price (2006) support the predictions of increased hotel bookings, estimating that 27% of all hotel bookings will be influenced by the Internet in 2006, but still done offline by means of "call centre" and "walk-ins".

On the demand side, the Internet consumer base has increased globally every day. According to a report of research conducted by Internet World Stats (2006), more than 1 billion people around the world will have online access by the year 2006. During 2000-2005, the number of worldwide Internet users grew from 451.04 million (Nua Internet Survey, 2001) to 1.01 billion (Internet World Stats, 2006). In addition, Internet hosts grew from 93 million to over 353 million during this time (Internet Systems Consortium, 2005). Table 1-1 illustrates the growth of the Internet. According to Mullen (2000), more than two-thirds of travel and hospitality companies view the Internet site as a significant competitive weapon within their industry and about 60% describe the Internet as very significant in new customer acquisition.

<b>Year</b>	<b>Number of Users (in millions)<sup>a</sup></b>	<b>Number of Internet Domain Hosts (in millions)<sup>b</sup></b>
<b>2000</b>	<b>407</b>	<b>93</b>
<b>2002</b>	<b>673</b>	<b>162</b>
<b>2003</b>	<b>814</b>	<b>171</b>
<b>2004</b>	<b>934</b>	<b>285</b>
<b>2005</b>	<b>1070</b>	<b>353</b>
<b>2006</b>	<b>1210</b>	<b>N/A</b>
<b>2007</b>	<b>1350</b>	<b>N/A</b>

<sup>a</sup> Nua Internet Survey (2001), Internet World Stats (2006)  
<sup>b</sup> Internet Systems Consortium (2005)

With the rapid increase in the number of online consumers and dramatic channel shift, marketers in the hotel industry are taking full advantage of capitalising on this opportunity. However, as the Internet grows and expands, it is extremely challenging to determine how to differentiate their Web sites to get more potential customers, and how to retain them. Adamic and Huberman (2001) found that 55% of users use the service only for the top 1% of Web sites. This concentration of visitors into a few sites cannot be due solely to the fact that people find some types of sites more interesting than others. Moreover, a survey conducted by Engage Technologies and Nvision companies (1999) reported that 80% of online customers never returned to the site after their first visit.

## 1.2 RESEARCH PROBLEM

Despite the trend of Internet commerce increasing worldwide, there is still a gap between developing and developed countries in the use of the Internet and Web technologies for online business. In the past decade, computer and Internet use has risen from being concentrated among an extremely small subset of the population in developing countries to a much large shared of the population. Although computer and Internet use has expanded rapidly in developing countries in the past few years, a large digital divide in terms of *lack of appropriate products, cost, education, language and human resources* continues to exist between the developed and developing countries (Parliamentary Office of Science and Technology, 2006).

According to research conducted for the Economist Intelligence Unit/Pyramid (2003), which rated and ranked each country's preparedness for e-business, Thailand was ranked 42<sup>nd</sup> out of 60 countries while Australia was ranked as the ninth top country out of the same 60 countries. In the Asia-Pacific region, Thailand was ranked 9<sup>th</sup> out of 16 countries while Australia was ranked 1<sup>st</sup>. Further, Thailand was ranked 44<sup>th</sup> out of 60 countries worldwide in 2005 (Economist Intelligence Unit, 2005). Table 1-2 provides a comparison of the rankings of preparedness for e-business by Economist Intelligence Unit (2003; 2005) between Thailand and Australia.

<b>Year/ Country</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>
<b>Thailand</b>	<b>42 out of 60</b> <b>9 out of 16</b>	<b>43 out of 60</b> <b>9 out of 16</b>	<b>44 out of 60</b> <b>9 out of 16</b>
<b>Australia</b>	<b>9 out of 60</b> <b>1 out of 16</b>	<b>12 out of 60</b> <b>3 out of 16</b>	<b>10 out of 60</b> <b>2 out of 16</b>
<b>Sources: Economist Intelligence Unit (2003; 2005)</b>			

According to Internet World Stats (2006), only 12.7% of the Thai population used the Internet in 2005, whereas nearly 70% of the Australian people were Internet users. It is clear that, although the use of Internet technology is growing worldwide, Thailand is still behind other countries. Table 1-3 shows a comparison of the number of Internet users between Thailand and Australia during 2000-2005. Thus, while Internet use in Thailand is increasing quickly the proportion of the total population usage using it is still quite small.

Country	Years	Users (million)	Population (million)	% Pop	% Growth
Thailand	2000	2.30	60.60	3.7	266.1
	2005	8.42	66.52	12.7	
Australia	2000	6.60	19.52	33.8	115.0
	2005	13.99	20.50	68.2	

**Sources:** Internet World Stats (2006)

As mentioned by National Electronics and Computer Technology Center (NECTEC, 2005), the diffusion of information communication technology (ICT) among business establishments was limited and uneven in Thailand. On average, 11% of business establishments have computers, whereas only 4.2% and 1.2% have access to the Internet and own Web sites, respectively. The size of firms is related to the extent to which firms absorb new technology. By and large, the larger the firm is, the more likely it will own and use ICT in its business. Overall, computer is more widespread and commonly used than the Internet and Web sites in Thailand (NECTEC, 2005).

The disparity of ICT uptakes also exists among economic activities in Thailand (NECTEC, 2005). Computer and relate activities is undoubtedly the most advanced sector, with 89.9% of its establishments having computers, 81.9% and 11.2% having Internet access and Web sites, respectively. Although hotel was the big sector of accommodation industry in Thailand, only 8.4 % of Hotel and restaurant have computers, whereas 3.2% and 1.7% have access to the Internet and own Web sites (NECTEC, 2005).

In fact, tourism provides a means for Thailand to attract foreign currency and expand employment. Both international arrivals and domestic tourism were the target market of tourism in Thailand. According to the research reported by UNCTAD (2004), tourism in Thailand represented 5.47% of GDP and 9.71% of the country's exports in 2003. Thailand received over 10 million international tourist arrivals in 2003 (Tourism Authority of Thailand, 2005). Specifically, the Tourism Authority of Thailand (TAT) set e-tourism as one of the main priorities of the Tourism promotion for 2003-2006 in order to achieve the goal of 20 million tourist arrivals by 2008 (UNCTAD, 2005). However, the Web site of the tourism authority of Thailand that marketed Thailand's

tourism and online booking facility received around 1.8 million visitors a year but did not include the facility of online payment on the Web site (UNCTAD, 2005). Internet transactions still contributed very small percentage in total value across travel and tourism (Euromonitor International, 2006). Only recently had Thais become more familiar, as low-cost carriers actively encourage online booking and payment. There were also more online sites set up both direct supplies and intermediaries, although still mostly frequented by foreigners. Currently, locals still utilised the Internet as means of finding out general information. Traditional travel retailers still played an important role in the market as locals still preferred to contact and made reservations by phone or fax, and being able to inquire for information in person. According to a study conducted by ITU (2002), e-commerce in Thailand falls short when compared to neighbouring nations.

In Australia, domestic visitors generated 76 percent of tourism industry gross domestic product in 2004-2005 (Tourism research Australia, 2006). Australians travelling in Australia are the biggest market for most tourism businesses. Australians have proven very accepting of the Internet as a means of information gathering and purchasing over the Internet. The Australian Government/Department of Foreign Affairs and Trade (2004) reported that Australia was one of the largest information communication technology (ICT) markets in the world, and more than 60% of Australian businesses that were online in 2004 used the Internet to receive orders and more than 55% used it to make purchases. Moreover, the European Travel Commission (2005) reported the research conducted in 2004 by Asia Pacific online travel company, Zuji, which found that more than 80% of Australians used online booking and paying, rather than paying by phone or in person.

Furthermore, a survey conducted by Hotelclub (2005) showed that Australians made the highest number of bookings through the Web site Hotelclub.com in 2004. Thus, these reports indicate that Australians have, in recent years, been one of the most confident online travellers in the Asia Pacific region (European Travel Commission, 2005). Table 1-4 illustrates Hotelclub's top ten countries by bookings for 2004.

<b>Number</b>	<b>Countries</b>
<b>1</b>	<b>Australia</b>
<b>2</b>	<b>United Kingdom</b>
<b>3</b>	<b>France</b>
<b>4</b>	<b>United States</b>
<b>5</b>	<b>Germany</b>
<b>6</b>	<b>Japan</b>
<b>7</b>	<b>New Zealand</b>
<b>8</b>	<b>Spain</b>
<b>9</b>	<b>Italy</b>
<b>10</b>	<b>Ireland</b>

**Sources:** Hotelclub quoted by [hospitalitymagazine.com.au](http://hospitalitymagazine.com.au) Feb 26, 2005.

In addition, prior studies have shown that there are differences in using the Internet and Web technologies in the travel and hospitality industries between different regions (Law and Leung, 2000; Huang and Law, 2003; So and Morrison, 2004). Law and Leung (2000) noted that North American airlines provided more comprehensive Web sites than those of European and Middle Eastern, Asian and Australian airlines. Huang and Law (2003) found that the Web sites of performance of Hong Kong hotels scored higher than Chinese Mainland hotels, and statistically significant differences exist between the Web sites of hotels in these two regions. Moreover, So and Morrison (2004) reported that none of the national tourism organisations (NTOs) in the East Asia region were fully utilising their Web sites in a marketing role.

### **1.3 JUSTIFICATION FOR THE RESEARCH**

As mentioned above, there is still a gap between developing and developed countries in the use of the Internet and Web technologies in online business. Based on an assessment of previous studies, the author found that the factors that affect the adoption of Internet and Web based marketing activities (IWMA) by the hotel industry have not yet been fully investigated. The small number of studies that were identified provided some insights but not a comprehensive range of these factors.

In Thailand, Sahadev and Islam (2005) studied factors that influence a hotel's propensity to adopt information communication technology (ICT), but they focused only on hotel characteristics in terms of hotel size, scope of hotel activities, the grade and age of hotel. As well, Lertwongsatien and Wongpinunwatana (2003) studied factors

affecting the adoption of e-commerce in small businesses in Thailand in terms of a firm's size, top management support, benefits, compatibility, and competition, but did not include the hotel industry.

In Australia, Van Hoof et al. (1999) investigated the perception of accommodation industry managers about the importance of the Internet to the accommodation industry in terms of property size, type and the respondents' industry experience. Mistilis et al. (2004) examined and identified the degree of strategic management and implementation of information communication technology (ICT) for Australian hotel marketing, including management's perceptions.

No research was found that studied the differences between Australian and Thai hotels in the adoption and diffusion of Internet and Web based marketing activities (IWMA). Thus, these two countries were selected for the present study, Thailand as a less developed country and Australia as a developed country. This study attempts to bridge this gap by exploring factors affecting the adoption of Internet and Web based marketing activities (IWMA) in Thai and Australian hotels.

## **1.4 RESEARCH AIMS**

The general aim of the research was to explore factors affecting the adoption of Internet and Web technologies for hotel marketing in Thai and Australian hotels.

The specific aims were:

- 1.4.1 To identify the Internet and Web based marketing activities (IWMA) adopted by Thai and Australian hotels;
- 1.4.2 To identify and evaluate the differences between Thai and Australian hotels in their adoption of Internet and Web based marketing activities (IWMA) and its diffusion;
- 1.4.3 To investigate the different facilitating and inhibiting factors affecting the adoption of Internet and Web based marketing activities (IWMA) in Thai and Australian hotels; and

- 1.4.4 To develop a model for the successful adoption and diffusion of Internet and Web based marketing activities (IWMA) by Thai and Australian hotels.

The aims of this study are translated into the three following research questions:

1. To what extent have Thai and Australian hotels adopted and implemented the Internet and Web based technologies in their marketing activities? **(This question is formulated from research aims 1.4.1 and 1.4.2)**
2. What are the potential factors affecting the adoption of Internet and Web based marketing activities (IWMA) in Thai and Australian hotels? **(This question is formulated from research aims 1.4.3 and 1.4.4)**
3. Does the adoption of Internet and Web based marketing activities (IWMA) differ between Thai and Australian hotels?

If there is a difference, *“How does the adoption and implementation of Internet and Web based marketing activities (IWMA) differ between Thai and Australian hotels, and what factors are causing this difference?”* **(These questions are formulated from research aims 1.4.2, 1.4.3 and 1.4.4).**

In attempting to answer these questions, this study first formulates a theoretical model based on the theory of diffusion of innovation to show what factors affect the adoption of Internet and Web based marketing activities (IWMA) in Thai and Australian hotels. The proposed model will be presented in Chapter 2.

## **1.5 CONTRIBUTION OF THE RESEARCH TO KNOWLEDGE**

Web based marketing has become a worldwide trend, and the evaluation of current factors helps clarify their relationship with the online market and technological characteristics. This research is a comparative study between Australia and Thailand on the adoption of Internet and Web based marketing activities (IWMA) in their hotels. In fact, comparative studies are very important for identifying and highlighting the factors affecting the successful adoption of Internet and Web based marketing activities (IWMA) around the world.

This research will provide a better understanding of, and important insights into the key factors that influence the use of Internet and Web based marketing activities (IWMA) in Thai and Australian hotels. It will help the hotel marketers and managers in both countries to improve their Web site strategies in their business activities.

In particular, this study will contribute to knowledge about the successful adoption of Internet and Web based marketing activities (IWMA) by hotels for both business practitioners and academic researchers as follows:

- 1.5.1 This study is based on innovation diffusion theory, which has been cited widely in innovation diffusion research. However, there is no empirical study about innovation diffusion theory in Thai hotels. Thus, this study will be one of the first to identify and quantify the innovation factors in hotels in Thailand.
- 1.5.2 This study focuses on Internet marketing in Thai hotels. There are few related studies focusing on Internet marketing in hotels in Thailand. Therefore, this research will fill a knowledge gap about the adoption of Internet and Web based marketing activities (IWMA) in Thai hotels.
- 1.5.3 This study focuses on hotel marketing activities in two different markets, the Australian hotel market and the Thai hotel market. Little comparative research has been conducted on hotel Internet and Web based marketing activities (IWMA) in different geographic markets. Thus, this research will extend our knowledge about the adoption of Internet and Web based marketing activities (IWMA) in the global hotel market.

## **1.6 SIGNIFICANCE OF THE STUDY**

This study will identify the benefits of adopting Internet and Web based marketing activities (IWMA) in Thai and Australian hotels:

- Senior Management will have a better understanding of the benefits of the Internet and Web technologies, and develop more positive attitudes to, and be more receptive, towards adoption and implementation of Internet and Web based marketing activities (IWMA).

- The policymakers in the hotel and tourism industries will be encouraged to become more proactive in promoting the adoption of Internet and Web based marketing activities (IWMA) to increase the chances of success in global marketing.
- With a better understanding of the benefits of the Internet and Web technologies, the hotels, by enhancing the knowledge of Internet and Web based marketing activities (IWMA) amongst their employees, will be encouraged to change their ways of doing business to improve productivity and increase competitiveness.

## **1.7 SCOPE OF THE STUDY**

This study involved an analysis of hotel Web sites, a quantitative questionnaire survey and a series of confirming interviews to investigate factors affecting the adoption of Internet and Web based marketing activities (IWMA) in Thai and Australian hotels. This study focused on hotels located in three provinces in Thailand including Bangkok, Chiang Mai and Phuket, while in Australia, hotels located in Melbourne, Sydney and Brisbane were sampled. The total population for this study was 810 hotels including 327 hotels in Thailand and 483 hotels in Australia. The senior manager, for example the hotel manager or marketing director, who should also be a decision maker in relation to the hotel's marketing activities, was the key informant of this study.

## **1.8 DEFINITIONS OF TERMS USED FOR THIS STUDY**

To begin, it is necessary to describe the meaning of terms used in this study as follows:

### **1) Internet and Web Based Marketing Activities (IWMA)**

The term "Internet and Web based marketing activities" in the present study involves *the use of e-mail and the World Wide Web for conducting hotel marketing. This may include the use of e-mail to contact customers directly; the use of a Web page for promoting and advertising hotel services and products (accommodation, bar & restaurant, business centre, hotel facilities, conference rooms, and special promotions), for direct selling of hotel products and services, and extend to distribution channels by*

*receiving bookings via an online reservation system, as well as make complete transactions and receive payment online.*

## **2) Information Technology (IT), Information Systems (IS), Information and Communication Technologies (ICTs) and E-Commerce**

The terms of information technology (IT), information systems (IS), information and communication technologies (ICTs) and e-commerce in the present study involve *the use of technologies that are relevant to Internet and Web based marketing activities.*

Details of definitions of IWMA, IT, IS, ICT and e-commerce are presented in Chapter 2.

## **3) Hotel**

The term “Hotel” in the present study refers to both *hotels and motels* that were identified as utilising the definition of hotels used by the Thai Hotel Association’s Directory (2003-2004) and by the Directory of Australian Accommodation (RACV, 2003-2004).

Details of definitions of these terms are presented in Chapter 3.

## **1.9 Organisation of the Thesis**

This thesis is organised into seven chapters.

- **Chapter 1** introduces the background information identifying the research problem, the purpose of the research and its contribution to knowledge.
- **Chapter 2** reviews the existing relevant organisational technological innovation adoption and hospitality literature to provide the theoretical foundation for the proposed conceptual model. Then, the development of the conceptual model and its related hypotheses are presented.

- **Chapter 3** describes the methodology used to empirically test the conceptual model in the study, including an analysis of hotel Web sites, a quantitative questionnaire survey and a series of confirming interviews, development of the research instruments, the tests for validity and reliability of the research instruments and ethical considerations. The selection of participants, data collection methods and the statistical techniques for data analysis are also discussed in this chapter.
- **Chapter 4** presents results of the analysis of hotel Web sites of Thai and Australian hotels.
- **Chapter 5** reports the results of the quantitative survey of hotels undertaken in each country and reports on the comparison of the findings of hotels across the two countries, including the response rates, respondents' characteristics and testing of the hypotheses.
- **Chapter 6** presents the results of confirming interviews of Thai and Australian hotel managers.
- **Chapter 7** provides the discussion and conclusion of the analysis of hotel Web sites, the questionnaire survey and the confirming interview findings. The limitations of the study and the theoretical and practical implications for Thai and Australian hotels are discussed. Finally, recommendations for further research are also suggested in this chapter.

## **1.10 SUMMARY**

In this chapter the research topic has been outlined. The research background, research problem, research aims, research questions, main area of the study and the significance of the study were discussed. The scope of the thesis, the outline of the thesis presentation and definitions were described. The next chapter will present the review of literature, as well as the theoretical and conceptual model for this study.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 INTRODUCTION**

Despite the growing importance of the use of the Internet as a marketing tool in the hotel industry, the factors that affect the adoption of Internet and Web based marketing activities by the hotel industry have not yet been fully investigated. In this study, the focus is on the adoption and diffusion of Internet and Web based marketing activities (IWMA) by hotels in Thailand and Australia. This chapter will provide the theoretical concepts in developing Web sites and organisational innovations and present the model for evaluating the factors affecting the adoption of IWMA in Thai and Australian hotels.

#### **2.2 THE IMPACT OF THE INTERNET**

Many expect that the Internet and electronic commerce will lead to the “frictionless” or perfect market (OECD, 1997). Unlike in the physical market, online consumers and suppliers can easily communicate and exchange their desired information for business transactions with each other. Moreover, with just a click, consumers can find a better alternative business. The traditional friction to the consumers is thereby reduced by the technology. The Internet and Web technologies have the potential to offer customers a better deal compared to purchase by conventional methods in many situations (Keeney, 1999).

The use of the Internet and Web technologies is important and becoming the direct marketing tool for improving the success of a business in the online environment (Lane and Cavaye, 1999; Poel and Leunis, 1999; Spiliopoulou and Pohle, 2001; Schneider, 2004). As mentioned by Lane and Cavaye (1999), the development of the Web as a marketing medium is critical to the success of electronic commerce. The Internet is not only used as a medium for providing rich information but also as a medium for communication, conducting transactions, and distributing the product or service to the customer (Angehrn and Meyer, 1997). Moreover, the Internet and Web technologies have become elements in the marketing mix, making a traditional marketing effort more effective and efficient (Cortada, 2001; Zeithaml and Bitner, 2003).

Under these circumstances, several industries have used the Internet and Web technologies as an effective marketing tool to keep their customers (Domegan, 1996; Noh and Fitzsimmons, 1999). Like other industries, several players in the hotel industry have used the Internet and Web technologies as potential distribution channels to extend their target markets to reach the global market, to receive online bookings, to enhance guest services and to generate revenue (Kasavana et al., 1997; Connolly et al., 1998; O'Connor, 1999; Wood, 2001; Morrison, 2002).

As pointed out by Jeong and Lambert (2001), the Internet has had a significant impact on competition in the lodging industry. The Internet and World Wide Web have added significantly to the distribution channels available to hotels. Hoteliers can now promote directly to customers and sell their rooms inventory more cheaply than using expensive call centres, global distribution systems (GDS) and central reservation systems (CRS) of their hotel affiliation (Sigala et al., 2001; Choi and Kimes, 2002; O'Connor and Piccoli, 2003).

The Internet is a niche instrument and a medium for highly customised contacts with existing and potential customers (Sigala, 2001). The Internet is a powerful marketing tool for hotels for building stronger customer relationships to reach customers and to retain customers, and has been a major driver for success in e-commerce (Gilbert and Powell-Perry, 2002; Luo and Seyedian, 2003; Hsu et al., 2004). Morrison et al. (1999) pointed out that there are six major advantages of Web marketing for hotels: 1) cost reduction; 2) revenue growth; 3) niche marketing; 4) improved customer satisfaction; 5) quality improvement; and 6) addressing other critical business or customer needs.

In addition, it is clear that e-commerce in travel and hospitality is growing at unprecedented levels and shows no signs of slowing down (Zickefoose, 2001; Zhou, 2004; Starkov and Price, 2005). E-commerce offers functionality and new ways of doing business that no business can afford to ignore. As mentioned, on the demand side, the Internet consumer base increases globally every day. With the rapid increase in the number of online consumers, hotel Websites are not only the place where a hotel places information about its products and services, but they also have a commercial value in terms of profitability (Liang and Law, 2003).

As a result, the Internet and Web technologies have become integral parts of hotel sales and marketing activities (Gregory et al., 2005), and can be viewed as important competitive marketing weapons to survive in online business.

## **2.3 DEFINITION OF INTERNET AND WEB BASED MARKETING ACTIVITIES**

Definitions of **Internet and Web based marketing activities (IWMA)** are available from a range of different sources but they still relate to each other. As the Internet and Web technologies are components of information technology (IT), information systems (IS), information and communication technologies (ICTs), the terms: *IT*; *IS*; *ICTs*; and *e-commerce* are used in this study and definitions of these terms from the literature are reviewed in this section.

### **2.3.1 Information Technology (IT) and Information Systems (IS)**

In terms of IT and IS, Maguire et al. (1994, p. 74) stated that *the perspectives from which IT and IS are viewed can lead to some difficulties in reconciling understanding of the terms*. From the top down, *in the macroview*, IT is embedded in the information systems that are the large building blocks of the infrastructure of a society. For example; the education system or the social services system are examples of information systems (IS). *At the microlevel*, however, in the management of any particular organisation, whatever its mission, it may be better to work within a definition that, while general, associates IS more closely with the management of organisations.

Thus, they claimed that IS will continue to include both human informants and humans wanting to be informed. At the same time IT will continue to extend the range and depth of human knowledge that can be stored and made available to inquirers through IS. Hence, the need for recognition that IS and IT are closely related concepts.

Also, McKay and Marshall (2004, p. 5) observed that *trying to make distinctions between e-commerce, e-business and what has traditionally been called IS/IT is probably becoming less and less useful*. All three terms will merge in time so that we will refer to the deployment of **IS/IT** (including the Internet and communications

technologies) in business. “In deed” they concluded that most businesses will be e-businesses in that various IS/IT components will play a vital role in supporting and enabling a range of business activities.

In the hospitality literature, Sheldon (1997, p. 1) noted that *IT includes computers, peripherals, data and voice communication lines and equipment, and software of all kinds*. The rapid pace of development in IT is creating millions of electronic connections around the globe, connecting people, the business community, industries, regional and international communities. The travel and tourism industry is a heavy user of these connections and some of the largest telecommunication networks spanning the globe carry travel information. IT, therefore, provides the information backbone that facilitates tourism.

### **2.3.2 Information Communication Technologies and Information Technology**

Buhalis (2003, p. 8) mentioned that information communication technologies (ICTs), as it becomes *more difficult to distinguish between each element of the technology*, should be regarded as the entire range of electronics, computing and telecommunication technologies and all hardware, software and netware required for the development and operation of the “info-structure” of an organisation. Thus, ICTs make up an integrated system of networked equipment and software that enables effective data processing and communication for organisational benefits.

According to Wikipedia (2006), information technology (IT), also known as ICT, *is a broad subject concerned with technology and other aspects of managing and processing information, especially in large organisations*. IT deals with the use of electronic computers and computer software to convert, store, protect, process, transmit and retrieve information. For that reason, computer professionals are often called IT specialists or Business Process Consultants and the division of a company that deals with software technology is often called the IT department. In the United Kingdom education system, IT was formally integrated into the school curriculum. With the arrival of the Internet and broadband connections to all schools, the application of IT knowledge, skills and understanding in all subjects became a reality. This change in

emphasis has resulted in a change of name from IT to ICT. ICT in Education can be understood to be the application of digital equipment to all aspects of teaching and learning.

Based upon these arguments, the concepts of IT/IS/ICT are closely related together and may be used interchangeably. The Internet and Web technologies are components of IT/IS/ICT; therefore, the terms of IT/IS/ICT in the present study are similar in concept and related to the use of “Internet and Web based marketing activities (IWMA)”.

### **2.3.3 Internet and Web Based Marketing Activities and E-Commerce**

#### ***2.3.3.1 Internet Based Marketing***

According to Chaffey et al. (2003, p. 7), Internet marketing or Internet based marketing can be defined as *the use of the Internet and related digital technologies to achieve marketing objectives and support the modern marketing concept*. Internet marketing will include the use of a company Web site in conjunction with online promotional techniques such as search engines, banner advertising and direct e-mail.

Zhou (2004, pp. 94, 213) claimed that Internet marketing or e-marketing refers to *bringing information of the products and services to the target consumers in a timely and accurate fashion through the Internet*. Specifically, Internet marketing is defined as *the process of building and maintaining customer relationships through online activities to facilitate the exchange of ideas, products and services that satisfy the goals of both buyers and sellers* (Imber and Betsy-Ann, 2000 cited in Ngai, 2003, p. 1).

#### ***2.3.3.2 E-Commerce***

McKay and Marshall (2004) defined e-commerce as the buying and selling of goods and services over computer networks, including the Internet. Zhou (2004, p. 56) also defined e-commerce as *a system of conducting business activities using the Internet and other information technologies*. E-commerce can be divided into two categories: business-to-consumer (B2C) and business-to business (B2B). B2C e-commerce refers to

e-commerce transacted between business organisations and end consumers, whereas B2B e-commerce refers to e-commerce transacted between business organisations (Whiteley, 2000; Schneider, 2004; McKay and Marshall, 2004; Chen, 2005).

In general, applications of the Internet by the hotel industry are categorised in electronic commerce as B2B and B2C (Yelkur and DaCosta, 2001; Cox and Koelzer, 2004; Kotler et al., 2003). Much of the B2B in the hotel industry involves businesses that serve the hotel's business, particularly restaurant suppliers, manufacturers and retailers of hotel furnishings (Cox and Koelzer, 2004). In addition, travel agents and tour operators that do business with hotels for bookings are classified in B2B as well. B2C includes hotels that do business with customers such as guests and travellers (Cox and Koelzer, 2004).

E-commerce in the hotel industry typically involves (1) a Web site where potential guests can find information and book a room, (2) an order fulfillment centre that tracks and ships orders, and (3) a customer service mechanism by which questions and feedback about products and services and returns can be handled (Zhou, 2004). However, Internet marketing is used directly to support the sell-side of e-commerce or B2C (Chaffey et al., 2003, p. 10).

**Based upon the above, it can be seen that *the terms "Internet marketing or Internet based marketing" are closely related in a similar context to "e-commerce" and "e-business"*.** Therefore, the meaning of adoption of Internet and Web based marketing activities (IWMA) by hotels used in the present study based upon these observations, is defined from the marketing perspective as the provision of service between hoteliers and consumers, including provision of hotel information, payment availability information, and provision of a confirmation service, for example bookings.

The definition is as follows:

- **Adoption of "Internet and Web based marketing activities (IWMA)" by hotels involves *the use of e-mail and the World Wide Web for conducting hotel marketing. This may include the use of e-mail to contact customers directly; the use of a Web page for promoting and advertising hotel services and products (accommodation,***

*bar & restaurant, business centre, hotel facilities, conference rooms, and special promotions), for direct selling of hotel products and services, and to extend distribution channels by receiving bookings via an online reservation system, as well as make complete transactions and receive payment online.*

## **2.4 THE KEYS TO A SUCCESSFUL WEB SITE**

In the information age, customers have different and individual needs (Bergsma, 2001). Consumers are demanding greater convenience and aspire to use the Internet and Web technologies for buying products and services and therefore the ability of the Internet to transmit information quickly has great advantages for marketing communications (Burke, 1997). Bell and Tang (1998, p. 219) stated that *Knowing which customers you want to access and their expectations are crucial factors* when starting to consider the feasibility of developing an Internet Web site for your business.

The importance of the customer in designing Web sites has been highlighted by a number of researchers. For example, Jarvenpaa and Todd (1997) and Keeny (1999) pointed out that the perception of product quality in terms of product availability, product information and product comparison at a particular e-commerce site is one of the key factors that influence customer purchase behaviour. Convenience or ease of use is also determinants of the perceived service quality of the Web site (Jarvenpaa and Todd, 1997; Keeny, 1999; Friend et al., 2006). According to Technology Acceptance Model (TAM) proposed by Davis (1989), “ease of use” has a dual effect, direct as well as indirect, on consumers’ intention to shop online. Following this, if consumers become more experienced with the Internet, they will adjust their perceptions regarding the “ease of use” of the Internet as a shopping medium in a positive direction (Monsuwe et al., 2004). Thus, to create interest in a Web site, the site should be easy to use, interactive and efficient.

In the services marketing literature, Parasuraman et al. (1985; 1988) have identified five factors that affect customer perceptions of service quality including responsiveness, assurance, reliability, tangibility and empathy. These can be applied to digital services as well (Zeithaml and Bitner, 2003). Jarvenpaa and Todd (1997) used survey data to

show that *responsiveness* is a major concern of online consumers. Responsiveness deals with how well the Web site responds to customer needs. Also, Palmer (2002) reported that responsiveness in terms of feedback options and frequently asked questions (FAQs) is significantly associated with Web site success. In the World Wide Web, since customers cannot interact directly with a sales representative, it is essential the Web site provides appropriate communication channels as part of a customer service program.

Zeithaml and Bitner (2003) also identified tangibility in terms of appearance of the Web sites could affect customer perceptions of service and product online. In their study, Mandel and Johnson (1998) found that a background colour or picture could affect the product attributes as perceived by online customers. In the World Wide Web, the page design and the use of multimedia are important to this effect. Trust or assurance is an important phenomenon in the consumer's mindset with regard to purchasing services online (McCole, 2002). Lack of trust is cited as one of the most frequent reasons why people do not shop online (Lee and Turban, 2001; Turban et al., 2004). According to Hoffman et al. (1999), 94% of Web users in their study had refused to provide information to a Web site and 40% had given false information. These results have shown that most online consumers are concerned about disclosing personal information. Moreover, one study reported that 21% of consumers would not buy things online because of the fear of hackers (Krantz et al., 1998).

Recent studies have shown how perceptions of Web sites are influenced by delays in retrieval time (Palmer, 2002; McKinney et al., 2002). Nielsen (1996) reported that if the download time exceeds 10 seconds, users are likely to lose interest in a Web site. This implies that quick and easy access and no down time are the key determinants to attract online customers to a Web site. Pricing strategy has been adapted for most Web sites, as in the World Wide Web customers can easily view and compare prices. Cao et al. (2003) reported that the level of pricing was perceived by the customers as an important determinant when making the decision to purchase online.

In their studies, Schubert and Selz (1999) and Song and Zinkhan (2003) found that even with many alternative Web sites, only a high-quality Web site has the potential to attract more consumers and encourage them to purchase products or services and revisit the

site. If consumers do not find information helpful for making a purchase decision at a company site, they are likely to visit and eventually buy products from competitors who happen to provide the necessary information (Salam et al., 1998). These findings suggest that when a company takes its business to the Web, it should create a Web site that is flexible enough to meet the needs of many different users.

Spiliopoulou and Pohle (2001) have suggested that the success of a Web site affects, and reflects directly, the success of the company in the electronic market. In summary, then, based on the above information, the basic elements of successful Web sites that can meet customer's needs should include both marketing functions and technical Web site characteristics (Palmer and Griffith, 1998) in terms of quality of information, easy use and access, security and privacy and fast loading (Jarvenpaa and Todd, 1997; Schubert and Selz, 1999; Song and Zinkhan, 2003; Monsuwe et al., 2004).

## **2.5 INTERNET APPLICATIONS AND WEB SITE EVALUATION**

Having a Web site provides a hotel with important business opportunities and a competitive edge. However, as more and more hotel Web sites proliferate, the competition among them is intensifying. In the physical world, consumers can switch to other Web sites or competitive URLs with a mouse click. Many Web sites suffer from low awareness among their customer targets. How to differentiate their Web sites from other sites is still the basic problem in online business.

Yet, it is extremely challenging to determine how to retain Web site customers and enhance competitiveness. Recent research has suggested that the evaluation of Web sites by comparing them with other related Web sites is the best practice to improve the success of Web sites in order to gain competitiveness (Misic and Johnson, 1999). Wan (2002) has suggested that tourism/hospitality professionals should frequently evaluate the content of their Web sites in order to meet the needs of consumers.

### 2.5.1 The Important Elements of A Successful Web Site

Previous studies focusing on Web sites in the hospitality industry have identified the important elements of a successful Web site. For example, Murphy et al. (1996) identified 32 features on hotel Web sites which they grouped into four categories: 1) promotion and marketing; 2) service and information; 3) interactivity and technology; and 4) management. The findings indicate that successful Web sites were designed and developed to allow interaction between the consumer and the hotel marketer that gave the consumers the easiest and most rewarding access to relevant information.

Gilbert et al. (1999) also identified a number of features on hotel Web sites that can gain competitive advantage for a hotel. These consisted of information, reservation, loyalty program, newsletter, special gestures, feedback, customer service, public relations, value-added services, employee Web site, channel member Web site and customised research.

Jeong and Lambert (2001) identified the 38 attributes of information needs on lodging Web sites, and grouped these into five categories: 1) general Web information quality; 2) hotel facility information and services; 3) locality; 4) Web design and format; and 5) room information. Wan (2002) set three criteria for the evaluation of hotel Web sites: 1) user interface (for example, *ease of access* and *standardised format*); 2) variety of information (for example, *simplicity*, *current* and *reliable information*); and 3) online reservation and suggested that these criteria should be considered when designing a Web site.

Chung and Law (2003) proposed a hotel Web site performance measurement model that consisted of five dimensions of features of hotel Web sites: 1) facilities information; 2) customer contact information; 3) reservation information; 4) surrounding area information; and 5) management of Web sites. Law and Hsu (2005) reported that customers perceived reservation information and room rates information as the most important attributes of hotel Web sites.

In addition, many studies have identified the various variables that affect the success of a hotel Web site. According to Wober et al. (2002) and Hsu et al. (2004), multilingual

content is a crucial factor for the success of a hotel Web site. Ho (2002) indicated that the number of non-English speaking Internet users will continue to grow faster than the number of English-speaking Internet users, and suggested that this justifies the need for multilingual capacity for online communication in the hotel industry.

In their study, Law and Wong (2003) found that a secure payment method is one of the most important factors for Web site success. Kim and Kim (2004) reported that convenience, ease of information search, transaction facility, price and safety significantly influenced online hotel reservation intention. Yelkur and DaCosta (2001) and O'Connor (2002) found that electronic pricing strategies of hotels were the key motivators for encouraging customers to purchase online.

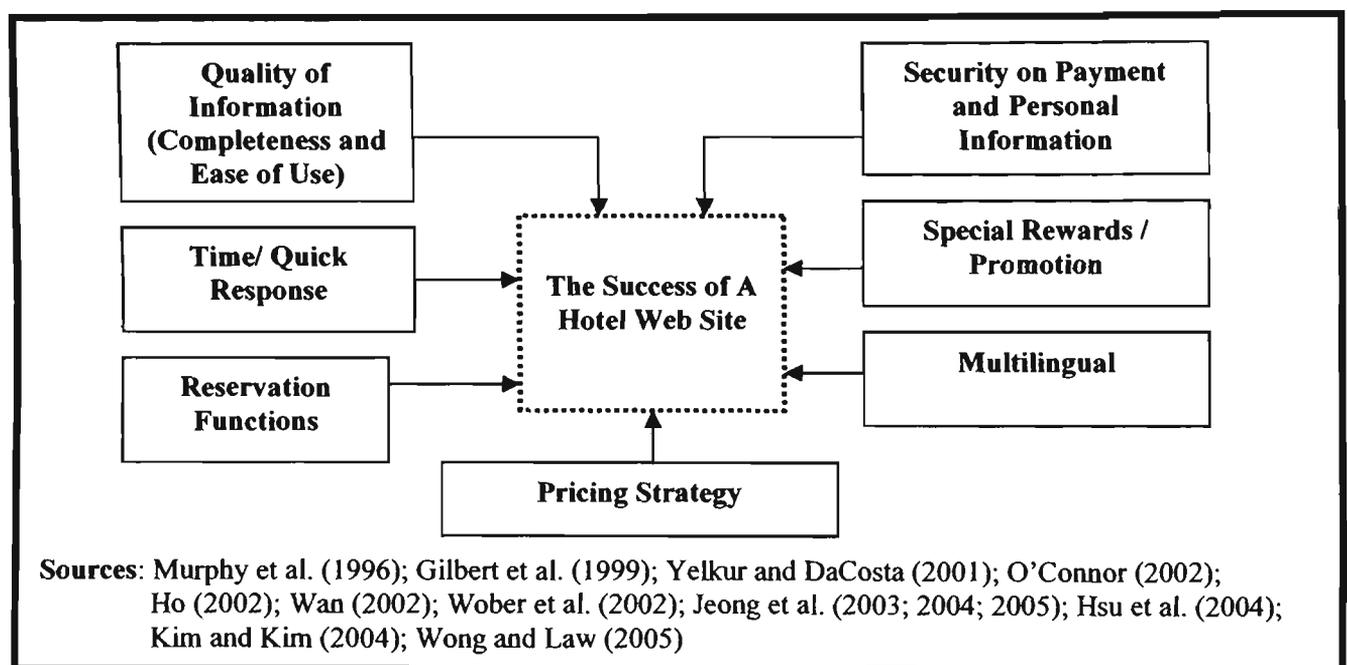
A study of Wong and Law (2005), regarding analysing the intention of travellers to Hong Kong to purchase on hotel Web sites, showed that over 90% of their respondents (606/638) would consider booking hotel rooms through the Internet as long as there was a discount of at least 6%. Chu (2001) conducted five focus groups of Hong Kong travellers about their needs and expectations towards airline/travel Web sites and reported that special reward strategies constituted the key success factor to encourage travellers to use online booking and payment facilities. Mason and Roberts (2004) conducted a customer survey during the booking process in two hotels in New Zealand and found that travellers want considerably more hotel information about location and facilities than most hotels actually provide through their brochures and Web sites.

Jeong et al. (2003) also reported that information clarity, ease of use, and navigational quality were the key motivators for encouraging customers to purchase online. Sigala (2003) stated that the five market dimensions; product, price, promotion, place and the customer relationship, are very important considerations for developing effective Web sites, and stressed that not many hotels consider the customer relationship dimension.

Jeong (2004) and Jeong et al. (2005) adopted the Technology Acceptance Model (TAM) proposed by Davis (1989) for studying customers' online purchase-related behaviour. They found that information completeness and ease of use are important determinants of perceived Web site quality, which, in turn, influences customers'

expectations of the quality, value, and attractiveness of the hotel featured on the Web sites. Also, Wong and Law (2005) proposed a model of the “intention to purchase” on a hotel Web site that consisted of three dimensions: 1) information quality; 2) sensitivity content; and 3) time, and indicated that information quality is perceived as the most significant dimension motivating the intention to purchase.

From these prior studies, several attributes were identified as important in the process of creating successful Web sites and may potentially encourage travellers to make a purchase over the Internet. Figure 2-1 summarises the important factors in the success of a hotel Web site.



**Figure 2-1: Important Factors in the Success of A Hotel Web Site Identified from Hospitality Literature**

### 2.5.2 The Performance of Hotel Web Sites

Recent studies have shown that the use of Web sites in the hotel industry focuses on advertising and promotion, or presence in virtual information space (VIS) and virtual distribution space (VDS) (Murphy et al., 1996; Weeks and Crouch, 1999; Leong, 2002; Wan, 2002; Sigala, 2003; Baloglu and Pekcan, 2006).

Weeks and Crouch (1999) applied the hotel Web site features identified by Murphy et al. (1996) to examine the content of 120 Australian-based hospitality and tourism Web sites. They found that only 34% of the Web sites offered their visitors the opportunity to

purchase on-line. Benckendorff and Black (2000) conducted content analysis to evaluate 16 sites of Regional Tourism Authorities (RTAs) in Australia, and reported that the RTAs did not provide online reservations or have multilingual capabilities.

In addition, Lituchy and Rail (2000) reported that most small inns and bed and breakfasts (B&Bs) in Canada and the U.S.A. did not provide audio, video, or 360-degree photography. Leong (2002) also utilised the hotel Web site features reported in Murphy et al.'s (1996) study to analyse the hotel Web sites in Singapore and found that most hotel Web sites in Singapore provided only basic information and did not practice any online bookings. This suggests that online transactions still need to be considered when businesses come to design their Web sites.

Liang and Law (2003) evaluated and compared hotel Web sites among 3 categories of Chinese hotels (3, 4 and 5 Star) in terms of "customer contact information", "facilities information", "management of Web sites", "reservation information", and "surrounding area information". They found that "reservation information" and "surrounding area information" presented on 3, 4 and 5 Star Chinese hotel Web sites achieved a poor performance score. However, they also reported that there were no significant differences in the performance of Web sites among these three categories of hotels in China.

Nevertheless, a number of research studies (Morrison et al., 1999; Paraskevas and Buhalis, 2002; Murphy et al., 2003; Sigala, 2003) have found that there are differences in the performance of hotel Web sites among different hotel categories and different sized hotels (small, medium, and large businesses). For example, the work of Morrison et al. (1999) showed that most of the small hotels in Scotland were not effectively using the Web and were certainly not realizing all of the advantages of the Internet and WWW.

Siguaw et al. (2000) found that the level of information technology application and sophistication is directly related to hotel categories in terms of lodging segment (budget, economy, midprice, upscale, luxury), lodging type (all-suites, extended-stay, casino hotel), and brand affiliation status (chain and independent hotels). In the studies undertaken by Buhalis and Main (1998), Paraskevas and Buhalis (2002), and Murphy et al. (2003), the findings indicate that the Web sites of small and budget hotels are not as

effective in meeting consumers' needs as those of luxurious hotels because of lack of knowledge, absence of Internet strategy and lack of resources.

Also, Chun and Law (2003) found that there were significant differences in the performance score among the luxurious, mid-priced and budget hotel Web sites. Jeong et al. (2003) reported that Web sites of luxury hotels were perceived to use better colour combinations than up-scale, mid-scale and economy hotels. According to a study conducted by Yeung and Law (2004), chain hotels performed significantly better than independent hotels in the dimensions of language usability and information architecture usability. Baloglu and Pekcan (2006) conducted content analysis on hotel Web sites and also reported that 5 star transient hotels performed better than other types of hotels in terms of site design and marketing features included in their Web sites. These results may imply that hotel categories and hotel size are related to the likely success of hotel Web sites.

Table 2-1 provides a summary of some of the results of Web site evaluation in the hospitality industry from previous studies. Most studies used checklist format in terms of "yes" and "no", and the number of Web site evaluations ranged between 16 and 139 sites. Despite the fact that most studies of Web sites in the hotel industry have been conducted in many countries including Australia, Hong Kong, Singapore, Taiwan, Greece and Turkey (Weeks and Crouch, 1999; Chung and Law, 2003; Leong, 2002; Wan, 2002; Sigala, 2003; Baloglu and Pekcan, 2006), there is very limited, if any, research on the Web site practices of hotels in Thailand. Therefore, for this study it was decided that the content of hotel Web sites in Thailand and Australia should be evaluated and compared by means of two purpose-designed checklists adapted from those of past studies. The first checklist instrument was modified from Murphy et al.'s (1996), Weeks and Crouch's (1999), and Leong's (2002) list of features. The second checklist was modified from the 38 attributes of Jeong and Lambert's (2001) to evaluate information that met customer's needs on hotel Web sites.

**Table 2-1: Web Site Evaluation in the Hospitality Industry**

Year	Author	Methodology	Number of Sites or Participants	Location	Key Findings
1996	Murphy et al.	Content analysis (evaluation of the 32 features provided on hotel Web sites, and then grouping into four categories: promotion; service; interactivity; and management.	36 sites (20 chain and 16 independent hotels)	North America	E-mail and some type of travel information were the most common features. Less than half had a functioning reservation system.
1999	Weeks and Crouch	Content analysis by using a checklist form (Yes or No)	120 sites	Australia	Only 34% of the Web sites offered their visitors the opportunity to purchase on-line.
2000	Benckendorff and Black	Content analysis by using an assessment sheet (Yes or No)	16 sites of Regional Tourism Authorities (RTA)	Australia	RTA did not provide online reservations and multilingual capabilities.
2002	Leong	Content analysis by using a checklist form (Yes or No)	66 Web sites of hotels	Singapore	Most hotel Web sites provided basic information, and a small number of those provided the rates and availability of the rooms but do not practice any online bookings.
2002	Wan	Content analysis by using checklist format on a 5-point rating scale	136 Web sites (60 international tourist hotels and 78 tour wholesalers)	Taiwan	Very few Web sites provided a credit card payment system when making online reservations, indicating that the use of the Internet in Taiwan's hospitality and tourism industry is primarily for advertising, not marketing.
2003	Liang and Law	Content analysis by using checklist format on a 5-point rating scale	90 hotel Web sites	China	They reported that "reservation information" and "surrounding area information" demonstrated poor performance on the hotel Web sites. They also indicated that there were no significant differences in providing content on their hotel Web sites among the three categories of hotels in China.
2003	Sigala	Survey questionnaire by answering Yes or No	216 owners or managers	Greece	Most hotels used the Internet for disseminating information and receiving reservation requests through e-mail, whereas very few were using the Internet for more enhanced and sophisticated activities.
2006	Baloglu and Pekcan	Content analysis by using a checklist form (Yes or No)	139 hotel Web sites	Turkey	The hotels in Turkey performed well in navigation, poorly in terms of marketing mix variables, were not utilising the Internet to its full potential and were effectively e-marketing their hotels regardless of the hotel type.

In the next section factors affecting the adoption of Internet and Web based marketing activities (IWMA) by the hotel industry are discussed. Also, a theoretical model is proposed as a conceptual model to provide the foundation for empirical investigation of the research questions in this study.

## **2.6 ADOPTION AND DIFFUSION**

Prior studies have shown that there are differences in using the Internet and Web technologies in the travel and hospitality industries between different regions (Law and Leung, 2000; Huang and Law, 2003; So and Morrison, 2004). It is, therefore, important to understand the factors that affect a firm's decision regarding the adoption of the Internet and Web technologies in its marketing activities.

As with other areas of literature pertaining to Internet adoption, research on the Internet and Web technologies for marketing is only now beginning to develop (Apigian et al., 2005). Therefore, to better understand the factors affecting the use of IWMA, the IT/IS and ICT literature, which has involved the use of the Internet and Web technologies and has a more comprehensive view of technology, was reviewed. This section outlines the theoretical background and recent literature regarding factors affecting the adoption of technology in an organisation. Previous research on the adoption of IT/ICT by the hospitality and tourism industries is also reviewed. Finally, a conceptual model that was developed from the literature and was subsequently used in this study is then presented.

### **2.6.1 Theoretical Background**

The theoretical foundation for most technology adoption research is based on the diffusion of innovation literature (Tornatzky and Klein, 1982; Rogers, 1983, 1995; Tornatzky and Fleischer, 1990), which includes reports of studies on the process of technology innovation diffusion and factors influencing technology innovation adoption. The purpose of this study was to develop a conceptual model and identify factors affecting the adoption and diffusion of IWMA. Thus, the theoretical basis for this study is found in the organisational innovation literature that includes innovation theory.

### 2.6.1.1 Diffusion of Innovation Theory

Rogers (1995, p.5) defined diffusion of innovation as *the process by which an innovation is communicated through certain channels over time among the members of a social system*. He identified the four main elements of a diffusion process as: 1) the innovation; 2) communication channels; 3) time; and 4) the social system. Rogers (1995, p. 11) defined innovation as *a process, object, or idea that is perceived as new by an individual or another unit of adoption*.

Innovation has been studied at the level of the industry, the firm and the individual (Damanpour, 1991). This study focuses on innovation at the organisational level, where it is defined as the adoption of a new idea by the adopting organisation (Damanpour, 1996). In this study, the innovation is defined in terms of adoption of the Internet and Web technologies by Thai and Australian hotels for their marketing activities.

Communication channels are *the means by which messages get from one individual to another* through the mass media and interpersonal channels (Rogers, 1995, p. 18). In this study, the diffusion of IWMA in Thai and Australian hotels refers to the channels through which each hotel manager learns or gains experience for the use of IWMA.

Time is the third element of the diffusion process. Rogers (1983; 1995) identified the five characteristics of innovation that affect the rate of diffusion. These are relative advantage, complexity, compatibility, trialability and observability. All these factors, except complexity, have a positive relationship with the rate of adoption of technology (Zaltman et al., 1973; Rogers, 1995). Innovation diffusion is faster if potential adopters perceive the innovation to have a relative advantage and be compatible with their practices and needs.

According to Rogers (1995), there are five types of innovation adopters: 1) innovators; 2) early adopters; 3) early majority; 4) late majority; and 5) laggards. Innovators are the fastest adopters while laggards are the slowest adopters. Table 2-2 illustrates the different types of innovation adopters and their characteristics (Rogers, 1995; Cain and Mittman, 2002). In this study, time refers to the relative earliness or lateness of the adoption of Internet and Web based marketing activities by Thai and Australian hotels.

<b>Category</b>	<b>Characteristics</b>	<b>Percent of Adopters</b>
<b>Innovators</b>	<ul style="list-style-type: none"> <li>• Venturesome and eager to try new ideas</li> <li>• Cosmopolite</li> <li>• Geographically dispersed contacts</li> <li>• High tolerance of uncertainty and failure</li> <li>• May or may not be respected by peers</li> </ul>	<b>2.5</b>
<b>Early Adopters</b>	<ul style="list-style-type: none"> <li>• Well-respected opinion leadership</li> <li>• Well integrated in social system</li> <li>• Judicious and successful use of innovation</li> </ul>	<b>13.5</b>
<b>Early Majority</b>	<ul style="list-style-type: none"> <li>• Deliberate before adopting new idea</li> <li>• Highly interconnected with a peer system</li> <li>• Just ahead of the average</li> </ul>	<b>34.0</b>
<b>Late Majority</b>	<ul style="list-style-type: none"> <li>• Approach innovations with caution and skepticism</li> <li>• Responsive to economic necessity</li> <li>• Responsive to social norms</li> <li>• Limited economic resources</li> <li>• Low tolerance for uncertainty</li> </ul>	<b>34.0</b>
<b>Laggards</b>	<ul style="list-style-type: none"> <li>• Hold on to traditional values</li> <li>• Relatively isolated</li> <li>• Precarious economic situation</li> <li>• Suspicious of new innovations and change agents</li> </ul>	<b>16.0</b>

**Source:** adapted from Rogers (1995); Cain and Mittman (2002)

Rogers (1995, p. 23) defined a social system as *a set of interrelated units that is engaged in joint problem-solving to accomplish a common goal. The members of units of a social system may be individuals, informal groups, organisations, and/or subsystems.* At the organisational level, the unit of adoption is the organisation while the social system is the organisation's external environment. In this study, the unit of adoption is the hotel firm in Australia and Thailand, and the social system is the hotel's external environment such as competition, customers, government and technology support.

### **2.6.1.2 Dimensions of the Innovation Process**

According to Damanpour (2002), organisational change occurs when organisations evolve from old behaviours and methods of operations to new ones. The difference between the current state prior to change to the future state of an organisation can be a consequence of the generation or adoption of innovation. This means that *organisational innovation* is a subset or sub-process of organisational change (Damanpour, 2002).

Damanpour (2002) distinguished the two dimensions of the innovation process: 1) generation; and 2) adoption. The generation of innovation is *a process that results in the creation of an innovation that is new to at least one organisational population* (p. 1726). If the outcome of the generation process is then acquired by another organisation, the second organisation goes through another process, the adoption of innovation. The adoption of innovation process is *a process that results in the inclusion of an innovation that is new to the adopting organisation* (p.1726).

The adoption process concerns a sequence of stages that a potential adopter of an innovation passes through before acceptance of the new process, product or idea. Rogers (1995) defines the adoption process as *the process through which an individual or other decision making unit passes from first knowledge of an innovation, to forming an attitude towards the innovation, to a decision to adopt or reject, to implementation of the new idea, and to confirmation of this decision.*

The innovation process can be considered a success to the extent that the innovation is accepted and integrated into the organisation (Zaltman et al., 1973; Rogers, 1995). With respect to organisational adoption, commonly two main stages are distinguished: initiation and implementation (Zaltman et al., 1973; Tornatzky and Klein, 1982). Rogers (1995, p. 21) stated that *adoption is a decision to make full use of an innovation as the best course of action available.* In the initiation stage, the organisation becomes aware of the innovation, forms an attitude towards the new process, product or idea and evaluates it. In the implementation stage, the organisation decides to purchase and make use of the innovation (adoption and continued use). In this study, thus, the full and actual adoption of innovations in an organisational context implies that adoption occurs within the hotel organisations and is integrated into ongoing business practices.

### **2.6.1.3 Innovation Types**

The characteristics of an innovation can be differentiated along four dimensions (Poutsma et al., 1987 cited in Thong, 1999): 1) product and process innovations; 2) radical and incremental innovations; 3) technology-push or market-pull; and 4) planned and incidental innovations.

### 1) Product and Process Innovations

*Product innovations* involve the development, production, and dissemination of new consumer and capital goods and services while *process innovations* are innovations that improve the production process through the introduction of new methods, machines or production systems. Damanpour (1996) noted that process innovations are: (1) less observable and perceived to be relatively less advantageous, as they are merely related to the delivery of outcomes, rather than being the outcome themselves; and (2) more difficult to implement, as their successful implementation depends upon more widespread changes in organisational structure and administrative systems.

### 2) Radical and Incremental Innovations

*Radical innovations* are innovations that produce fundamental changes in the activities of an organisation and large departures from existing practices while *incremental innovations* are minor improvements or simple changes in current technology.

### 3) Technology-Push or Market-Pull

Innovations can occur because of technology-push or market-pull. *Technology-push* implies that an innovation is developed and offered in a matured form on the capital-good market. Under pressure exerted by the competing suppliers and the ascribed superiority of the new innovation, the market is required to absorb the new innovation. In a *market-pull* situation, a social need is felt, acknowledged, and translated into technical demand. In response to this demand, a new technology is developed.

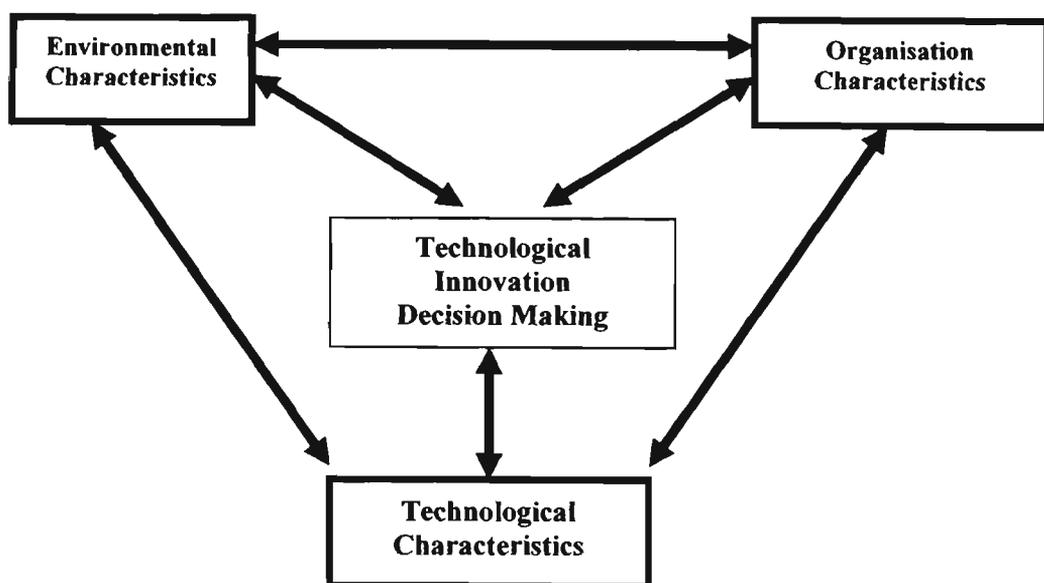
### 4) Planned and Incidental Innovations

*Planned innovations* are innovations that are carried out according to plan where the business aims to control the market through its innovation. Innovations are considered to be *incidental* when they occur as a specific reaction of a business to new market demand.

In this study, the adoption of IWMA is the result of a radical innovation. For Thai hotels the adoption of IWMA is likely to cause change in work procedures and to increase computer anxiety among the employees. Thus, not only is an innovation a renewal by means of technology, but it can also be a renewal in terms of thought and action (Poutsma et al., 1987 cited in Thong, 1999).

## 2.7 FACTORS AFFECTING TECHNOLOGICAL INNOVATION ADOPTION

Previous technological innovation studies have identified various groups of variables that are possible determinants of organisational adoption of an innovation. For example, Kimberly and Evanisko (1981) identified three clusters of predictors for innovation adoption in a hospital: 1) characteristics of the organisation; 2) characteristics of the leader; and 3) characteristics of the environment. Tornatzky and Fleischer (1990) proposed a technological innovation model, which consisted of three contexts affecting adoption and implementation of technology in firms: 1) organisational context; 2) technological innovation context; and 3) external environment context. Figure 2-2 on page 33 shows the facets of the model proposed by Tornatzky and Fleischer (1990).



Source: Adapted from Tornatzky and Fleischer's (1990) Model

**Figure 2-2: The Context of Technological Innovation**

Furthermore, Thong (1999) divided the organisational context into characteristics of the organisation and characteristics of the organisational decision-makers. He identified four elements for information system adoption in small and medium businesses: 1)

characteristics of the organisational decision-makers (CEO characteristics); 2) characteristics of the organisation; 3) characteristics of the technological innovation; and 4) characteristics of the environment.

Both Tornatzky and Fleischer's (1990) model and Thong's (1999) elements are the basis for this study developing the conceptual model. In order to have a better understanding regarding factors affecting the use of IWMA, four characteristics of technological innovation adoption are reviewed and presented as follows: 1) technological innovation; 2) organisations; 3) organisational decision-makers; and 4) environment.

### **2.7.1 Characteristics of the Technological Innovation**

Based on an analysis of the organisational innovation literature, it appears that technological innovation characteristics are widely and frequently used as a key determinant of innovation adoption. As mentioned earlier, Rogers (1983; 1995) identified the five attributes of an innovation and it is proposed that in the case of this study the technological innovation can influence innovation adoption in terms of these attributes: 1) relative advantage; 2) complexity; 3) compatibility; 4) trialability; and 5) observability. Also, Tornatzky and Fleischer (1990) identified perceived barriers and perceived benefits as technological innovation characteristics. Moore and Benbasat (1991) added another two attributes to test their effect on the decision to adopt an information technology (IT) innovation; these were 1) image, and 2) voluntariness of use.

Consequently, in subsequent studies researchers applied different innovation attributes when testing the adoption of innovation by an organisation. The perceived innovation characteristics as presented by Rogers (1983; 1995) have been discussed extensively. Studies undertaken by Kendall et al. (2001) and Seyal and Rahman (2003) revealed that the five attributes of innovation characteristics proposed by Rogers (1995) do influence the adoption of e-commerce in firms. Furthermore, several studies have revealed that perceived barriers and perceived benefits are the most important groups of innovation characteristics that affect the adoption of innovation in firms (Poon and Swatman, 1997; Iacovou et al., 1995; Chau and Tam, 1997; Scupola, 2003).

### 2.7.2 Characteristics of Organisations

Organisational factors have also frequently been used as a key determinant of technological innovation adoption. Several previous studies have investigated a range of organisational characteristics. For example, Grover (1993) investigated organisational factors including *top management support* and *championship* on the adoption decision for a customer-based interorganisational system (CIOS). Results indicate that *top management support* and *championship* had a direct influence on the adoption decision for a CIOS.

Doll (1985) mentioned that top management is responsible for providing general guidance information systems activities. Iacovou et al. (1995) identified and tested *organisational readiness* as an organisational factor in the adoption of electronic data interchange (EDI). They reported that *low levels of information technology sophistication* and *lack of resources* influenced the adoption of EDI. Thong (1999) identified three organisational attributes: 1) business size; 2) employee's information system (IS) knowledge; and 3) information intensity. He found that organisational characteristics influenced the adoption of IT for small businesses. Dholakia and Kshetri (2004) also reported that business size had a significant effect on Internet adoption among SMEs in the New England region of the U.S.A.

Seyal and Rahman (2003) also investigated size, type and nature of the business as organisational attributes in the adoption of electronic commerce. Results indicate that *management support* was a major determinant of e-commerce adoption. However, they found that there was no statistically significant difference between small and medium sized organisations in the adoption of e-commerce. Scupola (2003) investigated four variables of organisational characteristics: 1) financial and technological resources; 2) employee's IS knowledge; 3) innovation champion; and 4) company size. Results show that *the project champion* and *employee's knowledge* were important factors for the company to adopt e-commerce.

### 2.7.3 Characteristics of Organisational Decision-Makers

Previous studies have found that through the lack of top executives' support, technology cannot be successfully implemented (Cooper and Zmud, 1990; Thong et al., 1993). Subsequently, recent studies identified *top management support*, *top managers' attitude*, *chief executive officer's (CEO's) innovativeness*, and *CEO's IS knowledge* as an additional group of factors of CEO characteristics or managerial attributes (Boynton et al., 1994; Tan and Teo, 1998; Thong and Yap, 1995; Armstrong and Sambamurthy, 1999; Thong, 1999; Seyal and Rahman, 2003; Pollard, 2003). In their study, Thong and Yap (1995) concluded that businesses with CEOs who are more innovative have a more positive attitude towards adoption of IT, are more knowledgeable about IT and are more likely to adopt IT.

### 2.7.4 Characteristics of the Environment

Environmental characteristics are important factors that have also been studied in many previous studies (Iacovou et al., 1995; Thong, 1999; Tan and Teo, 2000; Scupola, 2003). The external environmental context describes the characteristics of external factors that present constraints and opportunities for technological innovations. According to Chau and Tam (1997), market conditions, in terms of competitive market forces and market uncertainty, constitute a major factor in the innovation process. Also the competitive pressure, which firms face within the industry, has been shown in several studies to have an influence on the company's decision to adopt information technology or e-commerce (Iacovou et al., 1995; Lertwongsatien and Wongpinunwatana, 2003; Dholakia and Kshetri, 2004).

Due to differences in the technological infrastructures built in various countries, several studies have investigated external factors in terms of level of government support, level of technology support, government intervention, and public administration (Tan and Teo, 2000; Scupola, 2003). Results indicate that government intervention and public administration were very important for the adoption and implementation of technological innovations (Tan and Teo, 2000; Scupola, 2003).

Many different factors have been identified in previous studies as affecting technological innovation adoption in an organisation. As mentioned earlier, the theoretical foundation for most technology adoption research has been based on the diffusion of innovation literature (Tornatzky and Klein, 1982; Rogers, 1983, 1995; Tornatzky and Fleischer, 1990). Consequently, a conceptual model for understanding technology adoption in an organisation has been developed from the models of Rogers (1995) and Tornatzky and Fleischer (1990).

Table 2-3 (pp. 38-39) gives an overview of major studies that have investigated explanatory variables for technological innovation adoption in an organisation.

The factors identified in the above studies can be grouped into the three main groups of factors: 1) organisational and CEO/owner/manager; 2) environmental; and 3) technological innovation, as shown in Table 2-4.

Authors	Groups of Factors		
	Organisational and CEO	Environmental	Technological Innovation
Kimberly and Evanisko (1981)	X	X	
Grover (1993)	X	X	X
Iacovou et al. (1995)	X	X	X
Chau and Tam (1997)	X	X	X
Thong (1999)	X ✓	X	X
Kendall et al. (2001)			X ✓
Scupola (2003)	X	X	X
Seyal and Rahman (2003)	X		X ✓

**Table 2-3: Summary Explanatory Variables for Organisational Innovation Adoption from Previous Studies**

Year	Author	Location	Research Setting	Methodology	Explanatory Variables	Key Findings
1981	Kimberly and Evanisko	U.S.A.	Technological and Administrative Innovations in Hospitals	16 Case Studies (16 hospital administrators and 16 chief medical officers in each hospital)	<ul style="list-style-type: none"> <li>Characteristics of Organisation</li> <li>Characteristics of Leader</li> <li>Characteristics of Environment</li> </ul>	<ul style="list-style-type: none"> <li><b>Organisational (size); leader (level of leader's education); and environment (competition)</b> had a significant effect on adoption of both technological and administrative innovations.</li> <li>Age of hospital and size of city had a significant effect on technological adoption.</li> </ul>
1993	Grover	Columbia	Interorganisational System (IOS)	Survey Questionnaire (226 chief information officers and IS directors from 5 types of industries: manufacturing, finance, wholesale, communication, and business service)	<ul style="list-style-type: none"> <li>IOS Factors</li> <li>Environmental Factors</li> <li>Policy Factors</li> <li>Organisational Factors</li> <li>Support Factors</li> </ul>	<ul style="list-style-type: none"> <li>Response rate 21.14%</li> <li><b>IOS factors</b> (compatibility, relative advantage, complexity); and</li> <li><b>support factors</b> (top management support, and championship) had a direct influence on the adoption of CIOS.</li> </ul>
1995	Iacovou et al.	Canada	Electronic Data Interchange (EDI)	In-depth Interviews (7 managers of small businesses)	<ul style="list-style-type: none"> <li>Perceived Benefits</li> <li>Organisational Readiness</li> <li>External Pressure</li> </ul>	<ul style="list-style-type: none"> <li><b>External pressure</b> had a strong relationship with EDI adoption.</li> <li><b>Perceived benefits</b> had a moderate relationship with the adoption of EDI.</li> <li><b>Organisational readiness</b> had a weak relationship with EDI adoption.</li> </ul>
1997	Chau & Tam	Hong Kong	Open Systems	Personal Interview Survey (89 senior executives from a wide spectrum of industries)	<ul style="list-style-type: none"> <li>External Environment Context</li> <li>Technological Context</li> <li>Organisational Context</li> </ul>	<ul style="list-style-type: none"> <li>Response rate 30%</li> <li><b>Technological context</b> (perceived barriers; perceived importance of compliance to standards, interoperability, and interconnectivity) significantly influenced the adoption of open systems.</li> </ul>
1999	Thong	Singapore	Information System	Survey Questionnaire (166 CEOs or owners of small businesses)	<ul style="list-style-type: none"> <li>CEO Characteristics</li> <li>Perception of IS Attributes</li> <li>Organisational Characteristics</li> <li>Environmental Characteristics</li> </ul>	<ul style="list-style-type: none"> <li>Response rate 40%</li> <li><b>CEO characteristics; perception of IS attributes; and organisational characteristics</b> were important factors in making decision to adopt IS.</li> </ul>
2000	Tan and Teo	Singapore	Internet Banking	Online Survey (454 Internet users)	<ul style="list-style-type: none"> <li>Attitude</li> <li>Subject Norms</li> <li>Perceived Behavioral Control</li> </ul>	<ul style="list-style-type: none"> <li>Response rate 27%</li> <li><b>Attitude</b> (relative advantage, compatibility, triability, and risk); and <b>perceived behavioural control</b> (self-efficacy, and government support) significantly affected intentions to adopt Internet banking services.</li> </ul>
2000	Nambisan & Wang	New York	Web Technology Adoption and Knowledge Barriers	Survey Method in 2 Phases 1) <u>Study A</u> , conducted in 1997, focused on the lowest level: 148 establishment of the corporate Web sites. 2) <u>Study B</u> , conducted in 1999, focused on the second level: 113 establishment of the corporate Intranet.	<ul style="list-style-type: none"> <li>Knowledge Barriers (KBs)</li> <li>Innovation Attributes</li> <li>Degree of Involvement of Supply Side Institution (SSI)</li> </ul>	<ul style="list-style-type: none"> <li>Response rate (study A: 22 %; study B: 17%)</li> <li><b>KBs and SSI</b> had a significant impact on adoption time.</li> <li><b>Innovation attributes</b> (complexity) had a positive impact on adoption time.</li> </ul>

**Table 2-3: Summary Explanatory Variables for Organisational Innovation Adoption from Previous Studies (Cont)**

Year	Author	Location	Research Setting	Methodology	Explanatory Variables	Key Findings
2001	Kendall et al	Singapore	E-Commerce	Survey Questionnaire (58 directors of small and medium enterprises)	<ul style="list-style-type: none"> <li>Relative Advantage</li> <li>Compatibility</li> <li>Complexity</li> <li>Trialability</li> <li>Observability</li> </ul>	<ul style="list-style-type: none"> <li>Response rate 14.5%</li> <li><b>Relative advantage, compatibility, and trialability</b> were important determinants of willingness to adopt E-Commerce.</li> </ul>
2003	Scupola	Italy	E-Commerce	In-depth Interviews (7 managers of small and medium enterprises)	<ul style="list-style-type: none"> <li>Organisational Context</li> <li>Technological Context</li> <li>External Environment</li> </ul>	<ul style="list-style-type: none"> <li><b>External environment</b> (government intervention, public administration; and external pressure from customers, suppliers, and competitors) were important factors to the adoption and implementation of EC.</li> </ul>
2003	Seyal and Rahman	Brunei	E-Commerce	Survey Questionnaire (129 top managers of small and medium enterprises)	<ul style="list-style-type: none"> <li>Managerial Attributes</li> <li>Organisational Attributes</li> <li>Adoption Attributes</li> </ul>	<ul style="list-style-type: none"> <li>Response rate 70%</li> <li><b>Management support</b> was a major determinant of EC adoption.</li> <li><b>Adoption attributes</b> (compatibility, trialability, and observability) were the factors affected EC adoption.</li> </ul>
2003	Lertwongsatien and Wongpinunwatana	Thailand	E-Commerce	Survey Questionnaire (386 respondents who were part of a decision making process of e-commerce adoption of small and medium enterprises)	<ul style="list-style-type: none"> <li>Organisational Context</li> <li>Technological Context</li> <li>External Environment</li> </ul>	<ul style="list-style-type: none"> <li>Response rate 32%</li> <li><b>Organisational; technological; and external environment context</b> significantly influenced the adoption of EC in three types of organisations (adopters, prospectors, and laggards).</li> </ul>
2003	Pollard	Australia	E-Service	Mixed Method: 1) Interviews (one of director of alpha and three of the growers); and 2) Survey Questionnaire (30 owner/ Managers of small farms of growers)	<ul style="list-style-type: none"> <li>Perceived Usefulness</li> <li>Ease of Use</li> <li>Compatibility</li> <li>Attitude towards Using E-Service</li> <li>Subject Norm</li> <li>Perceived Behavioral Control</li> <li>IT maturity</li> <li>Frequency of Communication with Suppliers</li> <li>Frequency of Communication with Processors</li> <li>Frequency of Communication with Contractors</li> <li>Level of Training</li> <li>Level of E-Service Used</li> </ul>	<ul style="list-style-type: none"> <li>Response rate 40%</li> <li><b>Perceived behavioural control and IT maturity</b> were significant differences between daily and sporadic users.</li> </ul>

## **2.8 THE ADOPTION OF IWMA BY THE HOTEL INDUSTRY**

Several previous studies in the hospitality industry have investigated the adoption of information technology (IT) in different types of organisations in various situations. For example, Buhalis and Main (1998) examined the use of IT in small and medium hospitality organisations (SMHOs) by using a push and pull type of innovations adoption model in SMHOs. They reported that push factors, e.g. education and training, and strategic partners, and pull factors, e.g. customer demand, enable SMHOs to incorporate IT in their strategic and operational management.

Sigala (2003) investigated the Internet marketing strategies in the hotel sector in Greece by using the information communication distribution and transaction (ICDT) model proposed by Agehrn and Meyer (1997). The results indicate that most hotels in Greece used the Internet for disseminating information and receiving reservation requests through e-mail, whereas very few used the Internet for more enhanced and sophisticated activities.

Buhalis and Deimezi (2004) adopted diffusion innovation theory to examine the level of information communication technology (ICT) diffusion in small and medium-size tourism businesses in Greece. The results indicate that both ICT and e-commerce in Greece were in their infancy stage.

Yeh et al. (2005) investigated business travellers' perceptions and needs in contemporary e-commerce and IT applications and found that business travellers had positive perceptions of, and needs for, hotel e-commerce and IT applications. This implies that hotels should adopt IT and e-commerce in order to meet customer's needs.

The role of hospitality organisation managers regarding the use of information technology has been analysed in several studies. For example, Main (1995) studied the use of IT in the independent sector of the hotel industry in South Wales, and reported that the profile of the hotel manager in terms of age, gender and level of education was a significant determinant in the adoption of IT.

Van Hoof and Combrink (1998) analysed the perception of U.S. lodging managers regarding the use of the Internet. They reported that the level of industry experiences and the level of technology training or education did not affect the use of the Internet, but respondents over the age of 55 years rated its effectiveness significantly lower than the younger age groups did. In addition, they found that the potential for property exposure and for marketing and advertising were the two most important benefits of the Internet.

Further, Van Hoof et al. (1999) investigated the perception of accommodation industry managers in Australia about the importance of the Internet to the accommodation industry. Results indicate that property size, type, and the respondents' industry experience had a significant effect on their use of e-mail and perceptions about the Internet. Managers in limited-service properties felt that the effectiveness of the Internet for making and advertising purposes, for making reservations, and as a means to check out the competition was significantly less than did managers in resort and full service properties. Also, managers of large hotels (more than 300 rooms) rated the issue regarding the effectiveness and importance of the Internet in terms of making reservations, checking competition, communicating with colleagues, suppliers and vendors, and corporate office significantly higher than did managers in smaller properties.

Mistilis et al. (2004) examined and identified the degree of strategic management and implementation of ICT for Australian hotel marketing, including management's perceptions. They found that the adoption of information technology is not dependent on the education level of senior hotel managers, and is not related to hotel sizes, but IT knowledge is associated with the adoption of ICT. Sahadev and Islam (2005) studied ICT adoption in Thailand and reported that hotel class and age each had a significant effect on ICT adoption, whereas size of hotel did not have an impact on the adoption of ICT.

Thus, these results from studies done in the past on hotel sector for adoption of IT and ICT have, in fact, been divided on the influence of firm size on adoption propensity with some finding a positive relationship (Van Hoof et al., 1999; Siguaw et al., 2000) and others finding a negative relationship on the adoption of IT and ICT (Mistilis et al.,

2004; Sahadev and Islam, 2005). Furthermore, the results relating to the effect of the level of a hotel manager's education on adoption of IT and ICT are mixed, with some indicating a positive impact (Main, 1995), and others indicating a negative impact (Van Hoof and Combrink, 1998; Mistilis et al., 2004).

Winata and Mia (2005) investigated the role of hotel managers' use of information technology for communication (ITC) in the relationship between the managers' perceived performance and their budgetary participation in Australia. The results indicate that the department managers' perceived performance in the hotels was positively associated with the interaction of their use of the ICT and budgetary participation. Gregory et al. (2005) investigated the perceptions of convention hotel managers in the U.S.A. and found that the Internet and Web based marketing tools have become an integral part of hotel sales and marketing activities, though convention hotel managers do not perceive that the use of the Internet and Web technologies alone increases hotel occupancy and sales.

Barriers to the use ICT have been investigated in several previous studies. For example, Anckar and Walden (2001) analysed the barriers that affect the use of IT and Internet commerce in SMHOs in Finland. They found that there were four important barriers, which still inhibit small and medium hospitality organisations from fully capitalising on information technology and the Internet; 1) lack of financial resources, 2) lack of IT knowledge and experience, 3) resistance to change, and 4) peripheral location.

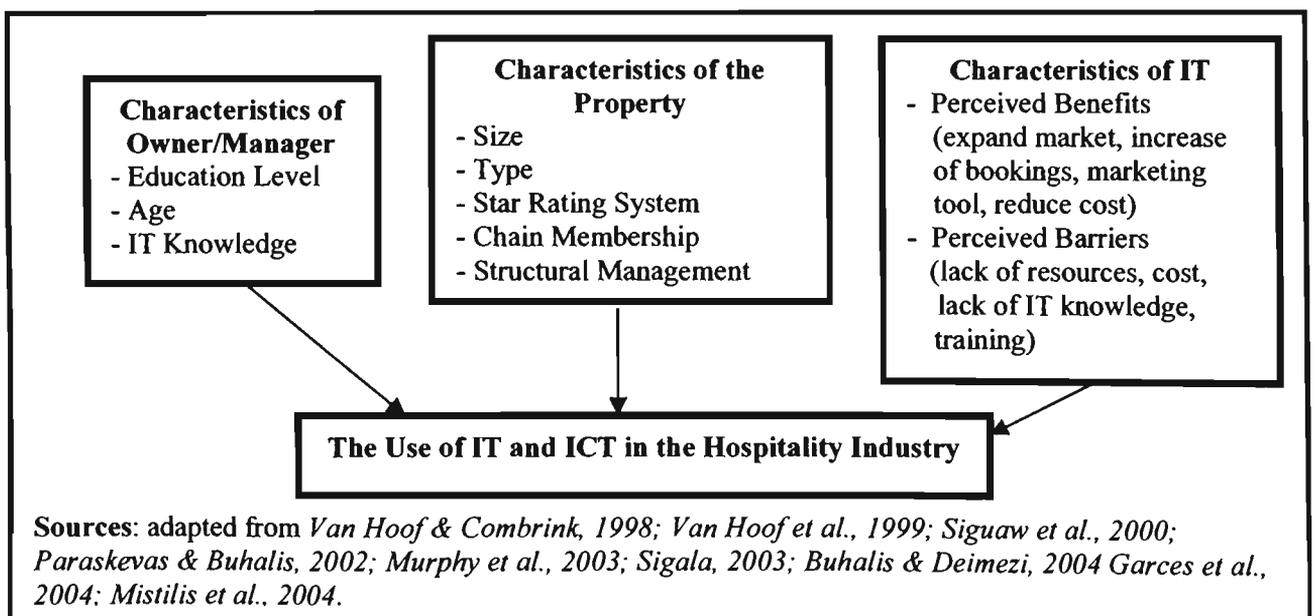
Heung (2003) also investigated barriers to implement e-commerce in the travel industry in Hong Kong. The findings of Heung (2003) indicate that travel agencies when they decided to implement e-commerce were mostly concerned about: 1) *the Management support* including financial resources, staff training and customer's demand; and 2) *Partner's participation* including trading partners and cost of implementation. Similarly, Olsen and Connolly, 2000) suggested that technology could not be successfully implemented in the hotel industry if there was no top executives' support.

Garces et al. (2004) analysed companies' reasons to use e-commerce, and difficulties with it in the Aragonese hospitality industry. Results indicated that smaller hotels

perceived more benefits, including an increase in bookings, than larger hotels did. Also, smaller companies assessed more than larger companies did because of the greater importance to the expansion of the market and cost reduction as reasons to adopt e-commerce.

Many different issues have been reported in the literature on the diffusion of ICTs and e-commerce in the hospitality industry. The issues investigated in several studies can be separated into three groups: 1) characteristics of the property including *size, type of hotel, chain membership* and *management structure* (Siguaw et al., 2000; Paraskevas and Buhalis, 2002; Murphy et al., 2003; Sigala, 2003; Mistilis et al., 2004); 2) characteristics of owners/managers including *education level, age, technical expertise* and *training* (Van Hoof and Combrink, 1998; Van Hoof et al., 1999; Mistilis et al., 2004); and 3) characteristics of technological adoption including *perceived benefits* and *barriers* for the use of ICTs (Garces et al., 2004; Buhalis and Deimezi, 2004).

Figure 2-3 provides a summary of these factors affecting technology adoption from the hospitality literature.



**Figure 2-3: Factors Identified from the Hospitality Literature as Affecting Technology Adoption in the Hospitality Industry**

## 2.9 DEGREE OF ADOPTION OF IWMA

The levels of Internet and Web technology adoption have been described in a number of studies illustrating the transition from the use of e-mail to a fully complete transaction. For example, Nambisan and Wang (2000) classified and studied Web technology adoption at two levels: 1) adoption of Web technology for information dissemination; 2) adoption of Web technology for work collaboration. They also defined the term of “information dissemination” as the establishment of the corporate Web site, and defined “work collaboration” as the implementation of the corporate intranet.

Sellitto and Martin (2003) categorised the degree of Internet Web site adoption of Australian Wineries into just three levels: 1) no Web site adoption (only e-mail and Web searching activity); 2) basic Web site (brochure); and 3) basic Web site also providing online sales facilities. Similarly, Martin (2004) also classified the stage of Internet adoption in small UK hospitality firms into three levels: 1) having e-mail; 2) having Web site; and 3) having the Internet and Web technologies for e-commerce and cash transactions online.

In contrast, in the UK, Daniel et al. (2002) classified the degree of e-commerce adoption into four clusters: 1) *Developers* refer to companies that are at the very start of their e-commerce adoption, use e-mail to communicate with customers, and use the Web for advertising; 2) *Communicators* refer to companies that use e-mail to communicate with customers, suppliers and employees; 3) *Web Presence* refers to companies that can receive orders online; and 4) *Transactors* refer to companies that undertake all of the activities in the above three clusters, and can receive payment online.

Scupola (2003) described the level of e-commerce adoption and implementation using four levels of capabilities ranking from “have almost no capability” through to “being able to complete transactions and receive payment”. Level 1 represents organisations with very basic or no online capabilities. Level 2 represents organisations with a Web site, but no advanced capabilities. Level 3 includes organisations that are able to take orders and provide customer service on their Web site, while Level 4 represents organisations that can make complete transactions and receive payment on their Web site.

In this study, two stages of adoption of Internet and Web based marketing activities by hotels: 1) early adopter hotels; and 2) non-early adopter hotels, have been identified based on the literature utilising the work of Rogers (1995) and also prior studies on Internet and Web technologies and e-commerce (Nambisan and Wang, 2000; Daniel et al. 2002; Scupola, 2003; Sellitto and Martin, 2003; Martin, 2004).

For the purposes of this study, “early adopters” are defined as *hotels that have e-mail, a Web site for advertising, receive online bookings, confirm bookings immediately, receive payment by a secure system, and complete transactions on their Web site.* The definition of “non-early adopters” is *hotels that have no Web site and only have e-mail; hotels that have e-mail and a basic Web page for advertising; and hotels that have e-mail and a Web site for receiving online bookings.*

## 2.10 A CONCEPTUAL MODEL OF ADOPTION OF IWMA BY HOTELS

Based on an assessment of these prior studies, it is clear that the factors affecting the adoption and implementation of IWMA by the hotel industry have not yet been fully investigated. As Tornatzky and Klein (1982) pointed out, studies of organisational adoption should examine multiple explanations of adoption behaviour in order to assess the power of different forces. More specifically, Mistilis et al. (2004) suggested that *diffusion of innovation theory* is useful to examine information communication technology adoption in hotels. Thus, a conceptual model for the adoption of IWMA by hotels was developed by utilising diffusion of innovation theory and also by incorporating those factors affecting the use of IT in an organisation, a concept readily derived from the organisational innovation and hospitality industry literature.

As there was no previous research on the adoption of IWMA by hotels in Thailand, pilot interviews was employed to supplement the literature review. Therefore, during the months of September and October 2004, pilot interviews were conducted at each of six hotels in Thailand. Each interview took approximately one hour to complete. Participants were two general managers, one executive assistant manager, three marketing managers and one front office manager. The pilot interview questions (see Appendix C2) were designed to determine:

- General information about firm demographics,
- Main reasons for, and problems influencing the adoption of IWMA by hotels in Thailand,
- Benefits and cost of the adoption of IWMA by hotels in Thailand,
- Environmental factors in Thailand that support the use of IWMA.

The results of these interviews (for example, opinions, suggestions and experiences) provided direction as to what factors were imperative for hotels in Thailand and how these factors were being assessed by occupants of these senior management positions.

Consequently, for this study, the proposed conceptual model was developed incorporating key variables derived from a review of the research literature on innovation adoption in organisations and from the results of the pilot interviews in Thailand. In Table 2-5 the research variables used in this study are summarised.

<b>Groups of Factors</b>	<b>Theoretical Representation</b>	<b>Variables</b>
Organisational Factors	Organisational Decision-Makers	Size of Hotel
		Top Management Support
	Organisational Structure	Organisational Readiness
		Organisational Process
		CEO's IS Knowledge
Technological Innovation Factors	Technological Innovation Context	Perceived Benefits
		Complexity
		Compatibility
		Perceived Barriers
		Image
Environmental Factors	Organisational Environment	Customer Power
		Competition Intensity
		Level of Government Support
		Level of Technology Support
<b>Sources:</b> Groups of Factors (adapted from Tornatzky and Fleischer, 1990; Thong 1999) : Research Variables (adapted from organisational innovation adoption, hospitality literature and the results of pilot interviews)		

In this study, the proposed conceptual model incorporates three key groups of factors: organisational; technological innovation; and environmental, based on Tornatzky and Fleischer (1990) (see Figure 2-4, p. 48).

The organisational factors, consist of the inherent characteristics of both **1) the hotel** (*organisational structure* in terms of size of hotel, and *organisational process* in terms of top management support and organisational readiness), and **2) the decision-maker**

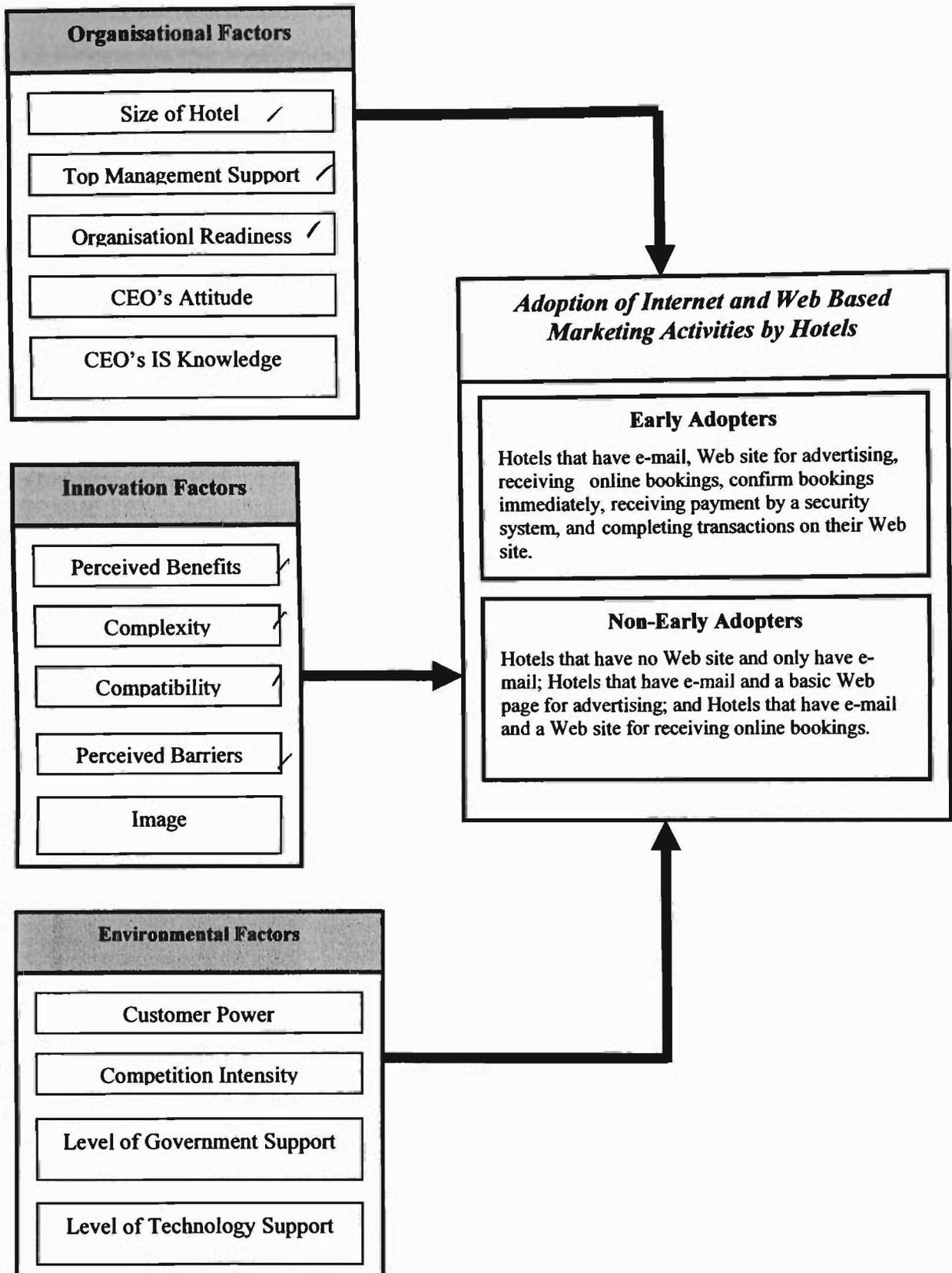
(CEO's attitudes and CEO's IS knowledge). The technological innovation factors consist of five factors, including 1) perceived benefits, 2) complexity, 3) compatibility, 4) perceived barriers and 5) image which represent technological innovation adoption theory. The environmental factors for the organisational environment consists of four factors, including 1) customer power, 2) competition intensity, 3) level of government support, and 4) level of technology support, which represents organisational environment theory.

This model proposes that there is a direct relationship between these factors and the adoption of IWMA by hotels. The degree of adoption of IWMA will be measured in two levels of using IWMA in terms of *early adopter and non-early adopter* hotels.

Hence, the proposed conceptual model provides the foundation for empirical investigation of the effect of the three main groups of factors in terms of organisational, technological innovation, and environmental factors on the adoption of IWMA in Thai and Australian hotels. Each of these factors is discussed below.

### 1) Organisational Factors

The following organisational factors were included in this study: *size of hotel; top management support; organisational readiness; CEO's attitude; and CEO's IS knowledge.*

**Sources:**

- *Groups of Factors* (adapted from Tornatzky and Fleischer, 1990; Thong, 1999)
- *Research Variables* (adapted from Organisational innovation adoption, hospitality literature and the results of in-depth interviews)
- *Degree of Adoption* (adapted from Rogers (1995); Nambisan and Wang (2000); Daniel et al. (2002); Scupola (2003); Sellitto and Martin (2003); Martin (2004)

**Figure 2-4: A Conceptual Model of Adoption of Internet and Web Based Marketing Activities by Hotels**

- ***Size of Hotel***

Some studies in organisational innovation adoption have indicated that there is no significant relationship between *business size* and organisational innovation adoption (see Seyal and Rahman, 2003 and Scupola, 2003; Mistilis et al., 2004; Sahadev and Islam, 2005). However, a number of previous studies have shown that *business size* does influence the use of technology (Rogers 1983; Grover, 1993; Thong et al., 1993; Thong and Yap 1995; Thong, 1999; Dholakia and Kshetri, 2004). Similarly, the study of Van Hoof et al. (1999) reported that property size and type have a significant effect on the use of e-mail and Web technology in the Queensland accommodation industry. Moreover, Sigauw et al. (2000) indicated that other hotel characteristics, such as whether the hotel is independent or part of a chain, or whether luxury, upscale or budget, influenced the adoption of technology. Therefore, it is expected that hotels at higher levels of IWMA would be larger in size than hotels at lower levels.

- ***Top Management Support***

*Top management support* refers to the level of support given by the Chief Executive Officer (CEO) that influences the effectiveness of information systems (Grover, 1993; Seyal and Rahman, 2003). Several previous studies have shown that *top management support* is a significant predictor of technology adoption and leads to more successful computer use in both large and small businesses (Grover, 1993; Thong et al., 1993; Tan and Teo, 1998; Seyal and Rahman, 2003). In addition, the findings of Heung (2003) indicate that “*Management support*” is an important factor for travel agencies when they decide to implement e-commerce. Therefore, it is expected that hotels at higher levels of IWMA would have a higher level of support from their top management than hotels at lower levels have.

- ***Organisational Readiness***

*Organisational readiness* refers to the level of (1) financial and (2) technological resources that the firm has (Iacovou et al., 1995). This factor is considered because small hotels and budget hotels tend to lack the resources that are necessary for Internet and Web based marketing activities (Buhalis and Main, 1998; Paraskevas and Buhalis, 2002; Murphy et al., 2003). In addition, the findings of Heung (2003)

indicate that financial resources and well-trained staff are important factors for travel agencies when they decide to implement e-commerce. Therefore, it is expected that hotels with higher levels of IWMA would have been in a better state of readiness towards the use of IWMA than hotels at lower levels would have been.

- ***CEO's Attitude***

Past studies have found that CEOs who have a better attitude towards the adoption of IT are more likely to adopt information technology and e-commerce (Thong and Yap, 1995, and Seyal and Rahman, 2003). Therefore, it is expected that managers or CEOs at hotels with higher levels of IWMA would have a more positive attitude than managers or CEOs at hotels with lower levels of IWMA.

- ***CEO's IS Knowledge***

As mentioned earlier, the terms of IT/IS/ICT in the present study are similar in concept and related to the use of Internet and Web based marketing activities (IWMA); therefore, the IT/IS and ICT literature, which has involved CEOs' knowledge regarding the use of Internet and Web technologies, was reviewed. Armstrong and Sambamurthy (1999) found that the IT knowledge of senior business executives was not a significant influence on IT assimilation in firms. However, a number of previous studies have shown that CEO's technical knowledge is related to adoption of IT in firms (Boynton et al., 1994; Thong and Yap, 1995; Thong, 1999; Mistilis et al., 2004). In their study, Boynton, et al. (1994) found that higher levels of managerial IT knowledge will directly and positively influence an organisation's extent of IT use. Thong and Yap (1995) and Thong (1999) have shown that CEOs who are more knowledgeable about IT/IS are more likely to adopt the information technology. Moreover, Mistilis et al. (2004) reported that technical knowledge had a strong relationship with ICT adoption in Sydney hotels. Therefore, it is expected that owners, CEOs and managers of hotels with higher levels of IWMA would be more knowledgeable about IWMA than owners, CEOs and managers of hotels with lower levels of IWMA.

## 2) Technological Innovation Factors

The following technological innovation factors were included in this study: *perceived benefits; complexity; compatibility; perceived barriers; and image.*

- ***Perceived Benefits***

Rogers found that *relative advantage* or *perceived benefits* had a positive relationship to the adoption of technology. Similarly, Moore and Benbasat (1991), Iacovou et al. (1995), Poon and Swatman (1997), Thong (1999), Tan and Teo (2000), and Kendall et al. (2001) found that *relative advantage* or *perceived benefits* was the best predictor of the adoption of innovation. According to O'Connor and Frew (2004), the increased volume of transactions and of revenue that could potentially be generated were the key factors for consideration in the electronic channel adoption process in the hotel industry. This suggests that positive perception of benefits of the electronic channel should provide an incentive for the hotels to develop the use of their Internet and Web technologies. Therefore, it is expected that managers at the early adopter hotels would perceive more benefits than would managers at the non-early adopter hotels.

- ***Complexity***

Complexity is defined as the degree to which an innovation is perceived as relatively difficult to understand and use (Rogers, 1983). Rogers generalised that the complexity of an innovation is negatively related to its rate of adoption. In contrast, some studies indicated that there is no relationship between complexity and innovation adoption (Tan and Teo, 2000; Kendall et al., 2001; Seyal and Rahman, 2003). This implies that some innovations are clearly understood by the adopter and are rapidly accepted while others are not and so will affect the rate of adoption (Nambisan and Wang, 2000). Specifically, O'Connor and Frew (2004) reported that *ease of use* is an important factor for the hotel industry in the adoption of electronic channels of distribution. Therefore, it is expected that hotels at higher levels of IWMA would perceive less complexity towards the use of IWMA than hotels at lower levels.

- **Compatibility**

Compatibility is defined as the degree to which an innovation is perceived as consistent with the existing values, past experiences, and needs of potential adopters (Rogers, 1983). Several previous studies have shown that *compatibility* is associated with the adoption of innovation (Moore and Benbasat, 1991; Thong, 1999; Tan and Teo, 2000; Seyal and Rahman, 2003). In addition, O'Connor and Frew (2004) found that *the potential of the channel to open up new market segments, and to address current market segments* are important factors affecting the adoption of the Internet and Web technologies in the hotel industry. This implies that the adoption of the Internet and Web technologies in the hotel industry is compatible with the hotel's objectives. Therefore, if the innovation is compatible with existing work practices, environments, and firms' objectives, firms will be more likely to adopt it. In this regard, it is expected that managers at hotels with higher levels of IWMA would perceive more compatibility than managers at hotels with lower levels of IWMA.

- **Perceived Barriers**

A perceived barrier is defined as an impediment to the establishment of barriers of the use of Internet and Web technologies for hotel marketing (Nambisan and Wang, 2000; Heung, 2003). Scupola (2003) noted that perceived barriers in terms of *lack of competence, lack of knowledge and awareness of the technology and its potentials, and losing competitive advantage by selling products through a Web catalogue* were important in the adoption and implementation of e-commerce. Also, Chau and Tam (1997) found that perceived barriers in terms of *high cost for migration, existing IS personnel are only familiar with proprietary systems, and infeasible to dispose of existing proprietary systems* significantly affected the adoption of an open system. Anckar and Walden (2001) found that barriers in terms of *lacking financial resources, lacking IT knowledge, resistance to change and location in peripheral regions* had an effect on the use of IT and of the Internet in SMHOs. Therefore, it is expected that early adopter hotels would perceive fewer barriers than non-early adopter hotels would.

- **Image**

Image is defined as the degree to which adoption/usage of the innovation is perceived to enhance one's image or status in one's social system (Moore and Benbasat, 1991). Moore and Benbasat (1991) suggested that *image* associated with users of information technology (IT) and of IT itself is an important determinant of the adoption decision. Rogers (1983; 1995) also suggested *observability* as a general attribute of innovation that influences adoption decisions. The observability of an innovation, as perceived by members of a social system, is positively related to its rate of adoption. Karahanna et al. (1999) reported that pre-adoption attitude towards IT adoption is based on perceptions of usefulness and ease of use whereas post-adoption attitude is based on perceptions of image enhancement. Moreover, in their exploratory study, Mistilis et al.'s (2004) hotel respondents commented that if a hotel did not have an Internet site its image in the marketplace could suffer. This suggests that the IT adoption decision in most businesses is not strictly based on usefulness and ease of use, but may also be based on perceived impressions that a firm projects towards its internal and external environment by having IT resources. Therefore, it is expected that hotels at higher levels of IWMA would perceive that the hotel has a higher level of image than hotels at lower levels have.

### 3) Environmental Factors

The following environmental factors were included in this study: *customer power; competition intensity; level of government support; and level of technology support.*

- **Customer Power**

Customer power refers to the demands of major hotel customers and the degree of loyalty of major customers, which can affect the way a hotel's business is conducted (Chau and Tam, 1997). The study of Chau and Tam (1997) indicated that market uncertainty in terms of *the demand of their major customers; the degree of loyalty of their major customers* did not have a significant affect on the adoption of an open system. In contrast, Buhalis and Main (1998) reported that *customer demand* is the pull factor for small and medium hospitality organisations (SMHOs) to use IT. Specifically, Yeh et al. (2005) found that business travellers had positive perceptions and needs towards hotel e-commerce and IT applications. These results

suggest that customer demand may have an effect on the adoption of IT and e-commerce by hotels. Therefore, it is expected that management of the early adopter hotels would perceive higher customer pressure than management of the non-early adopter hotels would.

- ***Competition Intensity***

Competitiveness refers to the intensity of the level of competition in the environment within the industry where the firms operate (Lertwongsatien and Wongpinunwatana, 2003). As mentioned by Porter and Millar (1985), to gain a competitive edge in their industries, firms need to differentiate themselves from competitors, positioning their products and services as premium goods. In highly competitive markets, innovation adoption may be necessary to maintain one's market position (Robertson and Gatignon, 1986). Also, Gatignon and Robertson (1989) reported that higher levels of competition stimulate innovation adoption. This is supported by the work of Dholakia and Kshetri (2004), Scupola (2003), and Lertwongsatien and Wongpinunwatana (2003) who showed that the competitive environment was associated with the adoption of IT. Therefore, it is expected that early adopter hotels would perceive a higher degree of competitiveness than non-early adopter hotels would.

- ***Level of Government Support***

Previous studies have suggested that a government can encourage a country's private sector to adopt e-commerce by providing supporting infrastructure, legal and regulatory frameworks, and directions on e-commerce use (Kuan and Chau, 2001). Several studies have tested the impact of government pressure on e-commerce adoption. For example, Tornatzky and Fleischer (1990) studied the effect of three groups of environmental factors: industry factors, technology support infrastructure factors and role of government. They concluded that these factors could have both positive and negative impacts on the adoption of innovation. Iacovou et al. (1995), Tan and Teo (2000), Scupola (2003), and Wang and Cheung (2004) found that government intervention and public administration were very important for the adoption and implementation of technological innovations. Thus, governments can play an intervention and leadership role in the diffusion of innovation (Molla and

Licker, 2005). Hence, it is expected that the greater the extent of perceived government support for the use of IWMA, the more likely that it will be adopted by hotels at the early adopter stage.

- ***Level of Technology Support***

Level of technology support refers to the technology competence as an enabling factor, which is readily available for the use of IWMA (Tan and Teo, 2000). In this study, the factors considered related to technology support are the advances in Internet technology in terms of providing Internet security for safer transactions and purchasing online, and the high speed of Internet technologies. Past studies have suggested that the level of technology support could impact on the intensity of use of IWMA in an organisation. For example, Xu et al. (2004) has found that the significant difference of technology competence between China and the United States is related to Internet adoption. The literature review indicates that the most important component for the use of the Internet and Web technologies is the underlying telecommunications infrastructure upon which the Internet services are built (Bazar et al., 1998). Tan and Teo (2000) have also reported that technology infrastructure is the key determinant, which shifts to organisational capabilities in terms of integrating to leverage existing information systems and databases, that is significantly associated with organisational innovation adoption. Based on the above, it may be expected that, if supporting technological infrastructures become easily and readily available, the use of IWMA at the early adopter hotels will also become more feasible.

## **2.11 RESEARCH QUESTIONS AND HYPOTHESES**

Based on the literature review above, it can be concluded that there are several groups of factors: organisational, technological innovation and environmental, which contribute to the adoption of Internet and Web based marketing activities. Therefore, the proposed conceptual model provides the foundation for empirical investigation of the following research questions in this study.

1. To what extent have Thai and Australian hotels adopted and implemented the Internet and Web based technologies in their marketing activities?

2. What are the potential factors affecting the adoption of Internet and Web based marketing activities (IWMA) in Thai and Australian hotels?
3. Does the adoption of Internet and Web based marketing activities (IWMA) differ between Thai and Australian hotels?

If there is a difference, *“How does the adoption and implementation of Internet and Web based marketing activities (IWMA) differ between Thai and Australian hotels, and what factors are causing this difference?”*

In order to address these questions, the following hypotheses (H) were specifically examined in the study.

**H1:** “Thai and Australian hotels differ in the extent to which they use IWMA”.

**H2:** “Organisational, technological innovation and environmental factors have an effect on the adoption of IWMA in Thai hotels”.

**H3:** “Organisational, technological innovation and environmental factors have an effect on the adoption of IWMA in Australian hotels”.

**H4:** “There is a difference between Thai and Australian hotels in terms of type of hotel management: (a) independent management and (b) chain management, in the extent to which they use IWMA”.

**H5:** “There is a difference in the effects of the three main groups of factors: 1) organisational, 2) technological innovation and 3) environmental, on the adoption of IWMA between Thai and Australian hotels in terms of type of hotel management”. (Independent or chain management; which is dependent on the results from Hypothesis 4)

**H6:** “There is a difference between Thai and Australian hotels in terms of size of hotel: (a) small, (b) medium and (c) large hotels, in the extent to which they use IWMA”.

**H7:** “There is a difference in the effects of the three main groups of factors: 1) organisational, 2) technological innovation and 3) environmental, on the adoption of IWMA between Thai and Australian hotels in terms of size of hotel”. (dependent on the results from Hypothesis 6).

## 2.12 SUMMARY

In summary, this chapter has described the importance and the success of the use of the Internet and Web technologies for marketing in the online environment. The purpose of this chapter was to propose a conceptual model for the adoption of Internet and Web based marketing activities by Thai and Australian hotels. Studies related to the adoption of technological innovation in an organisation and hospitality and tourism businesses were reviewed. The findings of a comprehensive analysis of all factors affecting the use of IWMA derived from extensive analysis of secondary sources, mainly existing adoption and diffusion literature and the literature on the diffusion of ICTs and e-commerce in the hospitality industry, and complemented through pilot interviews, were integrated into the proposed model. The three key groups of factors: organisational, technological innovation, and environmental were combined into a proposed model to describe and explain the facilitating and inhibiting factors for the use of Internet and Web based marketing activities.

The organisational factors consist of 1) size of hotel, 2) top management support, 3) organisational readiness, 4) CEO’s attitudes and 5) CEO’s IS knowledge. The technological innovation factors consist of 1) perceived benefits, 2) complexity, 3) compatibility, 4) perceived barriers and 5) image, which represent technological innovation adoption theory. The environmental factors for the organisational environment consist of 1) customer power, 2) competition intensity, 3) level of government support and 4) level of technology support. The degree of adoption of IWMA will be measured in two levels in terms of *early adopter and non-early adopter* hotels.

Hence, the proposed conceptual model provides the foundation for empirical investigation of the research questions (see section 2.11) in this study. The next chapter will present the research methodology, as well as the research process to accomplish the research aims and answer the research questions.

## CHAPTER THREE

### RESEARCH METHODOLOGY

#### 3.1 INTRODUCTION

The purpose of this chapter is to describe the research methodology and design used to complete this study. The methods involve an analysis of hotel Web sites, a questionnaire survey of senior hotel managers in Thailand and Australia, and a series of confirming interviews with some of the aforementioned senior managers that have been considered appropriate for the goal of this study. The method of development of the research instruments, the measurement of validity and reliability of the research instruments, the methods of selection of the population and the sample, data collection and the data analysis techniques for this study are described.

#### 3.2 RESEARCH METHODS

When considering the method that may be used in a research study, there are three main options: 1) a quantitative method, 2) a qualitative method and 3) a mixed method (Kaplan and Duchon, 1988; Jennings, 2001; Creswell, 2003). The distinctions between these three methods are important in choosing a suitable approach for the research.

- *Quantitative methods* involve statistical analysis and rely on numerical evidence to test hypotheses (Brunt, 1997; Creswell, 2003). Quantitative methods focus on the measurement and analysis of causal relationships between variables (Denzin and Lincoln, 1994). A quantitative method is grounded in a positivist social sciences paradigm that primarily reflects the scientific method of the natural sciences (Jennings, 2001). The advantage of a quantitative method is that the findings have broad, generalisability (Patton, 2002).
- According to Maanen (1979, p. 520), “*qualitative method* is an umbrella term covering interpretive techniques which seek to describe, decode, translate, and otherwise come to terms with the meaning, not the frequency, of certain more or less naturally occurring phenomena in the social world”. Qualitative methods also

use strategies of inquiry such as narratives, phenomenologies, ethnographies, grounded theory studies and case studies (Patton, 2002; Creswell, 2003). Qualitative methods facilitate the study of issues in a wealth of detailed information about a smaller number of people and cases (Patton, 2002).

- *A mixed method* is “one in which the researcher tends to base knowledge claims on pragmatic grounds. It employs strategies of inquiry that involve collecting data either simultaneously or sequentially to best understand research problems” (Creswell, 2003, p. 18). There are five purposes for the use of mixed methods for a study: 1) *triangulation*, or seeking convergence of results, 2) *complementarity*, or examining overlapping and different facets of a phenomenon, 3) *initiation*, or discovering paradoxes, contradictions or fresh perspectives, 4) *development*, or using the methods sequentially, so that results from the first method inform the use of the second method, and 5) *expansion*, or mixed methods adding breadth and scope to a project (Greene et al., 1989 cited in Tashakkori and Teddlie, 1998). Also, there are four designated possibilities for the complementarity of quantitative and qualitative data (Miller and Crabtree, 1994), as shown in Table 3-1.

<b>Table 3-1: Design Possibilities</b>	
<b>Design Possibility</b>	<b>Explanation</b>
Concurrent	Where quantitative and qualitative data are used simultaneously
Sequential	Where qualitative data are used first in order to develop quantitative instruments
Nested	Where both are used in a conceptual framework to form checks and balances to ensure that the “wrong problem” is not addressed
Combination	Where qualitative data contextualises situation specific cases
<b>Sources:</b> Miller and Crabtree, 1994	

Many authors have suggested that the use of a combination of methods is likely to be more productive because it can reduce the biases and increase the validity and reliability of research data (Jick, 1979; Kaplan and Duchon, 1988; Miles and Huberman, 1994; Creswell, 2003). Also, using different methods to collect data provides a wider range of coverage that may result in a fuller picture (Bonoma, 1985; Babbie, 2001). Eisenhardt (1989) mentioned that the combination of qualitative and quantitative data can be highly synergistic. The synergy between qualitative and quantitative methods is highlighted by Mintzberg (1979, p. 587) as follows:

*For while systematic data create the foundation for our theories, it is the anecdotal data that enable us to do the building. Theory building seems to require rich description, the richness that comes from anecdote. We uncover all kinds of relationships in our hard data, but it is only through the use of this soft data that we are able to explain them.*

Each type of research strategy has strengths and weaknesses and no single research strategy is singularly superior to any other (Benbasat et al., 1987; Babbie, 2001; Yin, 2003). In tourism research, Davies (2003) noted that several roles for qualitative and quantitative data within multiple methods of mixing are important.

By comparing the strengths and weaknesses of these three methods of research, the mixed methods approach was considered to be appropriate for this study as well as enhancing, by triangulation, the strengths of both the qualitative and quantitative methods. Hence, an analysis of hotel Web sites, a questionnaire survey of senior hotel managers in Thailand and Australia, and a series of confirming interviews were employed in combination for this research in order to overcome biases that stem from the use of a single method.

### **3.3 RESEARCH PROCESS**

As mentioned in Chapter 1, the aim of the present study was to explore factors affecting the adoption of IWMA in Thai and Australian hotels. The following three research questions were used as the guide for the research design in order to achieve the aim of this study.

- (1) To what extent have Thai and Australian hotels adopted and implemented the Internet and Web based technologies in their marketing activities?
- (2) What are the potential factors affecting the adoption of Internet and Web based marketing activities (IWMA) in Thai and Australian hotels?
- (3) Does the adoption of Internet and Web based marketing activities (IWMA) differ between Thai and Australian hotels?

If there is a difference, “*How does the adoption and implementation of Internet and Web based marketing activities (IWMA) differ between Thai and Australian hotels, and what factors are causing this difference?*”

Thus, the research process to accomplish the research aims and answer the research questions was conducted in three stages: 1) the analysis of hotel Web sites; 2) the quantitative method using structured, closed item surveys; and 3) the confirming interviews, as follows.

- **The first stage** involved a quantitative method involving an analysis of hotel Web sites. Owing to the newness of the research area, in this study when investigating the use of IWMA in Thai and Australian hotels, it was first necessary to obtain *preliminarily data* regarding the Web technology features of hotel Web sites that are available in Thailand and in Australia.

*The main objectives of the analysis of hotel Web sites were to:*

- evaluate and compare the features and the extent to which customer’s information needs are met on hotel Web sites in Thai and Australian hotels;
- evaluate and compare the features and the extent to which customer’s information needs are met on hotel Web sites between independent and chain hotels in each country;
- start to answer Research Questions 1 and 3, and provide support for the hypothesis H1: *Thai and Australian hotels differ in the extent to which they use IWMA* and hypothesis H4: *There is a difference between Thai and Australian hotels by type of hotel management: (a) independent management and (b) chain management, in the extent to which they use IWMA*; and
- supplement the results of both the questionnaire survey and the confirming interviews.

Thus, a quantitative method on *the analysis of hotel Web sites* utilising two checklist instruments was chosen at the first stage of this study to evaluate and compare features

provided on the hotel Web sites in these two countries, and as a source of preliminary data and to answer the Research Questions 1 and 3. *There were seven major steps in the analysis of hotel Web sites.* These are shown in Figure 3-1 and will be discussed in later sections of the chapter.

Step 1: Literature Review (see Chapter 2, section 2.5, pp. 21-28)
Step 2: Instrument Design (see Section 3.4.1, p. 66)
Step 3: Define term of Hotel (see Section 3.4.2, pp. 67-69)
Step 4: Define Population Size (see Section 3.4.2, pp. 67-69)
Step 5: Define Sampling Techniques (see Section 3.4.2.2, pp.69-70)
Step 6: Data Collection (see Section 3.4.3, p. 70)
Step 7: Data Analysis (see Section 3.4.4, p. 70)

**Figure 3-1: Seven Steps of the Research Process for the Analysis of Hotel Web Sites**

- **For the second stage**, the quantitative questionnaire survey method using structured, closed item questions was chosen as an appropriate way to obtain a profile of hotel businesses in Thailand and Australia in terms of whether they used or did not use the Internet and Web based marketing activities.

*The main objectives of the questionnaire surveys conducted in the two countries were to:*

- identify the IWMA adopted by Thai and Australian hotels;
- identify and evaluate the differences between Thai and Australian hotels in their adoption of IWMA;
- investigate the different facilitating and inhibiting factors affecting the adoption of IWMA in Thai and Australian hotels; and
- develop a model for the successful adoption and diffusion of IWMA by Thai and Australian hotels.

Thus, the quantitative questionnaire surveys provided the main method to test the model and all the hypotheses (H1-H7), and to provide answers to Research Questions 1, 2 and 3, as shown in Table 3-2.

**Table 3-2: Research Questions and Hypotheses**

Research Questions	Hypotheses
(1) To what extent have Thai and Australian hotels adopted and implemented the Internet and Web based technologies in their marketing activities?	<b>H1:</b> Thai and Australian hotels differ in the extent to which they use IWMA.
(2) What are the potential factors affecting the adoption of IWMA in Thai and Australian hotels?	<b>H2:</b> Organisational, technological innovation and environmental factors have an effect on the adoption of IWMA in Thai hotels.  <b>H3:</b> Organisational, technological innovation and environmental factors have an effect on the adoption of IWMA in Australian hotels.
(3) Does the adoption and implementation of IWMA differ between Thai and Australian hotels?  If there is a difference, how does the adoption and implementation of IWMA differ between Thai and Australian hotels, and what factors are causing this difference.	<b>H4:</b> There is a difference between Thai and Australian hotels in terms of type of hotel management: (a) independent management and (b) chain management, in the extent to which they use IWMA.  <b>H5:</b> There is a difference in the effects of the three main groups of factors: 1) <i>organisational</i> , 2) <i>technological innovation</i> and 3) <i>environmental</i> , on the adoption of IWMA between Thai and Australian hotels in terms of type of hotel management (independent or chain management; which is dependent on the results from H4).  <b>H6:</b> There is a difference between Thai and Australian hotels in terms of size of hotel (a) small, (b) medium and (c) large hotels, in the extent to which they use IWMA.  <b>H7:</b> There is a difference in the effect of the three main groups of factors: 1) <i>organisational</i> , 2) <i>technological innovation</i> and 3) <i>environmental</i> , on the adoption of IWMA between Thai and Australian hotels in terms of size of hotel (dependent on the results from H6).

There were twelve major steps in the research process for the quantitative questionnaire surveys. These are shown in Figure 3-2 and will be discussed in later sections of this chapter.

Step 1: Define Questionnaire Survey Methods (see Section 3.5.1, p. 71)
Step 2: Pilot Interviews (see Section 3.5.2, pp. 71-72)
Step 3: Instrument Design (see Sections 3.5.2.1, 3.5.2.2, 3.5.2.3 pp. 72-75)
Step 4: Pre-Test of Questionnaire (see Section 3.5.2.4 p. 76)
Step 5: Pilot Study (English Version) in Australia (see Section 3.5.2.4, pp. 76-77)
Step 6: Back Translation of Questionnaire from Thai to English Version (see Section 3.5.2.5, p. 77)
Step 7: Pilot Study (Thai Version) in Thailand (see Section 3.5.2.4, pp. 76-77)
Step 8: Define Population Size (see Section 3.4.2.1, pp. 67-69, Section 3.5.3, pp. 77-78)
Step 9: Define Sampling Techniques (Section 3.5.3, pp. 77-78)
Step 10: Data Collection (see Section 3.5.4, p. 78)
Step 11: Test for Validity and Reliability (see Section 3.5.5, pp. 78-87)
Step 12: Data Analysis (see Section 3.5.6, pp. 87-92)

**Figure 3-2: Twelve Steps of the Research Process of the Stages of the Quantitative Questionnaire Surveys**

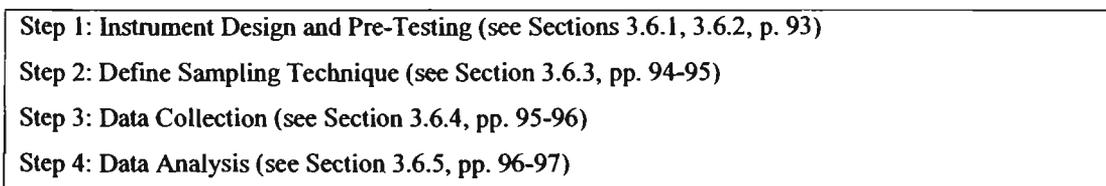
- **In the last stage**, confirming interviews were used. Although the questionnaire survey, which was employed at the second stage of this study, provided useful quantitative data and profile of Thai and Australian hotels using IWMA, it did not involve an investigation the key issues related to the adoption of IWMA by hotels in details. Therefore, confirming interviews with senior hotel managers was an appropriate approach for this stage of this study.

*The main objectives of the confirming interviews were to:*

- identify and evaluate the differences between Thai and Australian hotels in their adoption of IWMA;
- investigate the different facilitating and inhibiting factors affecting the adoption of IWMA in Thai and Australian hotels in detail;
- supplement the results of the analysis of hotel Web sites and questionnaire surveys in the two countries.

Thus, the confirming interviews was chosen as a supplementary method to investigate the factors affecting the use of IWMA in hotels for providing information for answering Research Questions 2 and 3, and to provide support for hypotheses H2, H3, H5 and H7.

There were four major steps of the research process for the confirming interviews. These are shown in Figure 3-3 and will be discussed in later sections of this chapter.



**Figure 3-3: Four Steps of the Research Process for Confirming Interviews**

**Thus, in summary, the research process was divided into 3 stages:** 1) a quantitative method to analyse hotel Web sites utilising the two checklist instruments to examine Thai and Australian hotel Web sites; 2) a quantitative method via self-completing, closed item questionnaires to investigate the factors affecting the adoption of IWMA in hotels in the two countries; and 3) the confirming interviews to investigate the key

issues related to the use of IWMA in hotels with the hotel managers in each country in details.

Details of each stage of the research process are provided in the following sections (sections 3.4, 3.5 and 3.6).

### 3.4 THE ANALYSIS OF HOTEL WEB SITES

The analysis of hotel Web sites was undertaken as the first stage of this research to gain a better understanding of the features presented on hotel Web sites in Australia and Thailand. This section consisted of four parts: 1) instruments for the analysis of hotel Web sites including two checklist instruments; 2) sampling of hotel Web sites including population size and sample selection method; 3) data collection; and 4) data analysis.

#### 3.4.1 Instruments for the Analysis of Hotel Web Sites

For this study, the researcher modified two checklist instruments based on the literature review to evaluate features and customer's information needs provided on hotel Web sites in both countries.

- *The first checklist instrument* used for this study was built upon the work of Murphy et al. (1996), Weeks and Crouch (1999), and Leong (2002). The modified checklist grouped 32 attributes into 7 categories: 1) basic information; 2) e-commerce; 3) promotions; 4) service; 5) technology; 6) secondary information; and 7) management functions. The first checklist instrument is provided in [Appendix A1](#).
- *The second checklist instrument* aimed to investigate the extent to which hotel Web pages meet customer's information needs. Attributes relating to *customer's information needs* employed in this study were based on the attributes used in the study of Jeong and Lambert (2001) when studying the intentions of customers to use lodging Web sites. This checklist has 32 attributes grouped into 5 categories: 1) general Web information quality; 2) hotel facility information and service; 3) locality; 4) Web design and format; and 5) room information. The second checklist instrument is provided in [Appendix A2](#).

### 3.4.2 Sampling

For standardisation, the criteria applied for the selection of the population and the sample were the same in both countries and are presented below.

#### 3.4.2.1 Population Size

The population for this study was selected by applying three criteria.

**Criterion 1:** Hotels selected for this study had already adopted IWMA.

**Criterion 2:** Hotels selected for this study were identified utilising the definition of hotels (see p. 68) used by the Thai Hotel Association's Directory (2003-2004) and by the Directory of Australian Accommodation (RACV, 2003-2004).

**Criterion 3:** Hotels selected for this study were located in three areas in each country, as follows:

- *in Thailand:* the hotels were located in three provinces, including Bangkok, Chiang Mai and Phuket, with their names listed in the Thai Hotel Association's Directory (2003-2004).
- *in Australia,* the hotels were located in Melbourne, Sydney and Brisbane and listed in the Directory of Australian Accommodation (RACV, 2003-2004).

The directories of both the Thai Hotel Association and Australian Accommodation (RACV) were chosen because they included a large number of hotel members and were among the largest organisations for providing a list of hotels in each country.

These regions have been chosen because they are tourist destinations, and have both a sufficient number and variety of suitable hotels for this study.

Definitions of hotels used by the Thai Hotel Association's Directory (2003-2004) and by the Directory of Australian Accommodation (RACV, 2003-2004) are described below.

#### Definition of Hotels Selected in Thailand

In Thailand a hotel, according to the *Thai Accommodation Business Act 1935, No 3* (Government of Thailand, 1935), provides accommodation that is charged on a daily basis. Hotels for this study were selected from those registered by the Thai Hotel Association and listed in the Association's Directory (2002-2003). Criteria for registration with the Thai Hotel Association include: possession of a hotel licence and can provide guest accommodation and meals and beverages through a coffee shop, restaurant, or club. In this study, the term of "Hotel" as used by the Thai Hotel Association includes hotels, motels, inns and resorts that have a hotel licence and provide guest accommodation and meals and beverages through a coffee shop, restaurant, or club.

#### Definition of Hotels Selected in Australia

For Australia this study used the definition of both hotels and motels provided by AAA Tourism Pty. Ltd (RACV, 2003-2004). Within these definitions resorts may be classified/listed as hotels or motels and inns as motels or hotels. AAA Tourism provides the following definitions: *A Hotel* is defined as an accommodation that "provides sole occupancy accommodation and will provide meals and beverages through cafés, restaurants and bars" (RACV, 2003-2004, p. 20). *A Motel* is defined as "all accommodation in units or suites, adequate parking within or near the motel boundary, all accommodation with individual bathing and toilet facilities, may be single or multi storeys, and in some instances, converted buildings" (RACV, 2003-2004, p. 20). *A Resort* is defined as "a property situated in spacious ground, which is self sufficient in service and facilities providing meals and a wide range of recreational facilities. It should have full time activities staff/guides, a tour activities desk and a variety of eating outlets on site. This type of accommodation will be listed as hotel or motel" as appropriate (RACV, 2003-2004, p. 20). Similarly, *Inn* is listed as hotel or motel (RACV, 2003-2004, p. 20).

As hotels and motels are grouped in separate categories by AAA Tourism (RACV, 2003-2004), in this study these two categories were combined to provide a list that had a similar composition to the Directory of the Thai Hotel Association. For the purpose of this study then, the term “Hotel” refers to both hotels and motels.

In summary, from these sources there was a total population of 816 hotels: 333 hotels in the three areas of Thailand (Directory of Thai Hotel Association, 2003-2004), and 483 hotels in the three areas of Australia (RACV, 2003-2004).

### ***3.4.2.2 Sample Selection***

The techniques of sample selection were modified from the work of Murphy et al. (1996), and Weeks and Crouch (1999). There were two steps for sample selection.

- (1) During January - February 2004, hotels in each area were identified via on-line search engines (Yahoo and Google) by using the search terms “hotel name” and “location” to identify hotels with a Web site. From this activity, a total population of 560 hotels with Web sites (69% of the hotel population) was identified; 207 Thai hotels (62%) and 353 Australian hotels (73%).
- (2) For this study, the population of hotel Web sites was further refined by using three search engines: Alta Vista, Yahoo and Google with the keywords “hotel”, “accommodation”, and “the area’s name” such as “Bangkok hotels”, “Melbourne hotels”. This produced a subsequent sample of 107 Thai hotel Web sites (22 Thai chain hotel Web sites and 85 Thai independent hotel Web sites), and 99 Australian hotel Web sites (23 Australian chain hotel Web sites, and 76 Australian independent hotel Web sites).

The 22 Thai chain hotel Web sites represented 51 hotels, whilst the 23 Australian chain hotel Web sites represented 153 hotels. Consequently, the number of Thai hotels represented in the sample was 136 (51 chain hotels and 85 independent hotels). In Australia, the number of Australian hotels represented in the sample was 229 (153 chain

hotels and 76 independent hotels). As most hotels within a single chain used the same Web site, the number of hotel Web sites was less than the number of hotels.

Thus, the total sample of hotel Web sites for this study was 206 sites, including 107 sites (including 85 independent and 22 chain hotel Web sites) from the three areas in Thailand and 99 sites (including 76 independent and 23 chain hotel Web sites) from the three areas in Australia.

### **3.4.3 Data Collection**

Each hotel's Web site was assessed by two checklist instruments for the presence or otherwise of the aforementioned 32 attributes of hotel features, and 32 attributes of customer's information needs provided on hotel Web sites. The researcher coded "Presence (Yes)" as "1" and "Absence (No)" as "0".

### **3.4.4 Data Analysis for Hotel Web Sites**

Data analyses were conducted by using the Statistical Package for Social Sciences version 14.0 (SPSS 14.0). Descriptive statistics and chi-square test were used with appropriate consideration about the nature of the data (Pallant, 2005; George and Mallery, 2003). Descriptive statistics including frequency and percentages were used to quantify the presence or otherwise of the attributes as mentioned by the two checklists. The chi-square test was used to test for differences in the attributes between hotel Web sites in each country and across the two countries.

## **3.5 QUANTITATIVE QUESTIONNAIRE SURVEY**

A closed item self administered questionnaire was utilised as the main method at the second stage of this study in order to test the model and all hypotheses, and to answer the research questions. This section consisted of six parts: 1) the method of the questionnaire survey; 2) development of the survey questionnaire; 3) population and sampling; 4) data collection; 5) validity and reliability of the survey questionnaire; and 6) data analysis.

### **3.5.1 The Method of the Questionnaire Survey**

Questionnaire surveys have been commonly used in recent studies regarding the use of IT, ICT, Internet and e-commerce in the hotel industry (e.g. Van Hoof et al., 1999; Leong, 2001; Sahadev and Islam, 2005; Wong and Law, 2005; Yeh et al., 2005), and also widely used in the previous studies on organisational technological innovation adoption (e.g. Chau and Tam, 1997; Thong, 1999, Teo, 2001; Pollard, 2003; Seyal and Rahman, 2003). This is because questionnaire surveys enable researchers to obtain data fairly easily, and the questionnaire responses are easily coded (Sekaran, 1992).

After assessing the advantages and disadvantages of the methods appropriate for the questionnaire survey (personal interviews and self-completion questionnaires), self-completion questionnaires by mail were considered the most straightforward method of collecting data as well as being the quickest and most cost effective. In addition, the respondents can complete the survey questionnaires at their own convenience (Sekaran, 1992; Zikmund, 2003). Specifically, the respondents of this study were the senior hotel managers that were very busy and had limited free time; therefore, they were best contacted by mail because an envelope can be addressed to a particular individual and thus ensure successful delivery.

### **3.5.2 Development of Survey Questionnaire**

An extensive search of the literature in the area of the Internet and Web technologies and innovation adoption in the hotel industry revealed that there has been very limited research in this field. No existing questionnaire was found to be directly applicable, specifically addressing all issues, including Internet based marketing innovation and diffusion in the hotels, focused on in this study.

Therefore, during the months of September and October 2004, pilot interviews were conducted at each of six hotels in Thailand. Each interview took approximately one hour to complete. Participants were two general managers, one executive assistant manager, three marketing managers and one front office manager. These managers were chosen because they were decision makers in relation to the hotel's marketing activities. The interview questions were designed to determine:

- General information about the hotel's profile;
- The main reasons for, and problems influencing, the adoption of IWMA by hotels in Thailand;
- The benefits and cost of IWMA adoption in hotels in Thailand;
- Environmental factors in Thailand that support the use of IWMA.

The results of these interviews (for example, opinions, suggestions and experiences) provided direction as to what factors were imperative for the adoption of IWMA by hotels, which were then elaborated upon to design the main questionnaires.

The results of the pilot interviews are included in Appendix A3.

### ***3.5.2.1 Development of Questionnaire Items***

For this study, in order to draw up appropriate questions for the questionnaires, key variables from the review of the research literature on innovation adoption in organisations were combined with variables identified from the results of the pilot interviews. Variables that were utilised to formulate the questions for inclusion in the questionnaires are listed in Table 3-3 (p. 73).

From Table 3-3, variables that were used in the identification of factors affecting the adoption of IWMA in Thai and Australian hotels consisted of *independent* and *dependent* variables.

**Table 3-3: Operationalisation of Variables**

Variables	Definitions
<b>Independent Variables</b>	
<b>1. Organisational Factors</b>	
1.1 Size of Hotel	Number of rooms ( Leong, 2001).
1.2 Top Management Support	The level of influence of CEO support on IS effectiveness (Grover, 1993; Seyal and Rahman, 2003).
1.3 Organisational Readiness	The level of financial and technological resources of the firm (Iacovou et al., 1995).
1.4 CEO's Attitude	Individual's positive or negative feelings about performing a target behavior (Seyal and Rahman, 2003).
1.5 CEO's IS Knowledge	Level of computer literacy of CEO (Grover, 1993; DeLone, 1983 cited in Thong, 1999).
<b>2. Technological Innovation Factors</b>	
2.1 Perceived Benefits	The level of recognition of the relative advantage that innovation can provide the organisation (Iacovou et al., 1995).
2.2 Complexity	The degree to which an innovation is perceived as relatively difficult to understand and use (Rogers, 1983).
2.3 Compatibility	The degree to which an innovation is perceived as consistent with the existing values, past experiences and needs of potential adopters (Rogers, 1983).
2.4 Perceived Barriers	Barriers of establishing a corporate Web site or internet or implementing e-commerce (Chau and Tam, 1997).
2.5 Image	The degree to which adoption/usage of the innovation is perceived to enhance one's image or status in one's social system (Moore and Benbasat, 1991).
<b>3. Environmental Factors</b>	
3.1 Customer Power	Power of the buyer in the industry (Grover, 1993; Chau and Tam; 1997; Thong, 1999).
3.2 Competition Intensity	The level of e-commerce capability of the firm's industry, and most importantly to that of its competitors (Iacovou et al., 1995).
3.3 Level of Government Support	Availability of government support (Tan and Teo, 2000).
3.4 Level of Technology Support	Availability of technology support (Tan and Teo, 2000).
<b>Dependent Variable</b>	
Adoption of Internet and Web Based Marketing Activities	Early adopter and non-early adopter hotels (Daniel et al., 2000; Scupola, 2003; Sellito and Martin, 2003).

The dependent variable in this context is *the adoption of IWMA by hotels* that, in this study, is defined in terms of the Internet and Web based marketing activities used to support Thai and Australian hotel businesses. The dependent variable was measured in terms of *early adopter* and *non-early adopter hotels*.

- *Early adopter hotels* have e-mail, a Web site for advertising, receive online bookings, confirm bookings immediately, receive payment by a secure system and complete transactions on their Web site.
- *Non-early adopter hotels* include: hotels that have no Web site and only have e-mail; hotels that have e-mail and a basic Web page for advertising; and hotels that have e-mail and a Web site for receiving online bookings.

**The independent variables** in this study were placed into three main groups of factors:

- 1) Organisational factors (*size of hotel, top management support, organisational readiness, CEO's attitude and CEO's IS knowledge*),
- 2) Technological innovation factors (*perceived benefits, complexity, compatibility, perceived barriers and image*), and
- 3) Environmental factors (*customer power, competition intensity, level of government support and level of technology support*).

### **3.5.2.2 Scoring Method**

Almost all of the questions in the questionnaire were designed in a closed form. Dichotomous scales and categorical scales were used for the questions regarding hotel characteristics in the first section of the questionnaire.

For questions regarding factors affecting the adoption of IWMA in the second section a Likert rating scale was used. The Likert scale is appropriate for measuring attitudes, beliefs or feelings (Singleton & Straits, 1999, p. 289). In addition, for data obtained using an interval scale, parametric statistical analysis may be used (Hair et al., 2003; Zikmund, 2003). Thus, the Likert scale was selected for its ability to measure attitudes, beliefs, or feelings.

For most of the questions in the second section respondents were asked to rate the extent of their agreement or disagreement with the statements on a seven-point Likert rating scale, ranging from 1 = strongly disagree, 2 = disagree, 3 = slightly disagree, 4 = neither disagree nor agree, 5 = slightly agree, 6 = agree and 7 = strongly agree. A seven-point scale was selected as scales with more response categories have been found to be more reliable and valid than shorter scales (Duane Alwin 1992, 1997 cited in Singleton & Straits, 1999).

### 3.5.2.3 Questionnaire Design

The questionnaire (see Appendices B1 and B2) consisted of 65 questions within two parts printed in a seven-page booklet on pale coloured paper (yellow and blue).

The details of each part are as follows:

- **Part I** (questions 1-14) was designed to gather background information about the respondent's hotel operation.
- **Part II** (questions 1-51) was designed to examine the factors affecting the adoption of Internet and Web based marketing activities in hotels. Questions in this section were developed and divided amongst three main concepts: organisational, technological innovation and environmental factors.

Variables and corresponding questions in the questionnaire for each concept according to the conceptual model are summarised in Table 3-4.

Variables	Items	Question (s)	
		Part I	Part II
<b>Organisational Factors</b>			
Size of Hotel	1	3	
Top Management Support	3		1-3
Organisational Readiness	2		22-23
CEO's Attitudes	5		8-12
CEO's Knowledge	1		51
<b>Technological Innovation Factors</b>			
Perceived Benefits	6		24-29
Complexity	4		4-7
Compatibility	4		18-21
Perceived Barriers	3		35-37
Image	2		13-14
<b>Environmental Factors</b>			
Customer Power	3		15-17
Competition Intensity	5		30-34
Level of Government Support	3		38-40
Level of Technology Support	3		41-43
<b>Adoption of IWMA</b>	1	13	

### 3.5.2.4 Pre-Testing Questionnaire

Before final administration of the questionnaire, each question in the questionnaire was rigorously evaluated by means of a pre-test. The purpose of the pre-test was to evaluate how each question was understood and to check the range of variation in the responses (De Vaus, 2002). For this study, the pre-test of the questionnaire was conducted both in Australia and Thailand. There were three steps of pre-testing.

*Firstly*, the questionnaires were *pre-tested* with research professionals at Victoria University to identify any difficulties with question wording, including effective use of language and clarity of content, formatting, instructions and timing to complete the questionnaire.

*Secondly*, all comments and suggestions obtained were used to correct and adjust the questionnaire before running a pilot study.

*Thirdly*, a *pilot study* was done with the senior managers, including managing directors, general managers or marketing directors of the hotels, *who made the decisions regarding the hotel marketing activities*. These managers were selected as participants in this study since they were in the best possible position to provide answers about their hotel.

- **In Australia**, the pilot study was done with 21 respondents who were hotel general managers, owners and marketing managers in Adelaide and Perth in November 2004.
- **In Thailand**, the pilot study was conducted *after the back translation process* with 20 respondents who were hotel general managers, owners and marketing managers in Pattaya and Hua-Hin in January 2005.

Although these pilot hotels were located in different areas to the target hotels in the final sample, they had characteristics similar to the target hotels for this study in terms of being in major locations that were *tourist destinations*.

Based on feedback from these hotel managers, modifications were made to the questionnaire for the questionnaire survey stage of the study.

### ***3.5.2.5 Back Translation of Questionnaire***

The researcher acknowledges that the major problem in cross-cultural research is to determine whether or not the translation is accurate, particularly in terms of nuance and colloquialism. For this study, back-translation was used to check for conceptual and experimental equivalence. Back translation is *the process of taking a questionnaire that has previously been translated into another language and then having a second, independent translator translate it back into the original language* (Zikmund, 2003, p. 361). After the first pilot test in Australia, the final English version of the questionnaire was translated into Thai. In order to ensure that the Thai and English versions of the questionnaire have equivalent meanings, back-translation was necessary. The first English version was translated into Thai by translators whose native language was Thai and who were fluent in both languages. In order to avoid translation mistakes and linguistic errors, the Thai version of the questionnaire was translated back from Thai into English by independent translators. The original and back translated copies were then compared by a panel which confirmed the adequacy and accuracy of the back translation and thus also of the Thai version of the questionnaire.

### **3.5.3 Population and Sampling**

As mentioned in section 3.4.2.1 (pp. 67-69), hotels selected for this study were identified utilising the definition of hotels from the Thai Hotel Association's Directory (2003-2004) and the Directory of Australian Accommodation (RACV, 2003-2004). There was a total population of 816 hotels: 333 hotels in the three areas of Thailand, and 483 hotels in the three areas of Australia.

Unfortunately, on 26 December 2004, more than 50 hotels in Phuket, Thailand were damaged because of the effect of the Tsunami. However, hotels in the target population in Phuket were not greatly affected because most of them could reopen in February and March 2005. There were only 6 hotels in Phuket that could not reopen in 2005.

Therefore, the final population of target hotels in the three areas of Thailand in May 2005 was 327 hotels. Due to the relatively small population, this study surveyed the entire population of 810 hotels including 327 hotels in Thailand and 483 hotels in Australia thereby providing data that were not only accurate but also precise (Zikmund, 2003, pp. 369-370).

### 3.5.4 Data Collection

The questionnaire was addressed to 810 particular management individuals at the 327 hotels in Thailand and 483 hotels in Australia.

- **In Australia**, the questionnaire survey was conducted in February 2005. A package was mailed to each of 483 general managers of the hotels in Melbourne, Sydney and Brisbane. The package contained three items: a covering letter (see Appendix B3); one questionnaire in English; and a prepaid reply envelope. The covering letter explained the purpose of the survey and asked the general manager to return the completed questionnaire within three weeks in the prepaid reply envelope.
- **In Thailand**, in May 2005, packages were mailed to each of the 327 general managers of the hotels in Bangkok, Phuket and Chiang Mai. The package also contained three items: a covering letter in Thai (see Appendix B4); one questionnaire in Thai; and a prepaid reply envelope.

In order to increase the response rate, a follow-up procedure was also employed in this study that involved a second mailing of questionnaires to those hotels that had not responded within three weeks.

### 3.5.5 Validity and Reliability of the Survey Questionnaire

In order to ensure that the instruments developed for this study made precise and accurate measurements, it was necessary to assess the “goodness” of measures. There are two criteria for testing the goodness of measures: *validity* and *reliability* (Sekaran, 1992).

### 3.5.5.1 Test for Validity

In this study, *content validity* and *construct validity*, used by many researchers, were chosen to establish the validity of the survey questionnaire (Thong and Yap, 1995; Thong, 1999; Teo, 2001).

#### (1) Content Validity

Content validity is a method to evaluate the validity of an instrument by the judgement of a group of experts to ensure that the questionnaire includes an adequate and representative set of questions that reflect the real meaning of the concept (Cavana et al., 2001; Zikmund, 2003).

For this study, the content validity of the survey questionnaire was chosen because it was tested by means of a pre-test approach using research professionals and senior managers in the hotels as described earlier. In addition, development of the questionnaire for this study was based upon the results of the pilot interviews and the findings from the relevant literature review on innovation adoption. In this way, it was ensured that the survey questionnaire for this study would provide data that related to accepted meanings of the concepts involved.

#### (2) Construct Validity

Construct validity is an assessment of the questionnaire's capacity to record data that accurately reflects the theory upon which questionnaire is based (Sekaran, 1992). Most researchers test the construct validity by means of factor analysis (Thong and Yap, 1995; Thong, 1999). In the questionnaire instrument development process, factor analysis is often used to test the validity of ideas about items in order to decide how items should be grouped together into subscales and which items should be dropped from the instrument entirely (Hair et al., 1998; Munro, 2005).

For this study, the construct validity of the survey questionnaire was tested by means of factor analysis. The reason for using factor analysis in this study was its ability to assess the degree to which items were measuring the same concepts or dimensions enabling the assessment of the factorial validity of the questions (Cramer, 2003). As mentioned in section 3.5.2.3 (p. 75), the questions in the questionnaire had already been grouped into

three main concepts (organisational, technological innovation and environmental factors) according to the proposed conceptual model. Therefore in this study factor analysis was used to confirm these three main concepts. In addition, in this study, if the variable consisted of only one item, such as *size of hotel* and *CEO's IS knowledge*, it was not placed in a group by itself.

### (2.1) The Assumptions of Factor Analysis

Before considering the use of factor analysis, the data from the questionnaire survey in this study were tested to ensure that the assumptions underlying the application of factor analysis were not violated.

- Data should be *interval level* or such that the researcher has specifically decided to treat them as interval level. In addition, data should be approximately normally distributed. In general, when the data are measured using an interval scale and the sample size is large, it is also assumed that sample data are collected from populations with normal distributions (Hair et al., 2003). For this study, the data collected from part II of the survey questionnaire were in the Likert scale form and were normally distributed (see Appendix B5).
- Factor analysis cannot be used for a sample of fewer than 50 observations and *the ratios of cases per item are lower than five cases per item* (Hair et al., 1998). It is widely accepted that a sample of *at least 100 cases* is required for factor analysis (Tabachnick and Fidell, 2001; Hair et al., 1998; Munro, 2005). For this study, the data met the acceptable level of sample size in terms of cases per item as follows: (1) for the data relating to *organisational factors* there were 295 respondents and 10 items, representing a ratio of 29.5 cases per item; (2) for the data relating to *technological innovation factors* there were 295 respondents and 19 items, representing a ratio of 15 cases per item; and (3) for the data relating to *environmental factors* there were 295 respondents and 13 items, representing a ratio of 21 cases per item.
- In terms of statistics, factor analysis is based on correlations among the items. If there are no significant correlations among items, the data are inappropriate for using factor analysis. To assess the factorability of the data, Bartlett's Test of

Sphericity and Kaiser-Meyer-Olkin (KMO) were used to measure sampling adequacy (Hair, et al., 1998; De Vaus, 2002; Pallant, 2005). The use of factor analysis is considered appropriate if *Bartlett's test of sphericity is significant with a value of less than 0.05 ( $p < 0.05$ )* and the *KMO measure of sampling adequacy is greater than 0.7* (De Vaus, 2002). The data of this study had both the significant values of Bartlett's test and the acceptable values of KMO at 0.813, 0.807 and 0.847 for the organisational, technological innovation and environmental factors, respectively, as shown in Table 3-5.

**Table 3-5: KMO and Bartlett's Test of the Organisational, Technological Innovation and Environmental Factors towards the Use of IWMA**

Results	Factors affecting the use of IWMA		
	Organisational	Technological Innovation	Environmental
Kaiser-Meyer-Olkin Measure of Sampling Adequacy	0.813	0.807	0.847
<b>Bartlett's Test of Sphericity</b>			
Approx. Chi-Square	1410.601	3176.950	2032.081
Degree of freedom	45	171	91
Significant	.000	.000	.000
Source: data from part II of the survey questionnaire	10 items	19 items	13 items

Therefore, the data were appropriate for the use of factor analysis.

### (2.2) Results of the Factor Analysis

Principal components analysis was employed to confirm the dimensions of the construct and to check whether measures constructed for each dimension were correctly grouped and met the expected concepts as theorised. In this analysis, eigenvalues and factor loadings were used to interpret the results.

- **Eigenvalues** greater than 1, or at least 5% of variance for each factor indicate that certain groupings of questions are consistently answered in a similar manner, and may be viewed by respondents as belonging in the same conceptual category (Hair et al., 1998; Monro, 2001). This study used eigenvalues and % of variance as criteria for selecting the number of factors.
- **Factor loadings** were used to indicate the degree of the correlation between the variable and the factor; for which a higher loading makes the variable representative of the factor. As *a rule of thumb*, "factor loadings greater than 0.30 are considered to meet the minimum level; loadings of 0.40 are considered more important; and if the

loadings are 0.50 or greater, they are considered practically significant” (Hair et al., 1998, p. 99).

The results of factor analysis for the three groups of factor items are listed in Tables 3-6 to 3-8.

Organisational Factor Items		Factor Loading	Eigenvalue	% of Variance Explained
<b>Items: Top Management Support</b>				
2	Top management supports, and allocate resources for, the adoption and implementation of Internet and Web based technologies.	.892	4.34	43.45
3	Top management has effectively communicated its support for the adoption and implementation of Internet and Web based technologies.	.881		
1	Top management considers the Internet and Web based technologies as important.	.861		
<b>Items: CEO's Attitude</b>				
9	It is very important for my hotel to organise information on its Web page to be reliable, relevant, and accurate.	.830	1.51	15.17
10	It is very important for my hotel to design a web page with enough information about hotel products to satisfy customers.	.815		
11	All hotels will use Internet and Web based technologies <i>in the future</i> .	.634		
8	My hotel continuously updates information on its Web page.	.572		
12	Using Internet and Web based technologies is a fast and efficient way to get more information.	.519		
<b>Items: Organisational Readiness</b>				
22	My hotel gave its staff formal training in the use of Internet and Web technologies before it adopted these technologies.	.799	1.08	10.85
23	The budget was the important factor that my hotel had to deal with before adopting Internet and Web based marketing activities.	.779		
<b>Cumulative Variance Explained (N=295)</b>				<b>69.48</b>
Kaiser-Meyer-Olkin Measure of Sampling Adequacy = 0.813				
Bartlett's Test of Sphericity: (Approx. Chi-Square = 1410.601, df =45, Sig. = .000)				

► Table 3-6 shows the results of factor analysis for groups of organisational factors. There were 3 initial eigenvalues greater than 1 in the concept relating to the *organisational factors*: top management support (4.34), CEO's attitude (1.51) and organisational readiness (1.086), with 69.48% of cumulative variance explained (43.45% of cumulative variance is accounted for by top management, 15.17% of cumulative variance is accounted for by CEO's attitude and 10.85% of cumulative variance is accounted for by organisational readiness). In addition, the rotated solution revealed that all 10 items of three variables (top management support, CEO's attitude and organisational readiness) had factor loadings greater than 0.5, therefore they were considered to be significant value making these variables representative of the organisational factors (Hair et al., 1998).

Based on these results, all three variables in terms of top management support, CEO's attitude and organisational readiness were retained in the group of organisational factors, which were defined in the theoretical model (Chapter 2: section 2.10, p. 48). Thus, dimensions of the construct were confirmed to group correctly and met the expected concepts as theorised.

► Table 3-7 shows the results of factor analysis for the groups of items for the technological innovation factors.

<b>Table 3-7: Rotated Component Matrix for Technological Innovation Factors</b>				
<b>Technological Innovation Factor Items</b>		<b>Factor Loading</b>	<b>Eigenvalue</b>	<b>% of Variance Explained</b>
<b>Items: Perceived Benefits</b>				
26	My hotel can extend market reach by using Internet and Web based technologies.	.783	6.54	34.45
27	My hotel can improve customer service by using Internet and Web based technologies.	.759		
25	My hotel can reduce operating costs by using Internet and Web based technologies.	.748		
29	My hotel can capture and analyse data quickly when using Internet and Web based technologies.	.724		
24	My hotel can increase sales and enlarge market share by using Internet and Web based technologies.	.678		
28	My hotel can establish strong relationships with client business partners when using Internet and Web based technologies.	.636		
<b>Items: Complexity</b>				
7	Internet and Web based technologies are clear and understandable for my customers to use.	.887	2.14	11.30
6	Internet and Web based technologies are clear and understandable for my employees to use.	.850		
5	Internet and Web based technologies are easy for my customers to use.	.832		
4	Internet and Web based technologies are easy for my employees to use.	.731		
<b>Items: Compatibility</b>				
20	Use of the Internet to conduct hotel bookings is available to my customers.	.779	1.98	10.43
21	Use of the Internet to complete transactions is available to my customers.	.748		
18	Using Internet and Web based technologies is compatible with the way my hotel does business.	.571		
19	Using Internet and Web based technologies fits well with the way my employees like to work.	.541		
<b>Items: Perceived Barriers</b>				
36	Most of my customers are not familiar with conducting online hotel bookings.	.927	1.33	7.03
37	Most of my customers are not familiar with conducting online hotel transactions.	.912		
35	Using Internet technology cannot reduce the costs of providing products and services to our customers.	.468		
<b>Items: Image</b>				
14	Hotels that use Internet technology have higher standards than those that do not.	.875	1.21	6.40
13	Hotels that use Internet technology are more sophisticated than those that do not.	.839		
<b>Cumulative Variance Explained (N=295)</b>				<b>69.60</b>
Kaiser-Meyer-Olkin Measure of Sampling Adequacy = 0.807				
Bartlett's Test of Sphericity: (Approx. Chi-Square = 3176.950, df = 171, Sig. = .000)				

As shown in Table 3-7, there were 5 initial eigenvalues greater than 1 in the concept relating to the *technological innovation factors*: perceived benefits (6.54), complexity (2.14), compatibility (1.98), perceived barriers (1.33) and image (1.21), which ranged from 1.21 to 6.54, with 69.60% of cumulative variance explained. To assist the interpretation of the five groups of items for the technological innovation factors, varimax rotation was performed and the results show that nearly all 19 items of these five variables had factor loadings above 0.5, with the exception of only one item (item 35: barrier), the value for which was still very close to 0.50 (0.468). This was considered to be the significant value making all five variables representative of the meaning of the dimensions according to the theoretical concept of technological innovation factors, as defined in the theoretical model (Chapter 2: section 2.10, p. 48).

► Table 3-8 shows the results of factor analysis for the groups of items for the environmental factors.

Environmental Factor Items		Factor Loading	Eigenvalue	% of Variance Explained
<b>Items: Customer Power</b>				
15	My hotel is actively involved in building and maintaining direct customer contacts.	.824	5.32	37.98
16	Customers are considered an important reason for my hotel to adopt the Internet and Web based technologies.	.768		
17	My customers demand the Internet and Web based technologies.	.754		
<b>Items: Competition Intensity</b>				
33	The rivalry between my hotel and its competitors is very intense.	.823	1.94	13.86
32	My hotel has many competitors.	.752		
34	Information about competitors use of the Internet and Web technologies was considered important when my hotel was making a decision to use those technologies.	.733		
31	My hotel monitors its competitors' moves very closely.	.686		
30	My hotel actively keeps abreast of new and innovative uses of technology by my competitors.	.542		
<b>Items: Level of Government Support</b>				
39	My government is active in setting up the facilities to enable Internet commerce.	.928	1.42	10.11
40	My government promotes the use of the Internet for commerce.	.907		
38	The government endorses Internet commerce in my country.	.885		
<b>Items: Level of Technology Support</b>				
43	Internet technology makes doing business easier in the hotel industry.	.835	1.35	8.10
42	Faster Internet access speed is important for Internet commerce in the hotel industry.	.789		
41	Advances in Internet security technology provide for safer transactions and purchasing online.	.599		
<b>Cumulative Variance Explained (N=295)</b>				<b>70.06</b>
Kaiser-Meyer-Olkin Measure of Sampling Adequacy = 0.847				
Bartlett's Test of Sphericity: (Approx. Chi-Square = 2032.081, df = 91, Sig. = .000)				

As shown in Table 3-8, there were 4 initial eigenvalues greater than 1 in the concept relating to the *environmental factors*: customer power (5.32), competition intensity (1.94), level of government support (1.42) and level of technology support (1.35), with 70.06% of cumulative variance explained. In addition, the results of factor loadings of all 14 items were above 0.5, therefore they were considered to be significant values making all four variables representative of the meaning of the dimensions according to the theoretical concept of environmental factors, as defined in the theoretical model (Chapter 2: section 2.10, p.48).

From these analyses, most of the factor loadings as shown in Tables 3-6 to 3-8 are greater than the cut-off point of 0.50 as recommended by Nunnally (1978), with the exception of only one item (item 35: barrier), the value for which was still very close to 0.50 (0.468). Hence, the dimensions of the construct were confirmed to group correctly and met the expected concepts as theorised.

### **3.5.5.2 Test for Reliability**

For this study, the survey questionnaire (instrument) was assessed for its internal consistency reliability. This type of reliability is used to assess a summated scale where several items are summed to form a total score for a construct (Hair et al., 2003). Hence, this type of reliability (the internal consistency reliability) was appropriate with the data of this study (Part II in the survey questionnaire), which were in the Likert scale form. The internal consistency reliability is checked by calculating the value of Cronbach's alpha coefficient (Cavana et al., 2001; Hair et al., 2003).

The value of Cronbach's alpha coefficient can range from zero (no internal consistency) to one (complete internal consistency) (Bryman and Bell, 2003). Cronbach's alpha value is inflated by a larger number of variables, so there is no set interpretation as to what is an acceptable alpha value. In general, researchers agree that an alpha value of at least 0.7 is considered acceptable for reliability (Nunnary, 1978; De Vaus, 2002; George and Mallery, 2003; Sekaran, 2003). Hair et al. (2003, p. 172) described rules of thumb about the size of Cronbach's alpha coefficient, as shown in the following table (Table 3-9).

Alpha Coefficient Range	Strength of Association
< .6	Poor
.6 to < .7	Moderate
.7 to < .8	Good
.8 to < .9	Very Good
.9	Excellent

Source: Hair et al. (2003, p. 172)

As a rule of thumb, the closer Cronbach's alpha coefficient is to 1, the higher the internal consistency and the more reliable the scale (De Vaus, 2002; George and Mallery, 2003; Hair et al., 2003).

In the present study, Cronbach's alpha coefficients were calculated for the two versions of the survey questionnaires (English and Thai versions) for the multi-item measures of the major constructs of the three main groups of factors: 1) organisational including *top management support*, *organisational readiness* and *CEO's attitude*, 2) technological innovation including *perceived benefits*, *complexity*, *compatibility*, *perceived barrier* and *image*, and 3) environmental factors including *customer power*, *competition intensity*, *level of government support* and *level of technology support*.

Table 3-10 presents the reliability results of the Cronbach's alpha coefficient for key variables used in the survey questionnaires in this study.

Variables and Groups of Factors	Cronbach Alpha Coefficient ( $\alpha$ )	
	English (N = 143)	Thai (N = 152)
<b>Organisational Factors</b>		
- Top Management Support (3 items)	.90	.92
- Organisational Readiness (2 items)	.61	.55
- CEO's Attitude (5 items)	.79	.78
<b>Technological Innovation Factors</b>		
- Perceived Benefits (6 items)	.81	.91
- Complexity (4 items)	.92	.83
- Compatibility (4 items)	.77	.82
- Perceived Barriers (3 items)	.65	.74
- Image (2 items)	.74	.79
<b>Environmental Factors</b>		
- Customer Power (3 items)	.69	.85
- Competition Intensity (5 items)	.78	.86
- Level of Government Support (3 items)	.94	.92
- Level of Technology Support (3 items)	.70	.70

As shown in Table 3-10, the values for the Cronbach alpha coefficients of the English version ranged from 0.61 to 0.94, and were considered to be acceptable for this study (Sekaran, 2003). Most of the values of the Cronbach alpha coefficients of the Thai

version ranged from 0.70 to 0.92. However, there was one variable in terms of organisational readiness for which the value of the Cronbach alpha coefficient was 0.55. This is because this variable consisted of only two items (Thong, 1999; Hair et al., 2003). Overall, the results of the reliability coefficient were satisfactory for this study.

### **3.5.6 Data Analysis**

Quantitative data from the questionnaire survey were analysed by utilising the Statistical Package for Social Science version 14.0 (SPSS 14.0).

After assessing the use of appropriate statistical tests in data analysis, nine statistical techniques, which were *Cronbach's coefficient alpha method, factor analysis technique, descriptive statistics, the chi-square test, independent sample t-test, one-way analysis of variance (ANOVA), multivariate analysis of variance (MANOVA), Pearson correlation analysis and discriminant function analysis (DFA)*, were considered to be suitable and relevant to provide answers to the research questions.

**These statistical techniques were chosen for the following purposes:**

- Cronbach's Coefficient Alpha and Factor Analysis Techniques  
*To ensure that the survey questionnaire (instrument) developed for this study produced precise and accurate measurements, Cronbach's coefficient alpha and factor analysis techniques were selected as appropriate statistical tests for assessing the reliability and validity of the survey questionnaire of this study. These measurements have already been discussed in section 3.5.5 (pp. 78-87).*
- Descriptive Statistics  
*To obtain the primary information regarding the characteristics of hotel samples and respondents in the two countries, descriptive statistics were appropriate statistics. Frequency distributions, percentages and means were used to describe the data regarding the characteristics of hotel samples and respondents in each country.*

- The Pearson Correlation Analysis

To ensure that there was no problem with multicollinearity among the research variables, Pearson correlation analysis was an appropriate statistic to assess the extent of multicollinearity among these variables. It was used to assess the multicollinearity or high correlation among the independent variables (size of hotel, top management support, organisational readiness, CEO's attitude, CEO's IS knowledge, perceived benefits, complexity, compatibility, perceived barriers, image, customer power, competition intensity, level of government support and level of technology support). *The Pearson correlation analysis* requires interval data or data that are treated as interval data (Pallant, 2005). A high correlation will make determining the contribution of each independent variable to the dependent variable difficult because the effects of all independent variables are mixed or confounded. If any pair of variables has a Pearson correlation coefficient of 0.8 or more, it means that these two variables have high multicollinearity (Steven, 1996, p. 76). For this study, *Pearson correlation analysis* was used to check that there was no problem with multicollinearity among the research variables.

To provide answers to the research questions fully, a wide range of statistics: *the chi-square test; independent sample t-test; one-way analysis of variance (ANOVA; multivariate analysis of variance (MANOVA); and discriminant function analysis (DFA), which was appropriate with the data, was chosen to test the hypotheses.*

- The Chi-square Test

The chi-square test was used to analyse the differences between the Thai and Australian hotels for the effect of hotel characteristics towards the extent to which they use IWMA, and to test hypotheses H1, H4 and H6. Also, the chi-square test was used to analyse the relationship between the effect of hotel characteristics and the extent of use of IWMA in hotels in each country.

- Multivariate Analysis of Variance (MANOVA)

Multivariate Analysis of Variance (MANOVA) is similar to multiple ANOVAs (Field, 2005). There are four multivariate tests: 1) Pillai's Trace; 2) Wilks's Lambda; 3) Hotelling's Trace; and 4) Roy's Largest Root. One of the most

commonly reported statistics is Wilks' Lambda. However, Tabachnick and Fidell (2001, p. 348) recommended that if the data have problems, for example, small sample size, unequal N values, violation of assumptions, Pillai's trace is more robust than Wilks' Lambda. For this study, when the data had problems in terms of violation of assumptions, Pillai's trace statistics were considered to be more robust (Pallant, 2005).

MANOVA was chosen as a statistical technique for use in this study for several reasons as mentioned by Field (2005, p. 572). Firstly, MANOVA is mostly used instead of multiple ANOVAs because MANOVA can reduce the error rate across statistical tests conducted on the same experimental data, which is known as familywise error rate. Moreover, MANOVA can reduce the chance of a Type I error occurring. "Type I error occurs when we think there is a difference between our groups, but there really isn't", stated Pallant (2005). Secondly, important additional information can be gained through MANOVA, for example, the relationship between dependent variables is ignored in the multiple ANOVAs, whereas MANOVA takes account of the relationship between these variables. Finally, MANOVA has the power to detect whether groups differ along a combination of dimensions whereas the multiple ANOVAs can detect whether groups differ along a single dimension.

For these reasons, MANOVA is an appropriate technique for this study as a preliminary analysis to find out if there were any differences in factors affecting the use of IWMA between the different groups of hotels in each country and across the two countries to test hypotheses H2, H3 and H7.

- One-Way Analysis of Variance (ANOVA)

ANOVA is used to assess the statistical differences between the means of two or more groups (Munro, 2005). ANOVA is used as a multiple *t*-test (Field, 2005), and requires interval or ratio data for independent or dependent variables. The F-test assesses the differences between the group means when using ANOVA. However, ANOVA does not identify where the differences are. It can be used to determine that there are significant differences somewhere between the groups (Munro, 2005;

Field, 2005). ANOVA has similar assumptions to MANOVA as discussed in the section on MANOVA (Field, 2005).

ANOVA was chosen as a statistical technique for following a significant MANOVA. When these ANOVAs are used following a significant MANOVA they do not protect against a Type I error (Field, 2005). Due to a significant MANOVA, it is reflecting a difference from only one rather than all dependent variables. Subsequent ANOVAs are then carried out on all of the dependent variables, but the MANOVA protects only the dependent variable for which group differences genuinely exist.

Field (2005, p. 594) also stated that:

*The ANOVA approach to following up a MANOVA implicitly assumes that the significant MANOVA is not due to the dependent variables representing a set of underlying dimensions that differentiate the groups. Therefore, some researchers advocate the use of discriminant analysis, which finds the linear combination (s) of the dependent variables that best separates (or discriminates) the groups. This procedure is more in keeping with the ethos of MANOVA because it embraces the relationships that exist between dependent variables and it is certainly useful for illuminating the relationship between the dependent variables and group membership. The major advantage of this approach over multiple ANOVAs is that it reduces and explains the dependent variables in terms of a set of underlying dimensions thought to represent substantive theoretical or psychological dimensions.*

Moreover, Field (2005) recommended that following up a MANOVA with both a one-way ANOVA and with discriminant analysis is the way to help researchers understand the data fully.

For these reasons, ANOVA was one of the appropriate statistical techniques for following a significant MANOVA in order to find out which of the factors differed significantly across the groups for testing hypotheses H2 and H3.

- Discriminant Function Analysis (DFA)

Discriminant function analysis (DFA) was chosen as an appropriate statistical technique for following a significant MANOVA in order to obtain a fuller picture of the data (Field, 2005). DFA was used to see how the dependent variables

discriminate the groups (Field, 2005). DFA identifies variates and indicates how many variates are significant by using the probabilities for the F-statistics (Cramer, 2003; Hair et al, 2003; Francis, 2004). Once the significant variates were identified, *Standardised Canonical Discriminant Function Coefficients* were used to find out how the dependent variables contributed to the variates. High scores indicate that a dependent variable is important for a variate. Finally, the functions at group centroids were used to find out which groups are discriminated by a variate (Cramer, 2003; Hair et al., 2003).

DFA is the appropriate statistical technique when the dependent variable is categorical (e.g. early adopter or non-early adopter hotels) and the independent variables are interval data (Steven, 1996; Thong and Yap, 1995). The probabilities for the F-statistics, indicating a p-value less than 0.05, identify the independent variables that were significant discriminators between the two groups. For this study, DFA was chosen to test hypotheses H2 and H3 since it can identify the combination of independent variables which best account for the statistically significant differences between early adopter and non-early adopter hotels with respect to two or more independent variables simultaneously (Steven, 1996, p. 261).

- Independent Sample *t*-test

The independent Sample *t*-test was used to compare the means from two independent samples, which require interval or ratio data (Munro, 2005). The homogeneity assumption was checked by means of SPSS using Levene's test. If the value of Levene's test is bigger than 0.05, the significant value of *equal variances assumed* will be used to interpret the data (Munro, 2005; Field, 2005). However, if the value of Levene's test is less than 0.05, then the assumption of homogeneity of variance has been broken, therefore the significant value of *equal variances is not assumed* and will not be used to interpret the data (Munro, 2005). For this study, the *t*-tests were used to follow up the ANOVA and DFA to determine where the differences lie to compare the means between two groups of hotels in each country and across two groups of hotels in both countries. Specifically, the *t*-tests were used to test hypotheses H2, H3, H5 and H7.

Table 3-11 summarises the objectives of the statistical techniques that were utilised in the analysis of the data obtained from the survey in the present study.

**Table 3-11: Summary of the Objectives of Statistical Techniques Utilised in the Analysis of the Data Obtained from the Questionnaire Survey**

Statistics	Objectives	Hypothesis Testing
The Cronbach's coefficient alpha	<ul style="list-style-type: none"> <li>To analyse the instrument reliability.</li> </ul>	
Factor analysis	<ul style="list-style-type: none"> <li>To analyse the instrument validity.</li> </ul>	
Descriptive Statistics	<ul style="list-style-type: none"> <li>To describe the data regarding the characteristics of hotel samples and respondents in each country.</li> </ul>	
The Pearson correlation analysis	<ul style="list-style-type: none"> <li>To analyse the multicollinearity among the research variables.</li> </ul>	
The Chi-square Test	<ul style="list-style-type: none"> <li>To analyse the relationship between the effect of hotel characteristics and the extent of use of IWMA in Thai and Australian hotels.</li> <li>To analyse the differences between Thai and Australian hotels for the effect of hotel characteristics towards the extent of use of IWMA.</li> </ul>	H1, H4 and H6
MANOVA	<ul style="list-style-type: none"> <li>To find out if there were any differences in factors affecting the use of IWMA between the different groups of hotels in each country and across the two countries.</li> </ul>	H2, H3 and H7
ANOVA	<ul style="list-style-type: none"> <li>To follow the significant MANOVA.</li> <li>To test which of the factors differed significantly across the different groups of hotels in each country and across countries</li> </ul>	H2 and H3
DFA	<ul style="list-style-type: none"> <li>To follow the significant MANOVA to see how the dependent variables discriminate the groups.</li> <li>To examine the effects of organisational, technological innovation and environmental factors on the adoption of IWMA in hotels in Thailand and in Australia</li> </ul>	H2 and H3
The <i>t</i> -test	<ul style="list-style-type: none"> <li>To follow the ANOVA and DFA to determine where the differences lie in order to compare the <i>means</i> between two groups of hotels in each country and across countries.</li> </ul>	H2, H3, H5 and H7

### 3.6 CONFIRMING INTERVIEWS

In this study, the interview approach was chosen as a supplementary method at the last stage of the research process to investigate the factors affecting the adoption of IWMA in Thai and Australian hotels to provide information for answering Research Questions 2 and 3, and to provide support for hypotheses H2, H3, H5 and H7. This section consisted of five parts: 1) instruments used for interviews; 2) pre-testing of the interview questions; 3) sampling techniques; 4) interview procedures; and 5) data analysis.

### **3.6.1 Instruments Used for Interviews**

Semi-structured interviews are commonly used for the interview (Minichiello et al., 1990 cited in Punch, 1998). For this study, the semi-structured interview approach was selected because it can provide some structure and guidance to keep the researcher focused and on track as data collection proceeds (Arksey and Knight, 1999; Caldeira and Ward, 2003). Successful use of the interview technique requires a great deal of preparation by the researcher. For this study, guide questions for the confirming interview were prepared and developed from the literature review and the results of the pilot interviews, as mentioned in section 3.5.2, pp 71-72.

Open questions or open-ended questions were chosen because this type of question allows the interviewee a wider choice of possible answers than structured questions do (Cavana et al., 2001). The questions were presented in a language that interviewees could understand. A similar procedure as described in section 3.5.2.5, p.77, for the back translation process of the interview questions, was also done. Consequently, there were two versions of the interview questions including English and Thai (see Appendixes C1 and C2). The English version was used for interviewing the hotel managers in Australia. The Thai version was employed for collecting data in Thailand.

### **3.6.2 Pre-Testing of the Interview Questions**

Proper use of pre-testing is a means of testing the research design, the data collection procedures and certain interview questions (Yin, 2003). For this study, in order to evaluate how each question was understood and clarify areas that may not have been fully defined, the interview questions were pre-tested when conducting the pilot interviews with seven hotel managers in six hotels in Thailand.

### 3.6.3 Sampling Technique

In general, sampling designs are classified as *probability* and *nonprobability*. Probability sampling can be classified as *simple random*, *stratified* and *cluster*, whereas nonprobability sampling consists of *convenience*, *purposive or judgement* and *quota sampling* (Singleton and Straits; 1999, Cavana et al., 2001; Churchill and Iacobucci, 2002; Zikmund, 2003). However, Veal (2006) stated that qualitative research generally made no claim to quantitative representativeness and, by definition, did not involve statistical calculations demanding prescribed levels of precision. In addition, Veal (2006) noted that the qualitative sampling methods used should be adequately described. Miles and Huberman (1994, p. 28) listed 16 types of sampling strategies in qualitative inquiry. Some of these are presented in Table 3-12.

Type of Sampling	Characteristics
Convenience	Use of conveniently located persons or organisations, e.g. friends, colleagues, students, organisations in the neighbourhood, tourists visiting a local popular attraction.
Criterion	Individuals selected on the basis of a key criterion, e.g. age group, membership of an organisation.
Opportunistic	Similar to convenience but involves taking advantages of opportunities as they arise, e.g. studying a major sporting event taking place locally, or a holiday resort the researcher is holidaying at.
Purposeful	Similar to criterion but may involve other considerations, e.g. maximum variation, typicality.

Source: Veal (2006, p. 295)

The number of hotels in the sample for the interviews could not be selected using sample logic as in survey research (Eisenhardt, 1989; Babbie, 2001; Yin, 2003).

In order to achieve the aim and answer the research questions, this study used *the criterion sampling methods* to select the hotel sample based upon two criteria.

- Firstly, they were participants in the earlier questionnaire survey.
- Secondly, they were either early adopters of IWMA or non-early adopters of IWMA, as mentioned in section 3.5.2 (pp. 73-74)

Criteria for selection of the respondents for each hotel were firstly that the person should be a senior manager, for example the hotel manager or marketing director, and secondly should also be a decision maker in relation to the hotel's marketing activities.

As mentioned in section 3.5.2.4 (p. 75), these managers were selected as participants in this study since they were in the best possible position to provide answers regarding the use of IWMA.

Researchers in previous studies that have employed the interview method in the area of the Internet and Web technologies in the hotel industry and innovation adoption have generally selected from five to seven hotels or companies (Iacovou et al., 1995; Gillbert et al., 1999; Scupola, 2003). For example, Gillbert et al. (1999) used semi-structured interviews following an analysis of hotel Web sites with five senior directors of marketing from five hotels about to what extent the hotel chains adopt, or will adopt, the Web as a relationship marketing tool.

For this study the *criterion sampling method* was followed. In both countries, after sending the request letter, telephone calls were made to respondents who had responded to the first request letter and granted permission for the interviews in order to make an appointment. A follow-up letter was first sent to hotel managers that did not reply to the first letter within three weeks. A second follow-up letter was then sent to hotels that did not reply to the first follow-up letter. At the end, eight hotel managers in each country had granted the interviews with their managers, who were decision makers in relation to the hotel's marketing activities.

#### **3.6.4 Interview Procedures**

The confirming interviews were conducted in Australia during the months of March and May 2005 and in Thailand during the months of June and August 2005. Interviews for this study were conducted face-to-face and one-on-one, and took approximately one hour to complete.

The confirming interviews for this study were organised and conducted in the following manner:

- An official letter (see Appendix C3; C4) was sent from the researcher to contact the managers of all sample hotels located in the study area.

- The researcher introduced herself to the managers and gave details about the objectives and ethical issues for the research through the official letter. The manager's assistance was later requested in collecting the data relating to the use of the Internet and Web based technologies in its marketing activities.
- Once the managers of hotels had volunteered to participate in the interviews they were then contacted via e-mail, telephone, or letter and asked for a convenient time to be interviewed.
- The interview was then conducted using the interview guide and the interview was tape recorded.
- The accuracy and completeness of data were then checked.
- A "Thank you" letter was sent to all sample hotels' managers for their participation in the research.

### 3.6.5 Data Analysis

According to Miles and Huberman (1994), an analysis of the interviews consists of three processes: 1) data reduction; 2) data display; and 3) conclusion drawing and verification.

Data reduction refers to "the process of selecting, focusing, simplifying, abstracting, and transforming the data that appears in written-up field notes or transcriptions" (Miles and Huberman, 1994, p.10). It is a useful process for the researcher to focus on the important data. A display is "an organised, compressed assembly of information that permits conclusion drawing and action" (Miles and Huberman, 1994, p.11). The data display can enable the researcher to understand the message or data clearly. Conclusion drawing and verification are the final processes of analysis, where the researcher interprets the data displays to form conclusions (Miles and Huberman, 1994).

For this study, the analysis was made through critical evaluation of the transcribed interviews and themes were determined and grouped into categories. The data were analysed in two stages. *Firstly*, the data were analysed for within each country in terms of non-early adopter and early adopter groups of hotels. The results were used to support hypotheses H2 and H3. *Secondly*, the data were analysed by comparing factors

affecting the use of IWMA between hotels in the two countries in terms of medium independent hotels and large chain hotels. The results were used to support for hypotheses H5 and H7.

### **3.7 ETHICAL CONSIDERATIONS**

Before conducting the main survey, the research proposal, interview questions and questionnaire for the survey were submitted to the Human Research Ethics Committee of Victoria University. Approval of the project had to be granted by the Human Research Ethics Committee of Victoria University to conserve the safety, liberty and rights of participants before conducting the interviews and mail survey.

A cover sheet for the survey questionnaire was provided and attached to the questionnaire to explain the aims of the study. Participants had to be informed that under the research ethics rules, their participation was entirely voluntary and that there were no legal, psychological, moral or other risks. In addition, if they felt that the study was intrusive or they were reluctant to answer questions, they could withdraw at any stage of the process.

The confirming interviews also had to be conducted with the interviewees' consent. Before conducting the interviews, the aims of the project and the ethical rules had to be explained to participants. Each participant was also requested to sign the consent form before starting the interview.

Complete questionnaires of the survey, transcripts and tape recording of the interviews must be stored at the School of Hospitality, Tourism, and Marketing at Victoria University after analysis by the researcher. All data are now held at the School of Hospitality, Tourism, and Marketing at Victoria University. Only the researcher and supervisors can access the data. In addition, the research results had to be presented in a form in which participants could not be identified.

### 3.8 SUMMARY

Mixed methods, including an analysis of hotel Web sites, a questionnaire survey of senior hotel managers in Thailand and Australia, and a series of confirming interviews with some of the aforementioned senior managers, were selected as an approach for this study.

Hotels selected for this study were hotels that had already adopted IWMA. They were identified utilising the definition of hotels used by the Thai Hotel Association's Directory (2003-2004) and by the Directory of Australian Accommodation (RACV, 2003-2004) and were located in three areas in each country, three provinces in Thailand, including Bangkok, Chiang Mai and Phuket, and three cities in Australia, including Melbourne, Sydney and Brisbane. There was a total population of 816 hotels: 333 hotels in the three areas of Thailand and 483 hotels in the three areas of Australia.

In this study, the research process was conducted in three stages.

*Firstly*, the analysis of hotel Web sites utilising the two checklist instruments to examine the Web technology features and customer's information needs provided on the hotel Web sites that were available in Thailand and in Australia was carried out. The results contributed to answering *Research Questions 1 and 3* and as a source of *preliminarily data*.

- The techniques of sample selection were modified from the work of Murphy et al. (1996), and Weeks and Crouch (1999), which produced a total sample of hotel Web sites for this study of 206 sites, including 107 sites from the three areas in Thailand and 99 sites from the three areas in Australia.
- Each hotel's Web site was assessed for the presence or otherwise of the aforementioned 32 attributes of hotel features and 32 attributes of customer's information needs provided on hotel Web sites. Descriptive statistics and the Chi-square test were used to analyse the data.

*Secondly*, the quantitative questionnaire surveys were used as the main method to test the model and all of the hypotheses (H1- H7) and contributed to answering Research Questions 1, 2 and 3.

- The questions in the survey questionnaire were designed by using findings from the literature review and the results of the semi-structured interviews from the exploratory study. Dichotomous scales and categorical scales were used for the questions regarding hotel characteristics and hotel respondents. For questions on the issues regarding the factors affecting the adoption of IWMA in hotels, respondents were asked to rate the extent of their agreement or disagreement with the statements provided on a seven-point Likert rating scale.
- In order to ensure that the instruments developed for this study made precise and accurate measurements, a pilot study was conducted in both countries: with 21 respondents in Adelaide and Perth in Australia and with 20 respondents in Pattaya and Hua-Hin in Thailand *after the back translation process*.
- Due to the relatively small population, this study surveyed the entire population from the Directory of Thai Hotel Association (2003-2004) and RACV (2003-2004) databases of 810 hotels including 327 hotels in Thailand (after the effect of the Tsunami on 26 December 2004) and 483 hotels in Australia. In order to increase the response rate, a follow-up procedure was also employed in this study.
- Two forms of statistical analyses were used to test instrument reliability and validity: alpha internal consistency reliability and factor analysis. Descriptive statistics were chosen to describe the data regarding the characteristics of hotel samples and respondents in each country. Pearson correlation analysis was used to analyse the multicollinearity among the research variables. Five statistical methods, chi-square test, multivariate analysis of variance (MANOVA), one-way analysis of variance (ANOVA), discriminant function analysis (DFA) and independent sample *t*- test, were chosen for testing the hypotheses.

Finally, the confirming interviews were chosen *as a supplementary method to investigate the factors affecting the use of IWMA in hotels* in order to contribute to answering Research Questions 2 and 3 and to provide the results to support hypotheses H2, H3, H5 and H7.

- Confirming interviews were selected by using a set of open-ended questions as a guide for data collection. The interview questions were pre-tested by means of the exploratory depth interviews. There were two versions of the interview questions: 1) English and 2) Thai.
- This study used *the criterion sampling method* to select the hotel sample based upon two criteria. Firstly, they were participants in the earlier questionnaire survey. Secondly they were either early adopters of IWMA or non-early adopters of IWMA. Criteria for selection of the respondents for each hotel were firstly that the person should be a senior manager, for example the hotel manager or marketing director, and secondly should also be a decision maker in relation to the hotel's marketing activities.
- In both countries, following the criterion sampling method, after sending the request letters to the hotel managers, eight managers in each country granted interviews.
- The data were analysed in two stages. *Firstly*, the data were analysed for within each country in terms of non-early adopter and early adopter groups of hotels. The results were used to support hypotheses H2 and H3. *Secondly*, the data were analysed by comparing factors affecting the use of IWMA between hotels in the two countries in terms of medium independent hotels and large chain hotels. The results were used to support hypotheses H5 and H7.

Figure 3-4 summarises the research process for this study.

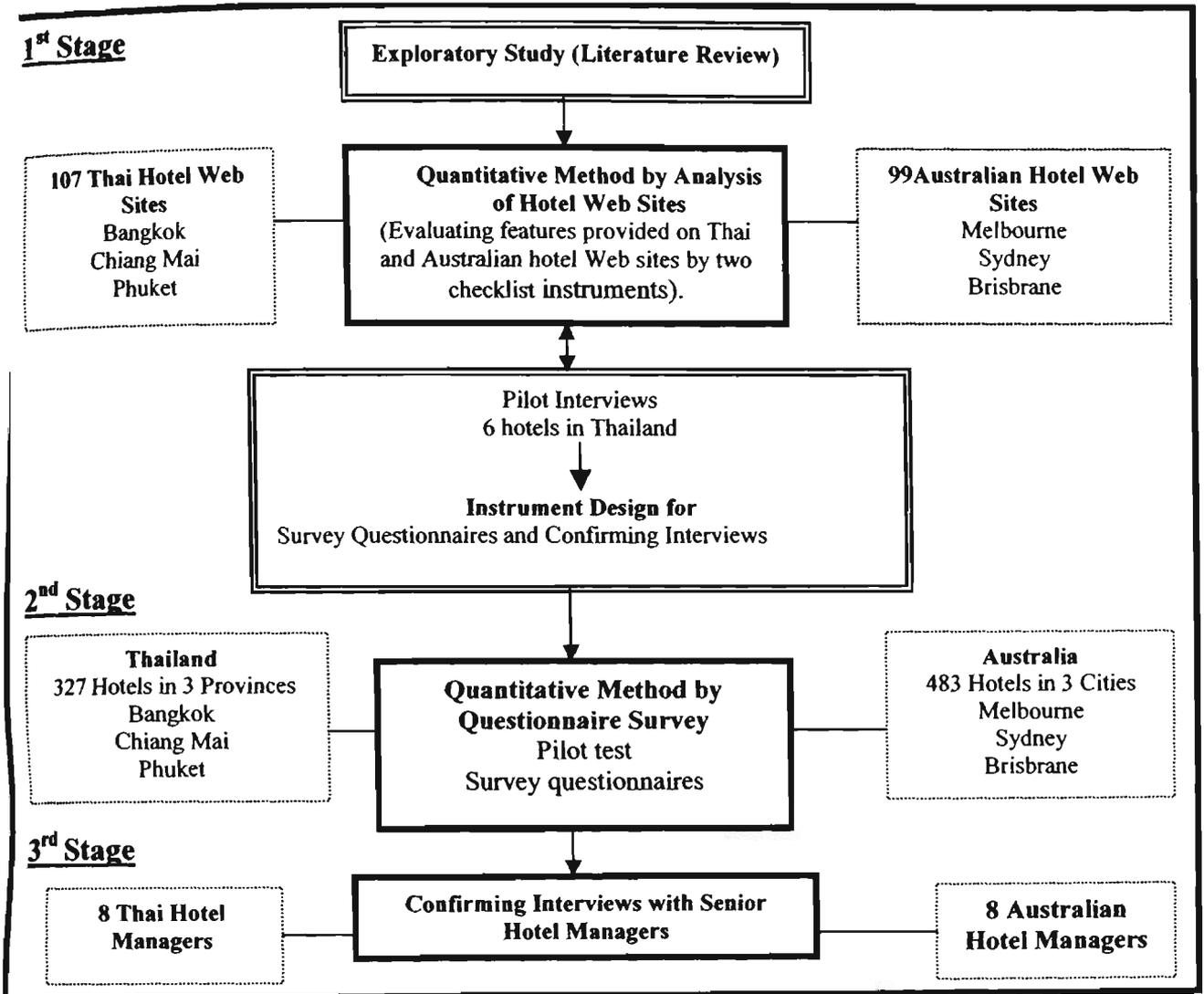


Figure 3-4: Research Process

## CHAPTER FOUR

### AN ANALYSIS OF HOTEL WEB SITES

#### 4.1 INTRODUCTION

In this chapter, the results of analysis of hotel Web sites in Thailand and Australia are reported. As mentioned in Chapter 2, most studies of Web sites in the hotel industry have been conducted in many countries such as Australia, Hong Kong, Singapore, Taiwan, Greece and Turkey, but there is very limited, if any, research on the Web site practices of hotels in Thailand (Weeks and Crouch, 1999; Chung and Law, 2003; Leong, 2002; Wan, 2002; Sigala, 2003; Baloglu and Pekcan, 2006). Therefore, the purpose of this study was to analyse and compare features provided on hotel Web sites in Thailand and Australia. The findings of the preliminary analysis of the features provided on the hotel Web sites in the two countries were used to provide support to answer Research Questions 1 and 3 and to provide support for hypotheses H1 and H4, as follows.

#### Research Question 1:

To what extent have Thai and Australian hotels adopted and implemented the Internet and Web based technologies in their marketing activities?

H1: Thai and Australian hotels differ in the extent to which they use Internet and Web based marketing activities (IWMA).

#### Research Question 3:

Does the adoption and implementation of Internet and Web based marketing activities (IWMA) differ between Thai and Australian hotels?

*If there is a difference, how does the adoption and implementation of Internet and Web based marketing activities (IWMA) differ between Thai and Australian hotels, and what factors are causing this difference.*

H4: There is a difference between Thai and Australian hotels in terms of type of hotel management: (a) independent management and (b) chain management, in the extent to which they use IWMA.

In order to achieve these purposes, two checklist instruments were used to evaluate and compare features provided on hotel Web sites in these two countries.

- The first checklist comprised 32 attributes grouped into seven categories: 1) basic information; 2) e-commerce; 3) promotions; 4) services; 5) technology; 6) secondary information; and 7) management functions, and was used to evaluate and compare features provided on hotel Web sites in Thailand and Australia.
- The second checklist comprised 32 attributes of information on customer's needs grouped into five categories: 1) Web design and format; 2) general Web information quality; 3) hotel facility information and services; 4) room information; and 5) locality, and was used to evaluate and compare features in relation to the information on the Web sites that met customer's needs or not.

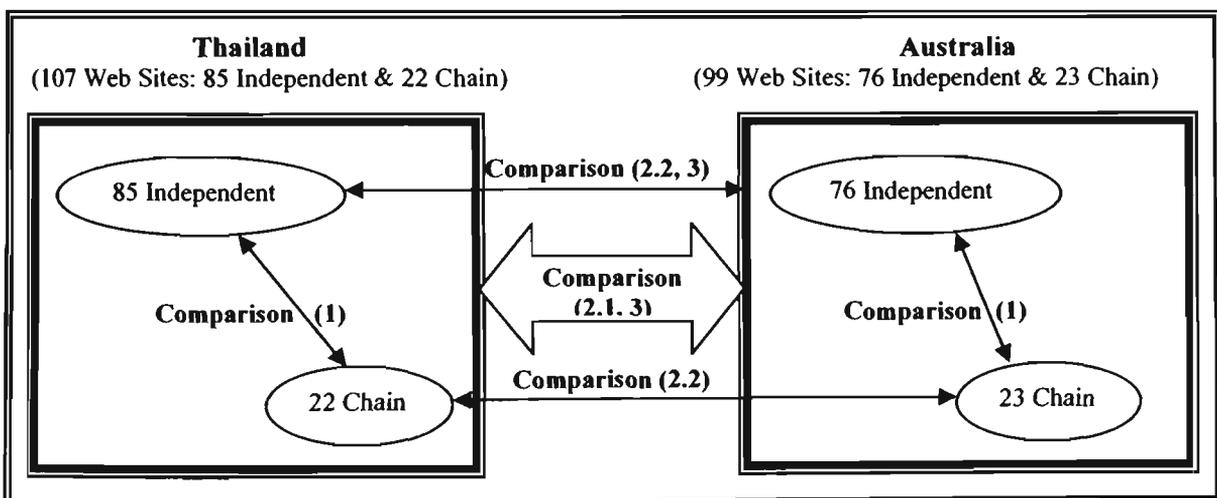
For this study, a total sample of 206 hotel Web sites was involved, including 107 sites (including 85 independent and 22 chain hotel Web sites) from the three areas in Thailand and 99 sites (including 76 independent and 23 chain hotel Web sites) from the three areas in Australia.

**Analysis involved three major comparisons of hotel Web sites in order to answer Research Questions 1 and 3 as follows:**

- 1) Comparison of features provided on hotel Web sites between *independent and chain hotel samples in each country* by using the first checklist instrument in order to have a better understanding on the extent of use of the Internet and Web technologies as a marketing tool in each country.

- 2) Comparison of features provided on hotel Web sites *across hotel samples in the two countries* by using the first checklist instrument for:
- 2.1) Comparison of features provided on *all hotel Web site samples across the two countries including 107 sites in Thailand and 99 sites in Australia*. The results were used to support hypothesis H1.
  - 2.2) Comparison of features *between independent hotel Web sites across the two countries, and between chain hotel Web sites across the two countries*. The results were used to support hypothesis H4.
- 3) Comparison of features in relation to *the information on the Web sites that met customer's needs between all hotel Web site samples across the two countries, and between independent hotel Web site samples across the two countries* by using the second checklist instruments. The results were used to supplement the findings of the first checklist instrument.

The three major comparisons of hotel Web sites are summarised in Figure 4-1.



**Figure 4-1: Three Major Comparisons of the Analysis of Hotel Web Sites**

*Descriptive statistics and the chi-square test* were used for testing the features and customer's information needs provided on hotel Web sites in both countries. Descriptive statistics were used to quantify the presence or otherwise of the 32 attributes of features and customer's information needs provided on Thai hotel Web pages. The chi-square test was used to test for differences in the 32 attributes between: 1) hotel

Web sites of the independent and chain hotels in each country; 2) all hotel Web site samples across the two countries; and 3) independent Web sites across the two countries, and chain hotel Web sites across the two countries.

This chapter consists of three main sections: 1) assessment of features on hotel Web sites between independent and chain hotels in each country; 2) comparison of features on hotel Web sites across the two countries; and 3) comparison of features of customer's *information needs* on hotel Web sites across hotel Web sites in the two countries.

#### **4.2 ASSESSMENT OF FEATURES ON HOTEL WEB SITES OF INDEPENDENT AND CHAIN HOTELS IN THAILAND AND AUSTRALIA**

In this section, comparison of the current use of Web technologies between independent and chain hotel Web sites in each country was carried out, based on a sample of 107 Thai hotel Web sites (including 85 independent and 22 chain hotel Web sites), and 99 Australian hotel Web sites (including 76 independent and 23 chain hotel Web sites). The contents of the hotel Web sites were measured for the presence on each of the features, and for each country. The findings for all features and their comparison between independent and chain hotel Web sites in each country are presented in Appendix D.

Table 4-1 (p. 106) summarises the significant differences of features between independent and chain hotel Web sites in each country.

As the results of comparison between independent and chain hotel Web sites in each country in Appendix D (Tables D-1 and D-3) show, *there was a significant difference between independent and chain hotels in the two countries in providing features on their hotel Web sites. Chain hotels in both countries provided a wider range of features than independent hotels in terms of four categories: 1) e-commerce; 2) promotions; 3) secondary information; and 4) technology.*

<b>Table 4-1: Significant Differences of Features between Independent and Chain Hotel Web Sites in Thailand and in Australia</b>						
Categories	Features	Thai Hotel Web Sites			Australian Hotel Web Sites	
		Independent % (N = 85)	Chain %(N = 22)	Chi-Square ( $\chi^2$ )	Independent %(N = 76)	Chain %(N = 23)
Basic Information	Tourism information	49.4	100.0	18.607**	Not Significant	
E-Commerce	Reservation Functioning	23.5	86.4	29.788**	Not Significant	
	Secure Payment System	20.0	86.4	34.477**	46.1	87.0
Promotions	Business Promotions	64.7	86.4	3.843*	55.3	78.3
	Restaurant Promotions		Not Significant		69.7	100
	Special Promotions		Not Significant		57.9	87.0
Secondary Information	Links to Partners	34.1	95.5	26.413**	44.7	82.6
Services			Not Significant			Not Significant
Technology	Download Information	16.5	63.6	20.123**	17.1	69.6
Management Functions			Not Significant			Not Significant
<i>Degree of freedom (df) = 1</i>						

\*\* Significant at  $p < 0.01$

\* Significant at  $p < 0.05$

- **In Thailand** the results in Table 4-1, p. 106 indicate that chain hotels than independent hotels provided significantly more:
  - **Basic information features** in terms of *tourism information*;
  - **Features for full functional e-commerce** including *full reservation functions and a secure payment system*;
  - **Promotion features** in terms of *business promotions*;
  - **Secondary information features** in terms of *links to partners*;
  - **Technology** in terms of *downloading information* on their hotel Web sites.
  
- **In Australia** the results in Table 4-1, p. 106 indicate that significantly more chain hotels than independent hotels provided:
  - **E-commerce features** in the provision of *secure payment system*;
  - **Promotional features** in the provision of *restaurant promotions, special promotions, and business promotions*;
  - **Secondary information features** in the provision of *linking to partners*;
  - **Technology features** in the provision of *downloading information*.
  
- ***It was found that more Thai chain hotels provided basic information features in the provision of tourism information than Thai independent hotels.***

This may be because the majority of chain hotels' customers came from overseas. As a result, tourism information, like *nearby attractions or businesses and direction to hotel*, was provided on more chain hotel Web sites than independent hotel Web sites in order to encourage international customers to select their hotels.

- ***In terms of e-commerce features, the results indicate that Thai chain hotels provided e-commerce features in terms of full reservation functions more than Thai independent hotels.***

Such differences may reflect that chain hotels were likely to have more advantages in terms of technical and human resources for the use of IWMA than independent hotels. Perhaps the number of customers that demanded to book online was higher in more chain hotels than independent hotels. Hence, full reservation function features were

provided on more Thai chain hotel Web sites than independent hotel Web sites in order to meet their customer demand and to improve services.

- ***In addition, e-commerce features in terms of secure payment systems were provided on more chain hotel Web sites than independent hotel Web sites in the two countries.***

This may be because more chain hotels seemed to have more online customers that had familiarity with the Internet and were concerned about the safety in payment when making purchases online than independent hotels. Also, it is possible to explain that chain hotels were likely to have more advantages in terms of technical and financial resources for establishing advanced secure payment systems for the use of IWMA than independent hotels.

- ***In terms of promotion features, chain hotels in each country provided business promotion features more than independent hotels.***

This may be because target customers of most chain hotels were business customers who preferred to use the booking online facility. However, in Australia the results also indicate that chain hotels provided more *restaurant promotions and special promotions* than independent hotels. A possible explanation is that more chain hotels than independent hotels were likely to have more advantages in terms of hotel products (e.g. large hotels, having various types of hotel rooms, having restaurants with a special menu or various menus) and human resources (chefs and marketing team) to create various promotions to encourage customers to book online.

- ***In terms of secondary information features, chain hotels provided features of linking to partners more than independent hotels in each country.***

It was not surprising to find that links to partners were provided on more chain hotel Web sites than independent hotel Web sites. This may be because most independent hotels did not seem to have any partners in terms of other businesses and other hotel partners as chain hotels. A possible explanation is that more chain hotels than

independent hotels perceived the value of adding these features as value-added service to their customers during online interactions with their hotels.

- ***In terms of technology features, chain hotels provided features of downloading information on their hotel Web sites more than independent hotels in each country.***

A possible explanation is that more chain hotels than independent hotels were likely to take greater advantage of technical resources for setting up a strategic information centre to offer users the facility to download information including a directory of hotels, a brochure, corporate information, fact sheets and hotel maps.

**Based on the results of this study, it seems that chain hotels were likely to have had more advantages in terms of *technical, financial, and human resources* for the use of Internet and Web based marketing activities than independent hotels.**

These findings are supported by O'Connor (2003, p. 91) who noted that *major international hotel chains' electronic-distribution activities* are indicative of industry patterns, because recent research has shown that large companies are most active on the Web - perhaps because their size often gives them an advantage in terms of *technical expertise and financial resources*. Findings from this analysis are also consistent with those of previous studies that managerial characteristics of hotel companies in terms of chain membership are positively related to the amount of information offered through the hotel Web sites (Yeung and Law, 2004).

### **4.3 COMPARISON OF FEATURES ON WEB SITES BETWEEN THAI AND AUSTRALIAN HOTELS**

The purpose of this section is to compare features provided on hotel Web sites across hotel samples in the two countries by using the first checklist instrument. The results of comparison of features provided on all hotel Web site samples across the two countries, including 107 sites in Thailand and 99 sites in Australia, were used to support hypothesis H1. The results of the comparison of features between independent hotel

Web sites across the two countries, and between chain hotel Web sites across the two countries, were used to provide support for hypothesis H4.

The Chi-square test was used to test for differences in the 32 attributes between hotel Web sites in Thailand and in Australia. The results of all comparisons are shown in Appendix D (Tables D-5 to D-7) while Table 4-2 (see page 111) and Figure 4-2 (see page 112) summarise the significant differences of features between hotel Web sites across the two countries. Details of each comparison and each category are discussed and reported in this section which consists of seven main parts: 1) basic information; 2) e-commerce; 3) promotion; 4) secondary information; 5) services; 6) technology; and 7) management functions.

### 4.3.1 Basic Information

**The results in Table 4-2 (p. 111) and Appendix D (Table D-5) of the comparison of 107 Thai and 99 Australian hotel Web sites indicate that:**

- Most of the hotel Web sites in Thailand and in Australia provided basic information including *own URL, e-mail address, maps of location, and tourism information*. In both countries most hotel Web sites did not provide the date when the Web pages were last updated. Only 7.5% of Thai and 7% of Australian hotel Web sites provided the dates for when the page was updated. In addition, no Web sites in either country provided safety or security tips.
- In both countries the tourism information provided on the hotel Web site usually described the various attractions around the hotel including special events. As shown in Table 4-2 (p. 111), there was a significant difference ( $\chi^2=6.789$ ,  $df=1$ ,  $p$ -value .009) between hotel Web sites in Thailand and Australia in terms of providing tourism information. This may result from the fact that of the hotel Web sites in Australia, 76.8% provided tourism information, whereas only 59.8% of Thai hotel Web sites provided such information.

**Table 4-2: Significant Differences of Features between Hotel Web Sites across Thai and Australian Hotels**

Categories	Features	Overall Hotel Web Sites			Independent Hotel Web Sites			Chain Hotel Web Sites		
		Thai % (N = 107)	Australian % (N = 99)	Chi-Square ( $\chi^2$ )	Thai % (N = 85)	Australian % (N = 76)	Chi-Square ( $\chi^2$ )	Thai % (N = 22)	Australian % (N = 23)	
1) Basic Information	Tourism Information	59.8	76.8	6.789**	49.4	72.4	8.829**	Not Significant		
2) E-Commerce	Reservation Functioning	36.4	85.9	52.394**	23.5	82.9	56.618**	Not Significant		
	Secure Payment System	33.6	55.6	10.011**	20.0	46.1	12.455**	Not Significant		
3) Promotions	All Features	Not Significant			Not Significant			Not Significant		
4) Secondary Information	All Features	Not Significant			Not Significant			Not Significant		
5) Services	Multilingual Site	23.4	8.1	8.929**	21.2	5.3	8.613**	Not Significant		
6) Technology	All Features	Not Significant			Not Significant			Not Significant		
7) Management Functions	All Features	Not Significant			Not Significant			Not Significant		
<i>Degree of freedom (df) = 1</i>										

\*\* Significant at  $p < 0.01$

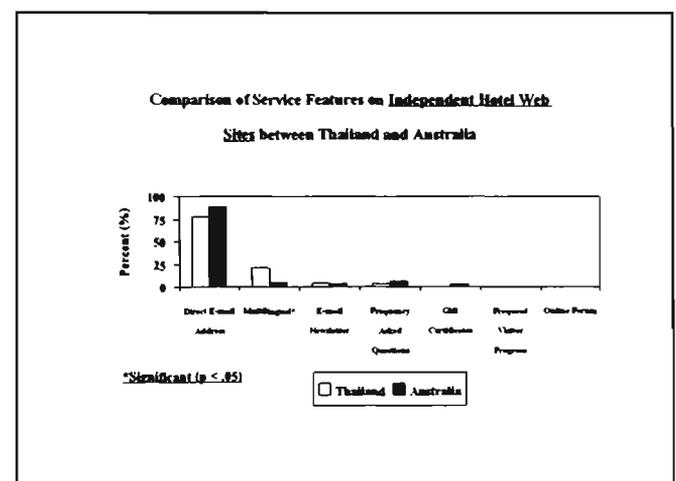
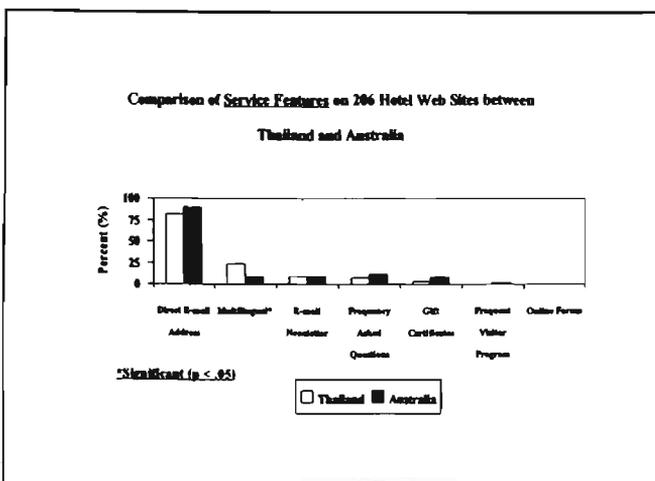
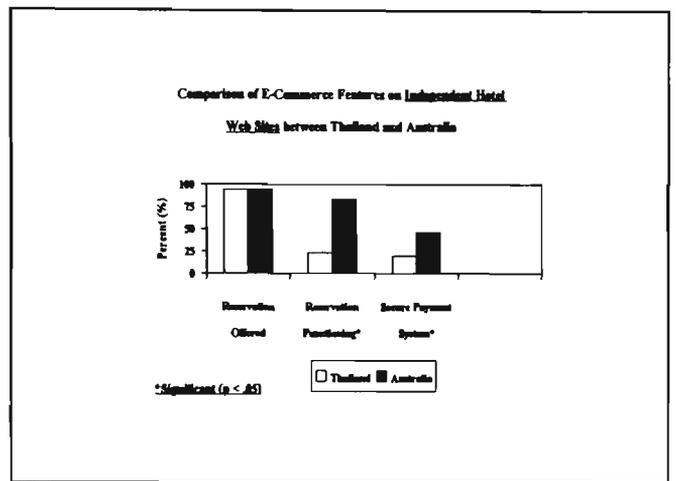
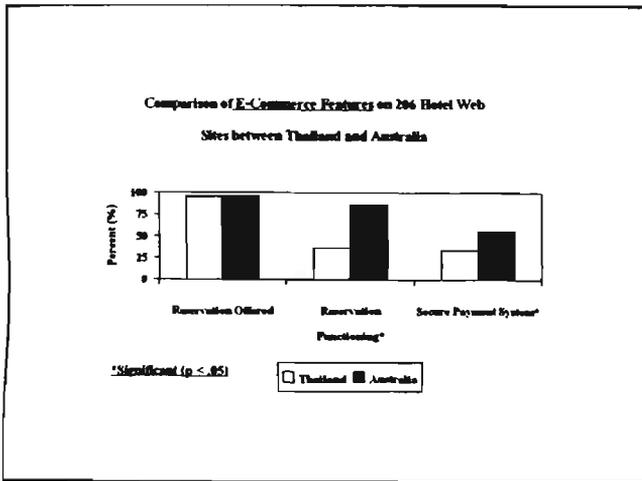
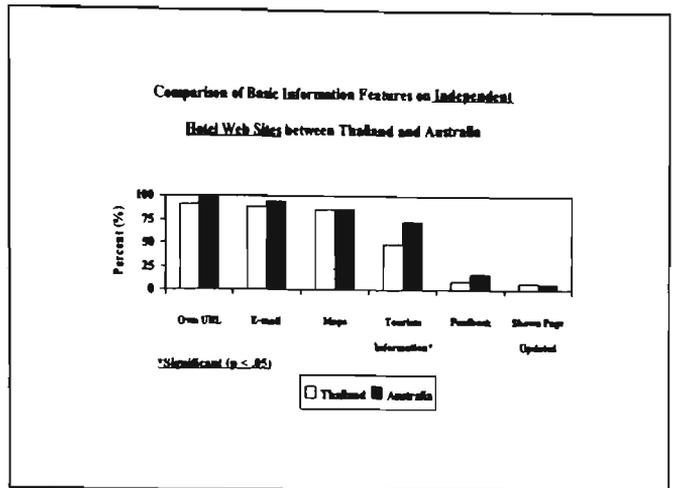
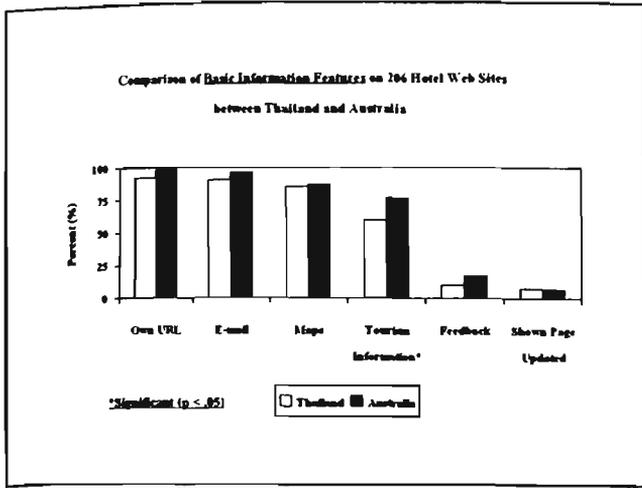


Figure 4-2: Differences in Features between Thai and Australian Hotel Web Sites

**The results in Table 4-2, p. 111 and Appendix D (Table D-6) of the comparison of 22 Thai chain and 23 Australian chain hotel Web sites indicate that there was no significant difference in basic information features provided on the Web sites across hotels in the two countries.**

**The results in Table 4-2 (p. 111) and Appendix D (Table D-7) of the comparison of 85 Thai independent and 76 Australian independent hotel Web sites indicate that:**

- There was a significant difference in providing *tourism information* ( $\chi^2 = 8.829$ ,  $df = 1$ ,  $p$ -value 0.003). More independent Australian hotels (72.4%) provided information for tourists than did independent Thai hotels (49.8%).
- This may be because most customers of independent hotels in Thailand came from tour operators that had a tour guide to organise information for customers. Another possible explanation is that most customers of independent hotels in Australia more than in Thailand were likely to directly book the hotels by themselves. As a result, the provision of tourism information like *nearby attractions or businesses* and *directions to the hotel* was provided on more independent hotel Web sites in Australia than independent hotel Web sites in Thailand.
- These results may also explain the significant difference in providing *tourism information* in cross comparison between overall hotel Web sites in the two countries.

Findings from this study indicate that even though customers do not come back to a static Web site, it is still necessary for hotel Web sites to keep information current (Cano and Prentice, 1998; Cai et al., 2004), and yet most hotel Web sites in both countries did not provide the date when the Web pages were last updated. However, hotels in both countries have taken advantage of the Web for advertising their hotels by introducing location, e-mail address for contacting the hotel and information for tourists. These findings are consistent with those of previous studies (Weeks and Crouch, 1999; Leong, 2002; Hsu et al., 2004), which claimed that basic information is a feature on the majority of hotel Web sites.

### 4.3.2 E-Commerce

The results in Table 4-2 (p. 111) and Appendix D (Table D-5) of the comparison of 107 Thai and 99 Australian hotel Web sites indicate that:

- For the e-commerce systems, more Australian than Thai hotel Web sites provided the features of *reservation functions* and *secure payments systems*. Of the 206 Web sites in Thailand and Australia that were assessed, online *reservations* were offered on most of the Thai (95.3%) and Australian (96%) Web pages. There were two main types of online reservations offered by hotel Web sites: 1) some Web sites could confirm bookings immediately, and 2) other Web sites could not confirm bookings immediately, but could only respond to the enquiry by using “contact us” or using an enquiry form and requesting that it be submitted to the hotel while still online either from the Web site or by e-mail.
- More Australian than Thai hotel Web sites provided *reservation functions* (85.9%, 36.4% respectively) that could confirm bookings immediately. Indeed, most hotels in Thailand required guests to fill in a separate form and to e-mail it through their own personal e-mail account to book a room. Even *on line reservations offered* on most hotel sites in Thailand did not make provision for immediate confirmation and the usual practice was to confirm through e-mail, contacting the guest within 24-48 hours.
- In Australia, most Web sites provided information on room types, room rates and the availability of rooms. On these Web sites, the guest could check the availability of the rooms and then fill in the form with their credit card number to confirm bookings. In addition, most hotels gave confirmation immediately. Similarly, a *secure payment system* was provided on more of the Australian hotel Web sites (55.6%) than on the hotel Web sites in Thailand (33.6%). Indeed, there were significant differences between hotel Web sites in Thailand and Australia in their provision of *reservation functions* ( $\chi^2 = 52.394$ ,  $df=1$ ,  $p$ -value 0.000) and also in their provision of a *secure payment system* ( $\chi^2 = 10.011$ ,  $df=1$ ,  $p$ -value 0.002).

**The results of the comparison of 22 Thai chain and 23 Australian chain hotel Web sites indicate that there was no significant difference in e-commerce features provided on their Web sites across hotels in the two countries (see Table 4-2 and Appendix D: Table D-6).**

**The results in Table 4-2 (p. 111) and Appendix D: Table D-7 of the comparison of 85 Thai independent and 76 Australian independent hotel Web sites indicate that more Australian independent hotels provided the features of reservation functions, and secure payment system than Thai independent hotels. Also, there were significant differences in providing reservation functions ( $\chi^2 = 56.618$ ,  $df = 1$ ,  $p$ -value .000) and a secure payment system ( $\chi^2 = 12.455$ ,  $df = 1$ ,  $p$ -value .000).**

- These results were similar to the results of comparison of independent and chain hotels in Thailand in section 4.2 (pp. 105-109). It seems that the use of Web technology for hotel marketing in Australian independent hotels was likely to be at the same level as that of chain hotels in Thailand. Also, these results may be the reason for the significant difference in providing reservation function and secure payment system features of cross comparison across hotel Web sites in the two countries.

Findings from this study imply that the use of hotel Web sites in Australian hotels was more sophisticated than in Thai hotels. In addition, the use of hotel Web sites for e-commerce in Thailand was at the same level as that of other countries that did not provide fully functional e-commerce features e.g. Switzerland (Frey et al., 2002), Taiwan (Wan, 2002), Greece (Sigala, 2003), and Turkey (Baloglu and Pekcan, 2006).

### 4.3.3 Promotions

**In both countries, the results shown in Tables 4-2 (p. 111) and Appendix D (Tables D-5 to D-7) indicate that there was no significant difference between hotel Web sites in relation to any of the features of promotion in terms of 1) cross comparison between overall hotel Web sites, 2) cross comparison between independent hotel Web sites and 3) cross comparison between chain hotel Web sites.**

- The majority of promotions provided on hotel Web sites in the two countries were *restaurant promotions, special promotions and business promotions*. Most hotels promoted their restaurants by presenting pictures of various menus. *Special promotions* in terms of special rates for Internet users were provided by most hotel Web sites in both countries. *Business promotions* included offering special corporate rates, package of conferences or meetings plus breakfast or lunch and providing a business centre. In both countries few hotels offered *group travel promotions, family or kid promotions, and what's new*. In terms of promotions, some elements were promoted on very few hotel Web sites, for example promoting group travel (0.9% of Thai, 2.0% of Australian hotel Web sites), whilst other elements were promoted by a high proportion of the hotel Web sites, for example promoting restaurants (81.3% of Thai, 76.8% of Australian hotels).

**The results of a comparison of independent hotel Web sites in both countries** show that most independent hotels in both countries provided and focused on *restaurant promotions, special promotions, and business promotions*. These results are similar to the results of *a comparison of chain hotel Web sites* in both countries.

This means that hotels in both countries still focused only on certain markets, such as business travellers, pleasure customers, and Internet users who are all common target markets of hotels. These findings relating to the use of hotel Web sites for promotion in both countries are similar to those reported by Leong (2002). However, there clearly is a challenge for hotel marketers in both countries to access new and different target markets via their Web sites.

#### **4.3.4 Secondary Information**

**For secondary information provided on overall hotel Web sites (107 Thai and 99 Australian hotel Web sites) in each country**, the results show that there were *no significant differences* in the provision of features for *linking to partners, listing all hotels and searching capability* (see Table 4-2, p. 111 and Table D-5 in Appendix D).

- Approximately half of the hotel Web sites in both countries provided features for linking to partners such as hotel partners, travel agents and airline companies. Only 5.6% of Thai and 7.1% of Australian Web sites had site maps to assist users.

**In addition, no significant differences were evident *between independent hotel Web sites* (see Table 4-2, p. 111 and Appendix D: Table D-7), or *between chain hotel Web sites* (see Table 4-2 and Appendix D: Table D-6) in Thailand and Australia in the provision of features for *linking to partners, list of all hotels and hotel search capability*. The feature of *linking to partners* was available as *secondary information* in most Thai and Australian independent and chain hotel Web sites. Few sites included the features of a *hotel search capability* function.**

Even though links to additional information sources constitute another popular form of value-added service, the majority of hotel Web sites in both countries fall short in providing secondary information to their customers. These findings are consistent with those of previous studies (Leong, 2002; Frey et al., 2002).

#### 4.3.5 Services

**For Services offered, the results of the comparison of 107 Thai and 99 Australian hotel Web sites presented in Table 4-2 (p. 111) and Appendix D (Table D-5) show that significantly more *multilingual facilities* were provided by Thai hotels (23.4%) than by Australian hotels (8.1%), ( $\chi^2 = 8.929$ ,  $df = 1$ ,  $p$ -value .003).**

- Most hotels in Thailand and in Australia provided a *direct e-mail address*, but few offered *e-mail newsletters, frequently asked questions, gift certificates, an online forum, or frequent visitor program*. Of the sites surveyed, 81.3% of Thai and 89.9% of Australian sites provided direct e-mail back to their hotels without having to go through any intermediaries. Provision of an *online forum* and a *frequent visitor program* was less common than e-mail facilities. In Australia, only 1% of sites incorporated online forum features and 2% provided frequent visitor programs while in Thailand none of the sites incorporated these features.

The results of the comparison of 22 Thai chain and 23 Australian chain hotel Web sites indicate that there was *no significant difference in service features* provided on their Web sites across hotels in the two countries (see Table 4-2, p. 111 and Appendix D: Table D-6).

When only the independent hotel Web sites in both countries were compared, it was still evident that more Thai independent hotels provided *multilingual facilities* (21.2%) than Australian hotels (5.3%) did. In addition, there was a significant difference in the provision of multilingual hotel Web sites ( $\chi^2 = 8.613$ ,  $df = 1$ ,  $p$ -value 0.003) between the two countries (see Table 4-2, p. 111 and Appendix D: Table D-7).

- This may be because non-English speaking customers, *particularly Chinese and Japanese*, were the majority of the target market in Thailand more than in Australia. As a result, more hotels in Thailand provided these languages on their Web sites than in Australia. This result may also be the reason for the significant difference in the provision of multilingual hotel Web sites of cross comparison of overall hotel Web sites between the two countries.

Findings from this study indicate that despite the fact that services features could add value for customers during their online interactions with the hotels, hotels in both countries provided limited value-added services. Specifically, multilingual facilities, *particularly English, Chinese and Japanese* were considered as value-added services in the Thai hotels more than in the Australian hotels. This implies that Thai hotels were developing their Web sites to communicate and attract both English speaking and non-English speaking customers.

#### 4.3.6 Technology

For technology, the results of the comparison of 107 Thai and 99 Australian hotel Web sites show that there were *no significant differences* in the provision of information for downloading, video and audio features (see Table 4-2, p.111).

- As shown in Appendix D (Table D-5), just over one quarter of hotel Web sites (26.2% of Thai and 29.3% of Australian Web sites) allowed users to download information (including a directory of hotels, a brochure, corporate information, fact

sheets and hotel maps). However, far fewer hotels provided audio features with Australian hotels providing more audio features (6.1%) than Thai hotels (0.9%).

Furthermore, when *only chain hotel Web sites* were compared and *independent hotel Web sites* were compared (see Table 4-2, p. 111 and Appendix D: Tables D-6 and D-7), there were no significant differences in providing these *technological features* between hotel Web sites in the two countries. It can be seen that few independent hotel Web sites in either country included technological features like downloadable directories, video, and audio. However, the technological feature for downloading information was available on the majority of chain hotel Web sites in the two countries.

Findings from this study indicate that although offering a variety of technology designs is an important way to attract consumers, the potential of the Web for the hotel industry in both countries as a marketing tool is still largely ignored. These findings are consistent with those of previous studies (Weeks and Crouch, 1999; Lituchy and Rail, 2000; Leong, 2002).

#### 4.3.7 Management Functions

For management functions, the results show that there were *no significant differences* between overall hotel Web sites in Thailand and in Australia in the provision of features for *employee of the month, employment opportunities and shareholder information* (see Table 4-2, p. 111 and Appendix D: Table D-5).

- The use of hotel Web sites in both countries was extremely low for *management functions*. None of the hotel Web sites provided the facility for displaying *employee of the month*. Few hotel Web sites presented corporate information for shareholders. However, approximately 14% of Thai and 18.2% of Australian hotel Web sites featured employment opportunities.

The results of the comparison of 22 Thai chain and 23 Australian chain hotel Web sites indicate that there was *no significant difference* in the provision of management function features provided on the Web sites across hotels in the two countries (see Table 4-2, p. 111 and Appendix D: Table D-6).

Also, when *only independent hotel Web sites* were compared, no significant differences between independent hotel Web sites in Thailand and in Australia in the provision of features for *employee of the month, employment opportunities and shareholder information* were evident (see Table 4-2, p. 111 and Appendix D: Table D-7). Specifically, no independent hotels in either country provided *employee of the month and shareholder information*. Only 5.9% of Thai and 13.2% of Australian hotel Web sites featured *employment opportunities*.

Findings from this study indicate that the majority of the hotels in both countries did not use the Web as an internal marketing tool to build relationships with their employees and shareholders. Findings from this study are similar to those of previous studies (Gilbert et al., 1999; Leong, 2002).

#### 4.3.8 Summary

In this section the current use of Web technologies in Thai and Australian hotels has been explored, based on a representative sample of 206 Web sites including 107 Thai hotel Web sites (85 independent and 22 chain hotel Web sites) and 99 Australian hotel Web sites (76 independent and 23 chain hotel Web sites).

- The results indicate that Australian hotels provided significantly more features on their Web sites than Thai hotels did, particularly *tourism information, reservation functions and secure payment system*. However, a *multilingual feature* was provided on more Thai hotel Web sites than on Australian hotel Web sites. From these results, it may be inferred that there was a significant difference between hotels in the two countries in the use of Web technology for their hotel marketing. These findings were used to provide support for hypothesis (H1): *Thai and Australian hotels differ in the extent to which they use IWMA*, and support for answer research question (1): To what extent have Thai and Australian hotels adopted and implemented the Internet and Web based technologies in their marketing activities?
- Similarly, the results of analysis of independent hotel Web sites in the two countries indicate that more independent Australian hotel Web sites provided features in terms

of *tourism information, reservation functions and a secure payment system* than Thai independent hotel Web sites. However, *a multilingual feature* was provided on more Thai independent hotel Web sites than Australian independent hotel Web sites. In addition, there was no significant difference in providing features in the seven categories between chain hotels in the two countries. From these results, it may be inferred that there was a significant difference between only independent hotels in the two countries in the use of Web technology for their hotel marketing. These findings were used to provide support for hypothesis H4: *there is a difference between Thai and Australian hotels in terms of independent management in the extent to which they use IWMA*, and thus provides part of the answer for Research Question 3: Does the adoption and implementation of Internet and Web based marketing activities (IWMA) differ between Thai and Australian hotels?

#### **4.4 COMPARISON OF FEATURES OF CUSTOMER'S INFORMATION NEEDS ON HOTEL WEB SITES BETWEEN THAILAND AND AUSTRALIA**

The purpose of this section is to compare features in relation to whether the information on the Web sites met customer's needs between all hotel Web site samples across the two countries and between independent hotel Web site samples across the two countries by using the second checklist instrument. The results were used to supplement the findings of the first checklist instrument.

Descriptive statistics were used to quantify the presence or absence of the 32 attributes of customer's information needs on hotel Web pages in Thailand and Australia. The Chi-square test was used to test for differences in the 32 attributes of customer's information needs between hotel Web sites in the two countries. The results of *customer's information needs* and their comparisons between hotel Web sites in both countries are reported in Table 4-3 (see page 122) and Appendix D (Table D-8 to D-10).

**Table 4-3: Significant Differences of Features of Customer's Information Needs between Hotel Web Sites Across Thai and Australian Hotels**

Categories	107 Thai & 99 Australian (Overall Hotel Web Sites)	85 Thai & 76 Australian (Independent Hotel Web Sites)	22 Thai & 23 Australian (Chain Hotel Web Sites)
1 Web Design and Format	Not significant	Not significant	Not significant
2 General Web Information Quality	<ul style="list-style-type: none"> <li>• Security of Personal Information (<math>\chi^2 = 6.772</math>, p-value = .009)</li> <li>• Confirmation of Reservation Immediately (<math>\chi^2 = 7.470</math>, p-value = .006)</li> </ul>	<ul style="list-style-type: none"> <li>• Security of Personal Information (<math>\chi^2 = 9.104</math>, p-value = .003)</li> <li>• Confirmation of Reservation Immediately (<math>\chi^2 = 10.530</math>, p-value = .001)</li> </ul>	Not significant
3 Hotel Facility Information and Services	<ul style="list-style-type: none"> <li>• Nearby Attractions or Businesses (<math>\chi^2 = 6.789</math>, p-value = .009)</li> </ul>	<ul style="list-style-type: none"> <li>• Nearby Attractions or Businesses (<math>\chi^2 = 8.829</math>, p-value = .003)</li> </ul>	Not significant
4 Room Information	<ul style="list-style-type: none"> <li>• Room Rate (<math>\chi^2 = 8.974</math>, p-value = .003)</li> <li>• Special Room Rate (<math>\chi^2 = 4.671</math>, p-value = .031)</li> <li>• Room Availability (<math>\chi^2 = 8.462</math>, p-value = .004)</li> </ul>	<ul style="list-style-type: none"> <li>• Room Rate (<math>\chi^2 = 10.554</math>, p-value = .001)</li> <li>• Special Room Rate (<math>\chi^2 = 5.663</math>, p-value = .017)</li> <li>• Room Availability (<math>\chi^2 = 9.983</math>, p-value = .002)</li> </ul>	Not significant
5 Locality	<ul style="list-style-type: none"> <li>• Direction to the Hotel (<math>\chi^2 = 5.030</math>, p-value = .025)</li> </ul>	<ul style="list-style-type: none"> <li>• Direction to the Hotel (<math>\chi^2 = 3.991</math>, p-value = .046)</li> </ul>	Not significant

*Degree of freedom (df) = 1*

Table 4-3 summarises the significant differences of features between hotel Web sites across the two countries. Details of each comparison and each category are discussed and reported. This section consists of five main parts or categories: 1) Web design and format; 2) general Web information quality; 3) hotel facility information and services; 4) room information; and 5) locality.

#### 4.4.1 Web Design and Format

The results presented in Table 4-3 (p. 122) and Appendix D (Table D-8) of the comparison of 107 Thai and 99 Australian hotel Web sites indicate that:

- Nearly 100% of Thai and Australian hotels designed and formatted their Web sites with features to meet their customers' information needs in terms of Web design and format by providing a text-only version of the site. Most hotel Web sites in both countries did not provide frames, banners or noise.

Furthermore, when *only chain hotel Web sites* were compared and *independent hotel Web sites* were compared, as shown in Table 4-3 (p. 122) and Appendix D

(Table D-9 and D-10), the results indicate that there was *no significant difference* in the provision of Web design and format features provided on their Web sites across hotels in the two countries in terms of the independent and the chain hotels.

Findings show that hotels in both countries provided features on their Web sites that could meet customer's information needs in terms of Web design and format.

#### 4.4.2 General Web Information Quality

**The results of the comparison of 107 Thai and 99 Australian hotel Web sites indicate that the customer's information needs features including response time, 2-3 clicks for needed information, e-mail address, phone number, mailing address, and online reservation were considered as basic customer information needs attributes on the Web sites and found on nearly all hotel Web sites in both countries (see Table 4-3, p. 122 and Appendix D: Table D-8).**

- Even though the date of the *last update of hotel Web sites* was recognised as a customer's information needs feature, it was provided on few hotel Web sites in either country. Moreover, *security of personal information and immediate confirmation of reservation* were considered to be important features of customer's information needs and were provided on more Australian hotel Web sites than on Thai hotel Web sites. Also, there was a significant difference between hotel Web sites in Thailand and Australia in *the provision of security for personal information* ( $\chi^2 = 6.772$ ,  $df = 1$ ,  $p\text{-value} = .009$ ) and in *immediate confirmation of reservation* ( $\chi^2 = 7.470$ ,  $df = 1$ ,  $p\text{-value} = .006$ ).

**The results of the comparison of 22 Thai chain and 23 Australian chain hotel Web sites indicate that there was no significant difference** in the provision of general Web information quality features provided on their Web sites across hotels in the two countries. Findings from this study confirm that most chain hotels in both countries were likely to have an advantage in terms of *technical expertise and financial resources* for the use of the Internet and Web technologies for their hotel marketing (see Table 4-3, p. 122 and Appendix D: Table D-9).

**When analysing independent hotel Web sites in both countries**, the results presented in Table 4-3, p. 122 and Appendix D: Table D-10 indicate that:

- There was a significant difference between *independent hotel Web sites* in both countries in the provision of *immediate confirmation of reservations* ( $\chi^2 = 10.530$ ,  $df = 1$ ,  $p\text{-value} = .001$ ), and *security of personal information* ( $\chi^2 = 9.104$ ,  $df = 1$ ,  $p\text{-value} = .003$ ). It was not surprising to find that *immediate confirmation of reservations and security of personal information* features were provided on more Australian independent hotel Web sites than Thai independent hotel Web sites.
- This may be because the use of hotel Web sites for hotel marketing in Australian hotels was likely to be more sophisticated than in Thai hotels as mentioned in section 4.3.2. Also, these results may be the reason for the significant difference in providing these two features of general information quality for the cross comparison between overall hotel Web sites in the two countries since the majority of hotel Web sites in the sample were independent hotel Web sites.

Findings from this study indicate that not only *reservation function and secure payment system features* (as found in section 4.3, pp. 109-121) but also *immediate confirmation of reservations and security of personal information* features were provided on significantly more Australian hotel Web sites than on Thai hotel Web sites. Such differences may reflect that Australian hotels have more advantages in terms of technical resources including network communication infrastructure than Thai hotels.

#### **4.4.3 Hotel Facility Information and Services**

**The results presented in Table 4-3, p. 122 and Appendix D: Table D-8 of the comparison of 107 Thai and 99 Australian hotel Web sites indicate that:**

- Features of information on hotel facilities and services including *hotel facilities, room service menu, pictures of hotel facilities, personal reservation history, on-site restaurant, type of hotel and nearby attractions or businesses* were provided on most hotel Web sites in both countries.

- Nevertheless, the results indicate that significantly more Australian than Thai hotel Web sites provided features of customer's *information needs on nearby attractions or businesses* ( $\chi^2 = 6.789$ ,  $df = 1$ ,  $p\text{-value} = .009$ ).

Similarly, when *only independent hotel Web sites* were compared, the results presented in Table 4-3 (p. 122) and Appendix D (Table D-10) show that more Australian than Thai independent hotel Web sites provided features of information needs on *nearby attractions or businesses* and there was a significant difference at  $\chi^2 = 8.829$ ,  $df = 1$ ,  $p\text{-value} = .003$ .

However, the results of the comparison of *22 Thai chain and 23 Australian chain hotel Web sites* indicate that there was no significant difference in *features of information on hotel facilities and services* provided on their Web sites across hotels in the two countries (see Table 4-3, p.122 and Appendix D: Table D-9).

Findings from this study support and confirm the results of the analysis of features provided on hotel Web sites in section 4.3 (pp. 109-121) that significantly more Australian than Thai hotel Web sites could meet customer's information needs in terms of information for tourists (nearby attractions).

#### 4.4.4 Room Information

**The results in Table 4-3 (p. 122) and Appendix D: Table D-8 of the comparison of 107 Thai and 99 Australian hotel Web sites indicate that:**

- Features of customer's information needs on room information including *room type, room rate, special room rate, in-room amenities, non-smoking accommodations* and *room availability* were available on most hotel Web sites in Thailand and Australia.
- However, *room rate* and *room availability* were considered as important features for information provision and were provided on more Australian hotel Web sites than Thai hotel Web sites. Also, there were significant differences between hotel

Web sites in the two countries in the provision of information needs including *room rate* ( $\chi^2 = 68.974$ ,  $df = 1$ ,  $p\text{-value} = .003$ ), and *room availability* ( $\chi^2 = 8.462$ ,  $df = 1$ ,  $p\text{-value} = .004$ ).

- Specifically, more Thai than Australian hotel Web sites provided *a special room rate* as a feature for meeting customer's information needs, and there was a significant difference between hotel Web sites in both countries in the provision of *a special room rate* ( $\chi^2 = 4.671$ ,  $df = 1$ ,  $p\text{-value} = .031$ ).

**The results of the comparison of 22 Thai chain and 23 Australian chain hotel Web sites indicate that** there was no significant difference in the provision of room information features provided on their Web sites across hotels in the two countries (see Table 4-3, p. 122 and Appendix D: Table D-9).

**However, when only independent hotel Web sites were compared,** the results presented in Table 4-3 (p. 122) and Appendix D (Table D-10) indicate that:

- Significantly, *more Thai than Australian independent hotel Web sites* provided *special room rate* as a feature to meet customer's information needs ( $\chi^2 = 5.663$ ,  $df = 1$ ,  $p\text{-value} = .017$ ). This may be because there was a higher degree of competition among Thai hotels in the samples than in Australian hotel samples. As a result, Thai hoteliers needed to encourage their customers to book their hotels by setting a special room rate on their hotel Web sites. These results may be the reason for the significant difference in providing special room rate features of cross comparison between overall hotel Web sites in the two countries
- Significantly, *more Australian than Thai independent hotel Web sites* provided features of information on room rate ( $\chi^2 = 10.554$ ,  $df = 1$ ,  $p\text{-value} = .001$ ) and room availability ( $\chi^2 = 9.983$ ,  $df = 1$ ,  $p\text{-value} = .002$ ). Such differences may reflect that Australian hotels had more sophisticated booking systems, so that customers can check the rate and room availability by themselves before booking, than Thai hotels. Also, these results may cause a significant difference in providing room rate and

room availability features of cross comparison between overall hotel Web sites in the two countries.

Findings from this study indicate that Australian hotels seem to have more sophisticated technology for reservation system in terms of checking room rate and linking to room availability than Thai hotels.

#### 4.4.5 Locality

**The results in Table 4-3 (p. 122) and Appendix D: Table D-8 of the comparison of 107 Thai and 99 Australian hotel Web sites indicate that:**

- Features to meet customer's information needs on locality including *directions to the hotel* and *map of surrounding area* were provided on most hotel Web sites in Thailand and Australia. *Directions to the hotel* were available on significantly more Australian than Thai hotel Web sites ( $\chi^2 = 5.030$ ,  $df = 1$ ,  $p\text{-value} = .025$ ).
- Nearly half of the hotel Web sites in both countries provided the feature of *linking to a hotel partner*. In addition, not many hotel Web sites in either country provided information on *local weather*. Less than 10% of hotel Web sites in both countries had features of information on *local mass transportation* and *links to car rental*.

**The results of the comparison of 22 Thai chain and 23 Australian chain hotel Web sites indicate that** there was no significant difference in the provision of *locality* features provided on their Web sites across hotels in the two countries (see Table 4-3, p. 122 and Appendix D: Table D-9).

**When independent hotel Web sites in both countries were compared, the results presented in Table 4-3 (p. 122) and Appendix D (Table D-10) indicate that:**

- Few independent hotel Web sites in either country provided features of information on *local mass transportation* and *links to car rental*.

- No Thai independent hotel Web sites and very few Australian hotel Web sites provided a link to car rental.
- In addition, the feature of information giving *directions to the hotel* was available on significantly more Australian than Thai independent hotel Web sites ( $\chi^2 = 3.991$ ,  $df = 1$ ,  $p\text{-value} = .046$ ). This may be because there was no shuttle bus and public transport to go directly to the sample hotels in Thailand in Phuket and Chiang Mai. Owing to the complexity of infrastructure in Thailand, it was too difficult for customers to understand the right direction to the Thai hotel. Also, most hotels in Thailand provided cars and taxi services for their customers. As a result, directions to hotel features were provided on Thai independent hotel Web sites less than on Australian independent hotel Web sites. These results reflect the significant differences in directions to hotel features of cross comparison between overall hotel Web sites in the two countries

Findings from this study are consistent with the results in section 4.3.1 (pp. 110; 113) that more Australian than Thai hotel Web sites provided information on directions to the hotel. These results suggest that Thai hotels should pay attention to the amount of basic information provided on their Web sites in order to meet the increasing online marketing demand.

#### 4.4.6 Summary

The results presented in this section are based on a representative sample of 206 Web sites including 107 Thai hotel Web sites (85 independent and 22 chain hotel Web sites) and 99 Australian hotel Web sites (76 independent and 23 chain hotel Web sites).

- The results indicate that significantly more Australian than Thai hotel Web sites provided features that can meet customer's information needs in terms of 1) *security of personal information*, 2) *immediate confirmation of reservation*, 3) *nearby attractions or businesses*, 4) *room rate*, 5) *room availability* and 6) *direction to hotel*. However, special room rate promotions were provided on more Thai than Australian hotel Web sites. From these results, it was found that there was a

significant difference between hotels in the two countries in the use of Web technology for their hotel marketing in terms of *providing customer's information needs*. These findings were used to provide partial support for hypothesis H1: *Thai and Australian hotels differ in the extent to which they use IWMA*.

- Similarly, the results of analysis of independent hotel Web sites in the two countries indicate that significantly more Australian than Thai independent hotel Web sites provided features of information that could meet customer's information needs in terms of 1) *security of personal information*, 2) *immediate confirmation of reservation*, 3) *nearby attractions or businesses*, 4) *room rate*, 5) *room availability* and 6) *directions to hotel*. However, more special room rate features were provided on Thai than Australian independent hotel Web sites. These findings imply that more Australian than Thai independent hotel Web sites provide an amount of information that can meet customer's information needs. These findings were used to provide partial support for hypothesis H4: *there is a difference between Thai and Australian hotels in terms of independent management in the extent to which they use IWMA*.

## 4.5 CONCLUSION

In this chapter the results of analysis of hotel Web sites in the sample of Thai and Australian hotels have been presented. The findings can be summarised as follows:

From the cross comparison between *chain and independent hotel Web sites* in each country, the results indicate that chain hotels in each country provided a wider range of features on their Web sites than independent hotels.

From the cross comparison between hotel Web sites in the two countries in terms of *independent and chain hotel Web sites*, the results indicate that:

- There was *no significant difference* between 22 Thai and 23 Australian chain hotel Web sites in providing features and amount of information on their Web sites across hotels in the two countries.

- Significantly, more Australian (76 Web sites) than Thai (85 Web sites) independent hotel Web sites provided a **wider range of features and amount of information** that can meet customer's information needs on their Web sites.

From the cross comparison between *107 Thai and 99 Australian hotel Web sites*, the results indicate that overall more Australian than Thai hotel Web sites provided a wider range of features and amount of information that can meet customer's information needs.

Overall, findings from this study show that there was a significant difference in the extent of use of IWMA between hotels in the two countries.

- **In Thailand**, the results indicate that the use of the Internet and Web technologies by the Thai hotels was primarily for advertising, not for a fully interactive site providing the full range of marketing functions, particularly e-commerce features and services. From a marketing perspective, hotel Web sites in Thailand were still simple static Web sites containing basic information of product and company. Thus, they functioned as “electronic brochures” rather than as “marketing tools”.
- **In Australia**, the findings show that Australian hotels provided full e-commerce sites. In general, provision of an e-commerce site is one of the key factors that influences sales and customer purchases. Most Australian hotels had their own Web sites for receiving online bookings and provided secure payment systems. Specifically, they could give confirmation of bookings immediately. These findings show that Australian hotel Web sites were more interactive and sophisticated than the Thai hotel Web sites, indicating that the Web sites of hotels in Australia functioned as more “marketing tools” than Thai hotel Web sites.

Furthermore, findings from this study also suggest that hoteliers in both countries need to make more efforts in their implementation of IWMA in order to meet the increasing online marketing demand. Hoteliers in both countries should fully utilise these 32 features and provide an amount of information that can meet customer's information needs to be more effective.

Factors that affect these differences will be tested in the next chapters, Chapters 5 and 6.

## CHAPTER FIVE

### THE QUESTIONNAIRE SURVEY FINDINGS

#### 5.1 INTRODUCTION

As explained in Chapter 3, the quantitative method via a questionnaire survey was chosen as an appropriate way for the second stage of this study. One aim of this method was to obtain a profile of hotel businesses in Thailand and Australia in terms of whether they used or did not use the Internet and Web based marketing activities (IWMA). Specifically, the quantitative questionnaire survey was used as the main method to test the model and all of the hypotheses (H1-H7), and to answer the Research Questions (1, 2 and 3), as re-stated below.

##### Research Question 1:

To what extent have Thai and Australian hotels adopted and implemented the Internet and Web based technologies in their marketing activities?

**H1:** Thai and Australian hotels differ in the extent to which they use IWMA.

##### Research Question 2:

What are the potential factors affecting the adoption of IWMA in Thai and Australian hotels?

**H2:** Organisational, technological innovation and environmental factors have an effect on the adoption of IWMA in Thai hotels.

**H3:** Organisational, technological innovation and environmental factors have an effect on the adoption of IWMA in Australian hotels.

Research Question 3:

Does the adoption and implementation of Internet and Web based marketing activities differ between Thai and Australian hotels?

If there is a difference, how does the adoption and implementation of Internet and Web based marketing activities differ between Thai and Australian hotels, and what factors are causing this difference?

**H4:** There is a difference between Thai and Australian hotels in terms of the type of hotel management: (a) independent management and (b) chain management, in the extent to which they use IWMA.

**H5:** There is a difference in the effects of the three main groups of factors: 1) organisational, 2) technological innovation and 3) environmental, on the adoption of IWMA between Thai and Australian hotels in terms of type of hotel management (independent or chain management which is dependent on the results from H4).

**H6:** There is a difference between Thai and Australian hotels in terms of size of hotel: (a) small, (b) medium and (c) large hotels, in the extent to which they use IWMA.

**H7:** There is a difference in the effects of the three main groups of factors: 1) organisational, 2) technological innovation and 3) environmental, on the adoption of IWMA between Thai and Australian hotels in terms of size of hotel (dependent on the results from H6).

The purpose of this chapter is to report and discuss the results of the questionnaire survey in each country, and the results of comparison of these surveys between the two countries. Data analyses were conducted by using the Statistical Package for Social Sciences version 14.0 (SPSS 14.0). Seven statistical techniques as shown in Table 3-11 (p. 92) were utilised in the analysis of the data and empirically used for testing the hypotheses.

This chapter outlines the response rate and profile of hotel samples in each country. The differences in the characteristics of hotels in the two countries and the effect of the hotel characteristics towards the extent of use of IWMA between hotels across the two countries are presented. Factors affecting the adoption of IWMA in hotels in each country and differences in these factors between hotels in the two countries are also presented. Finally, the testing of hypotheses in this study is then addressed.

## 5.2 THE RESPONSE RATE

A review of the survey literature indicated that there are concerns about the percentage response rates for mail surveys. Babbie (2001) stated that achieving a high response rate means that there is less chance of a significant response bias than for a low response rate. Cavana et al. (2001) mentioned that a 30 percent response rate for mail questionnaires is considered acceptable.

For this study, the mail survey was conducted with hotels in Thailand and in Australia. In order to increase the response rate, a follow-up procedure was also employed that involved a second mailing of questionnaires to those hotels that had not responded within three weeks. In Australia, the questionnaires were mailed to 483 general managers of hotels in Sydney, Melbourne and Brisbane in February 2005. The number of the two mailings was as follows: the first mailing yielded 90 responses; the second mailing yielded 53 responses. In the end, seven undelivered questionnaires were returned, effectively reducing the population survey size to 476. One hundred and forty-three questionnaires were completed and returned giving an effective response rate after two mailings of 30.04%, which is an acceptable percentage response rate (see Table 5-1a).

**Table 5-1a: Response Rate in Australia**

Cities	Number of Questionnaire				Response Rate
	Sent	Received	Returned	Total	
Sydney	191	61	5	186	32.79
Melbourne	185	59	-	185	31.89
Brisbane	107	23	2	105	21.90
<b>Total</b>	<b>483</b>	<b>143</b>	<b>7</b>	<b>476</b>	<b>30.04</b>

In Thailand, the questionnaires were mailed to 327 general hotel managers in Bangkok, Phuket and Chiang Mai in May 2005. The first mailing yielded 102 responses and, from the second mailing, 50 more responses were received. In the end, nearly half (152) of

the questionnaires were completed and returned after two mailings. This represented a response rate of 46.48%, which is a higher percentage than was achieved in Australia (see Table 5-1b).

Cities	Number of Questionnaire				Response Rate
	Sent	Received	Returned	Total	
Bangkok	144	65	-	144	45.13
Phuket	115	55	-	115	47.82
Chiang Mai	68	32	-	68	47.05
<b>Total</b>	<b>327</b>	<b>152</b>	<b>-</b>	<b>327</b>	<b>46.48</b>

The response rate of 30.04% achieved in Australia and 46.48% achieved in Thailand were both considered to be acceptable for a mail survey (Cavana et al., 2001). Indeed, the response rate of the survey in the present study was a higher percentage rate than obtained for previous information technology survey studies conducted in the Queensland accommodation industry (11.67%) (Van Hoof et al., 1999), in the U.S. lodging industry (22.2%) (Van Hoof and Combrink, 1998) and in the hotel industry in Singapore (20%) (Leong, 2001).

### **5.3 PROFILES OF THE HOTEL SAMPLES**

In the first part of the questionnaire, the respondents were invited to describe characteristics of their hotels. In addition, the respondents were asked about some of their personal characteristics. The reasons for doing so were to:

- Provide insights into the composition of the hotel samples;
- Allow personal and hotel characteristics to be related to the extent of use of the Internet and Web technologies for hotel marketing.

Descriptive statistics in terms of frequencies and percentage were used to describe the characteristics of hotel samples and hotel respondents.

### 5.3.1 Characteristics of the Hotels in the Australian Sample

In Tables 5-2a (p. 135) and 5-2b (p. 137) the characteristics of the 143 hotels and their respondents in the sample from the three Australian cities including Sydney, Melbourne and Brisbane are summarised.

Hotel Characteristics	Categories	Australia	
		Frequency	Percent
Location	Sydney	61	42.7
	Melbourne	59	41.2
	Brisbane	23	16.1
	Total	143	100.0
Type of Hotel Management	Independent	63	44.1
	Chain	80	55.9
	Total	143	100.0
Management Since Opening	Yes	62	43.4
	No	78	54.5
	Missing	3	2.1
	Total	143	100.0
Numbers of Hotel's Rooms	Less than 51 rooms	55	38.5
	51-100 rooms	31	21.6
	101-150 rooms	14	9.8
	151-200 rooms	10	7.0
	201-300 rooms	17	11.9
	301-400 rooms	12	8.4
	More than 400 rooms	4	2.8
	Total	143	100.0
Number of Full Time Employees	1-5 employees	41	28.6
	6-10 employees	20	14.0
	11-20 employees	19	13.3
	21-50 employees	22	15.4
	51-100 employees	11	7.7
	101-200 employees	15	10.5
	More than 200 employees	3	2.1
	Missing	12	8.4
Total	143	100.0	
Age of Hotel	Less than 1 year	1	.7
	1-5 years	24	16.8
	6-10 years	25	17.5
	11-15 years	23	16.1
	16-20 years	15	10.5
	More than 20 years	45	31.5
	Missing	10	6.9
	Total	143	100.0
Duration of the Use of Internet and Web Based Marketing Activities (IWMA)	Less than 1 year	4	2.8
	1-3 years	27	18.9
	4-5 years	52	36.4
	6-10 years	44	30.8
	More than 10 years	-	-
	Missing	16	11.1
Total	143	100.0	
Level of the Use of Internet and Web Based Marketing Activities (IWMA)	- Having e-mail, no Web Site	1	.6
	- Having e-mail and basic Web page	12	8.4
	- Having e-mail, own Web site, and receiving online booking	69	48.3
	- Having e-mail, own Web site, and making complete transactions	61	42.7
	Total	143	100.0

Source: Data Drawn from Survey Questionnaire (Part I) Responses

Approximately 42.7% of hotels in the sample in Australia were located in Sydney, followed by 41.2% located in Melbourne. Only 16.1% of hotels in the sample were located in Brisbane. More than half (55.9%) of the sample were managed as a part of a chain. Over half of the sample (54.5%) had experienced change of management or owners since opening. Just over one third (38.5%) of the sample had fewer than 51 rooms, while another 21.6% had between 51 and 100 rooms. More than one-quarter (28.6%) of the sample employed between 1-5 full time employees, followed by 15.4% in the range of 21-50 people employed. Almost one third (31.5%) of the sample were over 20 years old. While just over one third (36.4%) of the sample had used the Internet and Web technologies for hotel marketing for 4-5 years, nearly half (48.3%) of the sample had e-mail and their own Web sites, which could receive online bookings and 42.7% of the sample had e-mail, their own Web sites, and could complete transactions online. Only 0.6% of the sample had only e-mail.

### **5.3.2 Demographics of Australian Respondents**

From Table 5-2b (p. 137), more than half (53.1%) of the Australian respondents stated that they were general managers of the hotels in which they worked. This is not surprising since the surveys were directed to the person holding that position. The second largest group of Australian respondents was owners (16.1%) of the hotels. The highest level of education that most Australian respondents had achieved was TAFE certification (49%), with 37.8% holding a bachelor's degree, and 8.4% a master's degree.

The managers also provided information about how long they had worked in the hotel industry and how long they had held their current positions. Almost one fifth (18.2%) of the Australian respondents had been in the hotel business for more than 20 years. However, most respondents reported that they had worked in the hotel industry for a shorter time; 22.4% for 3-5 years and 22.4% for 11-15 years. The shortest number of years of work experience in the hotel industry (less than 3 years) was reported by 9.1% of the Australian respondents.

Respondent Characteristics	Categories	Australia	
		Frequency	Percent
Position of Respondents	General Manager	76	53.1
	Marketing Manager	12	8.4
	Owner	23	16.1
	Operation Manager	3	2.1
	Front Office Manager	11	7.7
	Others	17	11.9
	Missing	1	.7
	Total	143	100
Education	TAFE	70	49.0
	Bachelor	54	37.8
	Master	12	8.4
	Ph.D.	-	-
	Missing	7	4.8
	Total	143	100.0
Duration of Current Position	Less than 1 year	14	9.8
	1-3 years	71	49.7
	4-5 years	24	16.8
	6-10 years	19	13.3
	More than 10 years	14	9.8
	Missing	1	.6
	Total	143	100.0
Duration of Hotel Experience	Less than 3 years	13	9.1
	3-5 years	32	22.4
	6-10 years	26	18.2
	11-15 years	32	22.4
	16-20 years	13	9.1
	More than 20 years	26	18.2
	Missing	1	.6
	Total	143	100.0

Source: Data Drawn from Survey Questionnaire (Part I) Responses

Tenure in their respective current positions was much shorter than the number of years spent in the field. The mean for how long the managers had held their current positions was between one to three years (49.7%). The longest respondents had been in their current positions was over 10 years (9.8%), and the shortest time anyone had held their current position was less than one year (9.8%).

### 5.3.3 Characteristics of the Hotels in the Thai Sample

In Table 5-3a (p. 138), the characteristics of the 152 hotels in the sample from the three provinces in Thailand, including Bangkok, Phuket and Chiang Mai are summarised. The greater number of hotels in the sample in Thailand were located in Bangkok (42.8%), followed by Phuket (36.2%) and Chiang Mai (21.0%), respectively.

Hotel Characteristics	Categories	Thailand	
		Frequency	Percent
Location	Bangkok	65	42.8
	Phuket	55	36.2
	Chiang Mai	32	21.0
	Total	152	100.0
Type of Hotel Management	Independent	111	73.0
	Chain	41	27.0
	Total	152	100.0
Management Since Opening	Yes	128	84.2
	No	22	14.5
	Missing	2	1.3
	Total	152	100.0
Numbers of Hotel's Rooms	Less than 51 rooms	24	15.8
	51-100 rooms	24	15.8
	101-150 rooms	15	9.9
	151-200 rooms	15	9.9
	201-300 rooms	38	25.0
	301-400 rooms	14	9.2
	More than 400 rooms	22	14.4
	Total	152	100.0
Number of Full Time Employees	1-5 employees	1	0.7
	6-10 employees	1	0.7
	11-20 employees	7	4.6
	21-50 employees	19	12.5
	51-100 employees	31	20.4
	101-200 employees	38	25.0
	More than 200 employees	52	34.2
	Missing	3	1.9
	Total	152	100.0
Age of Hotel	Less than 1 year	4	2.6
	1-5 years	32	21.1
	6-10 years	35	23.0
	11-15 years	35	23.0
	16-20 years	22	14.5
	More than 20 years	19	12.5
	Missing	5	3.3
Total	152	100.0	
Duration of the Use of Internet and Web Based Marketing Activities (IWMA)	Less than 1 year	8	5.3
	1-3 years	43	28.3
	4-5 years	49	32.2
	6-10 years	40	26.3
	More than 10 years	-	-
	Missing	12	7.9
Total	152	100.0	
Level of the Use of Internet and Web Based Marketing Activities (IWMA)	- Having e-mail, no Web Site	4	2.6
	- Having e-mail and basic Web page	15	9.9
	- Having e-mail, own Web site, and receiving online booking	105	69.1
	- Having e-mail, own Web site, and making complete transactions	28	18.4
	Total	152	100.0

Source: Data Drawn from Survey Questionnaire (Part I) Responses.

Nearly three-quarters (73%) of the hotels in Thailand were independent, whereas slightly more than one-quarter (27%) of the sample were chain hotels. Most of the sample (84.2%) still had the same management since opening, whereas only 14.5% of the sample had changed their management. About one-quarter (25%) of the sample were in the size range of 201-300 rooms and just less than one-quarter (23.6%) had

more than 301 rooms. Over one-third (34.2%) of the sample had more than 200 full time employees, followed by one-quarter (25%) of the sample that had 101-200 full time employees, and 20.4% with 51-100 employees. About half of the properties were hotels in the two age groups 6-10 years (23%) and 11-15 years (23%).

About one-third (32.2%) of the sample had used the Internet and Web technologies for hotel marketing for 4-5 years. Nearly three-quarters (69.1%) of the sample had e-mail and their own Web sites which could receive online bookings, followed by 18.4% of the sample that had e-mail, own Web sites and could complete transactions. Only about 2.6% of the sample had only e-mail.

### **5.3.4 Demographics of Thai Respondents**

In Table 5-3b (p. 140), half (50%) of the Thai respondents were general managers whilst 17.8% were marketing managers. The most common highest level of education that the respondents had achieved was a bachelor's degree (52%), followed by a master's degree (27%) and TAFE certification (14.5%), respectively. Over one-third (37.5%) of the respondents reported being in their current position for 1-3 years. Just over one-fifth (21.7%) of the respondents reported working in the hotel industry for between 3-5 years, while almost one-fifth (19.1%) had 6-10 years hotel industry experience.

In summary, the majority of respondents in the two countries were general managers of the hotels in which they worked. This meant that most of the opinions expressed in the questionnaire were the opinions of persons who controlled both hotel operations and long-term plans of the hotel.

Respondent Characteristics	Categories	Thailand	
		Frequency	Percent
Position of Respondents	General Manager	76	50.0
	Marketing Manager	27	17.8
	Owner	14	9.2
	Operation Manager	2	1.3
	Front Office Manager	1	0.7
	Others	32	21.0
	Missing	-	-
	Total	152	100.0
Education	TAFE	22	14.5
	Bachelor	79	52.0
	Master	41	27.0
	Ph.D.	2	1.3
	Missing	8	5.2
	Total	152	100.0
Duration of Current Position	Less than 1 year	15	9.9
	1-3 years	57	37.5
	4-5 years	24	15.8
	6-10 years	39	25.7
	More than 10 years	15	9.9
	Missing	2	1.2
	Total	152	100.0
Duration of Hotel Experiences	Less than 3 years	21	13.8
	3-5 years	33	21.7
	6-10 years	29	19.1
	11-15 years	25	16.4
	16-20 years	21	13.8
	More than 20 years	22	14.5
	Missing	1	0.7
	Total	152	100.0

Source: Data Drawn from Survey Questionnaire (Part I) Responses

#### **5.4 HOTEL CHARACTERISTICS: THAILAND-AUSTRALIA COMPARISON**

The purpose of this section is to compare the differences in the characteristics of hotels across the two countries: *size of hotel, type of hotel management, age of hotel, duration of the use of IWMA, number of full time employees, manager's education and the level of use of IWMA*. The results were used to answer the Research Question 1 and test hypothesis H1. Cross-tabulations were used to compare the differences in the characteristics of hotels across the two countries. Pearson chi-square was chosen to test any significant differences. The results are summarised in Table 5-4 (p. 141).

Hotel Characteristics	Australia (AUS)		Thailand (THA)		Pearson Chi-Square ( $\chi^2$ )	Asymp. Sig (2-sided)
	N	%	N	%		
<b>Type of Hotel Management*</b>						
Chain Hotel	80	55.9	41	27.0	25.561	.000
Independent Hotel	63	44.1	111	73.0		
Total	143	100.0	152	100.0	df = 1	
<b>Size of Hotel*</b>						
Small (1-50 rooms)	55	38.5	24	15.8	27.635	.000
Medium (51-200 rooms)	55	38.5	54	35.5		
Large (>201 rooms)	33	23.0	74	48.7		
Total	143	100.0	152	100.0	df = 2	
<b>Number of Full Time Employees*</b>						
1-50 people	102	77.9	28	18.8	97.797	.000
> 50 people	29	22.1	121	81.2		
Total	131	100.0	149	100.0	df = 1	
<b>Age of Hotel</b>						
1-10 years	50	37.6	71	48.3	3.261	.071
> 10 years	83	62.4	76	51.7		
Total	133	100.0	147	100.0	df = 1	
<b>Duration of the Use of IWMA</b>						
1-5 years	83	65.4	100	71.4	1.139	.286
> 5 years	44	34.6	40	28.6		
Total	127	100.0	140	100.0	df = 1	
<b>Manager's Education*</b>						
TAFE	70	51.5	22	15.3	41.530	.000
University degree (Bachelor, Master, Ph.D.)	66	48.5	122	84.7		
Total	136	100.0	144	100.0	df = 1	
<b>Level of the Use of IWMA*</b>						
Non-Early Adopters	82	57.3	124	81.6	20.554	.000
Early adopters	61	42.7	28	18.4		
Total	143	100.0	152	100.0	df = 1	

\*Significant at  $p < .05$

The results in Table 5-4 show that there were significant differences between hotels across the two countries in terms of *type of hotel management, size of hotel, number of full time employees, manager's education and level of the use of IWMA*.

**In summary, cross-sample comparisons between Thai and Australian hotel characteristics demonstrate the following key differences:**

- **Type of hotel management:** the majority of Australian hotels were managed as part of a chain of hotels, whereas the majority of Thai hotels were managed independently.
- **Size of hotel:** most Australian hotels were small or medium-sized, whereas most of the Thai hotels were large or medium-sized. Findings from this study show that the

majority of the hotels in the sample in Thailand had over 200 rooms, which was similar to the characteristics of the Hong Kong hotels in Sin et al.'s (2005) study. Furthermore, the majority of hotels in the Australian hotel sample had fewer than 50 rooms, which was consistent with Van Hoof et al.'s (1999) previous technology studies in Queensland, Australia.

- The number of full time employees: most Thai hotels (81.2%) had more than 50 full time employees, whereas only 22.1% of Australian hotels had the same number of more than 50 full time employees. This may be because the Thai hotels were larger with more rooms, but there may also be other factors, possibly the labor cost in Thailand was cheaper than in Australia or the operational systems used in Thai hotels required more people than in Australian hotels.
- The highest level of manager's education: more of the Thai hotel managers than Australian hotel managers had achieved a graduate degree. Findings from this study, particularly in Thailand, were similar to previous studies (Gregory et al., 2005), which reported that the majority of hotel managers in the United States had attained a bachelor's degree.
- The extent of use of IWMA: more of the Australian hotels adopted IWMA at the early adopters' stage than Thai hotels.

As hypothesised earlier, Thai and Australian hotels differ in the extent to which they use IWMA. This finding indicates that more of Australian hotels adopted IWMA and were early adopters than Thai hotels. As a result, it is clear that more Thai hotels could not confirm bookings immediately, receive payment by a secure system and complete transactions on their Web site than Australian hotels. From these results, it is concluded the extent of use of IWMA was different between hotels across the two countries, supporting H1: *Thai and Australian hotels differ in the extent to which they use IWMA.*

Comparison of the effect of hotel characteristics on the extent of use of IWMA between Thai and Australian hotels will be presented in the following sections.

## 5.5 HOTEL CHARACTERISTICS AND THE EXTENT OF USE OF IWMA

The purpose of this part of the study is to examine the similarities and differences between Thai and Australian hotels for the effect of hotel characteristics *in terms of size of hotel, type of management, age of hotel and manager's education* on the extent of use of IWMA. The results were used to answer the Research Question 3 and to test hypotheses H4 and H6:

Research Question 3: Does the adoption and implementation of Internet and Web based marketing activities differ between Thai and Australian hotels?

**H4**: There is a difference between Thai and Australian hotels in terms of type of hotel management: (a) independent management and (b) chain management, in the extent to which they use IWMA.

**H6**: There is a difference between Thai and Australian hotels in terms of size of hotel: (a) small, (b) medium and (c) large hotels, in the extent to which they use IWMA.

Pearson chi-square was chosen to test for significant differences. The results of the analysis are reported in Tables 5-5a –5-5f (pp. 144-147).

### 5.5.1 Size of Hotel and the Extent of Use of IWMA

The results in Table 5-5a (p. 144) show that there were significant differences between: the *medium* Thai and Australian hotels ( $\chi^2 = 24.284$ ,  $df = 1$ ,  $p$ -value = .000); and *large-sized* Thai and Australian hotels ( $\chi^2 = 10.029$ ,  $df = 1$ ,  $p$ -value = .000), in the extent to which they used IWMA.

However, no significant difference was found for the extent of use of IWMA between the small hotels in the two countries.

► Based on these findings, the medium and large-sized hotels in the two countries were different in the extent of use of IWMA and these provide partial support for hypothesis H6: *there is a difference between Thai and Australian hotels in terms of medium-sized hotels and large-sized hotels in the extent to which they use IWMA.*

**Table 5-5a: Size of Hotel and the Extent of Use of IWMA: Thai and Australian Hotels Comparison**

Size	Country	Non-early adopter hotels	Early adopter hotels	Total
Small (1-50)	Australia	40 (72.7%)	15 (27.35)	55 (100%)
	Thailand	20 (83.35)	4 (16.7%)	24 (100%)
<b>Total</b>				79 (100%)
Pearson Chi-Square ( $\chi^2 = 1.029$ , $df=1$ , $p$ -value = .310)				
Medium (51-200)	Australia	29 (52.7%)	26 (47.3%)	55 (100%)
	Thailand	51 (94.4%)	3 (5.6%)	54 (100%)
<b>Total</b>				109 (100%)
Pearson Chi-Square ( $\chi^2 = 24.284$ , $df=1$ , $p$ -value = .000)				
Large (more than 200)	Australia	13 (39.4%)	20 (60.6%)	33 (100%)
	Thailand	53 (71.6%)	21 (28.4%)	74 (100%)
<b>Total</b>				107 (100%)
Pearson Chi-Square ( $\chi^2 = 10.029$ , $df=1$ , $p$ -value = .000)				

### 5.5.2 Type of Hotel Management and the Extent of Use of IWMA

When comparing the type of hotel management for the extent of use of IWMA between the hotels across the two countries, the results in Table 5-5b show that there was a significant difference in the extent of use of IWMA across the independent hotels in the two countries ( $\chi^2 = 17.923$ ,  $df=1$ ,  $p$ -value = .000). More Australian independent hotels were at the early adopters' stage for adopting IWMA than Thai independent hotels.

**Table 5-5b: Type of Hotel Management and the Extent of Use of IWMA: Thai and Australian Hotels Comparison**

Type of Hotel Management	Country	Non-early adopter hotels	Early adopter hotels	Total
Independent	Australia	43 (68.3%)	20 (31.7%)	63 (100%)
	Thailand	103 (92.8%)	8 (7.2%)	111 (100%)
<b>Total</b>				174 (100%)
Pearson Chi-Square ( $\chi^2 = 17.923$ , $df=1$ , $p$ -value = .000)				
Chain	Australia	39 (48.8%)	41 (51.3%)	80 (100%)
	Thailand	21 (51.2%)	20 (48.8%)	41 (100%)
<b>Total</b>				121 (100%)
Pearson Chi-Square ( $\chi^2 = .066$ , $df=1$ , $p$ -value = .797)				

Thus, these findings provide partial support for hypothesis H4: *there is a difference between Thai and Australian hotels in terms of independent management in the extent to which they use IWMA.*

However, there was no significant difference in the extent of use of IWMA between chain hotels in the two countries. These are consistent with findings from the results of analysis of hotel Web sites in Chapter 4: *there was no significant difference between chain hotels in the two countries in providing a wide range of features on their hotel Web sites.*

### 5.5.3 Age of Hotel and the Extent of Use of IWMA

When comparing the age of hotels and the extent of use of IWMA between Thai and Australian hotels, the results in Table 5-5c show that there was a significant difference in the extent of use of IWMA between the hotels in the age group of 1-10 years ( $\chi^2 = 9.546$ ,  $df = 1$ ,  $p$ -value = .002) across the two countries, and also between the hotels that were more than 10 years old across the two countries ( $\chi^2 = 9.566$ ,  $df = 1$ ,  $p$ -value = .002).

**Table 5-5c: Age of Hotel and the Extent of Use of IWMA: Thai and Australian Hotels Comparison**

Age of Hotel	Country	Non-early adopter hotels	Early adopter hotels	Total
1-10 years	Australia	27 (54.0%)	23 (46.0%)	50 (100%)
	Thailand	57 (80.3%)	14 (19.7%)	71 (100%)
<b>Total</b>				121 (100%)
<b>Pearson Chi-Square (<math>\chi^2</math>) = 9.546, df = 1, p-value = .002</b>				
> 10 years	Australia	49 (59.0%)	34 (41.0%)	83 (100%)
	Thailand	62 (81.6%)	14 (18.4%)	76 (100%)
<b>Total</b>				159 (100%)
<b>Pearson Chi-Square (<math>\chi^2</math>) = 9.566, df = 1, p-value = .002</b>				

Based on these results, it seems that both old and new hotels in Thailand were more likely to be less receptive to the use of IWMA at the early adopters' stage than Australian hotels. Also, the age of the hotel was not likely to be associated with the extent of use of IWMA in both countries. These were tested and confirmed by analysis of the use of IWMA and the age of the hotel in each country by ( $\chi^2$ ) statistics as shown in Table 5-5d.

**Table 5-5d: Age of Hotel and the Extent of Use of IWMA in Thai and Australian Hotels**

Country	Age of Hotel	Non-Early Adopter Hotels	Early Adopter Hotels	Total
Thailand	≤ 10	57 (80.3%)	14 (19.7%)	71 (100%)
	> 10	62 (81.6%)	14 (18.4%)	76 (100%)
<b>Total</b>				147 (100%)
<b>Pearson Chi-Square Value (<math>\chi^2</math>) = .040, df = 1, Sig. = .841</b>				
Australia	≤ 10	27 (54.0%)	23 (46.0%)	50 (100%)
	> 10	49 (59.0%)	34 (41.0%)	83 (100%)
<b>Total</b>				143 (100%)
<b>Pearson Chi-Square Value (<math>\chi^2</math>) = .323, df = 1, Sig. = .570</b>				

These are in agreement with findings from previous studies (DeTienne and Koberg, 2002) that reported that there was no significant difference between a firm's age and organisational innovation adoption. However, these results were in contrast with Sahadev and Islam's study (2005) that found that the age of a hotel had a significant effect on ICT adoption. They also reported that older hotels were less prone to try out new technologies than newer hotels.

#### 5.5.4 Manager's Education and the Extent of Use of IWMA

The results in Table 5-5e show that there were significant differences in the extent of use of IWMA between the hotels with the highest level of manager's education in terms of TAFE ( $\chi^2 = 6.213$ ,  $df = 1$ ,  $p$ -value = .013), and also for university degree ( $\chi^2 = 13.052$ ,  $df = 1$ ,  $p$ -value = .000) across the two countries.

Level of Manager's Education	Country	Non-early adopter hotels	Early adopter hotels	Total
TAFE	Australia	40 (57.1%)	30 (42.9%)	70 (100%)
	Thailand	19 (86.4%)	3 (13.6%)	22 (100%)
<b>Total</b>				92 (100%)
<b>Pearson Chi-Square (<math>\chi^2</math>) = 6.213, <math>df = 1</math>, <math>p</math>-value = .013</b>				
University Degree (Bachelor, Master, Ph.D.)	Australia	38 (57.6%)	28 (42.4%)	66 (100%)
	Thailand	100 (82.0%)	22 (18.0%)	122 (100%)
<b>Total</b>				188 (100%)
<b>Pearson Chi-Square (<math>\chi^2</math>) = 13.052, <math>df = 1</math>, <math>p</math>-value = .000</b>				

It seems that Australian hotels that had managers who graduated with TAFE or any university degrees adopted IWMA at the early adopters' stage more than they did in Thai hotels. From these results, it is possible that the highest level of manager's education was not associated with the extent of use of IWMA in the two countries. These results were confirmed by analysis of the use of IWMA in each country and level of manager's education by chi-square ( $\chi^2$ ) statistics, as shown in Table 5-5f (see page 147).

These findings were consistent with Mistilis et al.'s study (2004) that reported that the adoption of ICT was not dependent on the education level of senior hotel managers. However, these findings were in contrast to Main's study (1995) that reported that level of education was a significant determinant in the adoption of IT.

**Table 5-5f: Level of Manager's Education and the Extent of Use of IWMA in Thai and Australian Hotels**

Country	Levels of Education	Non-Early Adopter Hotels	Early Adopter Hotels	Total
Thailand	TAFE	19 (86.41%)	3 (13.6%)	22 (100%)
	University Degrees	100 (82.0%)	22 (18.0%)	122 (100%)
			Total	144 (100%)
Pearson Chi-Square Value ( $\chi^2$ ) = .251, df = 1, Sig. = .616				
Australia	TAFE	40 (57.1%)	30 (42.9%)	70 (100%)
	University Degrees	38 (57.6%)	28 (42.4%)	66 (100%)
			Total	136 (100%)
Pearson Chi-Square Value ( $\chi^2$ ) = .003, df = 1, Sig. = .959				

► **In summary**, there were significant differences between hotels across the two countries in the characteristics of hotels and the extent to which they used IWMA in terms of:

- Size of hotel, particularly medium and large hotels: more medium and large hotels in Australia that had adopted IWMA were at the early adopters' stage than medium and large hotels in Thailand. These provide support for H6.
- Type of hotel management, particularly independent hotels: more independent Australian hotels that had adopted IWMA were at the early adopters' stage than independent Thai hotels. These provide support for H4.
- Age of hotel (1-10 and > 10 years): both new and old hotels in Thailand were more likely to be less receptive to the use of IWMA at the early adopters' stage than Australian hotels. That is, the age of the hotel had no impact on the use of IWMA.
- The level of manager's education (TAFE and University degree): more Australian hotels than Thai hotels that had managers who graduated with TAFE or any university degrees and had adopted IWMA, were at the early adopters' stage. However, subsequent analysis suggests that level of manager's education had no impact on the use of IWMA.

Factors that affect the adoption of IWMA in hotels in the two countries will be further tested in the next sections.

## 5.6 FACTORS AFFECTING THE ADOPTION OF IWMA IN HOTELS

The second part of the survey contained questions divided into three main groups of factors based on the research model presented in Chapter 2 and the results of factor analysis outlined in Chapter 3. These groups of factors were 1) organisational factors (*size of hotel, top management support, organisational readiness, CEO's attitudes and CEO's IS knowledge*), 2) technological innovation factors (*perceived benefits, complexity, compatibility, perceived barriers and image*) and 3) environmental factors (*customer power, competition intensity, level of government support and level of technology support*). All questions were seeking the respondents' agreement/disagreement about factors affecting the adoption of IWMA in hotels.

By using these survey data, a two-step analysis was conducted.

- Firstly, to understand the status of use of IWMA and the nature of factors affecting the use of IWMA in hotels in each country, three main groups of factors, organisational, technological innovation and environmental that influenced on the adoption of IWMA, were compared by level of use of IWMA (non-early adopter and early adopter hotels), by type of hotel management (independent and chain hotels) and by size of hotel (small, medium and large hotels) in each country.
- Secondly, the use of IWMA between hotels in the two countries and factors affecting the adoption of IWMA between hotels in the two countries was investigated by using a matched sample in order to isolate all possible mediating variables.

This section consists of four parts: 1) findings by level of use of IWMA in each country; 2) findings by type of hotel management in each country; 3) findings by size of hotel; and 4) findings from comparing the use of IWMA between hotels in the two countries.

### 5.6.1. Factors Affecting the Use of IWMA: Level of Use of IWMA

The purpose of this part of the study is to test the proposed conceptual model which is built upon organisational, technological innovation and environmental factors. Since all

variables were categorised into seven levels of agreement, the original data for size of hotel were also divided into seven groups according to the number of hotel rooms. The results were used to answer Research Question 2, and to test hypotheses H2 and H3 stated below:

Research Question 2: What are the potential factors affecting the adoption of IWMA in Thai and Australian hotels?

**H2:** Organisational, technological innovation and environmental factors have an effect on the adoption of IWMA in Thai hotels.

**H3:** Organisational, technological innovation and environmental factors have an effect on the adoption of IWMA in Australian hotels.

► There were three major steps for testing hypotheses H2 and H3.

Firstly, multivariate analysis of variance (MANOVA) was used to find out if there were any differences in factors affecting the use of IWMA across the different levels of using IWMA in the sample of hotels. For this analysis, factors affecting the hotel's adoption of IWMA served as dependent variables while the hotel's use of IWMA at different levels served as the independent variable.

Secondly, when a significant difference in the identified factors between these two groups was found, one-way ANOVA and discriminant function analysis (DFA) were used to follow up the analysis of MANOVA. DFA was used after MANOVA to see how the dependent variables discriminate the groups (Field, 2005). DFA is the appropriate statistical technique when the dependent variable is categorical (e.g. early adopters and non-early adopters) and measurement of the independent variables yields interval data (Thong and Yap, 1995).

Finally, the *t*-test was used to compare mean scores of two groups of hotels in terms of non-early adopter and early adopter hotels in order to confirm and support the results of the DFA.

► Preliminary assumption testing was conducted before proceeding with the MANOVA analysis. Tabachnick and Fidell (2001, p. 348) recommended that if the data have problems (for example, small sample size, unequal N values and violation of assumptions), Pillai's trace is more robust than Wilks' Lambda.

- In Thailand, the value of the  $p$ -value of Box's test in Appendix E1 (Table E-1a) is less than 0.05, which indicates that the assumption of homogeneity is not met. In addition, the results of Levene's test show that four variables recorded significant values, as shown in Appendix E (Table E-1a). Therefore, these would indicate that the assumption of Levene's test has not been met.
- In Australia, the  $p$ -value of Box's test and the results of Levene's test of Equality of variances for each of the dependent variables have been violated ( $p < 0.05$ ), as shown in Appendix E (Table E-1b). Therefore, it has not met the assumption of equality of variances.

Thus, for this study, Pillai's trace statistics were considered to be the most robust measure for this analysis when the data showed problems in terms of violation of assumptions (the  $p$ -value of Box's M and Levene's test are less than 0.05).

► In order to ensure that there was no problem with multicollinearity among the research variables, a Pearson correlation matrix was constructed to assess the strength of the correlations among the independent variables. The presence of high multicollinearity would make determining the contribution of the effect of each independent variable on the dependent variable difficult as it indicates that the effects of the independent variables are mixed or confounded. None of the squared correlations in the two countries are close enough to 0.80 to suggest a problem with multicollinearity among the research variables, as shown in Appendix F (Tables F1 and F2) (Hair et al., 1998).

This section outlines the results of factors affecting the adoption of IWMA in Thai and Australian hotels by testing hypotheses H2 and H3.

### 5.6.1.1 Level of Use of IWMA in Thai Hotels

The results of this analysis begin with the MANOVA test and one-way ANOVA to determine the source of any significant multivariate effect. Finally, the results of DFA and *t*-test are presented.

#### 1) The Results of MANOVA and One-Way ANOVA

The results of multivariate test statistics presented in Table 5-6a show that the *p*-value of Pillai's trace is less than 0.05 (.046), which reach the criterion for significance of 0.05. From these results it may be concluded that there were statistically significant differences between non-early adopter and early adopter hotels in Thailand in the factors affecting the use of IWMA.

Thailand						
Factors	Non-early Adopter Hotels (N=124)	Early Adopter Hotels (N=28)	ANOVA		<i>t</i> -test	
	Mean		F Statistic	Sig.	<i>t</i> -value	<i>P</i> -value
<b>Organisational factors</b>						
H2.1: Size of Hotel*	3.75	5.00	9.179	.003	-3.030	.003
H2.2: Top Management Support	6.32	6.65	2.979	.086	-1.726	.086
H2.3: Organisational Readiness*	5.23	5.75	4.168	.043	-2.042	.043
H2.4: CEO's Attitude	6.31	6.55	2.498	.116	-1.581	.116
H2.5: CEO's IS Knowledge	5.56	5.89	1.855	.175	-1.362	.175
<b>Technological Innovation factors</b>						
H2.6: Perceived Benefits*	5.49	6.07	6.363	.013	-2.522	.013
H2.7: Complexity	5.60	5.91	2.490	.117	-1.578	.117
H2.8: Compatibility*	5.74	6.35	9.433	.003	-4.378	.000
H2.9: Perceived Barriers	4.19	4.42	.615	.434	-.784	.434
H2.10: Image	5.91	6.10	.506	.478	-.711	.478
<b>Environmental factors</b>						
H2.11: Customers Power*	5.77	6.23	4.264	.041	-2.065	.041
H2.12: Competition Intensity	5.41	5.80	3.428	.066	-1.851	.066
H2.13: Level of Government Support*	4.60	5.33	4.666	.032	-2.160	.032
H2.14: Level of Technology Support	5.99	6.25	1.996	.160	-1.413	.160
MANOVA: Pillai's Trace = .155, F = 1.789, Sig = .046 Wilks' Lambda = .845, F = 1.789, Sig = .046 Hotelling's Trace = .183, F = 1.789, Sig = .046 Roy's Largest Root = .183, F = 1.789, Sig = .046						

\*Significant at  $p < .05$

The analysis was further carried out by one-way ANOVA and the results are presented in Table 5-6a. Where the ANOVA shows significant F values ( $p$ -values  $\leq 0.05$ ), the variable can be considered to have acceptable levels of statistical significance. The results indicate that early adopter and non-early adopter hotels were significantly different in terms of *the size of hotel, organisational readiness, perceived benefits, compatibility,*

customer power and level of government support. Thus, the findings support parts of hypothesis H2 (H2.1, H2.3, H2.6, H2.8, H2.11 and H2.13). These results were supported and confirmed by the discriminant function analysis and the *t*-test.

## 2) The Results of Discriminant Function Analysis (DFA)

The results for the DFA are shown in Tables 5-6b to 5-6d (pp. 152-153). The findings of DFA regarding the Canonical Discriminant Functions presented in Table 5-6b reveal the model can be considered to have acceptable levels of statistical significance (Wilks' Lambda = .845, Chi-square = 24.010, df = 14, P < .05).

Thailand							
Organisational Factors		Wilks' Lambda	F	Df1	Df2	Sig	
H2: 1 Size of Hotel		.942	9.179	1	150	.003	
H2: 2 Top Management Support		.981	2.979	1	150	.086	
H2: 3 Organisational Readiness		.973	4.168	1	150	.043	
H2: 4 CEO's Attitude		.984	2.498	1	150	.116	
H2: 5 CEO's IS knowledge		.988	1.855	1	150	.175	
Technological Innovation Factors							
H2: 6 Perceived Benefits		.959	6.363	1	150	.013	
H2: 7 Complexity		.984	2.490	1	150	.117	
H2: 8 Compatibility		.941	9.433	1	150	.003	
H2: 9 Perceived Barriers		.996	.615	1	150	.434	
H2: 10 Image		.997	.506	1	150	.478	
Environmental Factors							
H2: 11 Customer Power		.972	4.264	1	150	.041	
H2: 12 Competition Intensity		.978	3.428	1	150	.066	
H2: 13 Level of Government Support		.970	4.666	1	150	.032	
H2: 14 Level of Technology Support		.987	1.996	1	150	.160	
Canonical Discriminant Functions							
Function	Eigenvalue	Canonical Correlation	After Function	Wilks' Lambda	Chi-square	D.F.	Sig
1	.183	.393	0	.845	24.010	14	.046

Where the probabilities for the F-statistics presented in Table 5-6b show p-values  $\leq$  0.05, this indicates the independent variables were significant discriminators between the two groups (hotels as early adopters and non-early adopters). The results show that there were 6 factors that have a significance level of less than 0.05: 1) *size of hotel*; 2) *organisational readiness*; 3) *perceived benefits*; 4) *compatibility*; 5) *customer power* and 6) *level of government support*.

In determining which predictor variable contributes the most to the function, the discriminant function coefficients were examined. These are listed in Table 5-6c (p. 153). An examination of the relative importance of the independent variables in predicting the dependent of the standardised discriminant function coefficients for this

study suggests that *compatibility* (.741) is the most important independent predictor in discriminating between the groups. The same observation could be obtained from a structure matrix of pooled within-groups correlations. The pooled within-groups correlations show how closely a single variable and the discriminating function are related. The results of unstandardised coefficients, are also provided, which were applied to the raw values of the variables for classification purpose.

**Table 5-6c: Discriminant Function Coefficients Analysis of Adoption of IWMA for Thai Hotels**

Country	Variables	Unstandardised Coefficients	Standardised Canonical Coefficients	Structure Matrix Pooled Within-Groups Correlations
Thailand	<b>Organisational Factors</b>			
	Size of Hotel	.344	.679	.579
	Top Management Support	-.237	.256	.330
	Organisational Readiness	.024	.029	.390
	CEO's Attitude	-.584	-.432	.302
	CEO's IS knowledge	.080	.092	.260
	<b>Technological Innovation Factors</b>			
	Perceived Benefits	.183	.199	.482
	Complexity	-.118	-.111	.301
	Compatibility	1.004	.741	.587
	Perceived Barriers	.086	.125	.150
	Image	-.238	-.307	.136
	<b>Environmental Factors</b>			
	Customer Power	-.055	-.060	.394
	Competition Intensity	-.017	-.017	.354
	Level of Government Support	.155	.250	.412
	Level of Technology Support	-.237	-.202	.270
	<b>Constant</b>	<b>-4.086</b>		

**Table 5-6d: Group Means (Centroids) of Canonical Discriminant Functions for Thai Hotels**

Group	Group Centroids: Function 1
0 (Non-Early Adopters)	-.202
1 (Early adopters)	.894

The group centroids, giving the value of the discriminant function (unstandardised coefficients) evaluated at the group mean, are also presented in Table 5-6d (p. 153). Early adopter hotel group has a positive value (.894), whereas non-early adopter hotel group has a negative value (-.202). This suggests that higher levels of factors affecting the adoption of IWMA are more likely to result in the early adopters.

Based on the results of DFA, it may be inferred that there were 6 factors in Thailand that have a significance level of less than 0.05: 1) *size of hotel*; 2) *organisational readiness*; 3) *perceived benefits*; 4) *compatibility*; 5) *customer power* and 6) *level of government support* that were significant discriminators between the two groups.

### 3) The Results of *t*-test

As mentioned the *t*-test was used to confirm the results of one-way ANOVA and DFA. The results of the *t*-test, shown in Table 5-6a (p. 151), confirmed and supported parts of hypothesis H2: H2.1: size of hotel; H2.3: organisational readiness; H2.6: perceived benefits; H2.8: compatibility; H2.11: customer power; and H2.14: level of government support.

► **Based on the results of the DFA, one-way ANOVA and *t*-test, it may be inferred that Thai hotels that adopted IWMA at early adopters' stage were:**

- more likely to perceive higher compatibility towards adoption of IWMA ( $p = .000$ );
- larger in size ( $p = .003$ );
- more likely to perceive higher benefits towards adoption of IWMA ( $p = .013$ );
- more likely to have a higher level of government support ( $p = .032$ );
- more likely to have higher pressure from their customers ( $p = .041$ );
- more likely to have higher readiness than non-early adopter hotels ( $p = .043$ );

From these results, it could be concluded that organisational factors of *size of hotel* and *organisational readiness*, technological innovation factors of *perceived benefits* and *compatibility*, and environmental factors of *customer power* and *level of government support* had an effect on the adoption of IWMA in Thai hotels.

#### **5.6.1.2 Level of Use of IWMA in Australian Hotels**

The purpose of this study is to test hypothesis H3: *organisational, technological innovation and environmental factors have an effect on the adoption of IWMA in Australian hotels*. This section outlines as section 5.6.1.1 (pp. 151-154).

### 1) The Results of MANOVA and ANOVA

From the MANOVA analysis it can be seen that the *p*-value of Pillai's trace (.000) reaches the criterion for significance of 0.05 (see Table 5-7a, p. 155). This indicates that there were statistically significant differences between non-early adopter and early adopter hotels in Australia in the factors affecting the use of IWMA. At this stage of the

analysis, one-way ANOVA was used to find out which of the factors differed significantly across the groups or discriminated the groups.

Australia						
Factors	Non-early Adopter Hotels (N=82)	Early Adopter Hotels (N=61)	ANOVA		t-test	
	Mean		F Statistic	Sig.	t-value	P-value
<b>Organisational Factors</b>						
H3.1: Size of Hotel	2.18	3.36	15.607	.000	-3.822	.000
H3.2: Top Management Support	6.13	6.46	3.937	.049	-2.048	.042
H3.3: Organisational Readiness	4.50	4.61	.245	.621	-.495	.621
H3.4: CEO's Attitude	6.22	6.61	8.147	.005	-3.153	.002
H3.5: CEO's IS Knowledge	5.54	6.04	6.817	.010	-2.764	.006
<b>Technological Innovation Factors</b>						
H3.6: Perceived Benefits	5.53	5.79	2.711	.102	-1.646	.102
H3.7: Complexity	5.42	5.62	1.231	.269	-1.109	.269
H3.8: Compatibility	5.42	6.33	29.263	.000	-5.969	.000
H3.9: Perceived Barriers	4.25	4.58	2.504	.116	-1.583	.116
H3.10: Image	4.45	4.74	1.393	.240	-1.18	.240
<b>Environmental Factors</b>						
H3.11: Customers Power	5.91	6.35	8.693	.004	-2.948	.004
H3.12: Competition Intensity	4.96	5.54	10.954	.001	-3.418	.001
H3.13: Level of Government Support	4.54	4.66	.332	.565	-.57	.565
H3.14: Level of Technology Support	5.60	6.03	7.237	.008	-2.857	.005
MANOVA: Pillai's Trace = .273, F = 3.434, Sig = .000 Wilks' Lambda = .727, F = 3.434, Sig = .000 Hotelling's Trace = .376, F = 3.434, Sig = .000 Roy's Largest Root = .376, F = 3.434, Sig = .000						

The results of ANOVA presented in Table 5-7a reveal significant F values ( $p < .05$ ) between early adopter and non-early adopter groups for the following organisational factors: *size of hotel*, *top management support*, *CEO's attitude* and *CEO's IS knowledge*, technological innovation factors: *compatibility*, and environmental factors: *customer power*, *competition intensity* and *level of technology support*. These results were followed-up with the DFA and the t-test.

## 2) The Results of Discriminant Function Analysis (DFA)

The results for the DFA are found in Tables 5-7b to 5-7d (pp. 156-157). The results of DFA regarding the Canonical Discriminant Functions presented in Table 5-7b indicate that the overall separation of groups achieved using the discriminant function has an acceptable level of statistical significance (Wilks' Lambda = .727, Chi-square = 42.728,  $df = 14$ ,  $p = .000$ ). Where the probabilities for the F-statistics presented in Table 5-7b show  $p$ -values  $\leq 0.05$ , this indicates the independent variables that were significant discriminators between the two groups (hotels at early adopters and non-early adopters).

There were 8 factors that have a significance level of less than 0.05: 1) size of hotel, 2) top management support, 3) CEO's attitude, 4) CEO's IS knowledge, 5) compatibility, 6) customer power, 7) competition intensity and 8) level of technology support.

**Table 5-7b: Hypothesis Testing (H3) by DFA**

Australia							
Organisational Factors	Wilks' Lambda	F	Df1	Df2	Sig		
H3.1: Size of Hotel	.900	15.607	1	141	.000		
H3.2: Top Management Support	.973	3.937	1	141	.049		
H3.3: Organisational Readiness	.998	.245	1	141	.621		
H3.4: CEO's Attitude	.945	8.147	1	141	.005		
H3.5: CEO's IS knowledge	.954	6.817	1	141	.010		
<b>Technological Factors</b>							
H3.6: Perceived Benefits	.981	2.711	1	141	.102		
H3.7: Complexity	.991	1.231	1	141	.269		
H3.8: Compatibility	.828	29.263	1	141	.000		
H3.9: Perceived Barriers	.983	2.504	1	141	.116		
H3.10: Image	.990	1.393	1	141	.240		
<b>Environmental Factors</b>							
H3.11: Customer Power	.942	8.693	1	141	.004		
H3.12: Competition Intensity	.928	10.954	1	141	.001		
H3.13: Level of Government Support	.998	.332	1	141	.565		
H3.14: Level of Technology Support	.951	7.237	1	141	.008		
<b>Canonical Discriminant Functions</b>							
Function	Eigenvalue	Canonical Correlation	After Function	Wilks' Lambda	Chi-square	D.F.	Sig
1	.376	.523	0	.727	42.728	14	.000

The results of the relative contribution of the variables to group separation are listed in Table 5-7c.

**Table 5-7c Discriminant Function Coefficients Analysis of Adoption of IWMA for Australian Hotels**

Variables	Unstandardised Coefficients	Standardised Canonical Coefficients	Structure Matrix Pooled within-Groups Correlations
<b>Organisational Factors</b>			
Size of Hotel	.254	.447	.543
Top Management Support	-.319	-.315	.273
Organisational Readiness	-.125	-.171	.068
CEO's Attitude	.200	.163	.392
CEO's IS knowledge	.054	.061	.359
<b>Technological Innovation Factors</b>			
Perceived Benefits	-.298	-.276	.226
Complexity	-.081	-.083	.152
Compatibility	.851	.924	.743
Perceived Barriers	.196	.241	.217
Image	.014	.020	.162
<b>Environmental Factors</b>			
Customer Power	-.024	-.021	.405
Competition Intensity	.287	.297	.455
Level of Government Support	-.137	-.164	.079
Level of Technology Support	.126	.120	.370
Constant	-4.896		

In Australia, an examination of the relative importance of the independent variables in predicting the dependence of the standardised discriminant function coefficients also

suggests that *compatibility* (.924) is the most predictor in discriminating between the groups (see Table 5-7c, p. 156). The same observation could be obtained from examination of the structure matrix, which indicates that *compatibility* (.743) contributes most strongly in discriminating between the groups.

The group centroids, giving the value of the discriminant function (unstandardised coefficients) evaluated at the group mean, are also presented in Table (5-7d).

**Table 5-7d: Group Means (Centroids) of Canonical Discriminant Functions for Australian Hotels**

Group	Group Centroids: Function 1
0 (Non-Early Adopters)	-.525
1 (Early Adopters)	.706

The early adopter hotel group has a positive value (.706), whereas the non-early adopter hotel group has a negative value (-.525). This suggests that higher levels of factors affecting the adoption of IWMA are more likely to result in the early adopters.

Based on the results of DFA, there were 8 factors that were significant discriminators between early adopter and non-early adopter hotels in Australia: 1) *size of hotel*, 2) *top management support*, 3) *CEO's attitude*, 4) *CEO's IS knowledge*, 5) *compatibility*, 6) *customer power*, 7) *competition intensity* and 8) *level of technology support*. These results provide support for parts of hypothesis H3 (H3.1; H3.2; H3.3; H3.5; H3.8; H3.11; H3.12; and H3.14).

### 3) The Results of *t*-test

As mentioned the *t*-test was used to confirm the results of one-way ANOVA and DFA. From the *t*-test analysis (see Table 5-7a, p. 155), there were 8 factors: 1) *size of hotel*, 2) *top management support*, 3) *CEO's attitude*, 4) *CEO's IS knowledge*, 5) *compatibility*, 6) *customer power*, 7) *competition intensity* and 8) *level of technology support* that had a *p*-value < 0.05, indicating statistical significance.

► **Based on the results of the one-way ANOVA, DFA and *t*-test, it may be inferred that Australian hotels that were at the early adopters' stage in their use of IWMA were:**

- more likely to perceive higher compatibility towards adoption of IWMA ( $p = .000$ );
- larger in size ( $p = .000$ );
- more likely to have more competition intensity ( $p = .001$ );
- more likely to have CEOs who possess a positive attitude towards adoption of IWMA ( $p = .002$ );
- more likely to have higher pressure from their customers ( $p = .004$ );
- more likely to have a higher technology support ( $p = .008$ );
- more likely to have CEOs who are knowledgeable about the use of IWMA ( $p = .010$ );
- more likely to have higher support from the top management than non-early adopter hotels ( $p = .049$ );

From these results, it could be concluded that organisational factors of *size of hotel*, *top management support*, *CEO's attitude* and *CEO's IS knowledge*, technological innovation factors of *compatibility*, and environmental factors of *customer power*, *competition intensity* and *level of technology support* had an effect on the adoption of IWMA in the Australian hotels.

► **In summary, the results indicate that certain organisational, technological innovation and environmental factors had an effect on the adoption of IWMA in hotels in the two countries.** These results are summarised in Table 5-8 (p. 158).

Groups of Factors	Early Adopter & Non-Early Adopter Hotels	
	Thailand	Australia
<b>Organisational Factors</b>	Size of Hotel* Organisational Readiness*	Size of Hotel* Top Management Support* CEO's Attitude* CEO's IS knowledge*
<b>Technological Innovation Factors</b>	Perceived Benefits* Compatibility*	Compatibility*
<b>Environmental Factors</b>	Customer Power* Level of Government Support*	Customer Power* Competition Intensity* Level of Technology Support*

ANOVA, DFA and *t*-test (\* $p < .05$ )

These findings are consistent with technological innovation theories that *organisational, technological innovation and environmental factors can influence innovation adoption in an organisation*. Although this proposed model did not include some organisational

factors that were specific to the nature and structure of the industry, it produced validity of outcomes for this study. In order to increase the validity of outcomes, it is suggested that future studies should expand this research model by *incorporating new organisational variables that are more specific to the nature and structure of hotels in order to provide a better understanding of the adoption of IWMA in the hotel industry.*

### 5.6.2 Type of Hotel Management: Independent-Chain Comparison

► For the extent of the use of IWMA by type of hotel management in each country, it seems that chain hotels in both countries were more likely to be at the early adopters' stage than independent hotels, as shown in Table 5-9a.

Country	Type of Hotel	Non-Early Adopter Hotels	Early Adopter Hotels	Total
Thailand	Independent	103 (92.8%)	8 (7.2%)	111 (100%)
	Chain	21 (51.2%)	20 (48.8%)	41 (100%)
			Total	152 (100%)
Pearson Chi-Square Value ( $\chi^2$ ) = 34.435, df = 1, Sig. = .000				
Australia	Independent	43 (68.3%)	20 (31.7%)	63 (100%)
	Chain	39 (48.8%)	41 (51.3%)	80 (100%)
			Total	143 (100%)
Pearson Chi-Square Value ( $\chi^2$ ) = 5.481, df = 1, Sig. = .019				

The findings indicate that there was a significant difference between independent and chain hotels in the use of IWMA in each country (Thai hotels:  $\chi^2 = 34.435$ , df = 1, Sig. = .000, Australian hotels:  $\chi^2 = 5.481$ , df = 1, Sig. = .019). These findings were consistent with the analysis of hotel Web sites in Chapter 4: *chain hotels in the two countries provided a wider range of features on their Web sites than independent hotels.*

Consequently, a comparison of manager's views, of factors affecting the adoption of IWMA between independent and chain hotels in each country was undertaken. The results were used to explain why more chain hotels provided a wider range of features on their hotel Web sites than independent hotels as indicated by the results presented in Chapter 4. Owing to the identical nature of the procedure for the statistical analyses used (MANOVA, one-way ANOVA and *t*-test) as outlined in section 5.6.1 (pp. 148-149), details of these analyses are not reported here but are reported in Appendix G.

The results are summarised in Tables 5-9b and 5-9c (p. 160).

**Table 5-9b: Factors Affecting the Adoption of IWMA between *Independent and Chain Hotels in Australia***

Australia						
Factors	Chain (N=80)	Independent (N=63)	ANOVA		t-test	
	Mean		F	Sig.	t-value	p-value
<b>Organisational factors</b>						
Size of Hotel*	3.28	1.92	22.054	.000	-4.881	.000
<b>Technological Innovation factors</b>						
Perceived Benefits*	5.84	5.38	8.955	.003	-2.992	.003
<b>Environmental factors</b>						
Customers Power*	6.34	5.80	13.725	.000	-3.705	.000
Competition Intensity*	5.50	4.85	14.005	.000	-3.742	.000
MANOVA: Pillai's Trace = .275, F = 3.466, p-value = .000						

\*Significant at  $p < .05$

**Table 5-9c: Factors Affecting the Adoption of IWMA between *Independent and Chain Hotels in Thailand***

Thailand						
Factors	Chain (N=41)	Independent (N=111)	ANOVA		t-test	
	Mean		F	Sig.	t-value	p-value
<b>Organisational factors</b>						
Size of Hotel*	5.04	3.58	17.330	.000	-4.395	.000
CEO's IS Knowledge*	5.92	5.51	3.904	.050	-1.976	.050
<b>Technological Innovation factors</b>						
Compatibility*	6.15	5.75	5.219	.024	-2.285	.024
<b>Environmental factors</b>						
Customers Power*	6.26	5.70	8.340	.004	-2.888	.004
Competition Intensity*	5.87	5.33	8.623	.004	-2.936	.004
MANOVA: Pillai's Trace = .188, F = 2.260, p-value = .008						

\*Significant at  $p < .05$

► *In both countries*, the results indicate that:

- Chain hotels were larger than independent hotels.
- Chain hotels had higher pressure from their competitors than independent hotels. This may be the result of a greater perception by chain hotels of rivalry from both domestic and international markets than perceived by independent hotels.
- Chain hotels had higher pressure from their customers than independent hotels had. It is not surprising that customer power was the driver for more chain hotels than for independent hotels in the use of IWMA. One plausible explanation is that most customers may have heightened expectations of chain hotels than of independent hotels with respect to flexibility of service, help in making a decision and personalisation because of their increased use and familiarity with the Internet.

► *In Australia*, the potential of benefits in the use of IWMA, in terms of increasing sales and extending markets, reducing operating costs and improving customer service, were the drivers for more chain hotels than independent hotels to use IWMA.

► *In Thailand*, managers of chain hotels had more knowledge than independent hotel managers in the use of these technologies. Also, more Thai chain hotel managers than independent hotel managers perceived that the use of IWMA was compatible with hotel employees' work and customer's demands.

**From these comparisons, it is clear that chain hotels more than independent hotels in the two countries took advantage of using IWMA. Managers in the chain hotels in both countries seemed to perceive that the use of these technologies could improve their customer services and enhance market competition. This is why chain hotels more than independent hotels in each country seemed to provide a wide range of features on their hotel Web sites. These results were used to support for the results of the analysis of hotel Web sites presented in Chapter 4.**

In this study, the author used a two step analysis including the chi-square test for seeking the differences in the extent of use of IWMA between independent and chain hotels in each country and the *t*-test for comparing manager's views on factors affecting the use of IWMA. It was assumed that there was external validity in terms of *similar hotel locations* and *definition of hotel in each country*. However, internal validity may be affected by the fact that there was no control over independent variables. This part of this study did not include a control variable since the sample of Thai hotels that were at the early adopters' stage was too small to use control techniques (see Table 5-9a, p. 159). Thus, generalisation of the conclusions to all hotels in each country should be treated cautiously. In order to improve the validity of outcome, it is recommended that any future study should set a control variable, for example size of hotel.

### 5.6.3 Size of Hotel: Small-Medium-Large Comparison

► For the extent of use of IWMA by size of hotel in each country, the results in Table 5-10a show that there was a significant difference in the extent of use of IWMA among the three sizes of hotels in each country. It seemed that larger hotels in each country were likely to be at the early adopters' stage.

Country	Size of Hotel	Non-Early Adopter Hotels	Early Adopter Hotels	Total
Thailand	Small (1-50)	20 (83.3%)	4 (16.7%)	24 (100%)
	Medium (51-200)	51 (94.4%)	3 (5.6%)	54 (100%)
	Large (>200)	53 (71.6%)	21 (28.4%)	74 (100%)
			Total	152 (100%)
Pearson Chi-Square Value ( $\chi^2$ ) = 10.879, df = 2, Sig. = .004				
Australia	Small (1-50)	40 (72.7%)	15 (27.3%)	55 (100%)
	Medium (51-200)	29 (52.7%)	26 (47.3%)	55 (100%)
	Large (>200)	13 (39.4%)	20 (60.6%)	33 (100%)
			Total	143 (100%)
Pearson Chi-Square Value ( $\chi^2$ ) = 10.147, df = 2, Sig. = .006				

As a consequence, comparing manager's views on factors affecting the adoption of IWMA among different sizes of hotels in each country was analysed and provided in this part of the study. Due to the identical nature of the procedure of statistical analyses (MANOVA, one-way ANOVA and *t*-test) as outlined in section 5.6.1 (pp. 148-149), details of these analyses are not reported here but are reported in the Appendix H.

► In Thailand, there was no significant difference in factors affecting the adoption of IWMA from managers' views among different sizes of hotels (Pillai's trace = .181,  $F = 1.058$ ,  $p$ -value = .392, see Appendix H). This may result from the fact that the majority of Thai hotels (69.1%) were classified in the group of *non-early adopter*, whereas only 18.4% of Thai hotels were at the *early adopters' stage*. Although more large hotels than smaller hotels tended to adopt IWMA at the early adopters' stage, in fact 71.6% of large sized, 94.4% of medium-sized, and 83.3% of small sized hotels were at the same stage (non-early adopters' stage). As a result, no significant difference was found.

► In Australia, there was a significant difference in factors affecting the adoption of IWMA from managers' views among different sizes of hotels (Pillai's trace = .287,  $F = 1.663$ ,  $p$ -value = .026). From the results of one-way ANOVA in Table 5-10b (p. 163),

there were eight factors: 1) top management support, 2) CEO's attitude, 3) CEO's IS knowledge, 4) perceived benefits, 5) compatibility, 6) customer power, 7) competition intensity and 8) level of government support that exhibited significant differences among the different hotel sizes.

**Table 5-10b: MANOVA and One-Way ANOVA Results among Different Hotel Sizes in Australia**

Australia						
Factors	Mean Score				F-value	Sig.
	Small hotels (n = 55)	Medium hotels (n = 55)	Large hotels (n = 33)	All Hotels (n = 143)		
<i>Organisational Factors</i>						
Top Management Support*	5.90	6.53	6.47	6.27	6.932	.001
CEO's Attitude*	6.12	6.60	6.47	6.39	5.025	.008
CEO's IS Knowledge*	5.36	6.09	5.87	5.76	6.059	.003
<i>Technological Innovation Factors</i>						
Perceived Benefits*	5.39	5.88	5.65	5.64	3.980	.021
Compatibility*	5.44	6.02	6.06	5.80	5.438	.005
<i>Environmental Factors</i>						
Customer Power*	5.78	6.33	6.25	6.10	6.306	.002
Competition Intensity*	4.73	5.45	5.63	5.21	10.732	.000
Level of Government Support*	4.28	4.83	4.71	4.59	3.202	.044
MANOVA: Pillai's Trace = .287, F = 1.663, Sig = .026						

\*Significant at  $p < .05$

**Table 5-10c: The *t*-test Results among the Different Hotel Sizes in Australia**

Variable	Mean difference between Small & Medium	Mean difference between Small & Large
<i>Organisational Factors</i>		
Top Management Support	.002*	.008*
CEO's Attitude	.006*	.044*
CEO's IS Knowledge	.002*	.061
<i>Technological Innovation Factors</i>		
Perceived Benefits	.007*	.255
Compatibility	.008*	.008*
<i>Environmental Factors</i>		
Customers Power	.002*	.028*
Competition Intensity	.000*	.000*
Level of Government Support	.017*	.123

\*Significant at  $p < .05$

The results of the *t*-test, presented in Table 5-10c, show that there was no significant difference in factors affecting the adoption of IWMA between *medium* and *large*-sized hotels. Small and large-sized hotels did exhibit significant differences for the 5 factors: 1) *top management support*, 2) *CEO's attitude*, 3) *compatibility*, 4) *customer power* and 5) *competition intensity*. Small and medium-sized hotels exhibited significant differences for 8 factors: 1) *top management support*, 2) *CEO's attitude*, 3) *CEO's IS*

*knowledge, 4) perceived benefits, 5) compatibility, 6) customer power, 7) competition intensity and 8) level of government support.*

► **Based on these findings, it may be inferred that:**

- In Thailand: no significant differences were found in terms of factors affecting the use of IWMA amongst small, medium and large-sized hotels.
- In Australia: there was a significant difference in factors affecting the use of IWMA among the three sizes of hotels. Australian hotels that were *larger in size* were more likely to have *higher support from their top management* than smaller hotels. Also, larger hotels were more likely than smaller hotels to have a *leader with more positive attitude* and *more IS knowledge* for the adoption of IWMA. In addition, larger hotels were more likely to perceive *higher benefits* and *compatibility* regarding the use of IWMA, and more likely than smaller hotels to have *higher pressure* from their *customers* and *competitors* and higher support from *the Government*.

These results indicate that managers of larger hotels in Australia seemed to perceive that the three main groups of factors in terms of *organisational, technological innovation* and *environmental* as important and necessary for the use of the IWMA than smaller hotels.

This study assumed that there was external validity in terms of similar hotel locations, and definition of hotel in each country; therefore, there was no control over the independent variables. Another reason was the size of the sample of small and medium-sized hotels in Thailand that were at the early adopters' stage was not sufficient for using control techniques. Thus, the generalisation of the conclusions to all hotels in each country should be treated cautiously.

### 5.6.4 Findings by Thai-Australian Hotels Comparison

The purpose of this section is to compare factors affecting the use of IWMA (in research model) in the two countries. Thus, the study used a **matched sample** to test the use of IWMA between hotels in the two countries *in order to isolate all possible mediating variables*. The results are listed in Table 5-11 (p. 165).

Size	Country	Non-early adopter hotels	Early adopter hotels	Total
Small-Independent	Australia	25 (71.4%)	10 (28.6%)	35 (100%)
	Thailand	19 (86.4%)	3 (13.6%)	22 (100%)
<b>Total</b>				57 (100%)
Pearson Chi-Square ( $\chi^2 = 1.712$ , $df=1$ , $p$ -value = .191)				
Small-Chain	Australia	15 (75.0%)	5 (25.0%)	20 (100%)
	Thailand	1 (50.0%)	1 (50.0%)	2 (100%)
<b>Total</b>				22 (100%)
Pearson Chi-Square ( $\chi^2 = .573^b$ , $df=1$ , $p$ -value = .449)				
Medium-Independent	Australia	15 (68.2%)	7 (31.8%)	22 (100%)
	Thailand	41 (95.3%)	2 (4.7%)	43 (100%)
<b>Total</b>				65 (100%)
Pearson Chi-Square ( $\chi^2 = 9.004^a$ , $df=1$ , $p$ -value = .003)				
Medium-Chain	Australia	14 (42.8%)	19 (57.6%)	33 (100%)
	Thailand	10 (90.9%)	1 (9.1%)	11 (100%)
<b>Total</b>				44 (100%)
Pearson Chi-Square ( $\chi^2 = 7.822$ , $df=1$ , $p$ -value = .005)				
Large-Independent	Australia	3 (50.0%)	3 (50.0%)	6 (100%)
	Thailand	43 (93.5%)	3 (6.5%)	46 (100%)
<b>Total</b>				52 (100%)
Pearson Chi-Square ( $\chi^2 = 9.830^a$ , $df=1$ , $p$ -value = .002)				
Large-Chain	Australia	10 (37.0%)	17 (63.0%)	27 (100%)
	Thailand	10 (35.7%)	18 (64.3%)	28 (100%)
<b>Total</b>				55 (100%)
Pearson Chi-Square ( $\chi^2 = .010$ , $df=1$ , $p$ -value = .919)				

<sup>a</sup> 1 cells (25.0%) have expected count less than 5.

<sup>b</sup> 2 cells (50.0%) have expected count less than 5.

► In Table 5-11, no statistically significant differences were found in terms of the extent of use of IWMA amongst 1) small-independent, 2) small-chain and 3) large-chain hotels in the two countries. Three significant results were found (medium-independent, medium-chain and large-independent), however, because of small sample size of medium-independent and large-independent hotels, the validity of this result is problematic. Nonetheless, these results are telling in that with a sufficient sample, there were no differences found in the large-chain hotels. Furthermore, in terms of the other tests, whilst the small sample size is highly problematic, there is a consistent pattern of under-representation of “early adopters” amongst the Thai hotels compared to the

Australian hotels. Thus, *this study used the data of large-chain hotels in the two countries for investigating factors affecting the adoption of IWMA in terms of non-early adopter and early adopter hotels.*

► In Table 5-11 (p. 165), medium-chain hotels in Thailand lag behind in the extent of use of IWMA (only 9.1% of medium-chain hotels in Thailand were in the early adopters' stage), as indicated by the significant ( $\chi^2$ ) statistic. As mentioned earlier, there was a significant difference between medium-sized hotels including independent and chain hotels in the two countries and the extent of use of IWMA, therefore, it was also necessary to consider the results of medium-independent hotels.

With regard to the number of medium-independent hotels in the two countries, there was a sufficient sample for comparing factors affecting the use of IWMA. Therefore, investigations were taken a further step; the three main groups of factors: organisational; technological innovation; and environmental, affecting the use of IWMA in medium-chain and medium-independent hotels, were compared. For these comparisons, the *t*-test was used with appropriate consideration about the nature of the data.

This section presents two main sets of findings: 1) comparison of the use of IWMA by large-chain hotels in the two countries; and 2) comparison of factors affecting the use of IWMA between medium-sized hotels in the two countries including medium-independent and medium-chain hotels.

#### ***5.6.4.1 The Use of IWMA by Large-Chain Hotels***

The section presents three sets of analyses. *Firstly*, in order to understand the factors affecting the adoption of IWMA in the large-chain hotels within each country, *t*-tests were conducted. *Secondly*, factors that affected the adoption of IWMA among large chain hotels in the two countries were also investigated by means of the *t*-test. *Thirdly*, a comparison of managers' views between large-chain hotels at the early adopters' stage in the two countries was examined and tested by MANOVA. These results were used to provide support for hypotheses H2, H3 and H7.

*In summary*, the results of investigating factors affecting the use of IWMA in the large-chain hotels in the two countries listed in Tables 5-12a to 5-12d (pp. 167-169) indicate that:

► *Firstly*, the results for factors affecting the adoption of IWMA in the large-chain hotels within each country, are shown in Tables 5-12a and 5-12b.

Factors	Non-Early Adopter (N=10)	Early Adopter (N=17)	t-test	
			t-value	p-value
<b>Organisational Factors</b>				
	<b>Mean</b>			
Top Management Support	6.50	6.49	.040	.969
Organisational Readiness	5.15	4.67	.809	.426
CEO's Attitude	6.48	6.51	-.186	.854
CEO's IS Knowledge	6.00	5.82	.467	.644
<b>Technological Innovation Factors</b>				
Perceived Benefits	5.98	5.63	1.066	.297
Complexity	5.50	5.70	-.509	.615
Compatibility*	5.60	6.44	-2.662	.013
Perceived Barriers	5.10	4.45	1.465	.155
Image	4.50	4.94	-.718	.479
<b>Environmental Factors</b>				
Customers Power	6.46	6.27	.693	.495
Competition Intensity	5.84	5.58	.603	.552
Level of Government Support	4.30	4.90	-1.290	.209
Level of Technology Support	6.00	5.86	.436	.666

\*Significant at  $p < .05$

Factors	Non-Early Adopter (N=10)	Early Adopter (N=18)	t-test	
			t-value	p-value
<b>Organisational Factors</b>				
	<b>Mean</b>			
Top Management Support	6.46	6.70	-1.097	.283
Organisational Readiness	5.95	5.72	.670	.509
CEO's Attitude	6.78	6.58	1.093	.285
CEO's IS Knowledge	5.80	6.27	-1.409	.171
<b>Technological Innovation Factors</b>				
Perceived Benefits	5.95	5.72	-.295	.770
Complexity	6.00	5.88	.286	.777
Compatibility	6.25	6.38	-.782	.441
Perceived Barriers	4.43	4.51	-.162	.873
Image	6.35	5.86	.948	.352
<b>Environmental Factors</b>				
Customers Power	6.60	6.37	1.000	.327
Competition Intensity	6.14	6.02	.369	.715
Level of Government Support	5.70	5.25	.984	.334
Level of Technology Support	6.36	6.22	.406	.688

- In Australia, large-chain hotels at the early adopters' stage were more likely to perceive higher compatibility regarding the use of IWMA than non-early adopter hotels. These results are consistent with the earlier results of DFA that compatibility was the best predictor in discriminating between hotels at non-early adopter and early adopter hotels.

- In Thailand, there was no significant difference between early and non-early adopter hotels in these large-chain hotels in the factors affecting the adoption of IWMA. This may be because large-chain hotels at non-early adopters' stage were likely to be in the stage of developing the use of IWMA into the early adopters' stage.
- **Secondly**, the results for factors that affected the adoption of IWMA among large-chain hotels in the two countries, are shown in Table 5-12c.

Factors	Non-Early Adopter (N=20)	Early Adopter (N=35)	t-test	
			t-value	p-value
<b>Organisational Factors</b>				
	<b>Mean</b>			
Top Management Support	6.48	6.60	-.717	.476
Organisational Readiness	5.55	5.21	.940	.352
CEO's Attitude	6.63	6.55	.567	.573
CEO's IS Knowledge	5.90	6.05	-.617	.540
<b>Technological Innovation Factors</b>				
Perceived Benefits	5.96	5.84	.517	.608
Complexity	5.75	5.80	-.179	.858
Compatibility*	<b>5.91</b>	<b>6.41</b>	<b>-2.605</b>	<b>.012</b>
Perceived Barriers	4.76	4.48	.819	.417
Image	5.42	5.41	.025	.980
<b>Environmental Factors</b>				
Customers Power	6.53	6.32	1.185	.241
Competition Intensity	5.99	5.81	.679	.500
Level of Government Support	5.00	5.08	-.251	.803
Level of Technology Support	6.18	6.04	.567	.573

\*Significant at  $p < .05$

- Among large-chain hotels in the two countries, there was a significant difference between early adopter and non-early adopter hotels in the perception of *compatibility* regarding the use of IWMA. This indicates that early adopters among large-chain hotels in the two countries seemed to perceive higher compatibility regarding the use of IWMA than non-early adopter hotels and provides support for hypotheses H2 and H3.
- **Thirdly**, a comparison of managers' views between large-chain hotels at the early adopters' stage in the two countries was examined and tested by MANOVA. The results are shown in Table 5-12d (p. 169).

**Table 5-12d: Comparison of Managers' Views between Large-Chain Hotels at the Early Adopters' Stage in the Two Countries**

MANOVA	Value	F	p-value
Pillai's Trace	.421	1.176	.359
Wilks' Lambda	.579	1.176	.359
Hotelling's Trace	.728	1.176	.359
Roy's Largest Root	.728	1.176	.359
Box's M = 122.983, F = .765, df1 = 91, df2 = 3387.939, Sig. = .952			

No statistically significant differences were found in terms of factors affecting the use of IWMA between managers' views of large-chain hotels at the early adopters' stage in the two countries. This may be because most large-chain hotels in both countries were in the same chain management, particularly international chain hotels. As a result, under the similar policy of chain management these managers' views seemed to be in similar directions. These results indicate that *there was no difference in the effects of the three main groups of factors: 1) organisational, 2) technological innovation and 3) environmental, on the adoption of IWMA between Thai and Australian hotels in terms of large-sized hotels.* These results did not support alternative hypothesis H7.

#### **5.6.4.2 Medium-Sized Hotels: Thai-Australian Comparison**

Comparison of factors affecting the use of IWMA between medium-sized hotels in the two countries including medium-independent and medium-chain hotels was conducted in order to answer Research Question 3. With regard to the number of medium independent hotels in the two countries, there was a sufficient number of hotels in the sample for testing hypotheses H5 and H7.

- H5:** There is a difference in the effects of the three main groups of factors: 1) organisational, 2) technological innovation and 3) environmental, on the adoption of IWMA between Thai and Australian hotels in terms of type of hotel management.
- H7:** There is a difference in the effects of the three main groups of factors: 1) organisational, 2) technological innovation and 3) environmental, on the adoption of IWMA between Thai and Australian hotels in terms of size of hotel.

The results are shown in Tables 5-13a and 5-13b (p. 170).

**Table 5-13a: Factors Affecting the Adoption of IWMA by *Medium-Independent Hotels*: Thai-Australian Comparison**

Factors	Australia (N=22)	Thailand (N=43)	t-test	
	Mean		t-value	p-value
<b>Organisational Factors</b>				
Top Management Support	6.65	6.26	1.680	.098
Organisational Readiness	4.31	5.01	-1.771	.081
CEO's Attitude	6.60	6.18	1.747	.085
CEO's IS Knowledge*	6.18	5.51	2.163	.034
<b>Technological Innovation Factors</b>				
Perceived Benefits	5.82	5.37	1.887	.064
Complexity	5.77	5.63	.604	.548
Compatibility	5.97	5.68	1.007	.318
Perceived Barriers	4.46	4.09	1.030	.307
Image*	4.68	5.87	-3.424	.001
<b>Environmental Factors</b>				
Customers Power*	6.22	5.59	2.657	.010
Competition Intensity	5.16	5.28	-.406	.686
Level of Government Support	5.03	4.63	1.018	.312
Level of Technology Support	6.09	5.84	1.074	.287

\*Significant at  $p < .05$ **Table 5-13b: Factors Affecting the Adoption of IWMA by *Medium-Chain Hotels*: Thai-Australian Comparison**

Factors	Australia (N=33)	Thailand (N=11)	t-test	
	Mean		t-value	p-value
<b>Organisational Factors</b>				
Top Management Support	6.46	6.42	.179	.858
Organisational Readiness	4.48	5.04	-1.275	.209
CEO's Attitude	6.60	6.30	1.541	.131
CEO's IS Knowledge	6.03	5.72	.901	.372
<b>Technological Innovation Factors</b>				
Perceived Benefits	5.92	5.72	.521	.605
Complexity	5.50	5.52	-.050	.960
Compatibility	6.05	5.75	1.112	.272
Perceived Barriers	4.55	3.66	1.826	.075
Image*	4.54	6.00	-2.719	.009
<b>Environmental Factors</b>				
Customers Power	6.41	5.81	1.882	.067
Competition Intensity	5.64	5.45	.592	.557
Level of Government Support	4.69	3.78	1.887	.067
Level of Technology Support	5.89	5.96	-.245	.808

\*Significant at  $p < .05$ 

In summary, cross-sample comparisons between medium-sized hotels in the two countries demonstrate the key differences in factors affecting the adoption of IWMA as follows:

► Findings from medium-independent hotels indicate that:

- For organisational factors, it is clear that medium-independent hotels in Australia were more likely to have CEOs who were knowledgeable about the use of IWMA than medium-independent hotels in Thailand.
- In terms of technological innovation factors, more Thai medium-independent hotel managers agreed that the use of IWMA could help the image of their hotels than the

Australian medium-*independent* hotel managers. This may imply that the use of IWMA in the Thai hotels was based on their perceived impressions that having these technologies could project towards certain values about the hotel to its internal and external environment.

- For environmental factors, it was found that more Australian medium-*independent* hotels perceived greater pressure from their customers than Thai medium-*independent* hotels. One plausible explanation is that most customers at these Australian hotels were likely to make a booking by the Internet and Web sites. This highlights the possibility that the drivers of the use of IWMA in these Australian hotels arise from the business objectives in terms of guest focus.

From these results, it is clear that there was a significant difference in factors affecting the adoption of IWMA between medium-*independent* hotels in Thailand and Australia. These results provide partial support for hypothesis H5.

► Findings from medium-*chain* hotels indicate that:

- Managers of medium-*chain* hotels in Thailand were more likely than managers of medium-*chain* hotels in Australia to perceive a positive effect on image regarding the use of IWMA. With respect to image, more managers of Thai hotels than managers of Australian hotels believed that hotels that used IWMA were more sophisticated than those that did not, and seemed to have higher standards than those that did not. It is possible that Thai hotels that adopted and implemented the IWMA proactively were international chain hotels, which sought to present a professional and sophisticated image. However, due to the small sample size of medium-*chain* hotels in Thailand, one must be cautious when attempting to generalise this result.

From these results, it may be concluded that there were three factors that exhibited significant differences between *medium-sized hotels* (including medium-*independent* and medium-*chain* hotels) in the two countries: 1) *CEO's IS knowledge*, 2) *image* and 3) *customer power* (see Tables 5-13a and 5-13b, p. 170). These results provide partial support for hypothesis H7.

## 5.7 HYPOTHESIS TESTING

The following is a summary of the findings in relation to each of the seven hypotheses. Results show that the alternative hypotheses of this study were valid.

### Hypothesis 1

H0: “Thai and Australian hotels are similar to the extent to which they use IWMA”.

H1: “Thai and Australian hotels differ in the extent to which they use IWMA”.

*Measurements:* level of the use of IWMA (non-early adopter and early adopter stages).

*Statistical tests:* Pearson chi-square test.

*Results:*  $\chi^2 = 20.554$ ,  $df = 1$ ,  $p\text{-value} = .000$

The results show that there was a significant difference in the extent of use of IWMA between hotels across the two countries (Table 5-4, p. 141). **Therefore, this result provides support for hypothesis H1.**

### Hypothesis 2

H0: “Organisational, technological innovation and environmental factors have no effect on the adoption of IWMA in Thai hotels”.

H1: “Organisational, technological innovation and environmental factors have an effect on the adoption of IWMA in Thai hotels”.

*Measurements:* (a) Factors affecting the use of IWMA;

(b) Early adopter and non-early adopter hotels.

*Statistical tests:* Multivariate Analysis of Variance (MANOVA), One-way ANOVA, Discriminant Function Analysis (DFA) and Independent sample *t*- test.

*Results:* see Table 5-14a (p. 173).

<b>Table 5-14a: Hypothesis Testing (H2)</b>			
MANOVA	Pillai's Trace = .155, F = 1.789, Sig. = .046		
One-Way ANOVA and DFA	<b>Organisational Factors</b>	<i>F</i>	<i>p</i>
	Size of hotel	9.179	.003
	Organisational readiness	4.168	.043
	<b>Technological Innovation Factors</b>		
	Perceived benefits	6.363	.013
	Compatibility	9.433	.003
	<b>Environmental Factors</b>		
	Customer power	4.264	.041
	Level of government support	4.666	.032
DFA	Wilks' Lambda = .845, Chi-square = 24.010, df = 14, Sig. = .046		
<i>t</i> -test	Size of hotel ( $p = .003$ ), organisational readiness ( $p = .043$ ), benefits = ( $p = .013$ ), compatibility ( $p = .000$ ), customer power ( $p = .041$ ) and level of government support ( $p = .032$ )		
See more details in section 5.6.1.1 (pp. 151-154)			

These results indicate that there were three main groups of factors: 1) organisational (size of hotel and organisational readiness); 2) technological innovation (perceived benefits and compatibility); and 3) environmental (customer power and level of government support) that had a significant effect on the adoption of IWMA in Thai hotels. **Therefore, this result provides partial support for hypothesis H2.**

*Note: the results in Table 5-12c (p. 168) comparing factors affecting the adoption of IWMA among large chain hotels in the two countries indicate that technological innovation in terms of compatibility had an effect regarding the use of IWMA. This result also provides partial support for hypothesis H2.*

### **Hypothesis 3**

**H0:** "Organisational, technological innovation and environmental factors have no effect on the adoption of IWMA in Australian hotels".

**H1:** "Organisational, technological innovation and environmental factors have an effect on the adoption of IWMA in Australian hotels".

**Measurements:** (a) Factors affecting the use of IWMA;

(b) Early adopter and non-early adopter hotels.

**Statistical tests:** Multivariate Analysis of Variance (MANOVA), One-way ANOVA, Discriminant Function Analysis (DFA) and Independent sample *t*- test.

**Results:** see Table 5-14b (p. 174).

**Table 5-14b: Hypothesis Testing (H3)**

MANOVA	Pillai's Trace = .273, F = 3.434, Sig. = .000		
One-Way ANOVA and DFA	<b>Organisational Factors</b>	<i>F</i>	<i>p</i>
	Size of hotel	15.607	.000
	Top management support	3.937	.049
	CEO's attitude	8.147	.005
	CEO's IS knowledge	6.817	.010
	<b>Technological Innovation Factors</b>		
	Compatibility	29.263	.000
	<b>Environmental Factors</b>		
	Customer power	8.693	.004
	Competition intensity	10.954	.001
	Level of technology support	7.237	.008
DFA	Wilks' Lambda = .727, Chi-square = 42.728, df = 14, Sig. = .000		
t-test	Size of hotel ( $p = .000$ ), top management support ( $p = .042$ ), CEO's attitude ( $p = .002$ ), 4) CEO's IS knowledge ( $p = .006$ ), 5) compatibility ( $p = .000$ ), 6) customer power ( $p = .004$ ), 7) competition intensity ( $p = .001$ ) and 8) level of technology support ( $p = .005$ ).		
See more details in section 5.6.1.2 (pp.154-159)			

These results indicate that there were three main groups of factors: 1) organisational (size of hotel, top management support, CEO's attitude and CEO's IS knowledge); 2) technological innovation (compatibility); and 3) environmental (customer power, competition intensity and technology support) that had a significant effect on the adoption of IWMA in Australian hotels. **Therefore, this result provides partial support for hypothesis H3.**

*Note: the results in Tables 5-12a (p. 167) and 5-12c (p. 168) comparing factors affecting the adoption of IWMA between large chain hotels in Australia, and among large chain hotels in the two countries indicate that technological innovation in terms of compatibility had an effect regarding the use of IWMA. These results also provide partial support for hypothesis H3.*

#### Hypothesis 4

**H0:** "Thai and Australian hotels by type of hotel management: (a) independent management and (b) chain management, are similar to the extent to which they use IWMA".

**H1:** "There is a difference between Thai and Australian hotels in terms of type of hotel management: (a) independent management and (b) chain management, in the extent to which they use IWMA".

**Measurements:** (a) Type of hotel management;

(b) Early adopter and non-early adopter hotels.

**Statistical tests:** Pearson chi-square test.

**Results:**

From Table 5-5b, (p. 144): **Independent:**  $\chi^2 = 17.923$ ,  $df = 1$ ,  $p\text{-value} = .000$ ;

**Chain:**  $\chi^2 = .066$ ,  $df = 1$ ,  $p\text{-value} = .797$

The results show that there was a significant difference in the extent of use of IWMA between the *independent hotels* across the two countries. **Therefore, this result provides support for hypothesis H4.**

*Note: results in Table 5-11 (p. 165) by using a matched sample indicate that three significant results were found (medium-independent, medium-chain and large-independent), however, because of the small sample size, the validity of this result is problematic. Therefore, these results were not used to provide support for hypothesis H4.*

### Hypothesis 5

**H0:** “There is no difference in the effects of the three main groups of factors: 1) *organisational*, 2) *technological innovation* and 3) *environmental*, on the adoption of IWMA between independent hotels in Thailand and Australia”.

**H1:** “There is a difference in the effects of the three main groups of factors: 1) *organisational*, 2) *technological innovation* and 3) *environmental*, on the adoption of IWMA between independent hotels in Thailand and Australia”.

**Measurements:** factors affecting the use of IWMA.

**Statistical tests:** Independent sample *t*- test.

**Results:** see Table 5-14c (p. 175).

<b>Table 5-14c: Hypothesis Testing (H5) by Medium-Independent Hotels in Thailand and Australia</b>	
<b>t-test</b>	1) CEO' IS knowledge ( $p = .034$ ), 2) Image ( $p = .001$ ) and 3) customer power ( $p = .010$ ).
See more details in section 5.6.4.2, pp. 169-171	

The results indicate that there were three main groups of factors: 1) *organisational* (CEO' IS knowledge); 2) *technological innovation* (image); and 3) *environmental*

(customer power) that exhibited significant differences in the adoption of IWMA between the medium-*independent* hotels across the two countries. **Therefore, this result provides partial support for hypothesis H5.**

### Hypothesis 6

**H0:** “There is no difference between Thai and Australian hotels in terms of size of hotel: (a) small, (b) medium and (c) large hotels, in the extent to which they use IWMA”.

**H1:** “There is a difference between Thai and Australian hotels in terms of size of hotel: (a) small, (b) medium and (c) large hotels, in the extent to which they use IWMA”.

**Measurements:** (a) Size of hotel;

(b) Non-early adopter and early adopter hotels.

**Statistical tests:** Pearson chi-square test.

#### **Results**

From Table 5-5a, (p. 144): Small-sized hotels:	$\chi^2 = 1.029$ , $df = 1$ , $p$ -value = .310;
Medium-sized hotels:	$\chi^2 = 24.284$ , $df = 1$ , $p$ -value = .000;
Large-sized hotels:	$\chi^2 = 10.029$ , $df = 1$ , $p$ -value = .000.

The results indicate that there were significant differences between (1) the medium-sized hotels and 2) the large-sized hotels across the two countries in the extent to which they used IWMA. **This result provides partial support for hypothesis H6.**

*Note:* results in Table 5-11(p. 165) by using a matched sample indicate that three significant results were found (medium-independent, medium-chain and large-independent), however, because of the small sample size, the validity of this result is problematic. Therefore, these results were not used to provide support for hypothesis H4.

### Hypothesis 7

**H0:** “There is no difference in the effects of the three main groups of factors: 1) *organisational*, 2) *technological innovation* and 3) *environmental*, on the adoption of IWMA between Thai and Australian hotels in terms of size of hotel”.

**H1:** “There is a difference in the effects of the three main groups of factors: 1) *organisational*, 2) *technological innovation* and 3) *environmental*, on the adoption of IWMA between Thai and Australian hotels in terms of size of hotel”.

**Measurements:** factors affecting the use of IWMA

**Statistical tests:**

- (1) Independent sample *t*- test for *independent and chain hotels in medium-sized hotels*;
- (2) MANOVA for large-sized hotels.

**Results: 1) Medium-Sized Hotels:** (see Tables 5-13a and 5-13b, p. 170)

- 1.1) Medium-Independent Hotels: a) CEO’s IS knowledge ( $p = .034$ ),  
b) image ( $p = .001$ ) and c) customer power ( $p = .010$ ).
- 1.2) Medium-Chain Hotels: image ( $p = .009$ ).

The results indicate that there were three main groups of factors: 1) organisational (CEO’s IS knowledge); 2) technological innovation (image); and 3) environmental (customer power) that exhibited significant differences in the adoption of IWMA between the medium-sized hotels (medium-*independent* hotels: *CEO’s IS knowledge*, *Image* and *customer power*, medium-*chain* hotels: *Image*) across the two countries. **Therefore, this result provides partial support for hypothesis H7.**

**Results: 2) Large Sized Hotels:** (see Table 5-12d, p. 169)

*The results of comparing factors affecting the use of IWMA between large-chain hotels at the early adopters’ stage in the two countries by using MANOVA indicate that no statistically significant differences were found (Wilks’ Lambda = .579,  $F = 1.176$ ,  $p$ -value = .359). This result provides partial support for null hypothesis H7.*

## 5.8 SUMMARY

This chapter provides the results from the quantitative questionnaire survey that was conducted in 152 hotels in Thailand and 143 hotels in Australia.

Results from statistical analysis reveal insights into the key factors that influence the use of IWMA in hotels in Thailand and in Australia. Overall, the results strongly support the hypotheses (H1-H7). Major findings include:

► Cross-sample comparisons between Thai and Australian hotel characteristics demonstrate the following key differences:

- Type of hotel management: more Australian hotels than Thai hotels were part of a chain. More than half of the Australian hotels were in a type of chain management, whereas only 27% of Thai hotels were in chain management.
- Size of hotel: most Australian hotels were small or medium-sized, whereas most of the Thai hotels were large or medium-sized. Nearly half of the Thai hotels had more than 201 rooms, whereas the majority of the Australian hotels had fewer than 200 rooms.
- The extent of use of IWMA: more of the Australian hotels that adopted IWMA were at the early adopters' stage than Thai hotels. Only 18.4% of Thai hotels were in the early adopters' stage that had e-mail and their own Web sites for receiving online bookings and completing transactions, whereas about 42.7% of Australian hotels had implemented the Internet and Web technologies at this stage. These results provide support for hypothesis H1.

► There were significant differences between the hotels across the two countries in the characteristics of hotels and the extent to which they used IWMA in terms of:

- Size of hotel, particularly medium and large hotels: more medium and large-sized hotels in Australia adopted IWMA at the early adopters' stage than medium and large-sized hotels in Thailand. These provide partial support for hypothesis H6.

- Type of hotel management, particularly independent hotels: more independent Australian hotels adopted IWMA at the early adopters' stage than independent Thai hotels. These findings provide partial support for hypothesis H4

► For testing the research model, four statistical methods, MANOVA, one-way ANOVA, DFA and *t*-test were chosen to test the effect of organisational, technological innovation and environmental factors on the adoption of IWMA in hotels in each country. The results are consistent with technological innovation theories. These are:

- Organisational factors with regard to *size of hotel* and *organisational readiness*, technological innovation factors with regard to *perceived benefits* and *compatibility*, and environmental factors with regard to *customer power* and *level of government support* had a significant effect on the adoption of IWMA in Thai hotels. These results provide partial support for hypothesis H2.
- Organisational factors with regard to *size of hotel*, *top management*, *CEO's attitude* and *CEO's IS knowledge*, technological innovation factors with regard to *compatibility*, and environmental factors with regard to *customers power*, *competition intensity* and *level of technology support* had a significant effect on the adoption of IWMA in Australian hotels. These results provide partial support for hypothesis H3.

► For comparing the use of IWMA between hotels in the two countries, this study used the data of large-chain hotels in the two countries for investigation. The results demonstrate the following key differences in factors affecting the adoption of IWMA:

- Managers of large-chain hotels that were at the early adopters' stage in Australia seemed to *perceive higher compatibility than* managers of non-early adopter hotels *regarding the use of IWMA.*
- There was *no significant difference* between early and non-early adopter hotels in these Thai large-chain hotels in the factors affecting the adoption of IWMA.
- Early adopter hotels among large-chain hotels in the two countries *perceived higher compatibility regarding the use of IWMA* than non-early adopter hotels

among large chain hotels. These results provide partial support for hypotheses H2 and H3.

- There was no significant difference between large-chain hotels at the early adopters' stage in the two countries in terms of factors affecting the use of IWMA.

► Cross-sample comparisons between medium-sized hotels including medium-independent and medium-chain hotels across the two countries demonstrate the following differences in factors affecting the use of IWMA:

#### *Medium-Independent Hotels*

- For organisational factors, medium-independent hotels in Australia were more likely to have CEOs who are knowledgeable about the use of IWMA, and to have higher pressure from their customers than medium-independent hotels in Thailand.
- For technological innovation factors, more Thai medium-independent hotel managers perceived higher image regarding the use of IWMA than the Australian medium-independent hotel managers.
- For environmental factors, more managers of Australian medium-independent hotels perceived greater pressure from their customers than managers of Thai medium-independent hotels. This highlights the possibility that the drivers of the use of IWMA in these Australian hotels arise from their customers' demand.

#### *Medium-Chain Hotels*

- More Thai medium-chain hotel managers perceived image regarding the use of IWMA than Australian medium-chain hotel managers.

These findings provide partial support for hypothesis H5 (in terms of independent hotels) and for hypothesis H7 (in terms of medium-sized hotels).

The next chapter will present the results of factors affecting the use of IWMA by the confirming interviews with hotel managers in each country.

## CHAPTER SIX

### CONFIRMING INTERVIEWS

#### 6.1 INTRODUCTION

This chapter provides an investigation into eight hotels in Thailand and eight hotels in Australia based on the methodology presented in Chapter 3. The specific focus is on what factors affect the use of IWMA in each of eight hotels studied in each country. The findings presented are the results of the interviews with management representatives from each hotel.

In recent years it has been suggested that business and management researchers particularly are finding it increasingly difficult to achieve an acceptable response rate to questionnaire surveys (Berger, 2000). The general remedy for this has been the increasing adoption of closed questions or Likert scale questions which can be completed quickly but which may yield only superficial data (Foddy, 1993). Previous researchers suggested that combining the qualitative research with survey research can provide a rich source of data through triangulation, and thus enable testing of hypotheses utilising both quantitative and qualitative data (Gable, 1994; Poon and Swatman, 1996).

Although the earlier questionnaire survey provided useful quantitative data and a profile of Thai and Australian hotels using the Internet and Web based marketing activities (IWMA), which was presented in Chapter 5, it did not involve an investigation the key issues related to the adoption of IWMA by hotels in details. Therefore, for this study, confirming interviews were used to enhance the findings of the questionnaire survey and analysis of hotel Web sites.

Thus, the sample of hotels for the confirming interviews was selected utilising two criteria; firstly the hotels were participants in the earlier exploratory survey and secondly they were either early adopters of IWMA or non-early adopters of IWMA defined as:

- **Early adopter hotels** have e-mail, Web site for advertising, receive online bookings, confirm bookings immediately, receive payment by a secure system and complete transactions on their Web site.
- **Non-early adopter hotels** include: hotels that have no Web site and only have e-mail; hotels that have e-mail and a basic Web page for advertising; and hotels that have e-mail and a Web site for receiving online bookings.

Criteria for selection of the respondents for each hotel sample were firstly that the person should be a senior manager, for example, the hotel manager or marketing director, and secondly should also be a decision maker in relation to the hotel's marketing activities.

For this study, in both countries, after sending the 35 request letters to the hotel managers, telephone calls were made to managers who had responded to the first request letter and granted permission for an interview in order to make an appointment. The first follow-up letters were sent to hotels that did not reply to the first letter within three weeks. The second follow-up letters were sent to hotels that did not reply to the first follow-up letter. At the end, eight hotels in each country had granted interviews.

This chapter begins with the characteristics of hotels that participated in the confirming interviews in each country. The results of identified factors affecting the use of IWMA in each country are then addressed, and the similarities and differences in identified factors between the two countries analysed. The chapter concludes with a summary of the findings.

## **6.2 DESCRIPTION OF PARTICIPATING HOTELS**

This section outlines the description of participating hotels for confirming interviews in each country.

### 6.2.1 Description of Participating Hotels in Thailand

Table 6-1a provides a summary of the 8 participating hotels in Thailand. These participating hotels consisted of two early adopter (E, F) and six non-early adopter hotels (A, B, C, D, G, H). All except one (early adopter E, with international chain management) of the participating hotels were managed independently. Most of the participating hotels (B, E, F, G, H) were in the size range of more than 200 rooms. In terms of the number of employees, four hotels (B, F, G, H) had more than 200 full time employees, two (A, E) had full time employees in the range of 101-200 people, one in the range 51-100 (D), and one in the range 21-50 (C), respectively. The ratio of the number of full time employees to the number of hotel rooms was between 1:1 and 1:2.

The percentage of online bookings taken by the participating hotels was between 5% and 30% of all reservations. The occupancy rate was in the range of 50% to 85%. Most of them had two types of Web sites that were used for their marketing activities: 1) own hotel Web site that could receive direct hotel bookings but could not confirm bookings immediately; and 2) travel agents or third party Web sites that sold the hotel room via their Web sites and which could confirm bookings immediately. Only one hotel (G) could not receive direct hotel bookings. Customers could contact the hotel by using "contact us" to ask the price or make bookings. *Contact us* was a feature on the hotel Web site providing information regarding the hotel's e-mail address and hotel's telephone number. Two hotels (E, F) could receive online bookings, confirm bookings immediately and complete transactions using the security system. The international chain hotel (F) participant had guaranteed the best price for customers booking their hotel rooms via its own hotel Web site. If customers found a cheaper price on any other Web site, this hotel would return their money or discount the price.

In the eight cases, four general managers (A, C, F, G), three marketing managers (D, E, H) and one revenue manager (B) agreed to be interviewed. Further, four respondents (B, C, D, H) reported being in their current position for 1-3 years, two for 6-10 years (E, G), and two for more than for 10 years (A, F). All of the hotel participants were persons who made decisions about their hotel's marketing.

**Table 6-1a: Description of the Thai Hotels (N = 8)**

Hotel	A		B		C		D		E		F		G		H	
	Bangkok	Independent	Phuket	Independent	Phuket	Independent	Chiang Mai	Independent	Bangkok	Independent	Bangkok	International Chain	Bangkok	Independent	Bangkok	Independent
<b>Location</b>																
<b>Type of Hotel Management</b>																
<b>Number of Hotel's Rooms</b>	160 (Medium)		273 (Large)		53 (Medium)		128 (Medium)		294 (Large)		300 (Large)		315 (Large)		812 (Large)	
<b>Number of Full Time Employees</b>	135		273		29		60		150		264		300		895	
<b>Occupancy Rate (% per year)</b>	85		70	No effect from Tsunami	Last year 90 After Tsunami 40-50		80		60-70		72		60		80-100	
<b>Level of Using IWMA</b>	<b>Non-Early Adopters</b> Having e-mail, own Web site, and receiving online bookings		<b>Non-Early Adopters</b> Having e-mail, own Web site, and receiving online bookings		<b>Non-Early Adopters</b> Having e-mail, own Web site, and receiving online bookings		<b>Non-Early Adopters</b> Having e-mail, own Web site, and receiving online bookings		<b>Early adopters</b> Having e-mail, own Web site, receiving online bookings, confirming bookings immediately, receiving payment using the security system, and completing transactions		<b>Early adopters</b> Having e-mail, own Web site, receiving online bookings, confirming bookings immediately, receiving payment using the security system, and completing transactions		<b>Non-Early Adopters</b> Having e-mail and basic Web page		<b>Non-Early Adopters</b> Having e-mail, own Web site, and receiving online bookings	
<b>Percentages of Online Bookings</b>	5		30		5		10		15		20		5		20	
<b>Duration of Current Position (years)</b>	11		2		3		2		7		11		9		1	

## 6.2.2 Description of Participating Hotels in Australia

Table 6-1b provides a summary description of the 8 hotel samples in Australia. The participating hotels consisted of 3 early adopter (6, 7, 8) and 5 non-early adopter hotels (1, 2, 3, 4, 5). Half of the participating hotels were managed independently (1, 2, 3, 8), and the others (4, 5, 6, 7) were managed as a part of chain hotels. Four hotels (2, 3, 4, 5) were in the size range of less than 51 rooms, three hotels (1, 6, 8) were in the size range of 51-200 rooms and only one hotel (7) was in the size range of more than 200 rooms. In terms of the number of employees, four hotels (2, 3, 4, 5) had fewer than 5 full time employees, two had 6-10 employees (1, 6), one had 21-50 employees (8), and one had 101-200 employees (7), respectively.

For the level of the use of IWMA, five hotels had e-mail and their own Web sites that could receive direct hotel bookings (1, 2, 3, 4, 5). Further, three hotels had e-mail and their own Web sites that could receive online bookings, confirm bookings immediately and complete transactions online using the security system (6, 7, 8). The proportion of online bookings reported by most respondents was between 15% and 60% of all reservations. The occupancy rate was in the range of 60% to 100%. Most of them had two types of Web sites that were used for their marketing activities: 1) own hotel Web site which could receive direct hotel bookings but could not confirm bookings immediately; and 2) travel agents or third party Web sites that sold the hotel room via their Web sites, and which could confirm bookings immediately.

In the eight hotels, two respondents (2, 4) stated that they were the owners of the hotels and two other respondents (1, 5) reported that they were general managers of the hotels in which they worked. Also, three respondents (3, 6, 8) reported they held the position of hotel marketing managers and one respondent (7) stated that his position was revenue manager. Five respondents (1, 4, 6, 7, 8) reported being in their current position for 1-3 years, one for 4-5 years (3) and one for more than 10 years (2). All of the hotel participants were persons who made decisions about their hotel's marketing.

**Table 6-1b: Description of the Australian Hotels (N = 8)**

Hotel	1	2	3	4	5	6	7	8
Location	Melbourne	Melbourne	Melbourne	Melbourne	Melbourne	Sydney	Melbourne	Melbourne
Type of Hotel Management	Independent	Independent	Independent	Chain	Chain	Australian Chain	International Chain	Independent
<b>Number of Hotel's Rooms</b>	55 (Medium)	22 (small)	20 (small)	30 (small)	27 (small)	115 (Medium)	262 (Large)	59 (Medium)
<b>Number of Full Time Employees</b>	6	3	3	4	2	9	120	45
<b>Occupancy Rate (% per year)</b>	85	80-100	65	60	70	80-100	70-80	75
<b>Level of Using IWMA</b>	Non-Early Adopters Having e-mail, own Web site, and receiving online bookings	Non-Early Adopters Having e-mail, own Web site, and receiving online bookings	Non-Early Adopters Having e-mail, own Web site, and receiving online bookings	Non-Early Adopters Having e-mail, own Web site, and receiving online bookings	Non-Early Adopters Having e-mail, own Web site, and receiving online bookings	Early adopters Having e-mail, own Web site, receiving online bookings, confirming bookings immediately, receiving payment using the security system, and completing transactions	Early adopters Having e-mail, own Web site, receiving online bookings, confirming bookings immediately, receiving payment using the security system, and completing transactions	Early adopters Having e-mail, own Web site, receiving online bookings, confirming bookings immediately, receiving payment using the security system, and completing transactions
<b>Percentages of Online Bookings</b>	20-30	20	30-35	30-35	30	50-60	15	40
<b>Duration of Current Position (years)</b>	1/2	11	5	2	5	2	3	2

### 6.3 FACTORS AFFECTING THE USE OF IWMA IN THE HOTEL SAMPLES

The data were analysed in two stages. Firstly, the data were analysed within each country in terms of non-early adopter and early adopter hotels. Secondly, a comparison of the factors affecting the use of IWMA in the two countries between medium independent hotels, and then between large chain hotels was undertaken. The results of each analysis are presented below.

#### 6.3.1 Factors Affecting the Use of IWMA by Non-Early and Early Adopter Hotels

The purpose of this study was to examine the effects of the three main groups of factors: organisational, technological innovation and environmental, on the adoption of IWMA in details. The organisational factors studied were size of hotel, Chief Executive Officer (CEO)'s attitudes, top management support and organisational readiness. The technological factors studied were benefits, compatibility, complexity, barriers and image. The environmental factors studied were customer power, competition intensity, level of government support and level of technology support. The adoption of IWMA has been categorised into two levels: 1) non-early adopter hotels; and 2) early adopter hotels. These factors based on the research model were presented in Chapter 2.

The results were used to provide an answer for Research Question 2: *What are the potential factors affecting the adoption of IWMA in Thai and Australian hotels?* Also, they were used to provide support for hypotheses H2 and H3 as following:

**H2:** Organisational, technological innovation and environmental factors have an effect on the adoption of IWMA in Thai hotels.

**H3:** Organisational, technological innovation and environmental factors have an effect on the adoption of IWMA in Australian hotels.

The results of analysis of factors affecting the adoption of IWMA by the confirming interviews in each country are structured around the three groups of factors (organisational, technological innovation and environmental).

### **6.3.1.1 Organisational Factors**

Under this category, four factors: 1) size of hotel, 2) top management support, 3) organisational readiness and 4) CEO's attitude that are applicable to the use of IWMA in the hotel samples in each country have been investigated. Each of these factors is discussed below.

#### **1) Size of Hotel**

- **In Thailand: *the participating hotels consisted of two early adopter and six non-early adopter hotels.***

Early adopter hotels consisted of two large hotels (E, F), whereas non-early adopter hotels consisted of *three medium* hotels (A, C, D) and *three large* hotels (B, G, H).

- **In Australia: *the participating hotels consisted of 3 early adopter and 5 non-early adopter hotels.***

Early adopter hotels consisted of *two medium* hotels (6, 8), and *one large* (7) hotel, whereas *four small* hotels (2, 3, 4, 5) and *one medium* hotel (1) were at the non-early adopters' stage.

► **From these results, it seems that these Australian hotels that were at the early adopters' stage were larger in size than non-early adopter hotels. However, results for the size of the Thai hotels and the adoption of IWMA were mixed; the hotels at the early adopters' stage were large in size, whereas some of the hotels at the non-early adopters' stage were also large.**

## 2) Top Management Support

- **In Thailand**, of the eight participating hotels, all of the respondents agreed that *top management support* was an important factor for the use of IWMA in their hotels. However, there were two different views between the respondents at non-early adopter and early adopter hotels regarding the resources that were allocated by their *top management*.

*For the non-early adopter hotels*, five respondents at these hotels said that there was a need regarding other resources for using IWMA. At Hotels B and D, both respondents claimed that their hotels lacked information technology (IT) staff and an IT department to solve problems or upgrade the content of Web sites. This indicates that the IT department could be viewed as a source of IT related skill and knowledge within these hotel organisations. Moreover, at Hotel B the respondent said that his top management didn't think that it was important to have an IT department or the hotel's own Web master. This highlights the possibility that decisions to invest in IT resources are not only based on the needs of the hotels and financial criteria, they also depend on their top management's understanding regarding the benefits of the use of IWMA.

*For the early adopter hotels*, both respondents at these hotels (E, F) stated that their top management had allocated enough resources regarding the adoption of IWMA in their hotels. For example, at Hotel F the top management had invested more resources regarding the use of technologies including the Internet and Web technologies in terms of having its own server, and having a training room for hotel staff to practice using a computer. These results indicate that these Thai hotels that could implement the IWMA at the early adopters' stage *appeared to have sufficient resources allocated by their top management*.

From these cases, it seems that top management support was likely to be a positive factor for the use of IWMA. However, early adopter hotels seemed to have higher support from the top management than non-early adopter hotels.

- **In Australia**, of the eight participating hotels, all respondents agreed that the resources that were allocated by their *top management* were important for the adoption of IWMA in their hotels. However, all of them mentioned that there was a need for other resources for using and developing the IWMA in the future.

For the *non-early adopter hotels*, three respondents at these hotels (1, 4, 5) stated that they required their top management to install wireless Internet in guest rooms, conference and restaurant rooms, and to make a contract with several third party Web sites for selling their hotel rooms. Also, at Hotels 2 and 3 there were requirements from their management to install sophisticated technologies in order to upgrade their hotel system such as to put in a modern modem or an electronic invoice program. It seems that although several hotel respondents at non-early adopters' stage claimed that resources allocated by their top management were adequate, they were in need of further resources for developing the extent of use of IWMA to a higher level.

For the *early adopter hotels*, all respondents at these hotels (6, 7, 8) stated that they required more sophisticated technologies to improve speed and to upgrade their reservation systems. At Hotel 6, although the hotel Web site was fully equipped to process reservations, he would like all reservations booked on any of the companies' Web sites to go directly into his hotel's reservation system automatically, instead of coming to the reservation staff. Similarly, at Hotel 7, although his hotel had invested a lot in the information system and had an in-house system, he would like higher speed technology to make his systems faster and easier for guests to book hotel rooms at each of the hotel group's other brands. This implies that these respondents required their top management to invest more in the latest technology to stay ahead of the competition and protect their lead.

From these cases, it may be inferred that top management support was likely to be a positive factor that influenced the use of IWMA in these Australian hotels. Also, there was no difference in the support from their top management between non-early adopter and early adopter hotels. Australian hotels at the non-early adopters' stage required resources to develop their technologies in terms of installing wireless Internet, electronic invoice programs and modern hardware. In addition, the hotels at the early

adopters' stage need advanced technologies in terms of new reservation systems and higher speed of technologies to increase their efficiency in the use of IWMA.

► Thus, these findings indicate that, for these hotels in the two countries, top management support seemed to have a positive influence on the use of IWMA.

### 3) *Organisational Readiness*

- **In Thailand**, of the eight participating hotels, all of the respondents agreed that *organisational readiness* was an important factor for the use of IWMA in their hotels. The majority of Thai respondents expressed concern about their readiness: *cost of the investment* and *employees' information system (IS) knowledge*.

For the *non-early adopter hotels*, at Hotel G, only 3% of the hotel staff could use the Internet and Web technologies for hotel marketing. In addition, at Hotel B the respondent claimed that computer training was important for his employees and there was a program of training for employees about the use of the Internet and basic computer use. This implies that non-early adopter hotels do not have the readiness in terms of *employees' IS knowledge*.

Besides being in a state of “readiness” in terms of employees' IS knowledge, *cost of investment* was also considered for “readiness” in the use of IWMA by non-early adopter hotels. For example, at Hotel C the respondent stated that when he updated information or redesigned the Web pages on his own hotel Web site, he needed to employ a consultant. It was necessary for the hotel to evaluate its financial “readiness”. Similarly, at Hotel D the respondent described the policy of her hotel for investment in the use of IWMA was to wait and see the trend in online bookings and then take steps to invest more. It seems that when evaluating the cost of investment for the extent of use of IWMA, Thai respondents were likely to consider revenue generation and its potential to increase bookings.

For the *early adopter hotels*, Hotel E it was not likely to complete the investment immediately; the respondent said that there were steps to develop the use of these technologies. These included:

- In the beginning phase, his hotel used the Web site only for advertising which customers could only visit, it could not receive bookings.
- Later, he put the enquiry form on the Web site for customers to make a booking, and his hotel would confirm in 24 hours.
- Now, there were booking engines, his hotel could confirm bookings immediately. Also, customers went to the Yahoo Web site and typed Bangkok hotels, and his hotel would appear at the top of the first page.

This highlights the possibility that financial readiness was likely to be important for Thai hotels in the development and the adoption of IWMA at a higher stage.

Also, Hotel F had a training room for hotel staff to practice using the computer, the hotel had its own server, about 90% of his hotel staff could use the Internet and Web technologies and all assistant managers had their own e-mail address. Moreover, his hotel organisation had studied the Web site content that could meet customer's satisfaction. It seems that these Thai hotels that could implement the IWMA at the early adopters' stage appeared to have more "readiness" in terms of financial resources and IS knowledge than non-early adopter hotels.

From these cases, it implies that organisational readiness was an important factor that was likely to have a positive influence for the use of IWMA in these Thai hotels.

- **In Australia**, of the eight participating hotels, all of the respondents agreed that *organisational readiness* was an important factor for the use of IWMA in their hotels. Findings show that the majority of these Australian respondents expressed concern about their hotel's readiness in relation to *the cost of the investment* and *technological resources*.

*For the non-early adopter hotels*, four respondents at these hotels (1, 2, 4, 5) claimed that they employed an IT expert for their hotels to achieve "readiness" for using IWMA in terms of designing the Web pages, setting the Web sites and installing the technologies. For example, at Hotel 1 the respondent stated that her hotel consulted an IT expert to design and install the Web pages and Web sites. She also said that it was not necessary to employ IT staff. This may highlight that the use of an IT consultant was likely to assist a hotel at the non-early adopters' stage in terms of cost saving and being ready for use of IWMA. In addition, at Hotel 4 the respondent described the

capital investment required for the use of IWMA depended on the number of consumers that generate income and estimation of the number of guests in each year. This highlights the possibility that the respondents at non-early adopters' stage were likely to consider cost of investment before making a decision to upgrade their technologies for the use of IWMA.

For the *early adopter hotels*, at one hotel (6) there were steps to develop the use of these technologies in terms of the readiness of technologies and people. Similarly, at another hotel (7) the respondent (7) explained that his hotel was prepared for the use of IWMA in terms of cost of investment, technological resources and marketing team to operate the Web sites. Also, the respondent at Hotel 8 mentioned that she hired contract consultants to assist with software programming and Web development and the capital investment for these was quite small. Without question, this implies that most of these Australian hotels were well prepared for using IWMA since they were likely to be a financially driven company and had budgeted for use of the IWMA.

From these results, it may be inferred that the majority of these Australian respondents expressed concern about their hotel's readiness in terms of *the cost of the investment and technological resources*. Although most of the respondents of the non-early adopter Australian hotels had the plans to equip their hotels with sophisticated technologies, they were concerned about the capital investment involved. These results may indicate that these Australian hotels that were at the early adopters' stage were better prepared in terms of technological resources and people than non-early adopter hotels were.

► Thus, based on these results, the implication is that these Australian and Thai hotels that were at the early adopters' stage were in a higher state of "readiness" in terms of financial, technological and people resources for use of IWMA than hotels at the non-early adopters' stage. This means that organisational readiness was likely to be a facilitating factor for the use of IWMA in each country.

### 3) CEO's Attitude

- **In Thailand**, of the eight participating hotels, seven respondents at these hotels (A, B, C, D, E, F, G) had *positive attitudes towards the use of IWMA in terms of cost saving, efficiency and building preference*. Most of these respondents claimed that the trend in bookings will be changing and most customers will make their purchases online via both hotel Web sites and third party Web sites.

For example, for the *non-early adopter hotels*, three respondents at three hotels (A, C, D) said that the use of the Internet and Web technologies could save the costs of producing brochures and of fax and customers around the World could get information of their hotels on their own Web sites. This implies that the respondents' main considerations regarding the use of IWMA were likely to be cost saving, efficiency and building preference.

For the *early adopter hotels*, at Hotel E the respondent highlighted that the use of IWMA in the independent hotels should have reservation functions and should integrate with well-known Web sites for selling more hotel rooms. From this it may be inferred that besides Thai hotels having a leader with a good understanding about the use of IWMA, they should also have strategic management of Web technology for dealing with their competition.

The results indicate that most of the respondents (CEOs) at the non-early adopter and early adopter hotels seemed to have a good understanding of the importance or benefits of the use of IWMA. However, this highlights the possibility that CEOs' attitudes were likely to be a primary factor that influenced the extent of use of IWMA in these hotels.

- **In Australia**, *all of the respondents seemed to have positive attitudes* regarding the use of IWMA, particularly the trend of online bookings. Most of these respondents accepted that most customers would like to use online communication for bookings.

For example, for the *non-early adopter hotels*, at two of the hotels (1, 2) the respondents claimed that the use of the Internet and Web technologies would become better and

faster for hotel business in the future, particularly as the communication with customers was easier than by telephone. Moreover, in terms of the trend of customers booking online, most respondents at the non-early adopter hotels accepted that online bookings would be increasing. This indicates that most Australian respondents at non-early adopter hotels seemed to have positive attitudes regarding the trend of online bookings.

For the *early adopter hotels*, at Hotel 6 the respondent said that the number of online bookings would grow to 80% of all reservations. Also, the respondent at Hotel 7 claimed that online bookings for his hotel would be increased every year by 30% and highlighted that Internet marketing would need more strategies to operate the Web sites to increase the numbers of customers. This highlights the possibility that these respondents had positive attitudes regarding the use of IWMA that it was a strategic and capable of making important and valuable contributions to the hotel business.

From these results, it may be inferred that CEOs' attitudes were likely to be a primary factor that influenced the extent of use of IWMA in these Australian hotels. This finding is consistent with the confirming interview findings from the sample of Thai hotels.

► Thus, based on these findings, the implication is that in both countries all of these hotel managers' attitudes and perceptions regarding the use of IWMA seemed to be of a positive nature and were likely to be a primary factor that influenced the extent of use of IWMA in these hotels.

***In summary, based on the confirming interviews with eight hotel managers in each country, the results indicate that organisational factors appear to have an effect on the adoption of IWMA in these hotels in each country.***

- ***In Thailand, it was found that there were three positive factors that influenced the use of IWMA: 1) organisational readiness; 2) CEO's attitude; and 3) top management support.*** It seemed that the managers' attitudes were likely to be a primary factor that influenced the decision to use and develop IWMA at highly sophisticated levels. The commitments from their top management to support the resources for the use of IWMA were likely to be a relationship with the

development and use of IWMA. These Thai hotels that adopted IWMA at *the early adopters' stage* were more likely than non-early adopter hotels to have higher support from their *top management* regarding the adoption of IWMA. More specifically, the organisational readiness in terms of *the cost of the investment* and *employees' information system (IS) knowledge* was likely to be an important factor that had a direct influence on the use of IWMA in the sample of Thai hotels. Thai hotels in these samples that adopted IWMA at *the early adopters' stage* were more likely to have higher *readiness* than non-early adopter hotels.

- **In Australia**, four factors of organisational factors: 1) *size of hotel*; 2) *CEO's attitude*; 3) *top management support*; and 4) *organisational readiness* were found to be positive factors for the use of IWMA. The hotels that were at *the early adopters' stage* in their use of IWMA were larger in size than non-early adopter hotels. All of these respondents had a very positive attitude in terms of having a good understanding of the importance and the benefits of the use of IWMA. All of them required resources to install sophisticated technologies in order to upgrade the hotel system, for example, higher speed technology, advanced technology for reservation system, wireless Internet, electronic invoicing program and modern modem. They also required budget to make a contract with several third party Web sites for selling their hotel rooms. It seems that the positive attitudes towards the use of IWMA and enough resources allocated by top management were likely to be an important factor that firstly influenced the decision to develop and use of IWMA at high sophisticated levels. However, organisational readiness was likely to have a direct effect on the use of IWMA. The hotels that were at *the early adopters' stage* in their use of IWMA were more likely to have higher *readiness* in terms of financial, human, and technological readiness than non-early adopter hotels.

### 6.3.1.2 Technological Innovation Factors

Under this category, the five factors of technological innovation adoption regarding the use of IWMA were studied. These factors were 1) perceived benefits, 2) complexity, 3) compatibility, 4) perceived barriers and 5) image. Each of these factors is discussed below.

## 1) Benefits

- **In Thailand, of the eight participating hotels, all of the respondents perceived that use of the IWMA had many benefits.** As discussed under the CEO's attitude, most of these respondents seemed to have a good understanding of the benefits of the use of IWMA. There were two different benefits identified by most of these respondents: 1) short term direct benefits and 2) long term indirect benefits.

*“Short term direct benefits”* of the use of IWMA in terms of cost saving, reducing paper, reducing fax, saving time and reducing the need for brochures, as well as to increase the efficiency of communication with customers, were perceived by all of the respondents at the non-early adopter and early adopter hotels.

*“Long-term indirect benefits”* in terms of *a channel for advertising and distribution of the hotel brand everywhere around the world, and increased market potential* were perceived by all of the respondents at the early adopter hotels and three of the respondents at the non-early adopter hotels (A, B, D). This implies that these respondents were likely to recognise the growing value of the use of IWMA and its essentialness to short-term and long-term survivability.

However, three respondents at non-early adopter hotels (C, G, H) said that the use of IWMA could not increase the volume of customers. They believed that service quality, customer relationships and strategic management were the important factors affecting the volume of customers. It seems that these hotel respondents have experiences with regard to increasing the volume of customers just by improving their service quality in terms of training their staff or service provider behaviors. This highlights the possibility that these hotel respondents did not perceive long-term indirect benefits of the use of IWMA in terms of increasing the volume of customers.

From these results, it seems that, if these Thai hotel managers had a good understanding of the growing value of the use of IWMA in terms of short and long term benefits, they were more likely to make the required investment for developing the use of IWMA at a higher level.

- **In Australia**, of the eight participating hotels, all of the respondents perceived *the benefits of use of IWMA in terms of short term direct and long term indirect benefits*. All of them stated that they use the IWMA for extending their market in terms of covering a wide range of customers and increasing the number of international customers. Most of these respondents claimed that the Internet and Web technologies could be used as a channel for increasing guest's services and to meet customer's satisfactions and so could reduce the cost of producing brochures.

These results indicate that all of the Australian hotel managers were likely to perceive short-term direct benefit of the use of IWMA in terms of *cost saving*, and long-term indirect benefits in terms of *extending market potential, including increasing the number of international customers*.

► Thus, based on these results it may be inferred that the perception of benefits regarding the use of IWMA was likely to be a positive factor that had influenced on the use of IWMA in these hotels in each country.

## 2) *Compatibility*

- **In Thailand**, of the eight participating hotels, *all of the respondents perceived that the use of IWMA was compatible with the work of the hotel business*. They said that the use of IWMA could increase *the efficiency of hotel services in terms of speed, accuracy and convenience*.

For example, for the *non-early adopter hotels* all of these respondents claimed that the use of IWMA could support the hotel service to be convenient, accurate, fast and better, and could meet customers' demand. It seems that these respondents perceived the compatibility regarding the use of IWMA could play a crucial role in helping a hotel to improve its service quality by learning more about their guests' demands in terms of preferences, behaviors and trends.

For the *early adopter hotels*, at Hotel E the respondent highlighted that the use of IWMA was compatible with *his employees*. His employees could work effectively, e.g.

they used e-mail to communicate with customers, and so they did not need to talk or negotiate with customers. This highlights the possibility that the use of IWMA can also enable employees to produce more consistent and efficient services according to company-determined standards.

Thus, from these results, the implication is that the perception of compatibility regarding the use of IWMA was likely to be a positive influencing factor for the extent of use of IWMA in these Thai hotels.

- **In Australia, all of the respondents perceived that the use of IWMA was compatible with the work of the hotel business in terms of *hotel marketing and hotel services*.**

For example, for the *non-early adopter hotels*, most of the respondents claimed that customers could see all things via a virtual tour on the Web site that was clearer than seeing pictures in the hotel brochure. Customers could get up-to-date information and could make a booking at any time that they wanted.

For the *early adopter hotels*, all of the respondents said that most customers preferred to use the Web site for comparing the hotel rate and for searching for more information before making bookings. In addition, they said that customers demand fast and efficient services, e.g. confirmed booking immediately when they make a booking.

Similar to the findings in the Thai hotels, there was no difference in perception of compatibility in the use of IWMA between non-early adopter and early adopter hotels in these Australian hotels.

► Thus, based on these results it may be inferred that the perception of compatibility regarding the use of IWMA was likely to be a positive factor that had influenced the extent of use of IWMA in these hotels in each country.

### 3) Complexity

- **In Thailand, of the eight participating hotels, findings show that there were two different views regarding the complexity in the use of IWMA.** Early adopter respondents at two hotels (E, F) claimed that the use of IWMA *was not difficult* for their hotel staff, whereas most of the respondents at non-early adopter hotels (B, D, G, H) claimed that most employees *were not familiar* with the use of IWMA.

For the *non-early adopter hotels*, most of these respondents said that their staff had no experience or technical skills in the use of IWMA. For example, the staff at two hotels (B, D) did not know the difference between e-mail and Web sites, and there were two groups of employees: 1) those with a positive attitude; and 2) those with a negative attitude. Also, at Hotel H most of the employees could not use the Internet and Web technologies because they cannot communicate in the English language. The respondent of Hotel H also gave a reason regarding the training; there was no formal training about the use of IWMA because the basic education in English of his staff was not good. This indicates that these respondents at the non-early adopter hotels were likely to perceive high complexity regarding the use of IWMA.

For the *early adopter hotels*, at two hotels (E, F), most employees at these hotels (E, F) had a positive attitude towards the use of these technologies and had experience and skills in the use of IWMA. The respondent at Hotel E said that his employees were happy to use IWMA since they had done it step by step, particularly receiving online bookings and contacting customers via e-mail. This highlights the possibility that most staff at the early adopter hotels seemed to have more experience and skills in the use of IWMA than most staff at the non-early adopter hotels. This indicates that these Thai hotels at the early adopters' stage were likely to perceive less complexity regarding the use of IWMA than the hotels at the non-early adopters' stage.

Thus, from these results it may be inferred that complexity regarding the use of IWMA was likely to be a negative factor for the extent of use of IWMA in these Thai hotels.

- **In Australia**, of the eight participating hotels, all of the respondents mentioned that the use of IWMA was easy for their hotel employees to use.

For example, for the *non-early adopter hotels*, most respondents agreed that most of their employees were young and familiar with the use of IWMA. However, the respondent at Hotel 5 mentioned that there might be some older employees that were not familiar with the computer. It seems that some older Australian employees were not familiar with the use of IWMA indicating that technical training was mostly required for older employees.

For the *early adopter hotels*, at Hotel 6 the respondent said that a maximum of five hours training was required about specific Web sites, how to update them in terms of the different types of rooms and the room rates on the main Web sites used by the hotel.

From these cases, it seems that most of the employees in these Australian hotels were computer literate and had skills in the use of IWMA. For most of these Australian hotels, it may be inferred that there was no perception of complexity regarding the use of IWMA in terms of employees' IS knowledge.

► Thus, based on these results, it seems that more of the respondents from the Thai hotels perceived more complexity regarding the use of IWMA than from the Australian hotels.

#### 4) Image

- **In Thailand**, of the eight participating hotels, all of the respondents mentioned that the use of IWMA could build the hotel image in terms of *increasing the customer's confidence*.

For example, for the *non-early adopter hotels*, three respondents at Hotels C, D, H claimed that hotels that had IWMA had a better image than hotels that did not in terms of increasing customer's confidence and customer's services. In addition, they perceived that hotels that had IWMA looked more professional or international, whereas hotels that did not have IWMA looked underdeveloped and unsophisticated. It seems

that the use of IWMA in these Thai hotels was related to the hotel's image in terms of the perception of the performance of the hotel.

For the *early adopter hotels*, the respondent at Hotel F mentioned that if the customers were a business group, they were unhappy with hotels that did not have Internet connection. This highlights the possibility that the use of IWMA in the hotels could make customers have a positive perception and feel more confident about the hotels so that they make a booking.

From these hotel samples, it seems that the use of IWMA in the Thai hotels was based on their perceived impressions that having these technologies could build the desired image for both the hotels and their customers. This implies that image was a facilitating factor for the use of IWMA in these Thai hotels including both the non-early adopter and the early adopter hotels.

- **In Australia, of the eight participating hotels, all of the respondents said that the use of IWMA could build the hotel image in terms of customer's recognition.**

For example, for the *non-early adopter hotels*, most of these respondents claimed that the use of IWMA could increase the customer recognition; most customers had a need to use e-mail for their communications, and wanted to book hotels online more than by the telephone. Also, the hotels that did not use IWMA, could not provide the facilities that their customers wanted. It seems that most customers expected service offered by the hotels in terms of providing the Internet and Web technologies. This indicates that the use of IWMA in these hotels was related to the hotel's image in terms of meeting their customers' expectations.

For the *early adopter hotels*, most of these respondents claimed that customers were less likely to choose hotels that did not have IWMA. For example, in the words of the respondent at an early adopter Hotel 6:

...For example, two hotels, which having the same quality, are very close to each other: one hotel can be booked through Web sites; another hotel cannot be booked via the Internet. I would say 90% of people would book the hotel online because people are becoming more and more comfortable and more and more used to booking on the Web sites rather than by telephone, it's cheaper as well... (Early Adopters: Interview 6).

From these results, it may be inferred that image was likely to be a push factor for the use and development of IWMA in these Australian hotels.

► Thus, based on these results, the implication is that image seemed to be a facilitating factor for the use of IWMA in these hotels in the two countries. Also, there was no difference between the non-early adopter and the early adopter hotels in the two countries in the perception of image regarding the use of IWMA.

### 5) *Barriers*

- **In Thailand, barriers regarding the use of IWMA were found to be perceived as inhibiting factors for the extent of use of IWMA in these Thai hotels at the non-early adopter stage.**

For example, for the *non-early adopter hotels*, at Hotel B the respondent said that his barriers included *senior managers that lacked IT knowledge, but could still make decisions about resources for the use or the upgrading of IWMA*. Also, the *difficulty in the use of the English language* was a barrier for the use of IWMA at Hotel H. The respondent at Hotel H also mentioned that customers might misunderstand information about the hotel because of the lack of good communication skills in the English language among his hotel's staff. Further, at two hotels (C, G), both respondents were concerned about *problems with the computer, the problem of no guaranteed bookings, and the cost of updating information*, as illustrated by the following comments:

...If the computer breaks down, which means I cannot know that there are customers who are bookings via online. Customers feel unhappy if they cannot find information or information is not shown because of a networking jam.... (Non-Early Adopters: Interview C).

... When my customers make a booking online, no one shows... (Non-Early Adopters: Interview G).

For the *early adopter hotels*, there was no perception of barriers regarding the use of IWMA. It seems that hotels at the early adopters' stage were likely to be ready or did not seem to perceive any barriers for use of the IWMA.

From these results, it seems that the main barriers were likely to come from the factors in their organisations at the non-early adopter stage. Also, the results indicate that the

respondents at the early adopter hotels were likely to perceive fewer barriers regarding the use of IWMA than the respondents at the non-early adopter hotels.

- **In Australia**, of the eight participating hotels, *six respondents at Hotels 1, 3, 4, 5, 6, 7 did perceived barriers regarding the use of IWMA while two (2, 8) did not.*

For the *non-early adopter hotels*, at Hotel 1 the barrier regarding the use of IWMA was the budget to install wireless Internet. At two hotels (3, 5), both these respondents said that computer breakdown or technological system problems would be major concerns if most bookings were coming from the Internet and Web sites. Also, the respondent at Hotel 4 claimed that when putting the price on the Web, the competitors looked at his prices and set more special prices. This indicates that these hotel respondents perceived barriers regarding the use of IWMA in terms of cost of investment to install wireless Internet, technological system breakdown and difficulties of management with the hotel room's rates on the Web sites.

For the *early adopter hotels*, at Hotel 7, due to the policy of his hotel management (a promotion with a best rate guarantee), the respondents claimed that it was very difficult for his marketing team to operate the hotel room's rates as most customers preferred to find and book the cheaper rate. Moreover, if the hotel did not have a system for checking the prices, there would be different hotel room's rates on different Web sites that may be cheaper than the price on his own hotel's Web site as mentioned by the respondent at Hotel 6. He also claimed that there was another problem of bookings confusion from customers. In the words of the respondent at an early adopter Hotel 6:

... There were two main types of online reservations offered by hotel Web sites: 1) *some Web sites can confirm bookings immediately, and 2) other Web sites cannot confirm bookings immediately, but only respond to the enquiries.* Some customers think the booking has already been confirmed and was not perceived as an enquiry. If the hotel sends the e-mail back saying the booking is not confirmed, but the customers were already on the plane or coming to hotel, they arrived to the hotel, and there is no booking...then there are problems for the hotel...(Early Adopters: Interview 6).

This indicates that booking confusion, and difficulties of management with the hotel room rates on the Web sites, was likely to be the major barriers for the extent of use of IWMA in these early adopter hotels.

From these cases, it seems that the barriers regarding the use of IWMA in these Australian hotels were likely to be technical and management problems.

► Thus, based on these results, the implication is that the perceptions of barriers regarding the use of IWMA were likely to be negative factors that influenced the extent of use of IWMA in each country. In *these Thai hotels*, the major barriers for the use of IWMA at the non-early adopters' stage were likely to be *basic problems*, for example, the difficulty in the use of the English language. For *these Australian hotels* it seems that the major barriers were likely to be *problems of management*, for example, difficulties of management with the hotel room's rates and booking confusion.

**In summary, the results indicate that technological innovation factors appear to have an influence on the adoption of IWMA in these hotels in the two countries.**

**In Thailand**, it was found that:

- **The positive factors that influenced the extent of use of IWMA in these hotels** were the perceptions of benefits (*cost saving, increased market potential*), compatibility (*compatible with hotel employees' work and customer's demands*), and image (*increasing customer's confidence, improving customer's services, increasing hotel image, for example, look like International hotel*).
- **The negative factors that influenced the extent of use of IWMA in these hotels** were the perceptions of complexity (*lack of experience and technical skill for the use of IWMA*) and barriers regarding the use of IWMA (*English language barrier, lack of computer education, cost of updated information, computer break down and security system problems*).
- **In terms of the non-early adopter and early adopter hotels:** for these Thai hotels that adopted IWMA at the *early adopters' stage* perception of higher benefits, fewer barriers and less complexity regarding the use of IWMA were more likely than for the non-early adopter hotels.

In **Australia**, it was found that:

- **The positive factors that influenced the extent of use of IWMA in these hotels** were the perceptions of benefits (*cost saving and extending market*), compatibility (*compatible with hotel marketing and hotel services*), and image (*increasing customer's recognition and improving customer's services*).
- **The negative factors that influenced the extent of use of IWMA in these hotels** were the perceptions of barriers regarding the use of IWMA (*budgets for installing the wireless, computer breakdown or technological system problems, problem of bookings confusion from customers, problem of management of the room rates on multiple Web sites*). However, for most of these Australian hotels, there was no perception of complexity regarding the use of IWMA in terms of employees' IS knowledge.
- **In terms of non-early adopter and early adopter hotels**, there was no difference between the non-early adopter and early adopter hotels in the perceptions of technological innovation factors regarding the use of IWMA

### 6.3.1.3 Environmental Factors

In this category, four factors regarding the use of IWMA were studied. These factors were 1) customer power, 2) competition intensity, 3) level of government support and 4) level of technology support. Each of these factors is discussed below.

#### 1) Customer Power

- **In Thailand**, of the eight participating hotels, seven respondents (A, B, C, D, E, F, H) said that *the use of IWMA could meet their target customers' demands*.

For example, for the *non-early adopter hotels*, at Hotel D, most customers that booked at the hotel via the Web were return guests and/or international customers. At two hotels (B, C), most of their customers came from overseas, *including online and offline bookings*. However, at Hotel G the respondent claimed that his target customers were Thai people from the Government sector and about 90% of his customers used telephone and fax for bookings at his hotel. From these results, it seems that distribution

channel selection for these hotels was based on the demands of the hotel's targeted customers.

For the *early adopter hotels*, both respondents at Hotels E and F said that most customers, who came from online bookings, were international customers and business groups. In addition, at Hotel E the respondent highlighted that his hotel could set prices at a higher rate for Internet customers than for customers who came from travel agents. This highlights the possibility that most customers that make online bookings at these hotels were likely to be international and business customers that had a potential buying power.

These findings indicate that target customers and the demands from major customers such as *business groups* and *the Thai Government* constitute an important factor affecting the use of IWMA in the Thai hotels. It seems that customer's buying power online was an important factor to push more hotels at the early adopters' stage to use IWMA than non-early adopter hotels.

- **In Australia, of the eight participating hotels, all of the respondents said that their major customers' demand was an important factor for the use of IWMA.** Also, the target customers in most of these hotels were *corporate and small and medium business customers* that preferred to use online bookings.

For example, for the *non-early adopter hotels*, at Hotel 1 online bookings came from leisure customers from overseas and other states of Australia and repeat guests. Moreover, at Hotel 4 most their customers were corporate types, and preferred to book online, whereas the leisure holiday market customers preferred to search for information by the Internet and make a booking by phone. This highlights the possibility that the drivers of the use of IWMA in these hotels arise from the business objectives in terms of guest focus.

For the *early adopter hotels*, at Hotel 8 most customers came from overseas and other states and cities in Australia, including about 40% of customers booked online, and about 60% booked through travel agents. At Hotel 6 the major customers were

corporate and government and about 50-60% of them used the Internet for bookings in his hotel. For Hotel 7, corporate customers made direct bookings via hotel Web sites, whereas customers from travel agents made a booking via global distribution systems. This indicates that most customers at these hotels seemed to prefer to make a booking online.

From these cases, it seems that most business customers and international customers at the participating hotels were likely to make a booking by the Internet and Web sites. Most of these Australian hotels seemed to focus on business and corporate customers as their target markets. In all of these Australian hotels, customer centricity and guest focus were likely to be the key drivers for developing and implementing their use of the IWMA indicating that customer power in terms of the major demand of target customers was likely to be an important factor affecting their use of IWMA.

► Thus, based on these results, the Thai hotels at the early adopters' stage were likely to have higher demand regarding the use of IWMA from their customers than the non-early adopter hotels. However, in Australia, customer power was likely to be a facilitating factor for the use of IWMA in both the non-early adopter and early adopter hotels.

## 2) *Competition Intensity*

- **In Thailand**, findings show that there are two different views among the eight respondents. Five respondents at Hotels A, B, D, E and F mentioned that if their hotels did not have IWMA, it affected their competitiveness, whereas three respondents at these hotels (C, G, H) believed that it did not affect their competitiveness.

Five respondents at Hotels A, B, D, E and F mentioned that *if their hotels did not have IWMA, it affected their competitiveness*.

For example, for the *early adopter hotels*, the respondent at Hotel E mentioned if his hotel did not have its own hotel Web site it would affect his hotel's competitiveness because the chances of the hotel being recognised by customers are reduced. Also, hotels could not depend only on the customers that come from travel agents. If travel

agents did not send customers, it affected the hotel business. This indicates that these hotels were likely to face a high level of competition intensity.

However, three respondents at these hotels (C, G, H) believed that *it did not affect their competitiveness*.

For example, for the *non-early adopter hotels*, at Hotel C the respondent said that it might only affect his hotel image. Also, two respondents at Hotels G and H claimed that it did not affect them a lot because most of their customers came from “offline”, for example, international customers from travel agents or domestic customers from Thai Government sectors. These findings imply that if these Thai hotels were certain to have offline customers from the travel agents and Thai Government market, they did not need to use IWMA.

From these results, it seems that these Thai hotels at the non-early adopters’ stage faced a lower level of competition intensity than the early adopter hotels.

- **In Australia**, of the eight participating hotels, *all of the respondents agreed that if their hotels did not have IWMA, it affected their competitiveness*.

For example, for the *non-early adopter hotels*, at Hotel 3 the respondent said that about 50% of hotels were using IWMA before his hotel installed it; therefore it was probably very hard to do business. Similarly, two respondents at Hotels 1 and 2 claimed that if their hotels did not have IWMA, it would affect their businesses since nearly all hotels in Australia had IWMA implying that the use of IWMA is perceived as necessary for doing hotel business in Australia.

For the *early adopter hotels*, the respondent at Hotel 6 mentioned that if any hotels did not use Web sites, they were missing out on a lot of business that they could be getting, as well as on cost savings, promotion and advertising. It seems that the use of IWMA was likely to be a core hotel business strategy to increase competitive advantage.

From these results, it implies that most of these participating Australian hotels used IWMA for increasing their competitive advantages. Thus, it may be inferred that

competitiveness for these participating hotels was likely to be an important factor that had encouraged the use of IWMA.

► Thus, based on these results, it seems that Thai hotels at the early adopters' stage perceived higher competition intensity than non-early adopter hotels. However, in Australia, it seems that competition intensity was a facilitating factor for the use of IWMA in both non-early adopter and early adopter hotels.

### 3) *Level of Government Support*

- ***In Thailand***, of the eight participating hotels, all of these respondents agreed that *level of government support was the most important change agent to increase and develop the use of IWMA in the Thai hotels.*

All of the respondents expressed the wish for Thai Government intervention **to increase the knowledge of English and of computers for Thai students.**

For example, for the *non-early adopter hotels*, the respondent at Hotel H pointed out that most Thai people lacked knowledge of IT and the use of the English language. Similarly, the respondent at Hotel B claimed that his hotel invested more and more on this technology, but the staff did not have the know-how to use it. There was a gap between the technology and the users. Also, he pointed out that most Thai people older than 35 years lacked knowledge of how to use computers. It seems that the Thai Government did not consider basic education regarding *the use of English language and computers* as major problems for the use of IWMA.

All respondents expressed the wish for more government intervention, not only in terms of education, but also in terms of **improving and upgrading the technological infrastructure.**

For example, the respondent at Hotel D pointed out that infrastructure in Thailand was not good enough to use these technologies because there were not enough telephone lines in suburban areas. Similarly, the respondent at Hotel C mentioned that there were

problems of inconsistency of *speed, high humidity and no fibre optics* of telephone lines. Also, at an early adopter Hotel E the respondent claimed that there was no free trade in Thailand; therefore, the price of the use of the Internet was still expensive. In the words of the respondent at Hotel E:

... There are three main service providers that most people use. If people use telephone lines of Company A., they cannot use the Internet of Company B... (Early Adopters: Interview E).

Furthermore, at two hotels (A, C), these respondents expressed the wish for Government intervention to support the Thai tourism industry in terms of promotions and creating demands.

Findings show that all of the respondents desire intervention by the Thai Government for the use and development of IWMA. It seems that the level of Thai Government support was likely to be an important factor affecting the use of IWMA in these Thai hotels including non-early adopter and early adopter hotels.

- **In Australia**, findings show that there are two different views among the eight respondents. Of the first view, six respondents at these hotels (1, 2, 3, 4, 5, 8) said that Australia is a country that has advanced technologies and good infrastructure. *Most people in most areas in Australia could use the Internet from home lines. The Australian Government had provided the hi-speed broadband, at a reasonable price.*

Of the second view, four respondents at these hotels (2, 4, 6, 7) claimed that although there were 20 different companies offering the Internet, there was only one big service provider in Australia. More specifically, two of these respondents (6, 7) expressed the wish for government intervention to increase the speed of the broadband Internet, and to increase the network for Internet access in regional areas. In the words of two respondents at Hotel 6 and Hotel 7:

...However, I think, for Australia one of the big problems is a lot of outlying and regional areas don't have proper Internet access, telephone network, and broadband. For example, hotels in Queensland, they receive a lot of bookings from online and telephone. People, who live about 100 kilometres away from the hotel, cannot book hotels by the Internet... (Early Adopters: Interview 6).

... The problem in Australia is the slow broadband. Broadband in Australia is more expensive and slower than U.S.A., Japan, and Korea. Broadband in U.S.A. is 100% cheaper than in Australia. There was only one big supplier... (Early Adopters: Interview 7).

This highlights the possibility that the respondents at the early adopter hotels in Australia seemed to have more experience in, and knowledge of, the use of IWMA from other countries than respondents at the non-early adopter hotels.

From these findings, it seems that Australian respondents at *the early adopter hotels* were likely to desire intervention by the Government for the use of IWMA in terms of *extending the network, improving the speed of the broadband Internet, and opening free trade of service providers* than non-early adopter hotels.

►Based on these results, in Thailand, it seems that level of government support was a facilitating factor for the use of IWMA in both non-early adopter and early adopter hotels. In Australia, it seems that respondents at hotels at the early adopters' stage desired intervention from the Government to increase support for the use of IWMA more than the respondents at the non-early adopter hotels.

#### 4) *Level of Technology Support*

- **In Thailand**, as mentioned in the level of government support, **all of the respondents pointed out that there were problems of infrastructure for the use of IWMA in Thailand**, such as *the problems of inconsistency of speed, high humidity, no fibre optics of telephone lines and lack of enough telephone lines in suburban areas*. This indicates that the level of technology support regarding the use of IWMA was likely to be a positive factor that influenced the extent of use of IWMA in these Thai hotels including the *early adopter and non-early adopter* hotels.
- **In Australia**, two of these respondents (6, 7) expressed *the wish for government intervention to increase the speed of the broadband Internet and to increase the network for Internet access in regional areas*. This indicates that these respondents at early adopter hotels would like the Government to provide a higher level of technology to support the use of IWMA more than the respondents at the non-early adopter hotels.

►Based on these results, in Thailand, it seems that level of technology support was a facilitating factor for the use of IWMA in both the non-early adopter and early adopter hotels. In Australia, it seems that the respondents at hotels at the early adopters' stage desired intervention from the Government to increase the technology support for the use of IWMA more than the respondents at the non-early adopter hotels.

***In summary, the results indicate that environmental factors in terms of customer power, competition intensity, level of government support, and level of technology support were likely to be positive factors that influenced the extent of use of IWMA in these hotels in each country.***

- **In Thailand**, the results indicate that Thai hotels that adopted IWMA at *the early adopters' stage* were more likely than non-early adopter hotels to have higher pressure from their customers and higher pressure from their competitors.
- **In Australia**, the results indicate that the Australian hotels that adopted IWMA at *the early adopter stage* were more likely than non-early adopter hotels to require the intervention from the Government to increase the high level of technologies for the extent of use of IWMA.

#### ***6.3.1.4 Summary of Findings of Factors Affecting the Use of IWMA in Thai and Australian Hotels***

Based on the above findings of the confirming interviews with respondents in eight hotels in each country, the results indicate that there was a difference in factors affecting the use of IWMA between: (1) the non-early adopter and early adopter hotels in each country; and (2) the eight hotels in the two countries, as follows.

##### **(1) Non-Early Adopter and Early Adopter Hotels in Each Country**

In terms of comparing factors affecting the use of IWMA between non-early adopter and early adopter hotels in each country, it was found:

- In Thailand, there were differences between early adopter and non-early adopter hotels in seven factors, as shown in Table 6-2a.

Early Adopter Hotels (N = 2)	Differences in Factors	Non-Early Adopter Hotels (N = 6)
Higher	Top Management Support	Lower
Higher	Organisational Readiness	Lower
Higher	Benefits	Lower
Lower	Complexity	Higher
Lower	Barriers	Higher
Higher	Customer Power	Lower
Higher	Competition Intensity	Lower

Thai hotels that were at **the early adopters' stage** were likely:

- to have higher support from their top management;
- to have higher readiness in terms of human, technical and financial resources for the use of IWMA;
- to perceive higher benefits regarding the use of IWMA;
- to have higher pressure from their customers, and from their competitors;
- to perceive less complexity and barriers regarding the use of IWMA than non-early adopter hotels.

These results provide some detailed support for hypothesis H2 (*organisational, technological innovation, and environmental factors have an effect on the adoption of IWMA in Thai hotels*) that was tested in Chapter 5 (section 5.6.1.1, pp. 151-154).

- In Australia, the results indicate that the Australian hotels that were at the early adopter stage in their use of IWMA are **larger in size**, more likely to have **higher readiness** in terms of financial, human, and technological resources and more likely to require the intervention from the Government to increase the high level of technologies for the extent of use of IWMA than non-early adopter hotels. The results are summarised in Table 6-2b.

Early Adopter Hotels	Differences in Factors	Non-Early Adopter Hotels
Bigger	Size of Hotels	Smaller
Higher	Organisational Readiness	Lower
Higher	Level of Government Support	Lower
Higher	Level of Technology Support	Lower

**These results provide some detailed support for hypothesis H3** (organisational, technological innovation and environmental factors have an effect on the adoption of IWMA in Australian hotels) that was tested in Chapter 5 (section 5.6.1.2, pp. 154-157).

## **(2) Comparison between Eight Hotels in the Two Countries**

The results of comparing factors affecting the use of IWMA between eight Thai and eight Australian hotels for these studies indicate that there was a difference in terms of size of hotel, and complexity, as follows.

### **• Size of Hotel**

- **Australian hotels:** it seems that the association between hotel size and the use of IWMA was positive. Hotels that adopted IWMA at the early adopter stage were medium and large-sized. Most non-early adopter hotels were smaller in size.
- **Thai hotels:** it seems that the association between hotel size and the use of IWMA was mixed; hotels at the early adopter stage were large in size, whereas some hotels at the non-early adopter stage were also large.

### **• Perception of Complexity**

- **Australian hotels:** most of the employees in these Australian hotels were computer literate and had skills in the use of IWMA. However, some older Australian employees were not familiar with the use of IWMA indicating that technical training was mostly required for older employees.
- **Thai hotels:** most employees had no experience or technical skills in the use of IWMA and technical training was also required.

The results of *comparison between the eight hotels in each of the two countries* are summarised in Table 6-3.

**Table 6-3: Summary Factors Affecting the Use of IWMA in Thailand (N = 8) and Australia (N = 8) Hotels (N = 8)**

Facilitating Factors (+)		Inhibiting Factors (-)	
Thailand		Australia	
<p><b>Organisational Factors</b></p> <p><u>Top Management Support</u></p> <ul style="list-style-type: none"> <li>• Enough support for the use of IWMA.</li> </ul> <p><u>CEO's attitude</u></p> <ul style="list-style-type: none"> <li>• Positive attitude towards the use of IWMA.</li> </ul> <p><u>Organisational Readiness</u></p> <ul style="list-style-type: none"> <li>• Having financial readiness, human readiness, and IT knowledge.</li> </ul>	<p><b>Size of Hotel**</b></p> <ul style="list-style-type: none"> <li>• Hotels that adopted IWMA at early adopter stage were medium and large sized.</li> <li>• Most non-early adopter hotels were smaller in size.</li> </ul> <p><u>Top Management Support</u></p> <ul style="list-style-type: none"> <li>• Enough support for the use of IWMA</li> </ul> <p><u>CEO's attitude</u></p> <ul style="list-style-type: none"> <li>• Positive attitude towards the use of IWMA</li> </ul> <p><u>Organisational Readiness</u></p> <ul style="list-style-type: none"> <li>• Having financial, human and technological readiness</li> </ul>		
<p><b>Technological Innovation Factors</b></p> <p><u>Benefits</u></p> <ul style="list-style-type: none"> <li>• Short-term direct benefits: cost saving, reducing cost of brochure, and improved communication efficiency.</li> <li>• The long-term indirect benefits: increase market potential including increasing the number of online bookings.</li> </ul> <p><u>Compatibility</u></p> <ul style="list-style-type: none"> <li>• Hotel employees' work, and customer's demands</li> </ul> <p><u>Image</u></p> <ul style="list-style-type: none"> <li>• Increasing customer's confidence.</li> <li>• Improving customer's services.</li> <li>• Increasing hotel image e.g. look like more sophisticated hotel or high standard hotel.</li> </ul> <p><b>Environmental Factors</b></p> <p><u>Customer power</u></p> <ul style="list-style-type: none"> <li>• Demand from target customers e.g. international customers, and business customers.</li> </ul> <p><u>Competition Intensity</u></p> <ul style="list-style-type: none"> <li>• Increasing market competitiveness.</li> </ul> <p><u>Level of Government Support</u></p> <ul style="list-style-type: none"> <li>• Increase Thai people's knowledge of English.</li> <li>• Increase computer education.</li> <li>• Promotion of Thai tourism industry.</li> <li>• Opening free trade for service providers.</li> <li>• Improve technological infrastructure.</li> </ul> <p><u>Level of Technology Support</u></p> <ul style="list-style-type: none"> <li>• Improve technological infrastructure.</li> </ul>	<p><u>Benefits</u></p> <ul style="list-style-type: none"> <li>• Short-term direct benefits: cost saving in terms of reducing the cost of producing brochures, promotion and advertising tool.</li> <li>• The long-term indirect benefits: increasing guest's services and extending market.</li> </ul> <p><u>Compatibility</u></p> <ul style="list-style-type: none"> <li>• Compatible with the work of hotel business in terms of hotel marketing and hotel services.</li> </ul> <p><u>Image</u></p> <ul style="list-style-type: none"> <li>• Increasing customer's recognition.</li> <li>• Improving customer's services.</li> <li>• Increasing hotel image e.g. look like a five-star property.</li> </ul>	<p><u>Barriers</u></p> <ul style="list-style-type: none"> <li>• English Language barrier.</li> <li>• Lack of Computer education.</li> <li>• Cost of updated information.</li> <li>• Computer breakdown.</li> <li>• Security system.</li> </ul> <p><b>Complexity**</b></p> <ul style="list-style-type: none"> <li>• Most employees at non-early adopter hotels had no experience or technical skills in the use of IWMA.</li> </ul>	<p><u>Barriers</u></p> <ul style="list-style-type: none"> <li>• Budgets for installing the wireless.</li> <li>• Computer breakdown.</li> <li>• Bookings confusion from customers.</li> <li>• Management of the room rates on multiple Web sites.</li> </ul>
<p><u>Customer power</u></p> <ul style="list-style-type: none"> <li>• Demand from target customers e.g. international customers, and business customers.</li> </ul> <p><u>Competition Intensity</u></p> <ul style="list-style-type: none"> <li>• Increasing market competitiveness.</li> </ul> <p><u>Level of Government Support</u></p> <ul style="list-style-type: none"> <li>• Increase Thai people's knowledge of English.</li> <li>• Increase computer education.</li> <li>• Promotion of Thai tourism industry.</li> <li>• Opening free trade for service providers.</li> <li>• Improve technological infrastructure.</li> </ul> <p><u>Level of Technology Support</u></p> <ul style="list-style-type: none"> <li>• Improve technological infrastructure.</li> </ul>	<p><u>Customer power</u></p> <ul style="list-style-type: none"> <li>• High demand of major customers regarding the use of IWMA.</li> </ul> <p><u>Competition Intensity</u></p> <ul style="list-style-type: none"> <li>• Increasing competitive advantages.</li> </ul> <p><u>Level of Government Support</u></p> <ul style="list-style-type: none"> <li>• Improve infrastructure for the use of IWMA in regional areas.</li> </ul> <p><u>Level of Technology Support</u></p> <ul style="list-style-type: none"> <li>• Increasing the speed of the broadband Internet.</li> </ul>		

**Note: 1) Size of Hotel in Thailand was a neutral factor for the use of IWMA, 2) \*\*Factors that were different between eight hotels in the two countries**

## **6.4 FACTORS AFFECTING THE ADOPTION OF IWMA BY SIZE AND TYPE OF HOTEL: CROSS COMPARISON**

This section provides the results of comparisons of the factors affecting the adoption of IWMA between Thai medium-independent hotels and Australian medium-independent hotels, and between Thai large-chain hotels and Australian large-chain hotels. The results were also used to provide more detailed background in support of the hypotheses H5 and H7, tested by means of the quantitative questionnaire survey data as follows:

**H5:** There is a difference in the effects of the three main groups of factors: 1) organisational, 2) technological innovation and 3) environmental, on the adoption of IWMA between Thai and Australian hotels in terms of type of hotel management.

**H7:** There is a difference in the effects of the three main groups of factors: 1) organisational, 2) technological innovation and 3) environmental, on the adoption of IWMA between Thai and Australian hotels in terms of size of hotel.

### **6.4.1 Thai Medium-Independent and Australian Medium-Independent Hotels**

The results of comparing factors affecting the use of IWMA between *medium-independent hotels in the two countries* indicate the differences in terms of (1) *perceived benefits*, (2) *competition intensity*, (3) *level of government support* and (4) *level of technology support* as shown in Table 6-4a.

**Table 6-4a: Summary of Factors with Differences between Thai and Australian Hotels by Medium-Independent Hotels**

Factors	Australia	Thailand
	Medium-Independent Hotel (1)	Medium-Independent (C)
<b>Technological Innovation Factors</b>		
Benefits**	Perceived both short-term direct and long-term indirect benefits: for extending their market.	Perceived short-term direct benefits: cost saving, reducing paper, saving time, reducing fax, reducing cost of brochure and improved communication efficiency.
<b>Environmental Factors</b>		
Competition Intensity**	Increasing market competitiveness: (if their hotels did not have IWMA, it would affect their businesses since nearly all hotels in Australia had IWMA).	Not increasing market competitiveness: (if their hotels did not have the IWMA, it did not affect their competitiveness, but it might affect their hotel image).
Level of Government Support**	Australia is a country that has advanced technologies and good infrastructure.	<ul style="list-style-type: none"> <li>• Promotion of Thai tourism industry (all industries in Thai tourism are not linked together, so if customers want to search information about airlines, tours, and hotels in Thailand, sometimes they need to open 7 Web sites to find information),</li> <li>• Improve technological infrastructure (there were problems of inconsistency of <i>speed, high humidity, and no fibre optics</i> of telephone lines).</li> </ul>
Level of Technology Support**	Good infrastructure	<ul style="list-style-type: none"> <li>• Improve technological infrastructure (there were problems of inconsistency of <i>speed, high humidity, and no fibre optics</i> of telephone lines).</li> </ul>

\*\*Factors with Differences between Thai and Australian Hotels regarding the Use of IWMA

Based on the findings in Table 6-4a, it may be inferred that:

- **The manager of the Australian Hotel (1) perceived more benefits and higher pressure from their competitors for the use of IWMA than the manager of the Thai Hotel (C).**

► The reasons used to explain these differences were that nearly all hotels in Australia had used the IWMA as mentioned by this Australian respondent. These reasons may reflect the fact that this Australian medium-independent hotel perceived pressure from the business's market forces, and needed to use the IWMA from fear of competitive disadvantage more than this Thai medium-independent hotel did. Owing to the effect of these market competitions, Australian hotels took these advantages to extend their market. This is why Australian hotel samples perceived more benefits than Thai hotels in terms of extending their market.

With respect to the level of government and technology support, it may be inferred that:

- **The manager of the Australian Hotel (1) perceived higher support from his Government in terms of providing higher level of technology support for the use of IWMA than the manager of the Thai Hotel (C).**

► One plausible explanation, derived from the earlier questionnaire survey results, is that medium sized hotels in Thailand were behind medium sized hotels in Australia in the adoption of IWMA. This result indicates that this Thai medium-independent hotel was at the non-early adopter stage, whereas this Australian medium-independent hotel adopted IWMA at the early adopter stage. This may reflect the fact that the IT/ICT infrastructure in Thailand was not mature enough for the use of the Internet and e-commerce. The existence of environmental barriers in Thailand, including the poor IT/ICT infrastructure, the poor integration of business process with information systems and the problem of security concerns, was why most Thai hotel Web sites did not offer the full function of e-commerce features (non-early adopters' stage), as mentioned in Chapter 4: an analysis of hotel Web sites. These findings were supported by UNCTAD (2005) that developed countries and developing countries were at different stages of e-business since the IT/ICT infrastructure in developing countries was not mature enough for the use of the Internet and e-commerce.

It is clear that, compared to medium-independent hotels in Australia, this Thai medium-independent hotel respondent desired intervention by the Thai Government for the use and development of IWMA regarding the use of English language, computers, improving and upgrading the technological infrastructure and opening free trade of service providers. These findings indicate that the level of government support for the use of IWMA was the most important factor in Thailand. Thus, the Thai Government should increase its attention on improving the technology to make it more advanced and to support resources for industries to connect together. Also, the Thai Government should make a contribution to the greater use of IWMA in the Thai hotel industry through promulgating English language knowledge and computer education, improving infrastructure, opening free trade of service providers and promotion of the Thai tourism industry.

#### **6.4.2 Thai Large-Chain and Australian Large-Chain Hotels**

► The results of comparing factors affecting the use of IWMA between *a large hotel in each of the two countries* indicate that there was a difference in the barriers regarding

the use of IWMA in terms of management of the room rates on multiple Web sites, as shown in Table 6-4b.

Factors	Australia	Thailand
	Large-International Chain Hotel 7	Large-International Chain Hotel F
Barriers**	<p><b>Perceived Barriers: problem of management of the room rates on multiple Web sites.</b>            (Due to the policy of the hotel management with a best rate guarantee. It was very difficult for his marketing team to operate the hotel room's rates as most customers preferred to find and book the cheaper rate).</p>	<p><b>Not perceive barriers</b>            This hotel had guaranteed the best price for customers booking the hotel rooms via its own hotel Web site. If customers found a cheaper price on any other Web site, this hotel would return the money or discount the price.</p>

\*\*Factors with Differences between Thai and Australian Hotels regarding the Use of IWMA

From these results, it seems that these two hotels had a similar policy to guarantee the best price for customers booking the hotel rooms via their own hotel Web site. However, there were different opinions about the policy with a best rate guarantee. This may be because the different respondents' working positions of Thai general manager and Australian marketing director reflected the different opinions. Perhaps also there was a different pattern of factors related to the use of IWMA between these two large hotels in the two countries in terms of barriers including cultural differences. However, the results for these two large-chain hotels also indicate that hotels with perceived sufficient human, technological and financial resources would be successful in the use of IWMA at the early adopter stage.

## 6.5 CONCLUSIONS

This chapter has provided an investigation into eight hotels in Thailand and eight hotels in Australia to provide more details for supporting the hypotheses tested (H2, H3, H5 and H7) in chapter 5 and so also to answer Research Questions 2 and 3.

Research Question 2: What are the potential factors affecting the adoption of Internet and Web based marketing activities (IWMA) in Thai and Australian hotels? Information about the different facilitating and inhibiting factors affecting the adoption of IWMA into eight hotels in each country was obtained. Factors affecting the use of IWMA in the non-early adopter and early adopter hotels were also reported.

Research Question 3: Does the adoption of Internet and Web based marketing activities (IWMA) differ between Thai and Australian hotels? If there is a difference, “*How does the adoption and implementation of Internet and Web based marketing activities (IWMA) differ between Thai and Australian hotels, and what factors are causing this difference?*” Comparison of the factors affecting the use of IWMA: (1) between large-chain hotels; and (2) between medium-independent hotels in the two countries provided information in details.

The above findings from the confirming interviews can be summarised with two tentative conclusions to support findings from the quantitative questionnaire survey data.

*Firstly*, in Thailand, environmental factors in terms of level of government support for improving IT infrastructure, promulgating English language knowledge and computer education had played a major role for the use of IWMA. For organisational factors, the most important factor associated with the use of IWMA appears to be associated with the organisational readiness in terms of *budget and employees’ IS knowledge*. Also, the complexity of the use of IWMA in terms of lack of technical experience and skills was a major problem in the Thai hotels.

*Secondly*, in Australia, environmental factors in terms of competitive intensity, and customer power had driven most of the hotels to use IWMA. Organisational readiness in terms of installing advanced technologies appeared to be the most important factor among organisational factors. The major barriers regarding the use of IWMA in the Australian hotels were related to *installing sophisticated technologies and the management of their hotels*.

The next chapter (7) will present the discussion and conclusions for this study.

## **CHAPTER SEVEN**

### **DISCUSSION AND CONCLUSIONS**

#### **7.1 INTRODUCTION**

This last chapter brings this study to a conclusion on the adoption and diffusion of the Internet and Web technologies in the context of hotel marketing in Thai and Australian hotels. It is organised into five sections. The first section presents the research aims including research questions and hypotheses. In the second section, the three stages of the research process including the research methods used are summarised. The summary of results for answering the three research questions and hypothesis testing is presented and discussed in the third section. In the fourth section, implications and recommendations are offered. Finally, limitations and future research directions are discussed and identified.

#### **7.2 RESEARCH AIMS**

Despite the growing importance of the use of the Internet as a marketing tool in the hotel industry, the factors that affect the adoption of IWMA by the hotel industry have not yet been fully investigated. Under these circumstances, the general aim of this study was to explore factors affecting the adoption of the Internet and Web technologies for hotel marketing in Australian and Thai hotels. As mentioned in Chapter 1, this study also focused on four specific aims. Hence, the following three research questions were formulated and developed as the guide for the research design in order to achieve the aim of this study.

Firstly, to what extent have Thai and Australian hotels adopted and implemented the Internet and Web based technologies in their marketing activities? (These questions are formulated from research specific aims 1.4.1 and 1.4.2).

Secondly, what are the potential factors affecting the adoption of Internet and Web based marketing activities (IWMA) in Thai and Australian hotels? (These questions are formulated from research specific aims 1.4.3 and 1.4.4).

Finally, does the adoption of Internet and Web based marketing activities (IWMA) differ between Thai and Australian hotels? If there is a difference, “*How does the adoption and implementation of Internet and Web based marketing activities (IWMA) differ between Thai and Australian hotels, and what factors are causing this difference?*” (These questions are formulated from research specific aims 1.4.2, 1.4.3 and 1.4.4).

As the Internet and Web technologies are relatively recent technological innovations, this study, (1) utilised the innovation theory in developing the research model of the adoption of Internet and Web based marketing activities by hotels, and (2) incorporated those factors affecting the use of IT in an organisation, which were derived from the organisational innovation and hospitality industry literature. The proposed research model provides the foundation for empirical investigation of the research questions in this study.

In order to achieve the aims of this study, seven hypotheses were formulated from the three research questions as follows:

Research Question 1: Hypothesis H1

H1: Thai and Australian hotels differ in the extent to which they use IWMA.

Research Question 2: Hypotheses H2 and H3

H2: Organisational, technological innovation and environmental factors have an effect on the adoption of IWMA in Thai hotels.

H3: Organisational, technological innovation and environmental factors have an effect on the adoption of IWMA in Australian hotels.

Research Question 3: Hypotheses H4, H5, H6 and H7

H4: There is a difference between Thai and Australian hotels in terms of type of hotel management: (a) independent management and (b) chain management, in the extent to which they use IWMA.

H5: There is a difference in the effects of the three main groups of factors: 1) organisational, 2) technological innovation and 3) environmental, on the adoption

of IWMA between Thai and Australian hotels in terms of the type of hotel management (independent or chain management which is dependent on the results from Hypothesis 4).

H6: There is a difference between Thai and Australian hotels in terms of size of hotel: (a) small, (b) medium and (c) large hotels, in the extent to which they use IWMA.

H7: There is a difference in the effects of the three main groups of factors: 1) organisational, 2) technological innovation and 3) environmental, on the adoption of IWMA between Thai and Australian hotels in terms of size of hotel (dependent on the results from Hypothesis 6).

### 7.3 RESEARCH METHOD

An analysis of hotel Web sites, a quantitative questionnaire survey and confirming interviews were employed in combination as the research methods for this study, and the research was conducted in three stages to accomplish the research aims and answer the research questions.

**The first stage** involved a quantitative method of *analysis of the information provided on hotel Web sites* in the two countries based on a representative sample of 206 Web sites including 107 Thai hotel Web sites and 99 Australian hotel Web sites. Two checklist instruments were used to measure and evaluate the richness of specific information, which as a whole constituted the information services offered through the Web. These instruments were used to summarise the findings and aimed to answer Research Questions 1 and 3 and partially support hypotheses H1 and H4.

**For the second stage**, the quantitative survey method using structured, closed item questions, was the main method implemented to test the model (see Figure 2-4, p. 48) and all of the hypotheses (H1- H7), and to provide answers to Research Questions 1, 2 and 3. A quantitative investigation was undertaken of 143 Australian hotels in Sydney, Melbourne and Brisbane and 152 Thai hotels in Bangkok, Phuket and Chiang Mai over the time period February to July 2005. The senior managers including managing directors, general managers or marketing directors of the hotels, *who made the decisions regarding the hotel marketing activities*, were selected to rate their agreement/ disagreement about factors affecting the use of IWMA in their hotels.

**In the last stage**, the confirming interviews were chosen as a supplementary method to investigate the factors affecting the use of IWMA in hotels and provide information for answering Research Questions 2 and 3, and to provide support for hypotheses H2, H3, H5 and H7. This was done with eight senior hotel managers in each country. Eight participating hotels in each country were selected from a pool of hotels in the sample that had been involved in the earlier quantitative questionnaire survey research in the second stage of this study designed to establish the profile of Thai and Australian hotels using IWMA.

## 7.4 MAJOR FINDINGS

In this section, the results of hypothesis testing for answering each research question are presented.

### 7.4.1 Research Question 1:

*To what extent have Thai and Australian hotels adopted and implemented the Internet and Web based technologies in their marketing activities?*

In order to answer this question, a two-step analysis was conducted. **Firstly**, a cross-sample comparison between Thai hotel Web sites and Australian hotel Web sites was conducted. **Secondly**, using the quantitative survey data, the extent of use of Internet and Web technologies for their hotel marketing was compared between Thai hotels and Australian hotels.

#### 7.4.1.1 Differences in the Use of Web Technology for Hotel Marketing

For comparing hotel Web sites across the two countries, the chi-square test was used to test for differences in features between the 107 Thai hotel Web sites and the 99 Australian hotel Web sites. The results indicate that *there was a significant difference between hotels in the two countries in their use of Web technology* for their hotel marketing. That is:

- *Australian hotels provided significantly more features on their Web sites than Thai hotels did, particularly in relation to tourism information, reservation functions, and a secure payment system. However, a multilingual feature was provided on more Thai hotel Web sites than on Australian hotel Web sites.*
- *Thai hotels lagged significantly behind Australian hotels in providing features that can meet customer's information needs, namely in relation to security of personal information, immediate confirmation of reservation, nearby attractions or businesses, room rate, room availability and directions to find the hotel.*

#### ***7.4.1.2 Differences in the Extent of Use of IWMA between Thai and Australian Hotels***

Using *quantitative survey data*, the extent to which they used Internet and Web technologies for their hotel marketing was compared between the 152 Thai hotels and the 143 Australian hotels utilising the chi-square test. Findings indicate that the extent of use of IWMA was significantly different between the hotels across the two countries.

- *Thai hotels lagged behind Australian hotels in using IWMA, as indicated by the significant  $\chi^2$  (chi-square test, pp. 141-142). The gap between Thai hotels and Australian hotels is particularly noticeable for e-commerce functions, e.g. confirming bookings immediately, receiving payment by a security system, and completing transactions on their Web site. This finding indicates that more of the Australian hotels than Thai hotels had adopted IWMA and were early adopters.*

Thus, combined together, the cross-sample comparison of hotel Web sites and the extent of use of IWMA lead to the conclusion that Thai and Australian hotels differ in the extent to which they use IWMA, supporting hypothesis H1. The gap between Thai hotels and Australian hotels in the use of IWMA may be explained by the results of the confirming interviews when respondents mentioned that the IT/ICT infrastructure in Thailand was not mature enough for the use of Internet and e-commerce. Findings from this study confirm that the use of IWMA was more advanced in Australian hotels than in Thai hotels. Also, the results of this study seemed to support the report of the Australian Government/Department of Foreign Affairs and Trade (2004) that more than

60 percent of Australian businesses were online using the Internet to receive orders while more than 55 percent used it to make purchases.

#### 7.4.2 Research Question 2:

*What are the potential factors affecting the adoption of IWMA in Thai and Australian hotels?*

For this question, using the quantitative survey data, a *two-step analysis* was conducted.

Firstly, three main groups of factors in the proposed research model, organisational, technological innovation, and environmental that influenced the adoption of IWMA in each country were investigated by using four statistical analyses (see section 5.6.1, pp. 149-159): 1) multivariate analysis of variance (MANOVA); 2) one-way analysis of variance (ANOVA); 3) discriminant function analysis (DFA); and 4) the *t*-test. The findings are summarised in section 7.4.2.1. **Secondly**, using a matched sample in order to isolate all possible mediating variables, factors affecting the adoption of IWMA among large-chain hotels in the two countries were investigated utilising the *t*-test (see Table 5-12c, p. 168). The findings are summarised in section 7.4.2.2.

In addition, the findings from *confirming interviews* with eight hotel managers in each country were used to support and supplement the results from the quantitative questionnaire survey.

##### 7.4.2.1 Factors Affecting the Adoption of IWMA in Thai and Australian Hotels

Findings from *the quantitative survey data* indicate that organisational, technological innovation, and environmental factors had an effect on the adoption of IWMA in Thai and Australian hotels. That is:

- *For Thai hotels: organisational factors of size of hotel and organisational readiness, technological innovation factors of perceived benefits and compatibility, and environmental factors of customer power and level of government support had an effect on the adoption of IWMA. This provides support for hypothesis H2.*

- *With regard to Australian hotels: organisational factors of size of hotel, top management support, CEO's attitude and CEO's IS knowledge, technological innovation factors of compatibility, and environmental factors of customer power, competition intensity and level of technology support had an effect on the adoption of IWMA. This provides support for hypothesis H3.*

In accordance with these findings, the results from the *confirming interviews* illustrated that:

#### **For Thai Hotels**

- *The positive factors that influenced the extent of use of IWMA in these Thai hotels were almost all factors that had been included in the research model, with the exception of size of hotel, the perception of barriers and complexity regarding the use of IWMA.*
- *The negative factors that influenced the extent of use of IWMA in these Thai hotels were the perceptions of complexity (lack of experience and technical skill for the use of IWMA) and barriers regarding the use of IWMA (English language barrier, lack of computer education, cost of updated information, computer breakdown and security system problems). Most employees in Thai hotels had no experience or technical skills in the use of IWMA.*
- *It seems that the association between size of hotel for these Thai hotels and the adoption of IWMA was **mixed**.*

It can be observed that the level of government support in terms of improving IT infrastructure, promulgating English language knowledge and computer education was the most important change agent to increase and develop the use of IWMA in Thai hotels. Organisational readiness in terms of *cost of the investment* and *employees' information system (IS) knowledge* were likely to be important factors that had direct influence the use of IWMA in Thai hotels. Thai hotels in this sample that adopted IWMA and were at *the early adopters' stage* were more likely to be in a higher state of *readiness*, to perceive higher *benefits* regarding the use of IWMA in terms of *cost saving*, and *increased market potential*, and to have higher pressure from their *customers* than the non-early adopter hotels.

### ***For Australian Hotels***

- *The positive factors that influenced the extent of use of IWMA in these Australian hotels were nearly all factors that had been included in the research model, with the exception of the perception of barriers regarding the use of IWMA. The Australian hotels that were at the early adopter stage in their use of IWMA were larger in size, more likely to be in a higher state of readiness in terms of financial, human and technological resources, and more likely to require intervention from the Government to increase the high level of technologies for the extent of use of IWMA than non-early adopter hotels.*
- *The negative factors that influenced the extent of use of IWMA in these hotels were the perceptions of barriers regarding the use of IWMA (budgets for installing the wireless, computer breakdown or technological system problems, problem of bookings confusion from customers, problem of management of the room rates on multiple Web sites). However, for most of these Australian hotels, there was no perception of complexity regarding the use of IWMA in terms of employees' IS knowledge. Most of the employees in these Australian hotels were computer literate and had skills in the use of IWMA.*

Based on the findings of this study, the model for adoption of IWMA by Australian hotels has been refined, to consist of 1) *size of hotel*, 2) *top management support*, 3) *CEO's attitude*, 4) *CEO's IS knowledge*, 5) *compatibility*, 6) *customer power*, 7) *competition intensity* and 8) *level of technology support*. Similarly, the model for adoption of IWMA by Thai hotels being delivered from this study now consists of 1) *size of hotel*, 2) *organisational readiness*, 3) *perceived benefits*, 4) *compatibility*, 5) *customer power* and 6) *level of government support*. **The model for adoption of IWMA that was delivered from findings of this study in each country can provide guidance for hoteliers to evaluate and improve their use of IWMA.**

Figure 7-1 shows the model for adoption of IWMA that was delivered from the findings of this study in each country.

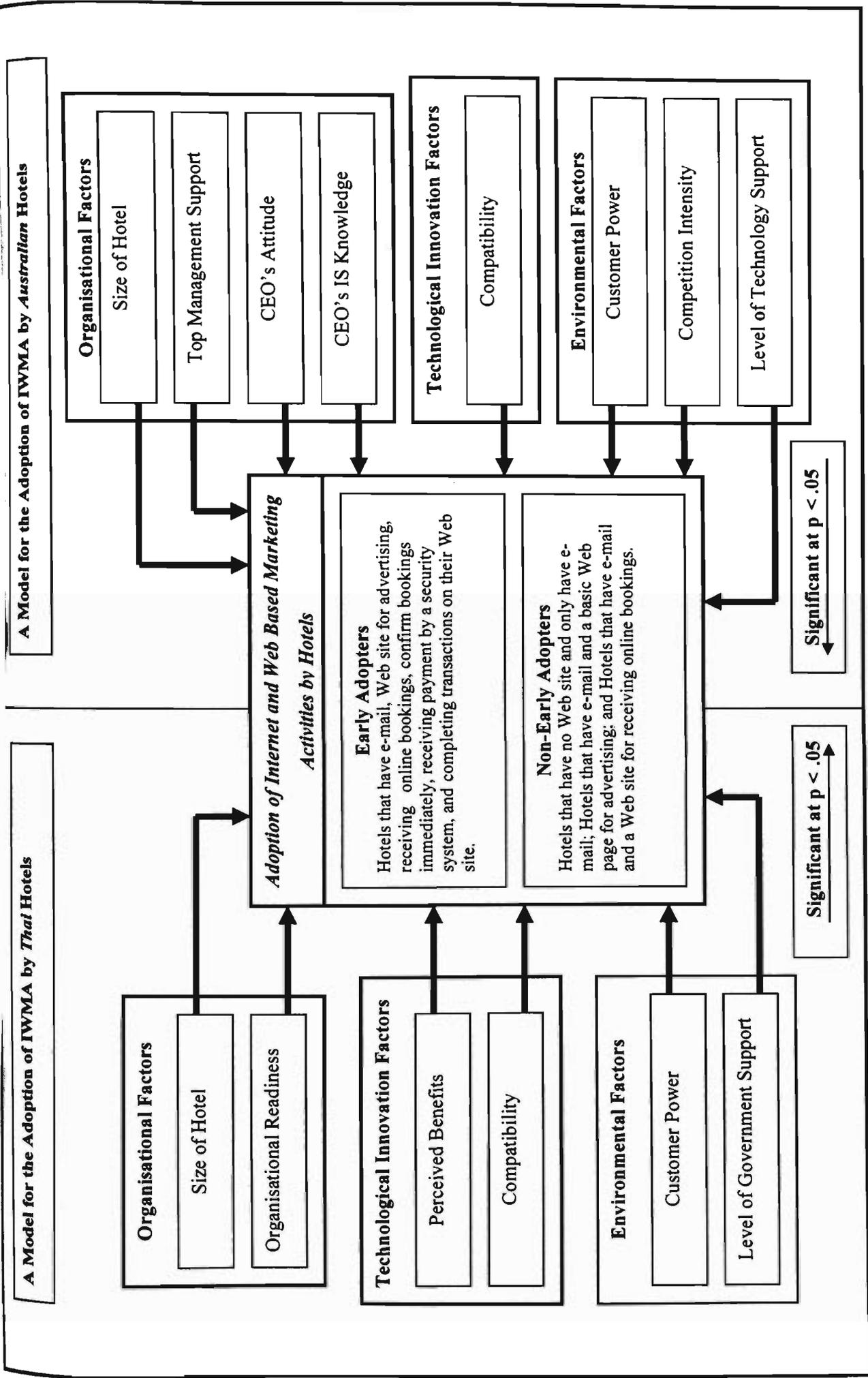


Figure 7-1: A Model for the Adoption of IWMA by Thai and Australian hotels

Although the confirming interviews with hotel managers in each country have provided more explanatory details to elaborate on the findings from the quantitative survey, it is difficult to generalise to the entire hotel population because of the limitation imposed by the small number of interview respondents from the hotels in both countries.

#### 7.4.2.2 Factors Affecting the Use of IWMA among Large-Chain Hotels

Factors affecting the adoption of IWMA among large-chain hotels in the two countries were investigated utilising the *t*-test. The results show that:

- *There was a significant difference between early adopter and non-early adopter hotels among large-chain hotels in the two countries in the perception of compatibility regarding the use of IWMA.*

This indicates that respondents from the early adopter large-chain hotels in the two countries seemed to perceive *higher compatibility* regarding the use of IWMA than those from the non-early adopter hotels, and this provides support for hypotheses H2 and H3.

Based on the above results, organisational, technological innovation and environmental factors have an effect on the adoption of IWMA in the hotels in the two countries and hence provides support for hypotheses H2 and H3. These findings are consistent with technological innovation theories that *organisational, technological innovation and environmental factors can influence innovation adoption in an organisation*. In addition, findings from quantitative survey data show that three factors, namely size of hotel, compatibility and customer power have an effect on the adoption of IWMA in hotels in the two countries. Early adopter hotels in each country seemed to be larger, were more likely to perceive *higher compatibility regarding the use of IWMA* and experienced higher customer power than non-early adopter hotels. Findings from this study indicate that *compatibility* was the best predictor for discriminating between hotels at the non-early adopter and early adopter stages in the two countries.

These findings also confirm conclusions from previous research studies that businesses that are bigger in size are more likely to adopt information technology (IT) (e.g. Thong and Yap, 1995; Thong, 1999). In addition, hospitality research has shown that larger

organisations tend to adopt innovations faster than small organisations do (Siguaw et al., 2000; Murphy et al., 2003). In terms of compatibility, results from this study support Rogers' (1995) suggestion that compatibility of an innovation with a previously introduced idea can influence the adoption of innovation, and is in agreement with the reports of previous studies (Moore and Benbasat, 1991; Tan and Teo, 2000; Seyal and Rahman 2003) that *compatibility* is associated with the adoption of innovation in an organisation. In terms of *customer power*, in all of these hotels, customer centricity and guest focus were key drivers for developing and implementing their use of IWMA. This finding is consistent with other studies (e.g. Buhalis and Main, 1998) that reported that *customer demand* is the pull factor for small and medium hospitality organisations (SMHOs) to use IT. Specifically, Yeh et al. (2005) found that business travellers had positive perceptions and needs towards hotel e-commerce and IT applications.

#### 7.4.3 Research Question 3:

*Does the adoption and implementation of Internet and Web based marketing activities differ between Thai and Australian hotels?*

*If there is a difference, how does the adoption and implementation of Internet and Web based marketing activities differ between Thai and Australian hotels, and what factors are causing this difference?*

In order to answer this question, a three step analysis was conducted.

**Firstly**, using the data collected from the analysis of hotel Web sites, cross-sample comparisons were made 1) between independent Thai hotel Web sites and independent Australian hotel Web sites, 2) between chain Thai hotel Web sites and chain Australian hotel Web sites by applying the chi-square test. In addition, using the quantitative survey data, cross-sample comparisons between the hotels across the two countries by the type of hotel management and the extent of use of IWMA were made using the chi-square test. In this way hypothesis H4 was tested. The findings are summarised in section 7.4.3.1.

**Secondly**, for testing hypothesis H6, using the quantitative questionnaire survey data, cross-sample comparisons between the hotels across the two countries in terms of three

sizes of hotels (small, medium and large) and the extent of use of IWMA were carried out utilising the chi-square test. The findings are summarised in section 7.4.3.2.

**Finally**, matched samples of *size and type* of hotels in the two countries were utilised in order to isolate all possible mediating variables, in order to compare managers' views regarding factors affecting the use of IWMA across hotels in the two countries. A comparison of the factors affecting the adoption of IWMA between hotels in the two countries was made using the data from the *large-chain hotels* that were at the early adopter stage. MANOVA was used for these comparisons and for testing hypothesis H7. The independent hotels and chain hotels in *medium-sized* hotels in the two countries provided matched samples large enough to compare the factors affecting the use of IWMA between medium sized hotels across the two countries. The *t*-test was then used for the comparisons and hence for testing hypotheses H5 and H7. The findings are summarised in section 7.4.3.3.

#### ***7.4.3.1 Differences in the Use of IWMA by Type of Hotel Management***

Findings from *the analysis of independent hotel Web sites* in the two countries indicate that there was a **significant difference** between **independent hotels** in the two countries in **the use of Web technology** for their hotel marketing.

- ***More Australian than Thai independent hotel Web sites provided significantly more features and information that met customer's needs. In addition, there was no significant difference in the provision of features and information that met customer's needs between chain hotels in the two countries.***

Findings from the *quantitative questionnaire survey data* indicate that there was a **significant difference in the extent of use of IWMA** across the **independent hotels** in the two countries.

- ***More Australian independent hotels than Thai independent hotels that adopted IWMA were at the early adopter stage. However, these findings confirm that there was no significant difference evident in the extent of use of IWMA***

*between chain hotels in the two countries. This implies that most chain hotels in the two countries over the time period of collecting data including the analysis of hotel Web sites, and quantitative questionnaire survey (January 2004 to July 2005) were likely to be part of the same chain hotel management, and thus, in fact, was the case.*

**Thus, by combining these findings,** it may be concluded that there was a difference between Thai and Australian hotels in terms of *independent management* in the extent to which the hotels used IWMA. This provides partial support for hypothesis H4.

#### ***7.4.3.2 Differences in the Use of IWMA by Size of Hotel***

Findings from cross-sample comparisons between the hotels across the two countries in terms of three sizes of hotels (small, medium and large) and the extent of use of IWMA indicate that

- *There were significant differences between the medium Thai and Australian hotels and also between the large-sized Thai and Australian hotels in the extent to which they used IWMA.*

However, no significant difference was found for the extent to which they used IWMA between the small hotels in the two countries. These findings provide partial support for hypothesis H6: there is a difference between Thai and Australian hotels in terms of medium hotels, and also in terms of large hotels in the extent to which they used IWMA.

#### ***7.4.3.3 Factors Affecting the Use of IWMA across Hotels in the Two Countries***

##### **For Large-Chain Hotels with Early Adopter Stage**

Findings from the *quantitative questionnaire survey data* indicate that:

- *No statistically significant differences were found in terms of factors affecting the use of IWMA between large-chain hotels that were at the early adopters' stage in the two countries.*

This result provides partial support for null hypothesis H7: *there was no difference in the effect of three main groups of factors: organisational, technological innovation and environmental, on the adoption of IWMA between large hotels in Thailand and Australia.*

However, findings from *the confirming interviews* illustrate that:

- *There was a possible difference between large-chain hotels that were at the early adopter stage for the barriers regarding the use of IWMA in terms of management of the room rates on multiple Web sites. Although, there were different opinions about the policy with the best rate guarantee, it could be concluded that hotels with perceived sufficient human, technological and financial resources would be successful in the use of IWMA at the early adopter stage.*

### **For Medium-Sized Hotel**

*Medium-Independent Hotels*: findings from the quantitative questionnaire survey indicate that there was a significant difference in factors affecting the adoption of IWMA between medium-independent hotels in Thailand and Australia. That is:

- *Medium-independent hotels in Australia were more likely than Thai medium-independent hotels to have CEOs who were knowledgeable about the use of IWMA and were more likely to perceive greater pressure from their customers.*
- *The number of medium-independent hotel managers who agreed that the use of IWMA could help the image of their hotels in Thailand is greater than those in Australia.*

In accordance with these findings, *the results of confirming interviews* of comparing factors affecting the use of IWMA between *medium-independent hotels in the two countries* indicate that:

- *The Thai medium-independent hotels were at the non-early adopter stage, whereas the Australian medium-independent hotels were at the early adopter stage. These may reflect the fact the IT/ICT infrastructure in Thailand was not*

*mature enough for the use of Internet and e-commerce. It is clear that, compared to medium-independent hotels in Australia, the Thai medium-independent hotel respondents desired intervention by the Thai Government for the use and development of IWMA in relation to the use of English language and computers, the improvement of the technological infrastructure and the endorsement of opening free trade service providers. Respondents from the Australian medium-independent hotels more than from the Thai medium-independent hotels perceived pressure from their business's market forces, and needed to use IWMA from fear of competitive disadvantage. Due to the effect of competition in markets, Australian hotels took advantage of IWMA to extend their markets.*

From these results (*quantitative survey and confirming interviews*), it is clear that there was a significant difference in factors affecting the adoption of IWMA between medium-independent hotels in Thailand and Australia. These results provide partial support for hypothesis H5.

**Medium-Chain Hotels:** findings from *quantitative questionnaire survey data* indicate that:

- **Medium-chain hotels in Thailand** were more likely to perceive a positive effect on the image regarding the use of IWMA than medium-chain hotels in Australia.

However, due to the small sample size of medium-chain hotels in Thailand, one must be cautious when attempting to generalise this result.

Thus, combining the results of *medium-independent and medium-chain hotels* from the quantitative survey data, it may be concluded that **there were three factors for which there were significant differences between medium-sized hotels** in the two countries: 1) CEO's IS knowledge, 2) image and 3) customer power (see Tables 5-13a and 5-13b, p. 170). These results provide partial support for hypothesis H7.

## 7.5 CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

*This study has direct implications for both research and practice in the field of Internet and e-commerce and the hospitality industry.*

### 7.5.1 Implications and Recommendations for Research

- **The findings of this study indicate that there was a significant difference between hotels in the two countries in their use of Web technology for their hotel marketing. In Thailand, the results indicate that the use of the Internet and Web technologies by Thai hotels was primarily for advertising, not for a fully interactive site providing the full range of marketing functions particularly e-commerce features and services. In Australia, the findings show that Australian hotels provided full e-commerce sites. Most Australian hotels had their own Web sites for receiving online bookings, and provided secure payment systems. Specifically, they could give confirmation of bookings immediately.**

The findings from analysis of hotel Web sites contribute to help researchers to better understand the use of hotel Web sites in developing and developed countries. This study provides improved knowledge about the success of hotel Web sites from the marketing perspective. Future research can utilise these findings as a reference for comparing and extending the analysis of hotel Web sites in other countries. In addition, results from this study show that online bookings and secure payment systems were not provided on most hotel Web sites in Thailand. In fact, “trust” is an important phenomenon in the consumer’s mindset with regard to purchasing services online (McCole, 2002). It seems that these Thai hotel managers did not know how much value would be added to their hotels, if they invested more money in the development of full features of e-commerce. Thus, it is recommended that a value analysis model of IWMA adoption in hospitality industry might be another topic for future research.

- **The findings of this study indicate that organisational, technological innovation and environmental factors had an effect on the adoption of IWMA in Thai and Australian hotels. The model for adoption of IWMA by Australian hotels has been refined, to consist of 1) organisational factors with regard to size of hotel, top management support, CEO’s attitude and CEO’s IS knowledge, 2) technological innovation factors with regard to compatibility and 3) environmental factors with regard to customers power, competition intensity and level of technology support. Similarly, the model for adoption of IWMA by**

*Thai hotels being delivered from this study now consists of 1) organisational factors with regard to size of hotel and organisational readiness, 2) technological innovation factors with regard to perceived benefits and compatibility and 3) environmental factors with regard to customer power and level of government support.*

An important implication of this research is that this study is one of among only a few which have empirically tested the model of adoption of IWMA in the context of the hotel industry in Thailand and Australia. Therefore, this study contributes new knowledge to the research literature and researchers. Also, the findings of this study can be utilised as a guideline for future study that is intended to examine the phenomenon in other Asia Pacific settings. More specifically, the findings of this study have also validated the theory that technological innovation adoption, as it is widely applied in other industries in North American or European countries, is applicable in the context of the hotel industry. Consequently, it is hoped that researchers in the field of the Internet and e-commerce in the hospitality industry will use the proposed model and the important variables of this study and test them in various situations.

## **7.5.2 Implications and Recommendations for Practice**

This study provides important implications for both hotel management and policymakers in the Thai and Australian hotel industries.

### **7.5.2.1 For Hotel Management in the two Countries**

- **Findings from analysis of hotel Web sites show that Australian hotels provided significantly more features on their Web sites than Thai hotels did, particularly in relation to tourism information, reservation functions and a secure payment system. However, a multilingual feature was provided on more Thai hotel Web sites than on Australian hotel Web sites. Thai hotels lagged significantly behind the Australian hotels in providing features that can meet customer's information needs, namely in relation to security of personal information, immediate confirmation of reservation, nearby attractions or businesses, room rate, room availability and directions to find the hotel.**

Findings from analysis of hotel Web sites in the two countries can be applied to hotel businesses for developing or improving their own hotel Web sites for their marketing

activities. Hoteliers in both countries should fully utilise the 32 features within the seven categories of basic information, e-commerce, promotions, service offering, secondary information, technology and management functions to be more effective as follows:

- Hoteliers should update information on the hotel Web sites consistently by providing the date when the Web pages were last updated since customers do not come back to a static Web site.
- The provision of tourism information, for example about *nearby attractions or businesses* and *directions to find the hotel*, should be provided on the Web, which could encourage customers to select the hotel.
- Offer opportunities for the customer to interact with the Web site through (1) the provision of secondary information such as linking to partners and searching capabilities (2) the provision of value added features such as providing special rewards including coupons and free gifts on the site.
- Hoteliers should provide services such as e-mail newsletter, frequently asked questions, online forum and frequent visitor program on the hotel Web site in order to enhance the customer relationship and two-way communication.
- In order to increase the attractiveness of the Web site, hoteliers should use Web designs that include multimedia, audio and video.
- Hoteliers should take advantage of technology by providing information for downloading including a brochure, corporate information, fact sheets and hotel maps on the site in order to save costs of printing.
- Thai hotels should develop their e-commerce Web sites to enable complete transactions online through a secure internal channel. In order to meet customer's information needs including *immediate confirmation of reservation, security of personal information, provision of room rates, and room availability* appropriate Web sites features should be set up which could inspire trust and increase the customer's confidence in the hotels.
- Australian hotels could improve their Web sites by providing value-added features in the provision of multilingual facilities, which could extend their target market to specific countries. A special room rate should be provided on the site in order to encourage their customers to book their hotels.

Overall, in order to be successful, the technological designs, value-added information and services, and development of full e-commerce Web sites must be integrated with the hotel's marketing activities. The appropriate Web site design and development should be developed from the marketing perspective to differentiate the design to meet customer information needs.

### 7.5.2.2 For Hotel Management in Thailand

- **Findings from the quantitative questionnaire survey and the confirming interviews** indicate that *the organisational factor of organisational readiness and the environmental factors of customer power and level of government support had an effect on the adoption of IWMA in Thai hotels.*

This study highlights the importance of organisational readiness, customer power and level of government support in influencing the adoption of IWMA in Thai hotels. Hotel executives should consider their organisational and environmental readiness for the use of IWMA. This study shows that organisational readiness in terms of IT skills and knowledge and English language play a major role in influencing the development of the use of IWMA in the Thai hotel industry. Most hotels at the early adopter stage (e.g. international chain hotels) strongly support IT deployment such as the existence of IT staff and an IT department, having a training room for hotel staff to practice the use of the computer and a high level of IT investment such as having their own server. However, knowledge-based skills and technologies required for the adoption of IWMA cannot be acquired immediately.

Hence, hotel executives should allot time and attention to their organisational readiness for the use of IWMA and need to show continuous support and commitment to the use of IWMA in all relevant processes. Specifically, in order to increase employees' empowerment, hoteliers should encourage and develop their employees' IT skills and knowledge to be in place ready and prepared for facing the competition in the "information age". Since the customer and market competitiveness are the drivers of the use of IWMA, it follows that hoteliers need to continuously monitor customer demand and their competitive environment to understand the impact of changes in the market by using IWMA. This study also suggests that IWMA is a key technology driving hotel

business in a current competitive environment; therefore, the hotels that adopt IWMA at the earlier stage can extend their reach to their target customers, meet the needs of use of IWMA of consumers and enhance their competitive position.

### **7.5.2.3 For Policymakers in Thailand**

- **Findings from the confirming interviews indicate that the IT/ICT infrastructure in Thailand was not mature enough for the use of the Internet and e-commerce.**

This study shows that many Thai hotel managers at the early adopters and non-early adopters' stages of IWMA desire intervention by the Thai Government for the use and development of IWMA regarding the use of English language, computers, improving and upgrading the technological infrastructure, and opening free trade of service providers. Hoping to be a leader in the tourism industry, the Government should increase its attention on improving the technology to make it more advanced and to provide resources for each of the industries to connect together. Hence, the Thai Government should make a contribution to the greater use of IWMA in the Thai hotel industry through promulgating English language knowledge and computer education, improving infrastructure, opening free trade of service providers and promotion of the Thai tourism industry.

### **7.5.2.4 For Hotel Management in Australia**

- **Findings from the quantitative questionnaire survey indicate that environmental factors of customer power, competition intensity and level of technology support had an effect on the adoption of IWMA in Australian hotels. The findings from the confirming interviews indicate that Australian hotels that were at the early adopter stage in their use of IWMA were more likely to be in a higher state of readiness than non-early adopter hotels.**

In Australia, clearly, environmental factors in terms of competitive intensity, customer power and level of technology support have driven most hotels to use IWMA. The findings from the confirming interviews indicate that organisational readiness in terms of installing advanced technologies was the most significant factor among organisational factors. Hence, Australian hotel managers should consider their

organisational and environmental factors for the use of IWMA. Findings from this study suggest that hotel managers need to show continuous support and commitment and put in place relevant processes to govern their IWMA. In addition, hoteliers should continuously monitor their competitive environment to understand the impact of changes in the market on their strategies and approach to IWMA. Due to the maturity of IT infrastructure, as mentioned by the Australian respondents, hotel managers should take advantage of this by assessing the efficiency of their technologies and provide advanced technologies for the use of IWMA in order to improve their competitive position and customer service.

#### ***7.5.2.5 For Policymakers in Australia***

- ***The findings from the confirming interviews indicate that most Australian hotel managers at the early adopter and non-early adopter stages desired intervention by the Government for the use of IWMA in terms of extending the network, improving the speed of the broadband Internet, and opening free trade of service providers. Australian hotels that were at the early adopter stage in their use of IWMA were more likely to require intervention from the Government to increase the high level of technologies for the extent of use of IWMA than non-early adopter hotels.***

Although in Australia there is now adequate Internet capacity at a relatively affordable price, however, most Australian hotel managers at early adopter and non-early adopter stages still desired intervention by the Government for the use of IWMA in terms of *extending the network, improving the speed of the broadband Internet and opening free trade of service providers*. Policymakers need to communicate effectively with the private sector about their IWMA adoption intentions. Therefore, the Australian Government should consider upgrading and expanding the infrastructure of network to be as sophisticated as those in other developed countries, for example the U.S.A.

Overall, in order to extend the use of IWMA and to sustain competitive advantage of hotels in the two countries, both “top-down” in nature, for example, *infrastructure development* and “bottom-up” activities, for example, *developing the use of IWMA and expanding markets* should be developed concurrently. Therefore, further investment in

improving the communications infrastructure and creating environments for developing the use of IWMA is needed.

## 7.6 LIMITATIONS AND EXTENSIONS

Although this study has provided relevant and interesting insights into the adoption of IWMA in the hotels, it is important to recognise its limitations. Nevertheless, the limitations present opportunities for future research.

*Firstly*, the scope of this study was limited by its population frame, which included hotels in only three cities in Australia and in only three provinces in Thailand. The sample used for analysis for each level of using IWMA drawn from the hotel population in the three areas in each country was relatively small. Future research, therefore, can also expand on the present study by using samples of hotels located in other areas or countries with varying environments.

*Secondly*, the data from the hotel Web sites was collected in 2004. At that time, most hotel Web sites in Thailand could not receive online bookings and had no secure systems. From analysis of the data conducted for this study, more Australian hotel Web sites provided *reservation functions* (85.9%) that could confirm bookings immediately than Thai hotel Web sites (36.4%) did. Even *on line reservations offered* on most hotel sites in Thailand did not make provision for immediate confirmation and the usual practice was to confirm through e-mail, contacting the guest within 24-48 hours. Similarly, a *secure payment system* was provided on more of the Australian hotel Web sites (55.6%) than on the hotel Web sites in Thailand (33.6%). This adoption profile is unlikely to be the same if the analysis of hotel Web sites is conducted today (2006). This is because diffusion of IWMA in the hotel industry is continuing; therefore, future research could replicate this study to determine the rate of diffusion of the use of IWMA.

*Thirdly*, data for this study including the survey questionnaires (used in Thailand and in Australia) and the confirming interviews were collected by the key informant approach. As defined by Phillips (1981), the key informant method, e.g., interviewing one or more respondents chosen because they have special qualifications, is an effective means for collecting information about a social system. However, although using hotel managers

or marketing managers as key informants is adequate for producing reliable and valid data (Tan and Litschert, 1994), a future study on adoption of IWMA in the hotel industry could attempt to use multiple informants to obtain a greater breadth of data and overcome any biases that stem from the use of a single informant in each hotel.

*Fourthly*, in terms of instrument design, two of the variables: *image and organisational readiness* used fewer than three items for measurement, weakening the reliability of the instrument. Future studies should expand these constructs with more items increasing the validity and reliability of the instrument.

*Fifthly*, as there was no previous study regarding the comparison of the use of IWMA in Thai and Australian hotels, this study used the term of hotel in the two countries that were similar in concept. However, there are many criteria for classifying hotels such as by size of hotel, type of hotel management and star rating system. As mentioned earlier, most hotels in the sample in Australia were small and a part of a chain, whereas most hotels in Thailand were large and independent hotels. There was no formal star rating of Thai hotels as for Australian hotels when starting this research in 2003. The differences in hotel characteristics in the two countries created problems that resulted in great limitations to the analysis of comparison of homogenous data. Therefore, in order to improve the validity of the analysis and interpretation, it is recommended that future comparative studies should collect data from hotels with similar characteristics such as the same size and the same type of hotel management.

*Sixthly*, in terms of rate of adoption, it was difficult to measure directly the rate of adoption. For the quantitative survey, the data regarding the year of adoption of IWMA by the hotel participants were incomplete. Most hotel managers answered that they could not remember, or they did not work there at that time. As a result, these data were missing. In order to make the database more complete, it is suggested that future studies should include a closed item for this question.

*Finally*, although this study attempted to incorporate a number of key variables from the organisational innovation and hospitality literature in the proposed research model, it did not include factors relating to the type of hotel management or hotel star rating. This study raised the issue that the research model needs to be more specific to the nature and

structure of industry in order to provide more valid outcomes. Thus, it is recommended that future studies should expand this research model by incorporating new variables that are more specific to the nature and the structure of the hotels to provide a better understanding of the adoption of IWMA in hotels.

## 7.7 SUMMARY

This study focused on the use of IWMA in hotels in Thailand and Australia. The aim of this study was to explore factors affecting the adoption of IWMA in Thai and Australian hotels. The main findings indicate that there was a significant difference in the use of the Internet and Web technologies for hotel marketing between Thai and Australian hotels. The findings from the preliminary analysis of hotel Web sites indicate that Thai hotels lagged significantly behind the Australian hotels in their provision of features and in the volume of information on their hotel Web sites. More Australian hotels than Thai hotels that had adopted IWMA were at the early adopter stage. This implies that Thai hotels were still developing their use of IWMA.

Results from statistical analysis of the quantitative questionnaire survey data reveal insights into the key factors that influence the use of IWMA in hotels in Thailand and in Australia. The main findings indicate that organisational, technological innovation, and environmental factors had an effect on the adoption of IWMA in the hotels in each country. For Thai hotels, the perception of benefits and compatibility regarding the use of IWMA were the major facilitating factors, whereas lack of IT skills and knowledge was an inhibiting factor for the use of IWMA. Specifically, customer demand was the push factor for Thai hotels in the use of IWMA. Issues relating to the level of government support play a major role in influencing the development of use of IWMA in the Thai hotel industry. In addition, results from the confirming interviews show that most employees at the non-early adopter Thai hotels had no experience or technical skills in the use of IWMA. More specifically, most Thai respondents claimed that infrastructure was not mature enough for the use of IWMA.

In Australia, the main findings indicate that 1) organisational factors with regard to *size of hotel, top management support, CEO's attitude* and *CEO's IS knowledge*, 2) technological innovation factors with regard to *compatibility* and 3) environmental

factors with regard to *customers power, competition intensity and level of technology support* had a significant effect on the adoption of IWMA in the hotel industry. The study has found that compatibility was the most important adoption attribute. These results suggest that the use of IWMA in the Australian hotel industry will be successful if hotel executives pay attention to both organisational and external environmental factors. In addition, findings from confirming interviews indicate installing advanced technologies was the most significant factor amongst organisational factors. Competition intensity and customer power were the external factors that had driven most Australian hotels to use IWMA. However, there was no perception of complexity regarding the use of IWMA in the Australian hotels. Most of the employees in these Australian hotels were computer literate and had skills in the use of IWMA.

Based on the quantitative survey and confirming interview data, findings from the cross comparisons between hotels in the two countries in the use of IWMA indicate that more Thai hotels than Australian hotels used IWMA for helping their hotel image. However, more Australian hotels than Thai hotels used IWMA for increasing their competitive position and customer services. In addition, the Australian Government provided more technology infrastructure for the use of IWMA than the Thai Government did. Consequently, infrastructure in Australia was more mature than in Thailand for the use of IWMA. This study suggests that Australian hotel managers should take advantage of this by assessing the efficiency of their technologies and provide advanced technologies for the use of IWMA in order to improve their competitive position and their customer service.

This study found that there is room for growth in use of the Internet and Web technologies for hotel marketing in both countries in the future. This study provides suggestions for developing the use of IWMA in the hotel industry in each country to be successful. The model for adoption of IWMA that was delivered from findings of this study can provide guidance for hoteliers in each country to evaluate and improve their use of IWMA. The author hopes that the findings of this study contribute knowledge to increase understanding of the benefits regarding the use of IWMA for hoteliers in these two countries.

## REFERENCES

- Adamic, L.A. & Huberman, B.A. (2001). The Web's Hidden Order. *Communications of the ACM*, 44(9), 55-59.
- Anckar B. & Walden P. (2001). Introducing Web Technology in A Small Peripheral Hospitality Organization. *International Journal of Contemporary Hospitality Management*, 13(5), 241-250.
- Angehrn, A.A. & Meyer, J.F. (1997). Developing Mature Internet Strategies. *Information Systems Management*, 14(3), 37-43.
- Apigian, C.H., Ragu-Nathan, B.S. & Kunnathur, A. (2005). Internet Technology: The Strategic Imperative. *Journal of Electronic Commerce Research*, 6(2), 123-145.
- Arksey, H. & Knight, P. (1999). *Interviewing for Social Scientists: An Introductory Resource with Examples*. Sage Publications, London.
- Armstrong, C.P. & Sambamurthy, V. (1999). Information Technology Assimilation in Firms: The Influence of Senior Leadership and IT Infrastructures. *Information Systems Research*, 10(4), 304-327.
- Australian Government /Department of Foreign Affairs and Trade. (2004). Australia Now: Geared For Success in the New Economy. [Online] Available: [www.dfat.gov.au/facts/geared\\_for\\_success.html](http://www.dfat.gov.au/facts/geared_for_success.html) accessed on 26 February 2005.
- Babbie, E. (2001). *The Practice of Social Research* (9<sup>th</sup> ed.). Wadsworth/Thomson Learning, Belmont.
- Baloglu, S. & Pekcan, Y.A. (2006). The Web Site Design and Internet Site Marketing Practices of Upscale and Luxury Hotels in Turkey. *Tourism Management*, 27(1), 171-176.
- Banoma, T.V. (1985). Case Research in Marketing: Opportunities, Problems, and A Process. *Journal of Marketing Research*, 22(2), 199-208.
- Bazar, B., Bataar, U. & Boalch, G. (1998). A Preliminary Model of Internet Diffusion within Developing Countries. *AusWeb97*. [Online] Available: <http://ausweb.scu.edu.au/proceedings/boalch/paper.html> accessed on 17 Oct 2003.

- Bell, H. & Tang, N.K.H. (1998). The Effectiveness of Commercial Internet Web Sites: A User's Perspective. *Internet Research: Electronic Networking Applications and Policy*, 8(3), 219-228.
- Benckendorff, P.J. & Black, N.L. (2000). Destination Marketing on the Internet: A Case Study of Australian Regional Tourism Authorities. *The Journal of Tourism Studies*, 11(1), 11-21.
- Berger, A.A. (2000). *Media and Communication Research Methods: An Introduction to Qualitative and Quantitative Approaches*. Sage Publications, Inc, California.
- Bergsma, M. (2001). Travel Distribution Systems: One-to-One Marketing. In Lockwood, A. and Medlik, S. (eds.). *Tourism and Hospitality in the 21<sup>st</sup> Century*, Butterworth-Heinemann, Oxford.
- Benbasat, I., Goldstein, D.K. & Mead, M. (1987). The Case Research Strategy in Studies of Information Systems. *MIS Quarterly*, 11(3), 369-386.
- Boynton, A.C., Zmud, R.W. & Jacobs, G.C. (1994). The Influence of IT Management Practice on IT Use in Large Organisations. *MIS Quarterly*, 18(3), 299-318.
- Brunt, P. (1997). *Market Research in Travel and Tourism*. Butterworth-Heinemann, Oxford.
- Bryman, A. & Bell, E. (2003). *Business Research Methods*. Oxford University Press, New York.
- Buhalis, D. (2003). *eTourism: Information technology for Strategic Tourism Management*. FT Prentice Hall, Harlow.
- Buhalis, D. & Main, H. (1998). Information Technology in Peripheral Small and Medium Hospitality Enterprises: Strategic Analysis and Critical Factors. *International Journal of Contemporary Hospitality Management*, 10(5), 198-202.
- Buhalis, D. & Deimezi, D. (2004). E-tourism Developments in Greece: Information Communication Technologies Adoption for the Strategic Management of the Greek Tourism Industry. *Tourism and Hospitality Research*, 5(2), 103-130.
- Burke, R.R. (1997). Do You See What I See? The Future of Virtual Shopping. *Journal of Academy of Marketing Science*, 25(4), 352-360.

- Caldeira, M.M. & Ward, J.M. (2003). Using Resource-Based Theory to Interpret the Successful Adoption and Use of Information Systems and Technology in Manufacturing Small and Medium-Sized Enterprises. *European Journal of Information Systems*, 12(2), 127-141.
- Cai, L., Card, J.A. & Cole, S.T. (2004). Content Delivery Performance of World Wide Web Sites of US Tour Operators Focusing on Destinations in China. *Tourism Management*, 25 (2), 219-227.
- Cain, M. & Mittman, R. (2002). *Diffusion of Innovation in Health Care*. California HealthCare Foundation's Publication.
- Cano, V. & Prentice, R. (1998). Opportunities for Endearment to Place through Electronic "Visiting": WWW Homepages and the Tourism Promotion of Scotland. *Journal of Tourism Management*, 19 (1), 67-73.
- Cao, Y., Gruca, T.S. & Klemz, B.R. (2003). Internet Pricing, Price Satisfaction, and Customer Satisfaction. *International Journal of Electronic Commerce*, 8(2), 31-50.
- Carrol, B. & Sigauw, J. (2003). The Evolution of Electronic Distribution: Effects on Hotels and Intermediaries. *Cornell Hotel and Restaurant Administration Quarterly*, 44(4), 38-50.
- Cavana, R.Y., Delahaye, B.L. & Sekaran, U. (2001). *Applied Business Research: Qualitative and Quantitative Methods*. John Wiley & Sons, Milton.
- Chaffey, D., Mayer, R., Johnston, k., & Ellis-Chadwick, F. (2003). *Internet Marketing* (2<sup>nd</sup> ed.). Pearson Education, London.
- Chau, P.Y.K. & Tam, K.Y. (1997). Factors Affecting the Adoption of Open Systems: An Exploratory Study. *MIS Quarterly*, 21(1), 1-24.
- Chen, S. (2005). *Strategic Management of E-Business* (2<sup>nd</sup> ed.). John Wiley & Sons, West Sussex.
- Choi, S. & Kimes, S.E. (2002). Electronic Distribution Channels' Effect on Hotel Revenue Management. *Cornell Hotel and Restaurant Administration Quarterly*, 43(3), 23-31.
- Chung, T. & Law, R. (2003). Developing A Performance Indicator for Hotel Websites. *International Journal of Hospitality Management*, 22(1), 119-125.

- Chu, R. (2001). What Online Hong Kong Travelers Look for on Airline/Travel Websites? *International Journal of Hospitality Management*, 20(1), 95-100.
- Churchill, G.A. & Iacobucci, D. (2002). *Marketing Research: Methodological Foundations* (8<sup>th</sup> ed.). Harcourt, Inc., Orlando.
- Connolly, D.J., Olsen, M.D. & Moore, R.G. (1998). The Internet as A Distribution Channel. *Cornell Hotel and Restaurant Administration Quarterly*, 39(4), 42-54.
- Cooper, R.B. & Zmud, R.W. (1990). Information Technology Implementation Research: A Technological Diffusion Approach. *Management Science*, 36(2), 123-139.
- Cortada, J.W. (2001). *21<sup>ST</sup> Century Business: Management and Working in the New Digital Economy*. Prentice-Hall, Inc. New York.
- Cox, B. & Koelzer, W. (2004). *Internet Marketing in Hospitality*. Prentice-Hall, Inc. New Jersey.
- Cramer, D. (2003). *Advanced Quantitative Data Analysis*. Open University Press, Maidenhead, Philadelphia.
- Creswell, J.W. (2003). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (2<sup>nd</sup> ed.). Sage Publications, Inc., California.
- Daniel, E., Wilson, H. & Myers, A. (2002). Adoption of E-Commerce by SMEs in the UK. *International Small Business Journal*, 20(3), 253-268.
- Damanpour, F. (1991). Organizational Innovation: A Meta-Analysis of Effects of Determinants and Moderators. *Academy of Management Journal*, 34(3), 555-590.
- Damanpour, F. (1996). Organisational Complexity and Innovation Developing and Testing Multiple Contingency Models. *Management Science*, 42(5), 693-716.
- Damanpour, F. (2002). Research on Organisational Innovation: Innovation-Generating Versus Innovation-Adopting Organisations. *Proceedings of Annual Meeting of the Decision Sciences Institute*, November, 2002, San Diego, California.

- Davies, B. (2003). The Role of Quantitative and Qualitative Research in Industrial Studies of Tourism. *International Journal of Tourism Research*, 5 (2), 97-111.
- Davis, F.D. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Quarterly*, 13(3), 319-339.
- Denzin, N.K. & Lincoln, Y.S. (1994). *Handbook of Qualitative Research*. Sage Publications, London.
- DeTienne, D.R. & Koberg, C.S. (2002). The Impact of Environmental and Organizational Factors on Discontinuous Innovation within High-Technology Industries. *IEEE Transactions on Engineering Management*, 49(4), 352-364.
- De Vaus, D.A. (2002). *Surveys in Social Research* (5<sup>th</sup> ed.). Allen & Unwin, Crows Nest.
- Dholakia R.R. & Kshetri, N. (2004). Factors Impacting the Adoption of the Internet among SMEs. *Small Business Economics*, 23(4), 311-322.
- Doll, W.J. (1985). Avenues for Top Management Involvement in Successful MIS Development. *MIS Quarterly*, 9(1), 17-35.
- Domegan, C.T. (1996). The Adoption of Information Technology in Customer Service. *European Journal of Marketing*, 30(6), 52-69.
- Directory of Thai Hotel Association. (2003-2004). *Thailand Official Hotel Directory*. Bangkok.
- Economist Intelligence Unit. (2003). The 2003 E-Readiness Rankings. [Online Internet] Available: <http://www.eiu.com> accessed on 18 October 2003.
- Economist Intelligence Unit. (2005). The 2005 E-Readiness Rankings. [Online Internet] Available: <http://www.eiu.com> accessed on 25 June 2005.
- Eisenhardt, K.M. (1989). Building Theories from Case Study Research. *Academy of Management Review*, 14(4), 532-550.
- Engage Technologies & Nvision (1999). Research Reveals Four out of Five Visitors Won't Return to A Web Site. [Online] Available: <http://www.prnewswire.co.uk/cgi/news/release?id=19043> accessed on 25 June 2005.

- Euromonitor International (2006). Travel and Tourism in Thailand. [Online] Available: [http://researchandmarkets.com/reportinfo.asp?report\\_id=64081&t=e&cat\\_id=](http://researchandmarkets.com/reportinfo.asp?report_id=64081&t=e&cat_id=) accessed on 1 April 2007.
- European Travel Commission. (2005). New Media Review: Travel Booking. [Online] Available: <http://www.etcnewmedia.com/review/default.asp?SectionID=11&CountryID=>...accessed on 27 Jan 2006.
- Field, A. (2005). *Discovering Statistics Using SPSS* (2<sup>nd</sup> ed.). Sage Publications, London.
- Foddy, W. (1993). *Constructing Questions for Interviews and Questionnaires: Theory and Practice in Social Research*. Melbourne.
- Francis, G. (2004). *Introduction to SPSS for Windows Versions 12.0 & 11.0: with Notes for Studentware* (4<sup>th</sup> ed.). Pearson Education, Sydney.
- Frey, S., Schegg, R. & Steiner, T. (2002). Benchmarking Internet Use for the Marketing of Swiss Hotels. In Wober, K., Frew, A. & Hitz, M. (eds.). *Information and Communication Technologies in Tourism 2002*, New York: Springer-Verlag, 294-302.
- Friend, L.A., Alexander, B. & Godwin, B. (2006). Learning to Trust e-Tailers: Strategies Used by Consumers in A Distrustful Environment. *Journal of Research for Consumers*, 10, 1-9.
- Gable, G.G. (1994). Integrating Case Study and Survey Research Methods: An Example in Information Systems. *European Journal of Information Systems*, 3(2), 112-126.
- Garces, S.A., Gorgemans, S. & Sanchez, A.M. (2004). Implications of the Internet - An Analysis of the Aragonese Hospitality Industry, 2002. *Tourism Management*, 25(5), 603-613.
- Gatignon, H. & Robertson, T.S. (1989). Technology Diffusion: An Empirical Test of Competitive Effects. *Journal of Marketing*, 53(1), 35-49.
- Gilbert, D.C., Powell-Perry, J. & Widijoso, S. (1999). Approaches by Hotels to the Use of the Internet as A Relationship Marketing Tool. *Journal of Marketing Practice: Applied Marketing Science*, 5(1), 21-38.

- Gilbert, D. & Powell-Perry, J. (2002). Exploring Developments in Web Based Relationship Marketing Within the Hotel Industry. *Journal of Hospitality & Leisure Marketing*, 9(3/4), 141-159.
- George, D. & Mallery, P. (2003). *SPSS for Windows Step by Step: A Simple Guide and Reference 11.0 Update* (4<sup>th</sup> ed.). Pearson Education, Boston.
- Gregory, S.R., Kline, S.F. & Breiter, D. (2005). Group Sales and Marketing in Convention Hotels: Internet and Web Usage. *Journal of Travel & Tourism Marketing*, 18(1), 67-77.
- Grover, V. (1993). An Empirically Derived Model for the Adoption of Customer-Based Interorganisational Systems. *Decision Sciences*, 24(3), 603-640.
- Hair, J.F., Anderson, R.E., Tatham, R.L. & Black, W.C. (1998). *Multivariate Data Analysis* (5<sup>th</sup> ed.). Prentice-Hall, New Jersey.
- Hair, J.F., Babin, B., Money, A.H. & Samouel, P. (2003). *Essentials of Business Research Methods*. John Wiley & Sons, New Jersey.
- Heung, V.C.S. (2003). Barriers to Implementing E-Commerce in the Travel Industry: A Practical Perspective. *International Journal of Hospitality Management*, 22(1), 111-118.
- Hoffman, D.L., Novak, T.P. & Peralta, M. (1999). Building Consumer Trust Online. *Communications of the ACM*, 42(4), 80-85.
- Ho, J. (2002). Easy-to-Use Multilingual Communication over the Internet: Facilitating E-Business for the Hotel Industry. *Cornell Hotel and Restaurant Administration Quarterly*, 43(2), 18-25.
- Hotelclub. (2005). Online Bookings Continue upward Trend. [Online] Available: <http://www.hospitalitymagazine.com.au/articles> accessed on 26 Feb 2005.
- Hsu, K., Zhu, Z. & Agrusa, J. (2004). Turning Click-Through Visitors into Customers: A Study of Chinese Hotel Websites. *Journal of Hospitality & Leisure Marketing*, 11(4), 81-91.
- Huang, X. & Law, R. (2003). Modeling and Comparing Internet Marketing: A Study of Mainland China and Hong Kong Based Hotel Websites. In Frew, A.J., Hitz, M. & O'Connor (eds.). *Information and Communication Technologies in Tourism*, Springer-Verlag Wien, New York, 173-182.

- Iacovou, C.L., Benbasat, I. & Dexter, A.S. (1995). Electronic Data Interchange and Small Organizations: Adoption and Impact of Technology. *MIS Quarterly*, 5(4), 465-485.
- Internet Systems Consortium. (2005). Internet Domain Survey: Number of Hosts Advertised in the DNS. [Online] Available: <http://www.isc.org/ops/ds/reports/2005-07/> accessed on 31 Jan 2006.
- Internet World Stats. (2006). World Internet Usage and Population Statistics. [Online] Available: <http://www.internetworldstats.com/stats3.htm/> accessed on 31 Jan 2006.
- ITU. (2002). Bits and Bahts: Thailand Internet Case Study. [Online] Available: <http://www.itu.int/ITU-D/ict/cs> accessed 10 October 2003.
- Jarvenpaa, S.L. & Todd, P.A. (1997). Consumer Reactions to Electronic Shopping on the World Wide Web. *International Journal of Electronic Commerce*, 1(2), 59-88.
- Jennings, G. (2001). *Tourism Research*. John Wiley & Sons Australia, Ltd., Milton.
- Jick, T.D. (1979). Mixing Qualitative and Quantitative Methods: Triangulation in Action. *Administrative Science Quarterly*, 24(4), 602-610.
- Jeong, M. (2004). An Exploratory Study of Perceived Importance of Web Site Characteristics: The Case of the Bed and Breakfast Industry. *Journal of Hospitality & Leisure Marketing*, 11(4), 29-44.
- Jeong, M. & Lambert, C.U. (2001). Adaptation of An Information Quality Framework to Measure Customers' Behavioral Intentions to Use Lodging Web sites. *International Journal of Hospitality Management*, 20(2), 129-146.
- Jeong, M., Oh, H. & Gregoire, M. (2003). Conceptualizing Web Site Quality and Its Consequences in the Lodging Industry. *International Journal of Hospitality Management*, 22(2), 161-175.
- Jeong, M., Oh, H. & Gregoire, M. (2005). The Role of Web Site Quality in Online Hotel Reservations. *Information Technology in Hospitality*, 4(1), 3-13.
- Jupiter Media Metrix, March. (2002). [Online] Available: <http://www.visualfrenzy.com/industry.html> accessed 18 November 2003.

- Jupiter Research. (2005). The U.S. Online Travel Industry Will Reach \$104 Billion by 2010. [Online] Available: <http://www.jupitermedia.com/corporate/releases/05.11.03-newjupresearch.htm>... accessed 4 Feb 2006.
- Kaplan, B. & Duchon, D. (1988). Combining Qualitative and Quantitative Methods in Information Systems Research: A Case Study. *MIS Quarterly*, 12(4), 571-586.
- Karahanna, E., Straub, D.W. & Chervany, N.L. (1999). Information Technology Adoption Across Time: A Cross Sectional Comparison of Pre-Adoption and Post Adoption Beliefs. *MIS Quarterly*, 23(2), 183-213.
- Kasavana, L.K., Knuston, B.J. & Polonowski, S.J. (1997). The Future of Hospitality Internet Marketing. *Journal of Hospitality & Leisure Marketing*, 5(1), 31-44.
- Krantz, M., Cole, P.E., Dowell, W., Pascual, A.M. & Jackson, D.S. (1998). Click Till You Drop. *Time Magazine*, 152(3), 34-39.
- Kendall, J., Tung, L.L., Chua, K.H., Ng, C.H.D. & Tan, S.M. (2001). Electronic Commerce Adoption by SMEs in Singapore. *Proceeding of the 34<sup>th</sup> Hawaii International Conference on System Sciences*, Hawaii, 1-10.
- Keeney, R. (1999). The Value of Internet Commerce to the Customer. *Management Science*, 45(4), 533-542.
- Kim, W.G. & Kim, D.J. (2004). Factors Affecting Online Hotel Reservation Intention between Online and Non-Online Customers. *International Journal of Hospitality Management*, 23 (4), 381-395.
- Kimberly, J.R. & Evanisko, M.J. (1981). Organisational Innovation: The Influence of Individual, Organisational, and Contextual Factors on Hospital Adoption of Technological and Administrative Innovations. *Academy of Management Journal*, 24(4), 689-713.
- Kotler, P., Bowen, J. & Makens, J. (2003). *Marketing for Hospitality and Tourism* (3<sup>rd</sup> ed.). Upper Saddle River, New Jersey.
- Kuan, K.K.Y. & Chau, P.Y.K. (2001). A Perception-Based Model for EDI Adoption in Small Businesses Using A Technology-Organisation-Environment Framework. *Information & Management*, 38(8), 507-521.

- Lane, M.S. & Cavaye, A.L.M. (1999). The Covergence of IT and Marketing in the Ongoing Development of An Internet Marketing Web Site. *Proceeding 10<sup>th</sup> Australian Conference on Information Systems*, 495-507.
- Law, R. & Hsu, C.H.C. (2005). Customers' Perceptions on the Importance of Hotel Web Site Dimensions and Attributes. *International Journal of Contemporary Hospitality Management*, 17(6), 493-503.
- Law, R. & Leung, R. (2000). A Study of Airlines' Online Reservation Services on the Internet. *Journal of Travel Research*, 39(2), 202-211.
- Law, R. & Wong, J. (2003). Successful Factors for A Travel Website: Perceptions of Online Purchasers in Hong Kong. *Journal of Hospitality & Tourism Research*, 27 (1), 118-124.
- Lee, M.K.O. & Turban, E. (2001). A Trust Model for Consumer Internet Shopping. *International Journal of Electronic Commerce*, 6(1), 75-91.
- Leong, C.C. (2001). Marketing Practices and Internet Marketing: A Study of Hotels in Singapore. *Journal of Vacation Marketing*, 7(2), 179-187.
- Leong, C.C. (2002). Evaluation of E-Commerce of the Hotel Industry: The Singapore Inbound Travel Agents (B2B) Perspective. *Proceeding of Conference on Tourism in Asia: Development, Marketing & Sustainability: The Fifth Biennial Conference, Hong Kong*, 343-353.
- Lertwongsatien, C. & Wongpinunwatana, N. (2003). E-Commerce Adoption in Thailand: An Empirical Study of Small and Medium Enterprises (SMEs). *Journal of Global Information Technology Management*, 6(3), 67-83.
- Liang, K. & Law, R. (2003). A Modified Functionality Performance Evaluation Model For Evaluating The Performance of China Based Hotel Websites. *Journal of Academy of Business and Economics*, 11(2), 193-208.
- Lituchy, T.R. & Rail, A. (2000). Bed and Breakfasts, Small Inns, and the Internet: The Impact of Technology on the Globalization of Small Businesses. *Journal of International Marketing*, 8(2), 86-97.
- Luo, X. & Seyedian M. (2003). Context Marketing and Customer - Orientation Strategy for E-Commerce: An Empirical Analysis. *International Journal of Electronic Commerce*, 8(2), 95-118.

- Maanen, J.V. (1979). Reclaiming Qualitative Methods for Organisational Research: A Preface. *Administrative Science Quarterly*, 15(1), 520-526.
- Maguire, C, Kazlauskas, E.J. & Weir, A.D. (1994). *Information Services for Innovative Organisations*. Academic Press, Inc, California.
- Main, H. (1995). Information Technology and the Independent Hotel – Failing to Make the Connection? *International Journal of Contemporary Hospitality Management*, 7(6), 30-32.
- Mandel, N. & Johnson, E. (1998). Constructing Preferences Online: Can Web Page Change What You Want? Working Paper, University of Pennsylvania.
- Martin, L.M. (2004). E-Innovation: Internet Impacts on Small UK Hospitality Firms. *International Journal of Contemporary Hospitality Management*, 16(2), 82-90.
- Mason, D.D.M. & Roberts, E. (2004). Guest Perceptions and Uncertainty: A Study of the Hotel Booking Process. *International Journal of Hospitality & Tourism Administration*, 5(3), 49-68.
- McCole, P. (2002). The Role of Trust for Electronic Commerce in Services. *International Journal of Contemporary Hospitality Management*, 14(2), 81-87.
- Mckay, J. & Marshall, P. (2004), *Strategic Management of E-Business*. John Wiley & Sons, Milton.
- McKinney, V., Yoon, K. & Zahedi, F.M. (2002). The Measurement of Web - Customer Satisfaction: An Expectation and Disconfirmation Approach. *Information Systems Research*, 13(3), 296-315.
- Miles, M.B. & Huberman, A.M. (1994). *Qualitative Data Analysis* (2<sup>nd</sup> ed.). Sage Publications, California.
- Miller, W.L. & Crabtree, B.F. (1994). Clinical Research. In N.K. Denzin & Y.S. Lincoln (eds). *Handbook of Qualitative Research*, Sage: Thousand Oaks, CA, 340-352.
- Mintzberg, H. (1979). An Emerging Strategy of Direct Research. *Administrative Science Quarterly*, 24(4), 582-589.

- Misic, M.M. & Johnson, K.L. (1999). Benchmarking: A Tool for Web Site Evaluation and Improvement. *Internet Research: Electronic Networking Applications and Policy*, 9(5), 383-392.
- Mistilis, N., Agnes, P. & Presbury, R. (2004). The Strategic Use of Information and Communication Technology in Marketing and Distribution: A Preliminary Investigation of Sydney Hotels. *Journal of Hospitality and Tourism Management*, 11(1), 42-55.
- Molla, A. & Licker, P.S. (2005). Perceived E-Readiness Factors in E-Commerce Adoption: An Empirical Investigation in a Developing Country. *International Journal of Electronic Commerce*, 10(1), 83-110.
- Monuwe, T.P.Y., Dellaert, B.G.C. & Ruyter, K.D. (2004). What Drives Consumers to Shop Online? A Literature Review. *International Journal of Service Industry Management*, 15 (1), 102-121.
- Moore, G.C. & Benbasat, I. (1991). Development of An Instrument to Measure the Perceptions of Adopting an Information Technology Innovation. *Information Systems Research*, 2(3), 92-222.
- Morrison, A. M. (2002). *Hospitality and Travel Marketing*. Delmar Thomson Learning, New York.
- Morrison, A.M., Stephen, T., Alison, M. & Allison D.M. (1999). Marketing Small Hotels on the World Wide Web. *Information Technology & Tourism*, 2(3/4), 97-113.
- Mullen, T. (2000). Travel's Long Journey to the Web - Companies Seek Customers, Lower Procurement and Operating Costs. *InternetWeek*, 30 Oct (835), 103-106.
- Munro, B.H. (2005). *Statistical Methods for Health Care Research* (5<sup>th</sup> ed.). Lippincott Williams & Wilkins, Massachusetts.
- Murphy, J., Forrest, E.J., Wotring, C.E. & Brymer, R.A. (1996). Hotel Management and Marketing on the Internet. *Cornell Hotel & Restaurant Administration Quarterly*, 37(3), 70-77.
- Murphy, J., Oлару, D., Schegg, R. & Frey, S. (2003). The Bandwagon Effect: Swiss Hotels' Web-site and E-mail Management. *Cornell Hotel and Restaurant Administration Quarterly*, 44(1), 71-87.

- Nambisan, S. & Wang, Y.M. (2000). Web Technology Adoption and Knowledge Barriers. *Journal of Organizational Computing and Electronic Commerce*, 10(2), 129-147.
- NECTEC (National Electronics and Computer Technology Centre) (2005). Thailand ICT Indicators 2005. [Online] Available: <http://www.nectec.or.th/pld/> accessed on 1 November 2005.
- Nielsen, J. (1996). Original Top Ten Mistakes in Web Design. [Online] Available: <http://www.useit.com/alertbox/96505a.html> accessed on 28 Jan 2006.
- Ngai, E.W.T. (2003). Commentary Internet Marketing Research (1987-2000): A Literature Review and Classification. *European Journal of Marketing*, 37(1/2), 24-49.
- Noh, J. & Fitzsimmons, J.A. (1999). Effect of Information Technology on Marketing Performance of Korean Service Firms. *International Journal of Service Industry Management*, 10(3), 307-319.
- Nua Internet Survey. (2001). How Many Online? [Online] Available: [http://www.nua.com/surveys/how\\_many\\_online/world.html/](http://www.nua.com/surveys/how_many_online/world.html/) accessed on 31 Jan 2006.
- Nunnally, J. (1978). *Psychometric Theory*. McGraw-Hill, New York.
- O' Connor, P. (1999). *Electronic Information Distribution in Tourism and Hospitality*. CABI Publishing, Wallingford.
- O' Connor, P. (2002). An Analysis of the Pricing Strategies of the International Hotel Chains. In Wober, K., Frew, A. & Hitz, M. (eds.). *Information and Communication Technologies in Tourism 2002*, New York: Springer-Verlag, 285-293.
- O' Connor, P. (2003). On line Pricing: An Analysis of Hotel Company Practices. *Cornell Hotel and Restaurant Administration Quarterly*, 44(1), 88-96.
- O' Connor, P. & Piccoli, G. (2003). Marketing Hotels Using Global Distribution Systems Revisited. *Cornell Hotel and Restaurant Administration Quarterly*, 44(5-6), 105-114.

- O' Connor, P. & Frew, A.J. (2004). An Evaluation Methodology for Hotel Electronic Channels of Distribution. *International Journal of Hospitality Management*, 23(2), 179-199.
- OECD. (1997). *Electronic Commerce: Opportunities and Challenges for Government*, Paris.
- Olsen, D. & Connolly, D.J. (2000) . Experience-Based Travel: How Technology is Changing the Hospitality Industry, *Cornell Hotel and Restaurant Administration Quarterly*, 41(1), 30-40.
- Pallant, J. (2005). *SPSS Survival Manual* (2<sup>nd</sup> ed.). Allen & Unwin, Sydney.
- Palmer, J.W. (2002). Web Site Usability, Design, and Performance Metrics. *Information Systems Research*, 13(2), 151-167.
- Palmer, J.W. & Griffith, D.A. (1998). An Emerging Model of Web Site Design for Marketing. *Communications of the ACM*, 41 (3), 45-51.
- Paraskevas, A. & Buhalis, D. (2002). Outsourcing IT for Small Hotels: The Opportunities and Challenges of Using Application Service Providers. *Cornell Hotel and Restaurant Administration Quarterly*, 43(2), 27-39.
- Parasuraman, A., Valarie, Z. & Leonard, B. (1985). A Conceptual Model of Service Quality and Its Implications for Future Research. *Journal of Marketing*, 49(4), 41-50.
- Parasuraman, A., Valarie, Z. & Leonard, B. (1988). SERVQUAL: A Multiple-Item Scale for Measuring Consumer Perceptions of Service Quality. *Journal of Retailing*, 64(1), 12-40.
- Parliamentary Office of Science and Technology (POSTNOTE) (2006), ICT in Developing Countries, March, (261), 1-3. [Online] Available: [www.parliament.UK/paliamentary\\_offices/post/pubs2006.cfm](http://www.parliament.UK/paliamentary_offices/post/pubs2006.cfm). accessed on 22 March 2007.
- Patton, M.Q. (2002). *Qualitative Research & Evaluation Methods* (3<sup>rd</sup> ed.). Sage Publication, California.
- Pollard, C. (2003). E-Service Adoption and Use in Small Farms in Australia: Lessons Learned from a Government-Sponsored Programme. *Journal of Global Information Technology Management*, 6(2), 45-63.

- Poel, D.V.D. & Leunis, J. (1999). Consumer Acceptance of the Internet as A Channel of Distribution. *Journal of Business Research*, 45(3), 249-256.
- Poon, S. & Swatman, P.M.C. (1996). Determinants of Small Business Internet Usage: A Multi-Method Investigation of Perceived Benefits. *Proceedings of the 9<sup>th</sup> International Conference on Electronic Commerce*, Bled, Slovenia, 465-483.
- Poon, S. & Swatman, P. (1997). Small Business Use of the Internet: Findings from the Australian Case Studies. *International Marketing Review*, 14(5), 385-402.
- Porter, M. & Millar, V.E. (1985). How Information Gives You Competitive Advantage. *Harvard Business Review*, 63(4), 149-160.
- Phillips, L.W. (1981). Assessing Measurement Error in Key Informant Reports: A Methodological Note on Organisational Analysis in Marketing. *Journal of Marketing Research*, 18(4), 395-415.
- PhoCusWright, December. (2002). [Online] Available: <http://www.visualfrenzy.com/industry.html> accessed 18 November 2003.
- Punch, K.F. (1998). *Introduction to Social Research: Quantitative & Qualitative Approaches*. Sage Publications, London.
- RACV. (2003-2004). *Accommodation Guide* (4<sup>th</sup> ed.). Melbourne.
- Robertson, T.S. & Gatignon, H. (1986). Competitive Effects on Technology Diffusion. *Journal of Marketing*, 50(3), 1-12.
- Rogers, E. M. (1983). *Diffusion of Innovations*. (3<sup>rd</sup> ed.). Free Press, New York.
- Rogers, E. M. (1995). *Diffusion of Innovations*. (4<sup>th</sup> ed.). Free Press, New York.
- Salam, A.F., Rao, H.R. & Pegels, C.C. (1998). Content of Corporate Web Pages as Advertising Media. *Communications of the ACM*, 41(3), 76-77.
- Sahadev, S. & Islam, N. (2005). Why Hotels Adopt ICTs: A Study on ICT Adoption Propensity of Hotels in Thailand. *International Journal of Contemporary Hospitality Management*, 17(5), 391-401.

- Schneider, G.P. (2004). *Electronic Commerce: The Second Wave*. (4<sup>th</sup> ed.). Thomson Course Technology, Massachusetts.
- Schubert, P. & Selz, D. (1999). Web Assessment-Measuring the Effectiveness of Electronic Commerce Sites Going Beyond Traditional Marketing Paradigms. *Proceedings of the 32<sup>nd</sup> Hawaii International Conference on System Sciences*, Hawaii.
- Scowsill, D. (2004). Growth of Online Travel. [Online] Available: [http://www.m-travel.com/news/2004/05/text\\_of\\_speech\\_.html/](http://www.m-travel.com/news/2004/05/text_of_speech_.html/) accessed on 1 Feb 2006.
- Scupola, A.J. (2003). The Adoption of Internet Commerce by SMEs in the South of Italy: An Environmental Technological and Organizational Perspective. *Journal of Global Information Technology Management*, 6(1), 52-71.
- Sellitto, C. & Martin, B. (2003). Internet Web-Site Adoption: A Study of 107 Victorian SME Wineries. [Online] Available: <http://ausweb.scu.edu.au/awo3/papers/sellitto/paper.html> accessed 22 Oct 2003.
- Sekaran, U. (1992). *Research Methods for Business*. (2<sup>nd</sup> ed.). John Wiley & Sons, Inc., New York.
- Sekaran, U. (2003). *Research Methods for Business: A Skill Building Approach*. (4<sup>th</sup> ed.). John Wiley & Sons, Inc., New York.
- Seyal, A. H. & Rahman, M. N. A. (2003). A Preliminary Investigation of E-Commerce Adoption in Small & Medium Enterprises in Brunei. *Journal of Global Information Technology Management*, 6(2), 6-26.
- Sheldon, P.J. (1997). *Tourism Information Technology*. CAP International, London.
- Sigala, M. (2001). Modelling E-Marketing Strategics: Internet Presence and Exploitation of Greek Hotels. *Journal of Travel and Tourism Marketing*, 11 (2/3), 83-103.
- Sigala, M., Lockwood, A. & Jones, P. (2001). Strategic Implementation and IT: Gaining Competitive Advantage from the Hotel Reservations Process. *International Journal of Contemporary Hospitality Management*, 13(7), 364-371.

- Sigala, M. (2003). Developing and Benchmarking Internet Marketing Strategies in the Hotel Sector in Greece. *Journal of Hospitality & Tourism Research*, 27(4), 375-401.
- Siguaw, J.A., Enz, C.A. & Namasivayam, K. (2000). Adoption of Information in U.S. Hotels: Strategically Driven Objectives. *Journal of Travel Research*, 39(2), 192-201.
- Sin, L.Y.M., Tse, A.C.B., Heung, V.C.S. & Yim, F.H.K. (2005). An Analysis of the Relationship between Market Orientation and Business Performance in the Hotel Industry. *International Journal of Hospitality Management*, 24(4), 555-577.
- Singleton, R. A. & Straits, B. C. (1999). *Approaches to Social Research*. Oxford University Press, Inc. New York.
- So, S.I. & Morrison, A.M. (2004). Internet Marketing in Tourism in Asia: An Evaluation of the Performance of East Asian National Tourism Organisation Websites. *Journal of Hospitality & Leisure Marketing*, 11(4), 93-118.
- Song, J.H. & Zinkhan, G.M. (2003). Features of Web Site Design, Perceptions of Web Site Quality, and Patronage Behavior. *Proceedings of the Annual Meeting of the Association of Collegiate Marketing Educators*. March, 2003, Houston, Texas, 106-113.
- Spiliopoulou, M. & Pohle, C. (2001). Data Mining for Measuring and Improving the Success of Web Sites. *Data Mining and Knowledge Discovery*, 5 (1-2), 85-114.
- Starkov, M. & Price, J. (2005). The End of the Merchant Framework. *Netroomz News*. [Online] Available: <http://www.netroomz.com.au/web/merchant-framework.htm> accessed 6 July 2005.
- Starkov, M. & Price, J. (2006). Hotelier's 2006 Top Ten Internet Marketing Resolutions. [Online] Available: [http://www.hotel-online.com/News/PR2006\\_1st/Jan06\\_InternetResolutions.ht](http://www.hotel-online.com/News/PR2006_1st/Jan06_InternetResolutions.ht). accessed on 1Feb 2006.
- Steven, J. (1996). *Applied Multivariate Statistics for the Social Sciences* (3<sup>rd</sup> ed.). Lawrence Erlbaum Associates, Inc., New Jersey.
- Tabachnick G.B. & Fidell L.S. (2001). *Using Multivariate Statistics* (4<sup>th</sup> ed.). Allyn and Bacon, Boston.

- Tan, J.J. & Litschert, R.J. (1994). Environment-Strategy Relationship and its Performance Implications: An Empirical Study of the Chinese Electronics Industry. *Strategic Management Journal*, 15(1), 1-20.
- Tan, M. & Teo, T.S.H. (1998). Factors Influencing the Adoption of the Internet. *International Journal of Electronic Commerce*, 2(3), 5-18.
- Tan, M. & Teo, T.S.H. (2000). Factors Influencing the Adoption of Internet Banking. *Journal of Association for Information System*, 1(5), 1-42.
- Tashakkori, A. & Teddlie, C. (1998). *Mixed Methodology: Combining Qualitative and Quantitative Approaches*. Sage Publications, Inc., California.
- Teo, T.S.H. (2001). Demographic and Motivation Variables Associated with Internet Usage Activities. *Internet Research: Electronic Networking Applications and Policy*, 11(2), 125-137.
- Thong, J.Y.L., Yap, C.S. & Raman, K.S. (1993). Top Management Support in Small Business Information Systems Implementation: How Important is It? *Proceedings of the Conference on Computer Personnel Research*, April, 1993, St Louis, Missouri, 416-425.
- Thong, J.Y.L. & Yap, C.S. (1995). CEO Characteristics, Organisational Characteristics and Information Technology Adoption in Small Business. *Omega-International Journal of Management Science*, 23(4), 429-442.
- Thong, J.Y.L. (1999). An Integrated Model of Information Systems Adoption in Small Businesses. *Journal of Management Information Systems*, 15(4), 187-214.
- Tornatsky, L.G. & Fleischer, M. (1990). *The Process of Technological Innovation*, Lexington Books, Lexington, Mass.
- Tornatsky, L.G. & Klein, K.J. (1982). Innovation Characteristics and Innovation Adoption Implementation: A Meta-Analysis of Findings. *IEEE Transactions on Engineering Management*, 29(1), 28-45.
- Tourism Authority of Thailand (TAT). (2005). Tourism Statistics 1997-2006. [Online] Available: [http://www2.tat.or.th/stat/web/static\\_index.php](http://www2.tat.or.th/stat/web/static_index.php) accessed on 2 Feb 2006.
- Tourism Research Australia. (2006). An Assessment of the Australian domestic tourism market. [Online] Available: <http://www.tra.australia.com> accessed on 1 April 2007.

- UNCTAD. (2004). Handbook of Statistics. [Online] Available: <http://stats.unctad.org/handbook/reportfolders/> accessed on 2 Feb 2006
- UNCTAD. (2005). Information Economy Report. [Online] Available: <http://www.unctad.org/ecommerce/> accessed on 2 Feb 2006.
- Van Hoof, H. B. & Combrink, T.E. (1998). U.S. Lodging Managers and the Internet. *Cornell Hotel and Restaurant Administration Quarterly*, 39(2), 46-54.
- Van Hoof, H.B., Ruys, H.F.M. & Combrink, T.E. (1999). The Use of the Internet in the Queensland Accommodation Industry. *Australian Journal of Hospitality Management*, 6(1), 11-24.
- Veal, A.J. (2006). *Research Methods for Leisure and Tourism: A Practical Guide*. (3<sup>rd</sup> ed.). Pearson Education, Harlow.
- Wan, C.S. (2002). The Web Sites of International Tourist Hotels and Tour Wholesalers in Taiwan. *Tourism Management*, 23(2), 155-160.
- Wang, S. & Cheung, W. (2004). E-Business Adoption by Travel Agencies: Prime Candidates for Mobile E-Business. *International Journal of Electronic Commerce*, 8(3), 43-63.
- Wikipedia, the free encyclopedia. (2006). [Online] Available: [http://en.wikipedia.org/wiki/Information\\_technology](http://en.wikipedia.org/wiki/Information_technology), accessed by 8 July 2006.
- Winata, L. & Mia, L. (2005). Information Technology and the Performance Effect of Managers' Participation in Budgeting: Evidence from the Hotel Industry. *International Journal of Hospitality Management*, 24(1), 21-39.
- Weeks, P. & Crouch, I. (1999). Sites For Sore Eyes: An Analysis of Australian Tourism and Hospitality Web Sites. *Information Technology & Tourism*, 2(3-4), 153-172.
- Whiteley, D. (2000). *E-commerce: Strategy, Technologies and Applications*, McGraw-Hill, Cambridge.
- Wober, K., Scharl, A., Natter, M. & Taudes, A. (2002). Success Factors of European Hotel Web Sites. In Wober, K.W., Frew, A.J. & Hitz, M. (eds), *Information and Communication Technologies in Tourism*, Springer-Verlag Wien, New York, 397-406.

- Wong, J. & Law, R. (2005). Analysing the Intention to Purchase on Hotel Websites: A Study of Travellers to Hong Kong. *International Journal of Hospitality Management*, 24(3), 311-329.
- Wood, E. (2001). Marketing Information Systems in Tourism and Hospitality Small- and Medium-Sized Enterprises: A Study of Internet Use for Market Intelligence. *International Journal of Tourism Research*, 3(4), 283-299.
- Xu, S., Zhu, K. & Gibbs, J. (2004). Global Technology, Local Adoption: A Cross-Country Investigation of Internet Adoption by Companies in the United States and China. *Electronic Markets*, 14 (1), 13-24.
- Yeh, R.J., Leong, J.K., Blecher, L. & Lai, H.H.S. (2005). Analysis of Hoteliers' E-Commerce and Information Technology Applications: Business Travelers' Perceptions and Needs. *International Journal of Hospitality & Tourism Administration*, 6(2), 30-61.
- Yelkur, R. & DaCosta, M.M.N. (2001). Differential Pricing and Segmentation on the Internet: the Case of Hotels. *Management Decision*, 39(4), 252-261.
- Yeung, T.A. & Law, R. (2004). Extending the Modified Heuristic Usability Evaluation Technique to Chain and Independent Hotel Websites. *International Journal of Hospitality Management*, 23(3), 307-313.
- Yin, R.K. (2003). *Case Study Research Design and Methods* (3<sup>rd</sup> ed.). Sage Publications, Inc., California.
- Zaltman, G., Duncan, R. & Holbek, J. (1973). *Innovations and Organisations*. John Wiley & Sons, New York.
- Zeithaml, V. & Bitner, M. (2003). *Services Marketing* (3<sup>rd</sup> ed.). McGraw-Hill Irwin, New York.
- Zhou, Z. (2004). *E-Commerce and Information Technology in Hospitality and Tourism*. Thomson Learning, New York.
- Zickefoose, J. (2001). Websites 101. *Lodging Hospitality*, 57(8), 22-24.
- Zikmund, W.G. (2003). *Business Research Methods* (7<sup>th</sup> ed.). Thomson, Ohio.

## Appendix A1: Checklist for Investigating Web Features

### Checklist of Hotel Internet Site Analysis Form

#### General Information

Hotel Name \_\_\_\_\_ ( ) Chain Hotels ( ) Independent Hotels

Hotel Web Site Address \_\_\_\_\_

Mailing Address \_\_\_\_\_

Tel \_\_\_\_\_ Fax \_\_\_\_\_

Country ( ) Thailand ( ) Australia

Time of Evaluate: Date \_\_\_\_\_ Month \_\_\_\_\_ Year \_\_\_\_\_

#### Content Analysis

Categories	Features	Yes	No
<b>Basic Information</b>	1. Page updated recently		
	2. Own URL		
	3. Tourism information		
	4. Maps of location		
	5. E-mail address		
	6. Feedback form		
	7. Safety & security tips		
<b>E-commerce</b>	8. Reservation offered		
	9. Reservations functioning		
	10. Secure payment system		
<b>Promotions</b>	11. Special Promotions		
	12. Group travel Promotions		
	13. Business Promotions		
	14. Family or kids Promotion		
	15. Restaurant Promotions		
	16. What's new		
<b>Services</b>	17. Frequent visitor program		
	18. Multilingual Site		
	19. Direct e-mail address		
	20. E-mail newsletter		
	21. Gift certificates		
	22. Online forum		
	23. Frequently asked questions		
<b>Technology</b>	24. Download information		
	25. Audio		
	26. Video		
<b>Secondary Information</b>	27. Links to partners		
	28. List of all hotels		
	29. Hotel search capability		
<b>Management Functions</b>	30. Employee of the month		
	31. Employment opportunities		
	32. Shareholder information		

Features adopted from the previous studies by Murphy, et al, 1996

Categories and Checklist form adapted from Weeks and Crouch, 1999 and Leong, 2002

## Appendix A2: Checklist for Investigating Information Needs

### Web Site Evaluation Checklist

**Hotel Name:** \_\_\_\_\_

**Web Site Address:** \_\_\_\_\_

**Date Checked:** \_\_\_\_\_

Question	Answer	How To Score	Pts
<b><i>General Web Information Quality</i></b>			
1. Quick Response Time	Y / N	Y = 1 pt, N = 0 pt	
2. 2-3 clicks for needed information	Y / N	Y = 1 pt, N = 0 pt	
3. I could find the e-mail of a hotel easily	Y / N	Y = 1 pt, N = 0 pt	
4. Phone number provided on main page	Y / N	Y = 1 pt, N = 0 pt	
5. Mailing address provided	Y / N	Y = 1 pt, N = 0 pt	
6. Date of last update provided If provided, when _____	Y / N	Y = 1 pt, N = 0 pt	
7. On-line reservation was provided	Y / N	Y = 1 pt, N = 0 pt	
8. Provided security of personal information	Y / N	Y = 1 pt, N = 0 pt	
9. Confirmation of Reservation immediately	Y / N	Y = 1 pt, N = 0 pt	
<b><i>Hotel facility information and services</i></b>			
10. I could find the room service menu of a hotel easily	Y / N	Y = 1 pt, N = 0 pt	
11. I found the pictures of hotel facilities easily	Y / N	Y = 1 pt, N = 0 pt	
12. I got information on the type of the hotel	Y / N	Y = 1 pt, N = 0 pt	
13. I got information on hotel facilities	Y / N	Y = 1 pt, N = 0 pt	
14. Personal reservation history was provided	Y / N	Y = 1 pt, N = 0 pt	
15. On-Site restaurant information was provided	Y / N	Y = 1 pt, N = 0 pt	
16. Nearby attractions or businesses were provided	Y / N	Y = 1 pt, N = 0 pt	
<b><i>Locality</i></b>			
17. Local weather information was provided	Y / N	Y = 1 pt, N = 0 pt	
18. Local mass transportation was provided	Y / N	Y = 1 pt, N = 0 pt	
19. I could find the map of surrounding area	Y / N	Y = 1 pt, N = 0 pt	
20. I got information on the direction to the hotel	Y / N	Y = 1 pt, N = 0 pt	
21. I could link to car rental	Y / N	Y = 1 pt, N = 0 pt	
22. I could link to hotel partners	Y / N	Y = 1 pt, N = 0 pt	

Question	Answer	How To Score	Pts
<b><i>Room Information</i></b>			
23. Room type was provided	Y / N	Y = 1 pt, N = 0 pt	
24. Room rate was provided	Y / N	Y = 1 pt, N = 0 pt	
25. Special room rate was provided	Y / N	Y = 1 pt, N = 0 pt	
26. I got information on the in-room amenities	Y / N	Y = 1 pt, N = 0 pt	
27. I could find non-smoking accommodations	Y / N	Y = 1 pt, N = 0 pt	
28. I got information on the room availability	Y / N	Y = 1 pt, N = 0 pt	
<b><i>Web design and format</i></b>			
29. Provided frames	Y / N	N = 1 pt, Y = 0 pt	
30. Provided banner	Y / N	N = 1 pt, Y = 0 pt	
31. Provided noise	Y / N	N = 1 pt, Y = 0 pt	
32. Provided Text-only version of the site	Y / N	Y = 1 pt, N = 0 pt	
<b>Total Number of Points For This Site</b>			

Adapted from Misic and Johnson (1999), Jeong and Lambert (2001), Jeong et al. (2003)

## Appendix A3: Results of Pilot Interviews

During the months of September and October 2004, in-depth semi-structured interviews (exploratory study) were conducted at each of six hotels in Thailand. Each interview took approximately one hour to complete. Participants were two general managers, one executive assistant manager, three marketing managers and one front office manager. These hotels have been categorised into four levels according to the degree to which they have adopted the Internet and Web based marketing activities. These categories are shown in Table 1. Participants were two general managers, one executive assistant manager, three marketing managers and one front office manager. Each interview took approximately one hour to complete. Only in Hotel D were in-depth interviews conducted with two managers (Marketing and Front Office Managers).

<b>Hotel</b>	<b>Hotel D</b>	<b>Hotel B</b>	<b>Hotel A, C, E</b>	<b>Hotel F</b>
	<i>Level I</i>	<i>Level I</i>	<i>Level II</i>	<i>Level III</i>
<b>Level of adoption of IWMA</b>	Have e-mail	Have e-mail, and Basic Web page	Have e-mail, hotel own Web site, and receive online bookings	Have e-mail, hotel own Web site, receive online bookings, secure online payment
<b>Number of rooms</b>	199	143	A: 160 C: 700 E: 164	650
<b>Number of Online Bookings</b>	5%	10-20%	A: 6-7% C: 20% E: 20%	20%
<b>Occupancy rates</b>	50-70%	50%	A: 70% C: 70-100% E: 80%	70-100%

### The Results

There were several factors associated with the adoption of Internet and Web based marketing activities. Firstly, most managers were concerned about the budget issues associated with the adoption of Internet and Web based marketing activities. Most believed that using or not using Internet and Web technologies depended on the budget allocated by their top management.

Secondly, most managers perceived that if their hotels do not use the Internet and Web based marketing activities, it affects their competitiveness. This opinion is supported by the following comments:

*Manager A “...most customers use this channel to compare the price with hotel competitors”,*

*Manager B “...approximately 60% of hotel competitors in this area have these technologies”,*

*Manager C “...if my hotel does not use the Internet and Web technologies, my hotel cannot extend to Europe market that is target market”,*

*Manager E “...most competitors are chain hotels having these technologies”,*

*Manager F “...if my hotel does not use the Internet and Web technologies, my hotel cannot distribute product, information, and brand to global market”.*

In addition, most managers reported that using the Internet and Web based technologies can help them to communicate or present their hotel products and information to customers because it is a communication way to mass marketing.

A third major group of factors related to use of the Internet and Web based marketing activities was the benefits, including compatibility and image. Many managers reported that one of the benefits that the hotel received was to extend to the global market, particularly receiving online bookings from overseas customers. The proportion of online bookings reported by most managers was between 5% and 20% of all reservations. In addition, all managers accepted that hotels having these technologies are more sophisticated and have a better image. Furthermore, all hotel managers believed that these technologies are easy and comfortable for their employees to use, and compatible with the work of the hotel. One manager commented that this is an instrument that assists marketing staff to promote hotel products clearly.

The fourth factor was government and technology support, most managers commented that infrastructure in local provinces in Thailand is not good enough for using these technologies. There is no telephone line in some areas. Some managers commented that most Thai people use these technologies for entertainment more than for shopping or buying products. At the same time, most suggested that the government should educate and provide more technology knowledge in schools and for the Thai people. Some managers were satisfied with the government to open free

trade for these technologies to provide customers with more choices, for example providing cheaper computers and promoting hi-speed broadband Internet in this year, 2004 (the year in which the interviews were conducted).

In summary, all except one hotel manager believed that the financial investments made in the adoption of Internet and Web based marketing activities were cost effective. All managers felt that these technologies are easy to use and compatible with the work of the hotel and its employees. Therefore, there is no formal training given about these technologies because computer experiences are a requirement for hotel staff now. One manager reported that he uses e-mail to communicate with the staff in all departments. All respondents foresee that in the future all hotels will need to use these technologies. One manager commented that the hotel does not use these technologies because of lack of confidence to present hotel products on the web. All managers reported that Thai customers prefer to use telephone and fax for bookings while 70% of overseas customers use online bookings. In addition, all managers expected to increase online bookings in the future.

## Appendix B1: Questionnaire for Conducting in Australia



### *Survey Questionnaires* *“Internet and Web Technologies in Hotel Marketing”*

#### **Please Note**

This questionnaire will take 15-20 minutes to complete. Your answers will be treated with strictest confidence by Victoria University and used solely for this research project. No individual information will be forwarded to any external organisation.

This questionnaire is aimed at the person who makes a decision in hotel marketing, e.g. Managing Director, General Manager or Marketing Director. I am aware you are busy, and I would be grateful if you could take the time to answer this questionnaire.

#### **Definition**

**Internet and Web Technologies in Hotel Marketing** are defined as the use of e-mail and the world wide web (www) for conducting hotel or motel marketing, e.g. having e-mail to contact customers directly, using web pages for promoting and advertising hotel services and products (accommodation, bar & restaurant, business centre, hotel facilities, conference rooms, and special promotions), direct selling of hotel products and services, extending distribute channels by receiving bookings via online reservation system, completing transactions and receiving payment.

**Top Management** is defined as the people in the top level of management that set the strategic plans and allocate resources to operate the hotel business, e.g. Board of Directors in four-five star hotels, owner or CEO in independent hotels.

**Customer** is defined as an individual consumer that is the buyer or receiver of hotel products or services produced for its benefits (*excluding companies, organisations, and government agencies*).



**Survey Questionnaires**  
**“Internet and Web Technologies in Hotel Marketing”**

**Part I: Background Information**

*The questions asked in this section will be used for classification purposes only. The information gathered will not be used in any other way and will be kept strictly confidential.*

1. **Name** of organisation (hotel): \_\_\_\_\_
2. Is your hotel an independent or chain hotel? ( ) independent hotel ( ) chain hotel
3. How many rooms does this hotel have? \_\_\_\_\_
4. Date of completion of survey: **Date** ( \_\_\_\_\_ ) **Month** ( \_\_\_\_\_ ) **Year** ( \_\_\_\_\_ )
5. **How many years** have you worked in hotels? \_\_\_\_\_ **years.**
6. Your current **position** in this hotel: \_\_\_\_\_
7. **How long** have you held your current position? \_\_\_\_\_ **years.**
8. **How many full-time employees** does your hotel currently employ? \_\_\_\_\_
9. When was this hotel opened? **Month** ( \_\_\_\_\_ ) and **year** ( \_\_\_\_\_ )
10. Has your management company operated this hotel since opening? ( ) **Yes** ( ) **No**  
*If no, who was the previous management company? \_\_\_\_\_*  
*And when did the previous management company open this hotel? \_\_\_\_\_*  
**If yes, go to the number 11.**
11. Does your hotel use the Internet and Web technologies in its marketing activities?  
 ( ) **Yes** ( ) **No**  
*If yes, please indicate your hotel Web site address (URL) \_\_\_\_\_*  
*And your e-mail \_\_\_\_\_*  
**If no, go to the next section (part 2)**
12. When did your hotel start using the Internet and Web based marketing activities?  
**Month** ( \_\_\_\_\_ ) and **year** ( \_\_\_\_\_ )
13. Please rate the level of Internet and Web technologies adoption in your hotel marketing:  
 (please place a checkmark (X) in the one bracket that is closest to your situation)  
 ( ) *There is only e-mail, no Web site*  
 ( ) *Have e-mail and use travel Web pages for promoting and advertising (Basic Web Page)*  
 ( ) *Have e-mail and hotel's own Web site for receiving online selling and online bookings*  
 ( ) *Have e-mail and hotel's own Web site for receiving online bookings, completing transactions and receiving payment via security system on the Web site.*

### **Part I: Background Information (Cont)**

14. How did you find out about how to use the Internet and Web based marketing activities in hotels?  
(Irrespective of how much you know, you can refer to the range of sources that you have learned from: e.g. University course, working in a hotel, friends, media etc, and comment on their usefulness).

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### ***Part II: Factors Affecting the Adoption of Internet and Web Based Marketing Activities in the Hotel Industry***

Please indicate your level of agreement or disagreement with each of the following statements. For each statement below, please **circle** the number that best describes your view.

- Level of agreement or disagreement*
- 7 = Strongly Agree
  - 6 = Agree
  - 5 = Slightly Agree
  - 4 = Neither Disagree nor Agree
  - 3 = Slightly Disagree
  - 2 = Disagree
  - 1 = Strongly Disagree

<b><u>Top Management Support for</u></b> <i>Internet and Web based marketing activities</i>	<b>Strongly Disagree</b>		<b>Neither Disagree Nor Agree</b>			<b>Strongly Agree</b>	
	1	2	3	4	5	6	7
1. Top management considers the Internet and Web based technologies as important.	1	2	3	4	5	6	7
2. Top management supports, and allocates resources for, the adoption and implementation of Internet and Web based technologies.	1	2	3	4	5	6	7
3. Top management has effectively communicated its support for the adoption and implementation of Internet and Web based technologies.	1	2	3	4	5	6	7

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**Complexity**, and difficulty in using  
*Internet and Web based marketing activities*

	Strongly Disagree		Neither Disagree Nor Agree			Strongly Agree	
4. Internet and Web based technologies are easy for my employees to use.	1	2	3	4	5	6	7
5. Internet and Web based technologies are easy for my customers to use.	1	2	3	4	5	6	7
6. Internet and Web based technologies are clear and understandable for my employees to use.	1	2	3	4	5	6	7
7. Internet and Web based technologies are clear and understandable for my customers to use.	1	2	3	4	5	6	7

**Attitude** towards Internet  
*and Web based marketing activities*

	Strongly Disagree		Neither Disagree Nor Agree			Strongly Agree	
8. My hotel continuously updates information on its Web page.	1	2	3	4	5	6	7
9. It is very important for my hotel to organise information on its Web page to be reliable, relevant, and accurate.	1	2	3	4	5	6	7
10. It is very important for my hotel to design a web page with enough information about hotel products to satisfy customers.	1	2	3	4	5	6	7
11. All hotels will use Internet and Web based technologies <i>in the future</i> .	1	2	3	4	5	6	7
12. Using Internet and Web based technologies is a fast and efficient way to get more information.	1	2	3	4	5	6	7

**Image** in using Internet and  
*Web based marketing activities*

	Strongly Disagree		Neither Disagree Nor Agree			Strongly Agree	
13. Hotels that use Internet technology are more sophisticated than those that do not.	1	2	3	4	5	6	7
14. Hotels that use Internet technology have higher standards than those that do not.	1	2	3	4	5	6	7


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<b>Customers</b>	<b>Strongly Disagree</b>		<b>Neither Disagree Nor Agree</b>			<b>Strongly Agree</b>	
15. My hotel is actively involved in building and maintaining direct customer contacts.	1	2	3	4	5	6	7
16. Customers are considered an important reason for my hotel to adopt the Internet and Web based technologies.	1	2	3	4	5	6	7
17. My customers demand the Internet and Web based technologies.	1	2	3	4	5	6	7

<b>Compatibility of Internet and Web based marketing activities</b>	<b>Strongly Disagree</b>		<b>Neither Disagree Nor Agree</b>			<b>Strongly Agree</b>	
18. Using Internet and Web based technologies is compatible with the way my hotel does business.	1	2	3	4	5	6	7
19. Using Internet and Web based technologies fits well with the way my employees like to work.	1	2	3	4	5	6	7
20. Use of the Internet to conduct hotel bookings is available to my customers.	1	2	3	4	5	6	7
21. Use of the Internet to complete transactions is available to my customers.	1	2	3	4	5	6	7

<b>Organisational Readiness of using Internet and Web based marketing activities</b>	<b>Strongly Disagree</b>		<b>Neither Disagree Nor Agree</b>			<b>Strongly Agree</b>	
22. My hotel gave its staff formal training in the use of Internet and Web technologies before it adopted these technologies.	1	2	3	4	5	6	7
23. The budget was the important factor that my hotel had to deal with before adopting Internet and Web based marketing activities.	1	2	3	4	5	6	7


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**Perceived Benefits** of using  
*Internet and Web based marketing  
activities*

	Strongly Disagree		Neither Disagree Nor Agree			Strongly Agree	
24. My hotel can increase sales and enlarge market share by using Internet and Web based technologies.	1	2	3	4	5	6	7
25. My hotel can reduce operating costs by using Internet and Web based technologies.	1	2	3	4	5	6	7
26. My hotel can extend market reach by using Internet and Web based technologies.	1	2	3	4	5	6	7
27. My hotel can improve customer service by using Internet and Web based technologies.	1	2	3	4	5	6	7
28. My hotel can establish strong relationships with client business partners when using Internet and Web based technologies.	1	2	3	4	5	6	7
29. My hotel can capture and analyse data quickly when using Internet and Web based technologies.	1	2	3	4	5	6	7

**Competition intensity**

	Strongly Disagree		Neither Disagree Nor Agree			Strongly Agree	
30. My hotel actively keeps abreast of new and innovative uses of technology by my competitors.	1	2	3	4	5	6	7
31. My hotel monitors its competitors' moves very closely.	1	2	3	4	5	6	7
32. My hotel has many competitors.	1	2	3	4	5	6	7
33. The rivalry between my hotel and its competitors is very intense.	1	2	3	4	5	6	7
34. Information about competitors use of the Internet and Web technologies was considered important when my hotel was making a decision to use those technologies.	1	2	3	4	5	6	7


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**Perceived Barriers** of using Internet and Web based marketing activities

	Strongly Disagree		Neither Disagree Nor Agree			Strongly Agree	
	1	2	3	4	5	6	7
35. Using Internet technology cannot reduce the costs of providing products and services to our customers.	1	2	3	4	5	6	7
36. Most of my customers are not familiar with conducting online hotel bookings.	1	2	3	4	5	6	7
37. Most of my customers are not familiar with conducting online hotel transactions.	1	2	3	4	5	6	7

**Government Support**

	Strongly Disagree		Neither Disagree Nor Agree			Strongly Agree	
	1	2	3	4	5	6	7
38. The government endorses Internet commerce in my country.	1	2	3	4	5	6	7
39. My government is active in setting up the facilities to enable Internet commerce.	1	2	3	4	5	6	7
40. My government promotes the use of the Internet for commerce.	1	2	3	4	5	6	7

**Technology Support**

	Strongly Disagree		Neither Disagree Nor Agree			Strongly Agree	
	1	2	3	4	5	6	7
41. Advances in Internet security technology provides for safer transactions and purchasing online.	1	2	3	4	5	6	7
42. Faster Internet access speed is important for Internet commerce in the hotel industry.	1	2	3	4	5	6	7
43. Internet technology makes doing business easier in the hotel industry.	1	2	3	4	5	6	7


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## Information System Knowledge

44. Please indicate your highest level of education by using a checkmark ( X )

- ( ) TAFE/ Commercial College  
 ( ) Bachelor's  
 ( ) Master's  
 ( ) Ph.D

Please indicate your level of using Internet and web technologies by circling the number on the scale with each of the following statements:

- Level of using**
- 1 = Never*  
*2 = Once or a few times (rarely)*  
*3 = 1-2 times a month*  
*4 = Once a week*  
*5 = 2-3 times a week*  
*6 = Once a day*  
*7 = Several times a day*

	Never							Several times a day	
	1	2	3	4	5	6	7		
45. I use e-mail to communicate with my employees in my hotel.	1	2	3	4	5	6	7		
46. I use e-mail to contact my customers inside the country.	1	2	3	4	5	6	7		
47. I use e-mail to contact my customers outside the country.	1	2	3	4	5	6	7		
48. I use online (WWW) resources to find information relevant to hotel business	1	2	3	4	5	6	7		
49. I use a computer at my hotel office.	1	2	3	4	5	6	7		
50. I use a computer at my residence.	1	2	3	4	5	6	7		

Please indicate your level of understanding of how to use the Internet and Web for marketing activities by circling the number on the scale that best describes your view.

	Strongly Disagree		Neither Disagree Nor Agree			Strongly Agree	
	1	2	3	4	5	6	7
51. I have a very good understanding of how to use the Internet and Web for marketing activities.	1	2	3	4	5	6	7

## Appendix B2: Questionnaire for Conducting in Thailand

### แบบสอบถามเรื่อง "การใช้เทคโนโลยีอินเทอร์เน็ตและเว็บด้านการตลาดในโรงแรม"

#### คำชี้แจง

แบบสอบถามนี้จะใช้เวลาในการตอบประมาณ 15-20 นาที คำตอบของท่านจะถูกเก็บรักษาไว้เป็นความลับโดย มหาวิทยาลัย  
วิศตอเรีย และจะถูกใช้เพื่อการศึกษาวิจัยในครั้งนี้เท่านั้น

แบบสอบถามนี้เน้นผู้ตอบเป็นบุคคลที่มีอำนาจตัดสินใจด้านการตลาดในโรงแรม เช่น

กรรมการผู้จัดการ ผู้จัดการทั่วไป หรือ ผู้จัดการฝ่ายการตลาด

ดิฉันตระหนักดีว่าท่านเป็นบุคคลที่มีภารกิจค่อนข้างมาก ดิฉันขอขอบคุณและมีความรู้สึกประทับใจเป็นอย่างยิ่ง  
หากท่านสามารถให้ความอนุเคราะห์ในการตอบแบบสอบถามในครั้งนี้

#### คำจำกัดความ

เทคโนโลยีอินเทอร์เน็ตและเว็บด้านการตลาดของโรงแรม หมายถึง การใช้อีเมล และ เว็บ (WWW) สำหรับดำเนิน  
กิจกรรมการตลาดของโรงแรม เช่น การมีอีเมลเพื่อติดต่อกับลูกค้าได้โดยตรง การใช้เว็บเพื่อการประชาสัมพันธ์และการ  
โฆษณาด้านบริการและสินค้าของโรงแรม (ได้แก่ ที่พัก บาร์ ภัตตาคาร ศูนย์ธุรกิจ สิ่งอำนวยความสะดวกของโรงแรม  
ห้องสัมมนา และ การประชาสัมพันธ์พิเศษ) การดำเนินการเกี่ยวกับการขายสินค้าและบริการของโรงแรมโดยตรง  
การขายช่องทางในการรับรองที่พักของโรงแรมผ่านระบบออนไลน์ การใช้ระบบออนไลน์เพื่อการทำธุรกรรมด้านการซื้อ  
และการขายอย่างสมบูรณ์ รวมทั้งการรับการชำระเงิน

ผู้บริหารระดับสูง หมายถึงบุคคลในระดับสูงสุดของการบริหารในโรงแรมที่ทำหน้าที่ในการวางแผนกลยุทธ์ และ มีอำนาจ  
จัดสรรทรัพยากรเพื่อการบริหารในธุรกิจโรงแรม เช่น คณะกรรมการบริหารของ โรงแรม 4-5 ดาว เจ้าของกิจการ หรือ ซีอีโอของ  
โรงแรม

ลูกค้า ในที่นี้หมายถึงลูกค้าแต่ละคนที่เป็นผู้ซื้อหรือผู้รับสินค้าและบริการของโรงแรม (ลูกค้าในที่นี้ไม่ได้รวมบริษัท องค์กร  
และตัวแทนของภาครัฐบาล)

## แบบสอบถามเรื่อง "การใช้เทคโนโลยีอินเทอร์เน็ตและเว็บด้านการตลาดในโรงแรม"

## ส่วนที่ 1 ข้อมูลพื้นฐาน

คำถามที่ถามในส่วนนี้มีวัตถุประสงค์เพื่อใช้ในการศึกษาวิจัยเท่านั้น ข้อมูลที่รวบรวมได้ทั้งหมดจะถูกเก็บรักษาไว้เป็นความลับ

1. ชื่อโรงแรม \_\_\_\_\_
2. โรงแรมของท่านเป็นโรงแรมอิสระ หรือ โรงแรมเชน ? ( ) โรงแรมอิสระ (independent hotel) ( ) โรงแรมเชน (chain hotel)
3. โรงแรมของท่านมีจำนวนห้องเท่าไร? \_\_\_\_\_ ห้อง
4. วันที่กรอกแบบสอบถาม: วัน \_\_\_\_\_ เดือน \_\_\_\_\_ พ.ศ. \_\_\_\_\_
5. ระยะเวลาที่ท่านทำงานอยู่ในธุรกิจโรงแรม \_\_\_\_\_ ปี
6. ตำแหน่งงานของท่านปัจจุบันในโรงแรมนี้ คือ \_\_\_\_\_
7. ท่านได้ดำรงตำแหน่งงานปัจจุบันนี้เป็นระยะเวลาานเท่าไร? \_\_\_\_\_
8. โรงแรมของท่านมีพนักงานทำงานเต็มเวลาจำนวนเท่าไร? \_\_\_\_\_ คน
9. โรงแรมของท่านได้เปิดดำเนินการเมื่อไร? เดือน \_\_\_\_\_ พ.ศ. \_\_\_\_\_
10. บริษัทที่บริหารโรงแรมของท่านขณะนี้ได้บริหารโรงแรมนี้ตั้งแต่เปิดดำเนินการหรือไม่? ( ) ใช่ ( ) ไม่ใช่  
ถ้าไม่ใช่, บริษัทใดบริหารในช่วงเริ่มต้น \_\_\_\_\_  
และบริษัทที่บริหารในช่วงเริ่มต้นได้เปิดดำเนินการโรงแรมนี้เมื่อไร? \_\_\_\_\_  
ถ้าใช่, ตอบข้อ 11
11. โรงแรมของท่านใช้เทคโนโลยีอินเทอร์เน็ตและเว็บด้านกิจกรรมการตลาดหรือไม่? ( ) ใช่ ( ) ไม่ใช่  
ถ้าใช่ กรุณาระบุเว็บไซต์ของโรงแรม (www) \_\_\_\_\_  
และอีเมลของท่าน \_\_\_\_\_  
ถ้าไม่ใช่ ข้ามไปตอบส่วนที่ 2
12. โรงแรมของท่านเริ่มใช้เทคโนโลยีอินเทอร์เน็ตและเว็บเมื่อไร? เดือน \_\_\_\_\_ พ.ศ. \_\_\_\_\_
13. กรุณาระบุระดับการใช้เทคโนโลยีอินเทอร์เน็ตและเว็บด้านกิจกรรมการตลาดในโรงแรมของท่าน  
(กรุณาใช้เครื่องหมายกากบาทในวงเล็บที่ตรงกับระดับของการใช้เทคโนโลยีในโรงแรมของท่านมากที่สุด)  
( ) มีแต่อีเมล ไม่มีเว็บไซต์  
( ) มีอีเมล ใช้เว็บของการท่องเที่ยว/บริษัทตัวแทนท่องเที่ยว สำหรับประชาสัมพันธ์และโฆษณา (เว็บพื้นฐาน)  
( ) มีอีเมล และ เว็บไซต์ของโรงแรมส่วนตัว สำหรับรับการจองโรงแรม  
( ) มีอีเมล และ เว็บไซต์ของโรงแรมส่วนตัว สำหรับรับการจองโรงแรม ชื่อขายอย่างสมบูรณ์ และรับการชำระเงิน
14. ท่านเรียนรู้เกี่ยวกับวิธีการใช้อินเทอร์เน็ตและเว็บด้านกิจกรรมการตลาดในโรงแรมอย่างไร? (โปรดระบุแหล่งที่ท่านเรียนรู้ เช่น จากหลักสูตรในมหาวิทยาลัย จากประสบการณ์การทำงานในโรงแรมของท่าน จากเพื่อน จากสื่อ และ อื่นๆ นอกจากนี้โปรดวิจารณ์ประโยชน์ของแหล่งเรียนรู้เหล่านี้)  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## ส่วนที่ 2

ปัจจัยที่มีอิทธิพลต่อการใช้อินเทอร์เน็ตและเว็บเทคโนโลยีด้านกิจกรรมการตลาดในอุตสาหกรรมโรงแรม

โปรดแสดงระดับความเห็นด้วยหรือไม่เห็นด้วยของท่านที่มีต่อข้อความต่อไปนี้โดยวงกลมหมายเลขที่ตรงกับความคิดเห็นของท่านมากที่สุด

ระดับความเห็นด้วย หรือ ไม่เห็นด้วย	7	=	เห็นด้วยอย่างยิ่ง
	6	=	เห็นด้วย
	5	=	ค่อนข้างเห็นด้วย
	4	=	เฉยๆ
	3	=	ค่อนข้างไม่เห็นด้วย
	2	=	ไม่เห็นด้วย
	1	=	ไม่เห็นด้วยอย่างยิ่ง

การสนับสนุนของผู้บริหารระดับสูง ต่อการใช้อินเทอร์เน็ตและเว็บด้านกิจกรรมการตลาด

	ไม่เห็นด้วยอย่างยิ่ง			เฉยๆ	เห็นด้วยอย่างยิ่ง		
1. ผู้บริหารระดับสูงตระหนักว่าเทคโนโลยีอินเทอร์เน็ตและเว็บเป็นสิ่งสำคัญ	1	2	3	4	5	6	7
2. ผู้บริหารระดับสูงสนับสนุนและจัดสรรทรัพยากรสำหรับการใช้เทคโนโลยีอินเทอร์เน็ตและเว็บ	1	2	3	4	5	6	7
3. ผู้บริหารระดับสูงแสดงท่าทีอย่างชัดเจนต่อการสนับสนุนการใช้เทคโนโลยีอินเทอร์เน็ตและเว็บ	1	2	3	4	5	6	7

ความซับซ้อน และความยากในการใช้อินเทอร์เน็ตและเว็บด้านกิจกรรมการตลาด

	ไม่เห็นด้วยอย่างยิ่ง			เฉยๆ	เห็นด้วยอย่างยิ่ง		
4. เทคโนโลยีอินเทอร์เน็ตและเว็บเป็นสิ่งที่ง่ายสำหรับพนักงานของฉันที่จะใช้	1	2	3	4	5	6	7
5. เทคโนโลยีอินเทอร์เน็ตและเว็บเป็นสิ่งที่ง่ายสำหรับลูกค้าของฉันที่จะใช้	1	2	3	4	5	6	7
6. เทคโนโลยีอินเทอร์เน็ตและเว็บเป็นสิ่งที่สามารถทำความเข้าใจได้ง่ายสำหรับพนักงานของฉันที่จะใช้	1	2	3	4	5	6	7
7. เทคโนโลยีอินเทอร์เน็ตและเว็บเป็นสิ่งที่สามารถทำความเข้าใจได้ง่ายสำหรับลูกค้าของฉันที่จะใช้	1	2	3	4	5	6	7

หน้าถัดไป

**ทัศนคติ** ที่มีต่ออินเทอร์เน็ตและเว็บด้านกิจกรรมการตลาด

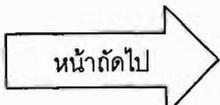
	ไม่เห็นด้วยอย่างยิ่ง			เฉยๆ	เห็นด้วยอย่างยิ่ง		
8. โรงแรมของฉันมีการจัดทำข้อมูลบนเว็บให้ทันสมัยอย่างต่อเนื่อง	1	2	3	4	5	6	7
9. การจัดข้อมูลบนเว็บให้มีความน่าเชื่อถือ สอดคล้อง และถูกต้องเป็นสิ่งที่มีความสำคัญมากสำหรับโรงแรมของฉัน	1	2	3	4	5	6	7
10. การออกแบบเว็บให้มีข้อมูลอย่างเพียงพอเกี่ยวกับสินค้าของโรงแรมเพื่อให้ลูกค้าพึงพอใจเป็นสิ่งที่มีความสำคัญอย่างมากสำหรับโรงแรมของฉัน	1	2	3	4	5	6	7
11. ในอนาคตโรงแรมทั้งหมดจะต้องใช้เทคโนโลยีอินเทอร์เน็ตและเว็บ	1	2	3	4	5	6	7
12. การใช้เทคโนโลยีอินเทอร์เน็ตและเว็บเป็นวิธีที่รวดเร็วและมีประสิทธิภาพต่อการได้รับข้อมูลมากขึ้น	1	2	3	4	5	6	7

**ภาพพจน์** ของการใช้อินเทอร์เน็ตและเว็บด้านกิจกรรมการตลาด

	ไม่เห็นด้วยอย่างยิ่ง			เฉยๆ	เห็นด้วยอย่างยิ่ง		
13. โรงแรมที่ใช้เทคโนโลยีอินเทอร์เน็ตมีความทันสมัยมากกว่าโรงแรมที่ไม่ใช้	1	2	3	4	5	6	7
14. โรงแรมที่ใช้เทคโนโลยีอินเทอร์เน็ตมีมาตรฐานสูงกว่าโรงแรมที่ไม่ได้ใช้	1	2	3	4	5	6	7

**ลูกค้า**

	ไม่เห็นด้วยอย่างยิ่ง			เฉยๆ	เห็นด้วยอย่างยิ่ง		
15. โรงแรมของฉันได้สร้างและดูแลเรื่องการติดต่อกับลูกค้าทางตรง (direct customers) อย่างแข็งขัน	1	2	3	4	5	6	7
16. ลูกค้าเป็นเหตุผลหนึ่งที่สำคัญสำหรับการพิจารณาใช้เทคโนโลยีอินเทอร์เน็ตและเว็บสำหรับโรงแรมของฉัน	1	2	3	4	5	6	7
17. ลูกค้าของฉันเรียกร้องเทคโนโลยีอินเทอร์เน็ตและเว็บ	1	2	3	4	5	6	7


 หน้าถัดไป

**ความสอดคล้อง** ของอินเทอร์เน็ตและเว็บด้านกิจกรรมการตลาด

	ไม่เห็นด้วยอย่างยิ่ง			เฉยๆ	เห็นด้วยอย่างยิ่ง		
18. การใช้เทคโนโลยีอินเทอร์เน็ตและเว็บมีความสอดคล้องกับแนวทางการดำเนินธุรกิจของโรงแรมฉัน	1	2	3	4	5	6	7
19. การใช้เทคโนโลยีอินเทอร์เน็ตและเว็บมีความสอดคล้องกับวิธีปฏิบัติงานที่ชื่นชอบของพนักงานของฉัน	1	2	3	4	5	6	7
20. การใช้อินเทอร์เน็ตสำหรับการจองโรงแรมได้ถูกจัดไว้ให้แก่ลูกค้าของฉันแล้ว	1	2	3	4	5	6	7
21. การใช้อินเทอร์เน็ตสำหรับการซื้อการขายอย่างสมบูรณ์ได้ถูกจัดไว้ให้แก่ลูกค้าของฉันแล้ว	1	2	3	4	5	6	7

**ความพร้อมองค์กร** ของการใช้อินเทอร์เน็ตและเว็บด้านกิจกรรมการตลาด

	ไม่เห็นด้วยอย่างยิ่ง			เฉยๆ	เห็นด้วยอย่างยิ่ง		
22. โรงแรมของฉันได้จัดการอบรมการใช้เทคโนโลยีและเว็บอย่างเป็นทางการแก่พนักงานก่อนที่จะใช้เทคโนโลยีเหล่านี้	1	2	3	4	5	6	7
23. งบประมาณเป็นปัจจัยที่สำคัญที่โรงแรมต้องจัดการก่อนที่จะใช้เทคโนโลยีอินเทอร์เน็ตและเว็บด้านกิจกรรมการตลาด	1	2	3	4	5	6	7

**ผลประโยชน์** ของการใช้อินเทอร์เน็ตและเว็บด้านกิจกรรมการตลาด

	ไม่เห็นด้วยอย่างยิ่ง			เฉยๆ	เห็นด้วยอย่างยิ่ง		
24. โรงแรมของฉันสามารถเพิ่มยอดขายและขยายส่วนแบ่งการตลาดโดยการใช้เทคโนโลยีอินเทอร์เน็ตและเว็บ	1	2	3	4	5	6	7
25. โรงแรมของฉันสามารถลดต้นทุนโดยการใช้เทคโนโลยีอินเทอร์เน็ตและเว็บ	1	2	3	4	5	6	7
26. โรงแรมของฉันสามารถขยายตลาดได้สำเร็จโดยการใช้เทคโนโลยีอินเทอร์เน็ตและเว็บ	1	2	3	4	5	6	7
27. โรงแรมของฉันสามารถปรับปรุงการบริการแก่ลูกค้าให้ดีขึ้นโดยการใช้เทคโนโลยีอินเทอร์เน็ตและเว็บ	1	2	3	4	5	6	7
28. โรงแรมของฉันสามารถสร้างความสัมพันธ์กับธุรกิจคู่ค้าโดยการใช้เทคโนโลยีอินเทอร์เน็ตและเว็บ	1	2	3	4	5	6	7
29. โรงแรมของฉันสามารถคัดเลือกและวิเคราะห์ข้อมูลได้รวดเร็วโดยการใช้เทคโนโลยีอินเทอร์เน็ตและเว็บ	1	2	3	4	5	6	7

**ความรุนแรงในการแข่งขัน**

	ไม่เห็นด้วยอย่างยิ่ง			เฉยๆ			เห็นด้วยอย่างยิ่ง		
30. โรงแรมของจีนติดตามความใหม่และการเปลี่ยนแปลงของการใช้เทคโนโลยีของคุณแข่งอย่างสม่ำเสมอ	1	2	3	4	5	6	7		
31. โรงแรมของจีนติดตามการเคลื่อนไหวของคุณแข่งอย่างใกล้ชิด	1	2	3	4	5	6	7		
32. โรงแรมของจีนมีคู่แข่งจำนวนมาก	1	2	3	4	5	6	7		
33. การแข่งขันระหว่างโรงแรมของจีนและคู่แข่งรุนแรงมาก	1	2	3	4	5	6	7		
34. ข้อมูลการใช้เทคโนโลยีของคุณแข่งมีความสำคัญต่อการตัดสินใจใช้เทคโนโลยีของโรงแรมจีน	1	2	3	4	5	6	7		

**อุปสรรค** ของการใช้อินเทอร์เน็ตและเว็บด้านกิจกรรมการตลาด

	ไม่เห็นด้วยอย่างยิ่ง			เฉยๆ			เห็นด้วยอย่างยิ่ง		
35. การใช้เทคโนโลยีอินเทอร์เน็ตไม่สามารถลดต้นทุนของสินค้าและบริการให้แก่ลูกค้าได้	1	2	3	4	5	6	7		
36. ลูกค้าของจีนส่วนใหญ่ไม่คุ้นเคยกับการจองโรงแรมทางออนไลน์	1	2	3	4	5	6	7		
37. ลูกค้าของจีนส่วนใหญ่ไม่คุ้นเคยกับการซื้อขายทางออนไลน์ของโรงแรม	1	2	3	4	5	6	7		

**การสนับสนุนของรัฐบาล**

	ไม่เห็นด้วยอย่างยิ่ง			เฉยๆ			เห็นด้วยอย่างยิ่ง		
38. รัฐบาลของประเทศจีนได้ลงนามรับรองการดำเนินธุรกิจทางอินเทอร์เน็ตอย่างเป็นทางการ	1	2	3	4	5	6	7		
39. รัฐบาลของจีนได้จัดตั้งอำนาจความสะดวกอย่างสม่ำเสมอ เพื่อให้การดำเนินธุรกิจทางอินเทอร์เน็ตมีศักยภาพ	1	2	3	4	5	6	7		
40. รัฐบาลของจีนส่งเสริมให้มีการใช้อินเทอร์เน็ตเพื่อดำเนินธุรกิจ	1	2	3	4	5	6	7		

## การสนับสนุนด้านเทคโนโลยี

	ไม่เห็นด้วยอย่างยิ่ง			เฉยๆ	เห็นด้วยอย่างยิ่ง		
41. ความก้าวหน้าของเทคโนโลยีอินเทอร์เน็ตด้านความปลอดภัย ช่วยทำให้การซื้อขายทางออนไลน์มีความปลอดภัยขึ้น	1	2	3	4	5	6	7
42. ความเร็วของอินเทอร์เน็ตยิ่งมากขึ้นจะมีความสำคัญ ต่อการดำเนินธุรกิจทางอิเล็กทรอนิกส์ในอุตสาหกรรมโรงแรม	1	2	3	4	5	6	7
43. เทคโนโลยีอินเทอร์เน็ตช่วยให้การดำเนินธุรกิจ ในอุตสาหกรรมโรงแรมมีความคล่องตัวขึ้น	1	2	3	4	5	6	7

## ความรู้เกี่ยวกับระบบข้อมูล

44. โปรดระบุระดับการศึกษาที่สูงสุดของท่านโดยใช้กากบาท (x)

- ( ) อนุปริญญา หรือ ประกาศนียบัตรวิชาชีพชั้นสูง  
 ( ) ปริญญาตรี  
 ( ) ปริญญาโท  
 ( ) ปริญญาเอก

โปรดระบุระดับการใช้เทคโนโลยีอินเทอร์เน็ตและเว็บของท่านโดยวงกลมหมายเลขที่แสดงระดับในแต่ละข้อความต่อไปนี้

ระดับการใช้	1	=	ไม่เคย					วันละหลายครั้ง
	2	=	นานๆครั้ง					
	3	=	1-2 ครั้งต่อเดือน					
	4	=	1 ครั้งต่อสัปดาห์					
	5	=	2-3 ครั้งต่อสัปดาห์					
	6	=	วันละ 1 ครั้ง					
	7	=	วันละหลายครั้ง					
			ไม่เคย					วันละหลายครั้ง
45. ฉันใช้อีเมลในการสื่อสารกับพนักงานในโรงแรมของฉัน	1	2	3	4	5	6	7	
46. ฉันใช้อีเมลในการติดต่อกับลูกค้าในประเทศของฉัน	1	2	3	4	5	6	7	
47. ฉันใช้อีเมลในการติดต่อกับลูกค้าต่างประเทศของฉัน	1	2	3	4	5	6	7	
48. ฉันใช้แหล่งข้อมูลออนไลน์(เว็บ)เพื่อค้นหาข้อมูลที่ สอดคล้องต่อกิจการของโรงแรม	1	2	3	4	5	6	7	
49. ฉันใช้คอมพิวเตอร์ที่ทำงานของฉัน	1	2	3	4	5	6	7	
50. ฉันใช้คอมพิวเตอร์ที่บ้านของฉัน	1	2	3	4	5	6	7	

โปรดระบุระดับความเข้าใจของท่านเกี่ยวกับวิธีใช้อินเทอร์เน็ตและเว็บด้านกิจกรรมการตลาดโดยวงกลมหมายเลขที่ตรงกับความคิดเห็นของท่านมากที่สุด

	ไม่เห็นด้วยอย่างยิ่ง			เฉยๆ	เห็นด้วยอย่างยิ่ง		
51. ฉันมีความเข้าใจอย่างดีมากเกี่ยวกับการใช้อินเทอร์เน็ต และเว็บด้านกิจกรรมการตลาด	1	2	3	4	5	6	7

ขอขอบคุณทุกท่านที่กรุณาตอบแบบสอบถาม  
กรุณาส่งแบบสอบถามคืน โดยใช้ซองที่แนบมาให้

หากท่านมีข้อสงสัยหรือเสนอแนะโปรดติดต่อ

ผู้ช่วยศาสตราจารย์ สุรีย์ เข้มทอง (ผู้วิจัย)

สาขามนุษยนิเวศน์ศาสตร์ มหาวิทยาลัยสุโขทัยธรรมมาธิราช

โทรที่ทำงาน 02-503 3639 หรือ ที่บ้าน 02-944 8975

หรือ [Suree.Khemthong@research.vu.edu.au](mailto:Suree.Khemthong@research.vu.edu.au)

## Appendix B3: Survey Covering Letter for Conducting in Australia

### Victoria University

PO Box 14428 Telephone: (03) 9248 1066  
MELBOURNE CITY MC VIC 8001  
Australia Facsimile: (03) 9248 1064

Faculty of Business and Law  
City Flinders Campus  
300 Flinders Street Melbourne



1 February 2005  
Dear General Manager,

I am currently carrying out research for the degree of Doctor of Philosophy (Ph.D.) through the School of Hospitality, Tourism and Marketing at Victoria University, Melbourne, Australia. The aim of this study is to examine the use of Internet and Web based marketing activities by the hotel industry.

I would like to invite you to be a part of my Ph.D. study into "*Internet and Web Technologies in Hotel Marketing*".

Your assistance in this matter is much appreciated and will lead to a greater understanding of Internet and Web based marketing activities in the hotel industry. The findings from this study will be used to make recommendations for global hotel Internet marketing strategies.

It would be greatly appreciated if you would kindly complete the attached questionnaire and return it in the prepaid reply envelope at your earliest convenience, preferably by **25 February 2005**. If you have any queries regarding this research project or would like to receive a complimentary copy of the summary results of this research, please feel free to contact me by e-mail at [Suree.Khemthong@research.vu.edu.au](mailto:Suree.Khemthong@research.vu.edu.au) or by phone # on 613 9248 1075 or my supervisor's e-mail address at [Linda.Roberts@vu.edu.au](mailto:Linda.Roberts@vu.edu.au) or by phone # on 613 9248 1320.

Thank you very much for your time and co-operation.

Yours faithfully,  
Suree Khemthong  
Ph.D. Candidate  
School of Hospitality, Tourism and Marketing  
Victoria University, Melbourne, Australia  
Tel. 61 3 9248 1075  
E-MAIL: [Suree.Khemthong@research.vu.edu.au](mailto:Suree.Khemthong@research.vu.edu.au)

## Appendix B4: Survey Covering Letter Conducting in Thailand

Victoria University  
PO Box 14428 Telephone: (03) 9248 1066  
MELBOURNE CITY MC VIC 8001  
Australia Facsimile: (03) 9248 1064

Faculty of Business and Law  
City Flinders Campus  
300 Flinders Street Melbourne



20 พฤษภาคม 2548

เรื่อง ขอความอนุเคราะห์ในการตอบแบบสอบถาม  
เรียน ท่านผู้จัดการทั่วไป

ด้วยขณะนี้ดิฉัน (ผู้วิจัย) นางสาวสุรีย์ เข้มทอง ผู้ช่วยศาสตราจารย์ประจำสาขาวิชามนุษย์  
นิเวศน์ศาสตร์ มหาวิทยาลัยสุโขทัยธรรมาธิราช กำลังศึกษาในระดับปริญญาเอกด้านการ โรงแรมและ  
ท่องเที่ยว ณ มหาวิทยาลัยวิกตอเรีย ประเทศออสเตรเลีย และกำลังอยู่ในระหว่างการศึกษาวิจัยเรื่อง "การใช้  
เทคโนโลยีด้านอินเทอร์เน็ตและเว็บไซต์เพื่อการตลาดของ โรงแรม: กรณีศึกษาโรงแรมในประเทศไทยและ  
ออสเตรเลีย (Adoption and Diffusion of Internet and Web Technologies in Hotel Marketing: A  
Study of Hotels in Thailand and Australia)" ซึ่งเป็นส่วนหนึ่งของวิทยานิพนธ์ของหลักสูตรที่กำลัง  
ศึกษาอยู่

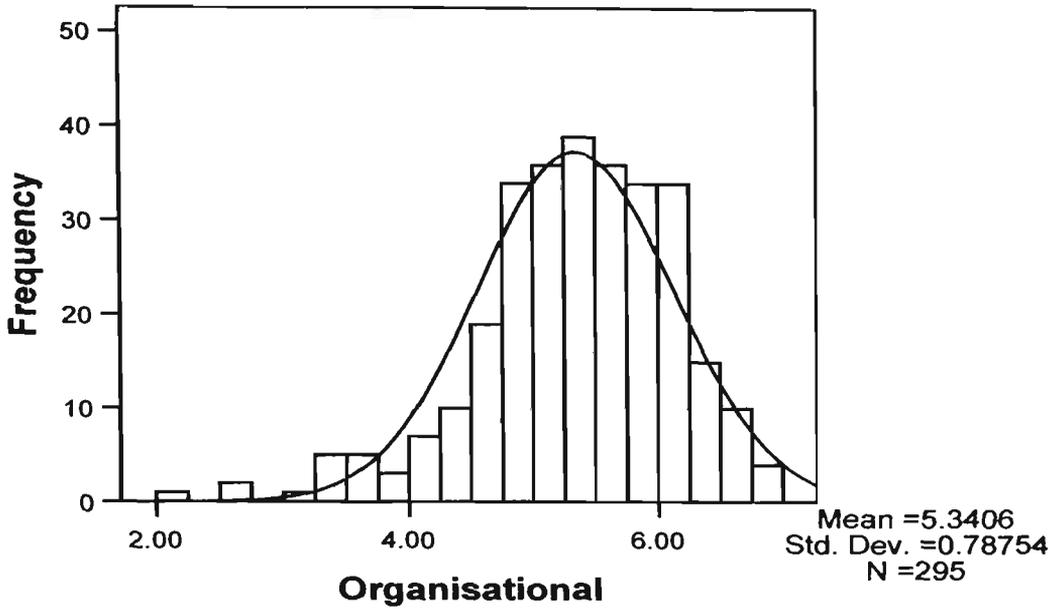
การจัดทำวิทยานิพนธ์หัวข้อดังกล่าวนี้ จะเป็นประโยชน์ต่อการพัฒนางานด้าน  
การตลาดของโรงแรมในประเทศไทยให้มีความทันสมัย เป็นที่ยอมรับของนักท่องเที่ยวทั้งในและ  
ต่างประเทศ ดังนั้น เพื่อให้ได้ข้อมูลที่เป็นประโยชน์ต่อการทำวิทยานิพนธ์ในเรื่องดังกล่าว ดิฉันจึงใคร่  
ขอความอนุเคราะห์จากท่านได้โปรดสละเวลาช่วยตอบแบบสอบถาม และโปรดส่งแบบสอบถามคืน  
โดยใช้ซองที่แนบมาให้ภายในวันที่ 24 มิถุนายน 2548 หากท่านต้องการผลของการศึกษาวิจัยกรุณา  
แนบนามบัตรของท่าน หรือติดต่อทาง **E-mail: Suree.Khemthong@research.vu.edu.au**

จึงเรียนมาเพื่อ โปรดพิจารณาและขอขอบคุณในความอนุเคราะห์ของท่านมา ณ  
โอกาสนี้

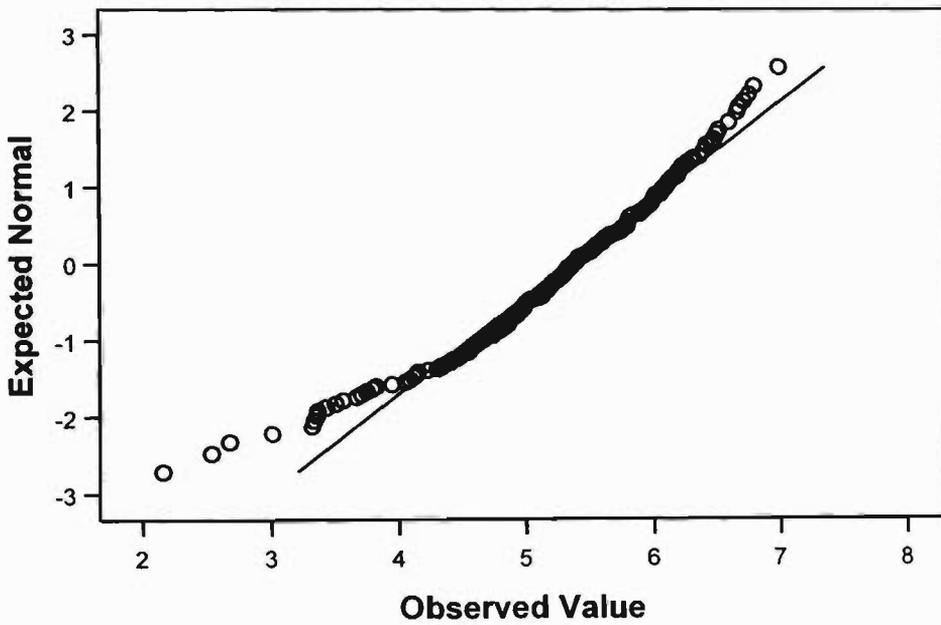
ขอแสดงความนับถือ  
ผู้ช่วยศาสตราจารย์สุรีย์ เข้มทอง  
ผู้วิจัย

## Appendix B5: The Distribution of Variables

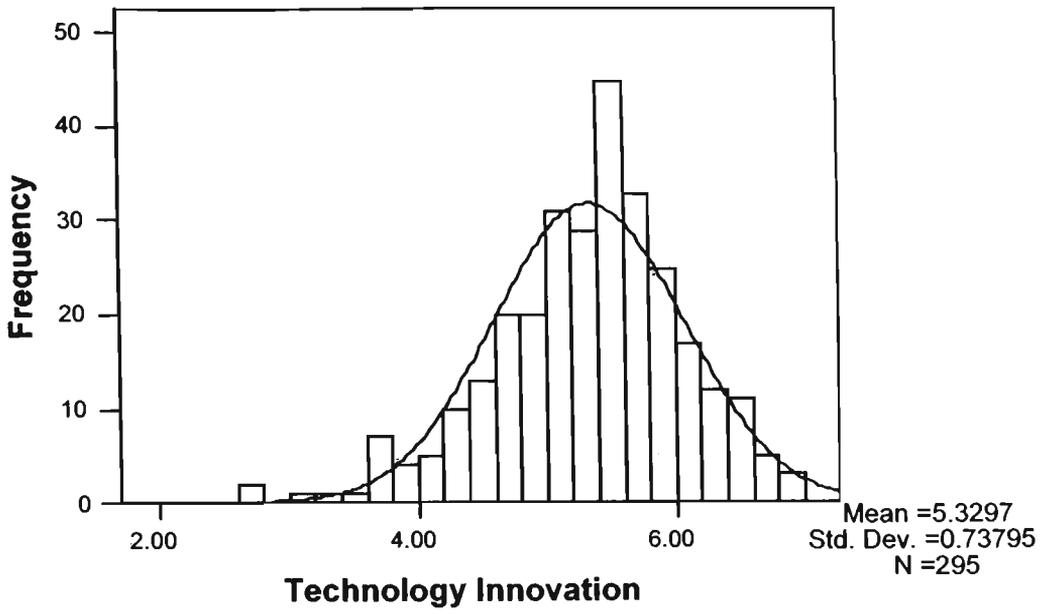
### Group of Organisational Factors



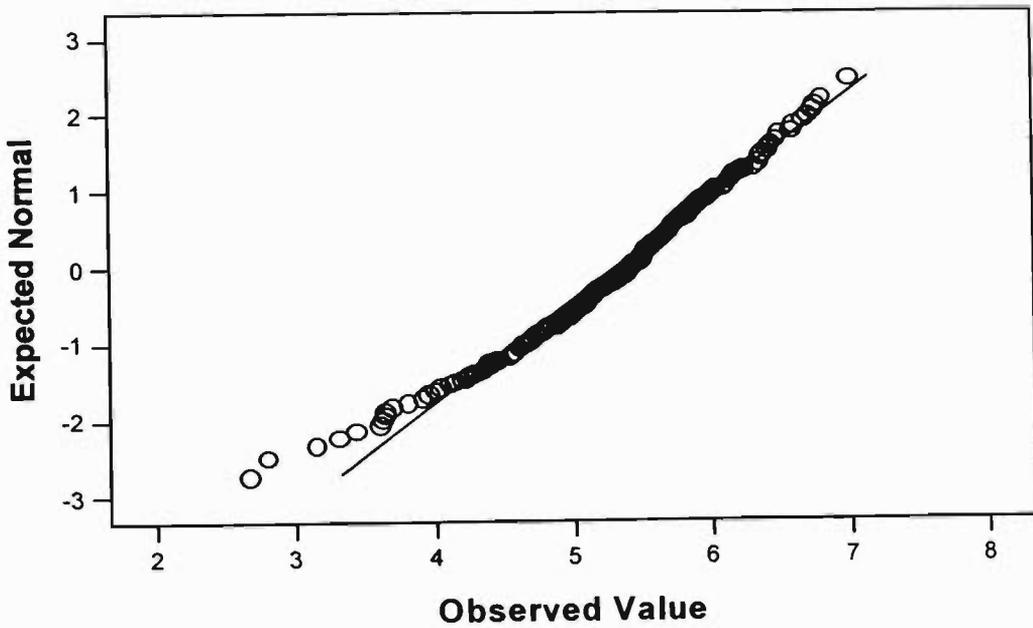
### Normal Q-Q Plot of Organisational



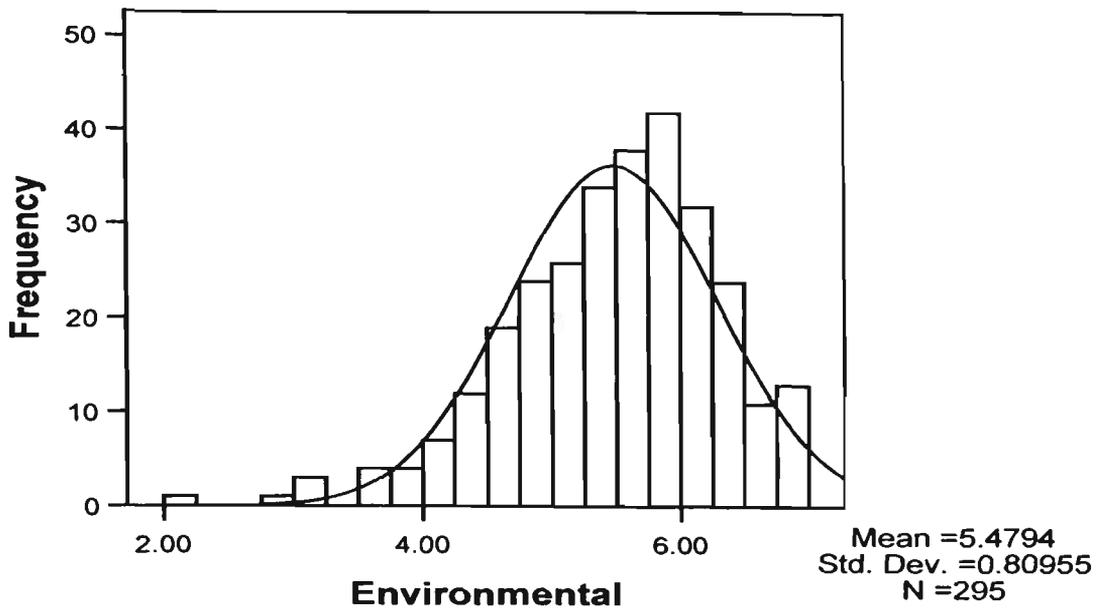
### Group of Technology Innovation Factors



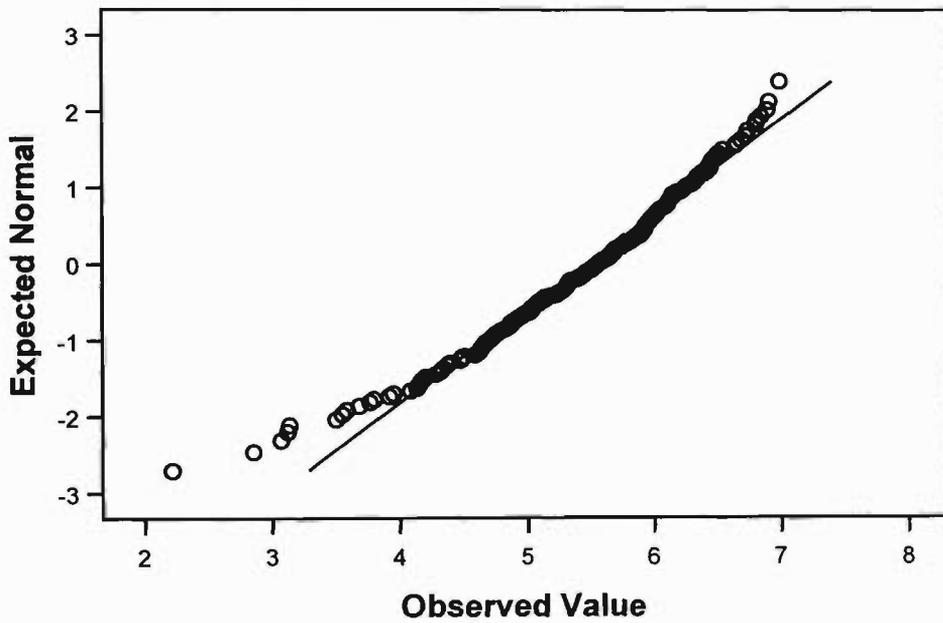
### Normal Q-Q Plot of Technology Innovation



### Group of Environmental Factors



### Normal Q-Q Plot of Environmental



## Appendix C1: Interview Guide for Conducting Interviews in Australia

### Qualitative Questions

#### In-depth Interview – Interviewer’s Instructions

##### Please note

This interview is aimed at the person who makes a decision in hotel marketing, e.g. Managing Director, General Manager or Marketing Director.

#### Definition

**Internet and web based marketing activities** are defined as the use of e-mail and the World Wide Web for conducting hotel marketing, e.g. having e-mail to contact customers directly, using web pages for promoting and advertising hotel services and products (Accommodation, Bar & Restaurant, Business Centre, Hotel Facilities, Conference rooms, and Special promotions), direct selling of hotel products and services, extending distribution channels by receiving bookings via online reservation system, completing transactions and receive payment via security system.

**Top Management** is defined as the people in the *top* level of management that set the strategic plans and allocate resources to operate the hotel business, e.g. Board of Directors in four-five stars hotels, owner or CEO in independent hotels.

#### The practical questions that need to be answered in this survey

##### Background Information

- |    |   |
|----|---|
| 1. | <p><b>What is your current title within your hotel?</b><br/> <b>Can you give me your business card?</b><br/> <b>How long have you held your current position?</b><br/> <b>What is the scope of your responsibilities towards the adoption of Internet and Web based marketing activities?</b><br/> <b>What are your responsibilities in relation to the use of Internet and Web technologies for your hotel?</b><br/>         This is to see the respondent’s position and responsibilities that influence making a decision in using the Internet and Web technologies in hotel marketing.</p> |
|----|---|

##### Size of hotels

- |    |   |
|----|---|
| 2. | <p><b>Please describe the size of your hotel in terms of number of rooms, number of employees.</b><br/> <b>How many rooms does your hotel have?</b><br/> <b>How many full-time employees does your hotel currently employ?</b><br/>         This is to examine the size of hotel by number of rooms or employees that may affect the use of Internet and web technologies in hotel marketing.</p> |
|----|---|

### Top Management Support

3. **What role does top management for your hotel play with respect to the Internet and Web based marketing activities?**  
**How does your top management support the use of these technologies?**  
**What resources are allocated within your hotel for the Internet and Web based marketing activities? (e.g. budget, equipment, employees, training course)**  
**What other resources do you think you might need?**  
 This is to identify how supportive management is with respect to the Internet and Web technologies for their hotel marketing, and to identify the resources that are allocated by top management to implement, maintain, or improve the Internet and Web based marketing activities.

### Complexity

4. **What do your employees think about Internet and Web technologies?**  
**What do you think about your employees' attitudes towards these technologies?**  
**Positive or Negative? If Positive, what are the positive things? If Negative, what are the negative things?**  
**How difficult do you think the system is for your employees to use?**  
**How much training is needed? What type of training do you provide?**  
 This is to determine users' attitudes and responses to the process of using the Internet and Web based marketing activities.

### Information Intensity

5. **Why does your hotel use the Internet and Web technologies to communicate or present hotel information?**  
**Do you think your hotel requires a lot of information at present? If yes or no, why?**  
**What are the factors your customers consider when they access hotel information?**  
**What feedback do you get from your customers on speed of information transmission?**  
**And the quality of information delivery?**  
 This is to see the application of information used to drive hotel marketing, and to examine the perception of information on the Internet and Web technologies.

### CEO's Attitude

6. **How does your hotel use the Internet and Web technologies for its marketing activities?**  
**How do these Internet and Web based marketing activities support your hotel business?**  
**How do you foresee the use of Internet and Web technologies for marketing activities developing in the future?**  
**How do you foresee your hotel using Internet and Web technologies for marketing activities in the future?**  
 This is to see the CEO's attitude towards the use of Internet and Web technologies for hotel marketing.

### Compatibility

7. **How do you think that these technologies are compatible with your hotel marketing activities?**  
**How are these technologies compatible with your hotel marketing activities?**  
**Do you think that these technologies are compatible with your hotel's needs? How?**  
**How do you think these technologies are compatible with your employees' work?**  
 This is to determine what the hotel management considers when using the Internet and Web technologies, particularly in hotel marketing activities, in relation to the hotel's needs and employees' work.

### Perceived Benefits

8. **What benefits to your hotel do you expect from the Internet and Web based marketing activities? What are the benefits that you expect from the Internet and Web based marketing activities? What benefits are you currently receiving from the Internet and Web based marketing activities? (e.g. number of online booking, number of occupancy rate, number of transactions per day or per year). Which of these benefits did you receive, but did not expect? Are there any benefits that you expected but did not receive?**  
This is to identify what benefits hotel management expects and receives from using the Internet and Web technologies in its marketing activities. Look for hotel details or reports about business performance by using Internet and Web based marketing activities.

### Image

9. **What do you think your customers think about hotels that have the Internet and Web technologies? What do you think your customers think about hotels that do not have the Internet and Web technologies? What are the major differences? What do you think your customers think about your hotel using Internet and Web based technologies for marketing activities? How do you think customers perceive your hotel with regard to using the Internet and Web based marketing activities?**  
This is to see if using Internet and Web technologies affects a hotel's image, and what that image might be.

### Competition Intensity

10. **If a hotel does not use the Internet and Web based marketing activities, how do you think it affects its competitiveness? How do you feel that the lack of these technologies affects a hotel's competitiveness? Can you estimate the percentage of your competitors that were already engaged in Internet and Web based marketing activities before your decision to adopt? Was this a factor that affected your hotel's decision to use these technologies too?**  
This is to investigate environmental forces, particularly for competition intensity in the hotel industry that if the hotel did not use Internet and Web technologies in its marketing activities, in what directions that competitiveness might be.

### Perceived Barriers

11. **From your point of view, what are the obstacles that limit the use of the Internet and Web based marketing activities? What are the factors that limit the use of these technologies? What were the main problems that your hotel faced and had to manage when introducing the Internet and Web based marketing activities? In your opinion, what are the risks from using the Internet and Web technologies? What is your view about the capital investment required for adoption of Internet and Web technologies?**  
This is to investigate what the constraints are, and affect the use of Internet and Web based marketing activities.

### Customers

12. **In your opinion, what channels do your customers prefer to use for booking your hotel? Why?**  
**Who are your target customers or market segments? What are the proportions of your customers booking online and offline?**  
**Can you estimate the percentages of your customers that currently purchase or book your hotel by online? And in the future?**  
**How do you obtain customer feedback about your services and marketing?**  
**What kinds of comments do hotel customers generally make regarding your Internet and Web based marketing activities?**  
 This is to determine how customers have a tendency to book at hotels through Internet and Web technologies, and the effect of the use of Internet and Web based marketing activities in the hotel industry.

### Government Support

13. **What do you think about the facilities allocated by your government for using the Internet and Web technologies in the hotel industry?**  
**What are the facilities provided by your government?**  
**In your opinion, what are the strengths of these facilities for using the Internet in your country? And what are the weaknesses?**  
 This is to identify the facilities that are allocated by government, and affect to use the Internet and Web based marketing activities.

### Technology Support

14. **What do you think about the technological infrastructure for using Internet and Web technologies in your country?**  
**What are the capabilities of technological infrastructure in your country?**  
**What are the capacities of Internet and web technologies for hotel marketing?**  
**How do you assess the capacities of the Internet and Web based marketing activities in your hotel? (in terms of sophistication, e.g. speed, security)**  
**What are the major strengths of your technologies? And what are the weaknesses?**  
 This is to determine the capabilities of the technology that is used to drive hotel business, and affect the use of the Internet and web based marketing activities.

### Organisational Readiness

15. **What were the main concerns that your hotel had to deal with before adopting Internet and Web based marketing activities?**  
**How did you set about installing these technologies?**  
**How did you prepare your hotel in order to use these technologies?**  
**What were the main reasons why it was decided for your hotel to use the Internet and Web based marketing activities?**  
**What were the main problems that inhibited your hotel from adopting Internet and Web technologies in its marketing activities?**  
 This is to investigate how the hotel is prepared for Internet and Web based marketing activities.

## Appendix C2: Interview Guide for Conducting Interviews in Thailand

### แบบสัมภาษณ์เรื่อง “การใช้เทคโนโลยีอินเทอร์เน็ตและเว็บด้านการตลาดในโรงแรม”

#### 1. ข้อมูลพื้นฐาน

- 1.1 ตำแหน่งงานปัจจุบันของท่านคืออะไร?
- 1.2 ท่านทำงานในตำแหน่งงานปัจจุบันนานเท่าไร?
- 1.3 ท่านมีหน้าที่และความรับผิดชอบอะไรที่เกี่ยวข้องกับการใช้อินเทอร์เน็ตและเว็บไซต์สำหรับกิจกรรมการตลาดในโรงแรมของท่าน?

#### 2. ขนาดของโรงแรม

- 2.1 โรงแรมของท่านมีจำนวนห้องพักเท่าไร?
- 2.2 โรงแรมของท่านมีจำนวนพนักงานทำงานเต็มเวลาเท่าไร?

#### 3. การสนับสนุนของผู้บริหารระดับสูง

- 3.1 ผู้บริหารระดับสูงมีบทบาทอย่างไรเกี่ยวกับการใช้อินเทอร์เน็ตและเว็บไซต์สำหรับกิจกรรมการตลาดในโรงแรมของท่าน?
- 3.2 ผู้บริหารระดับสูงสนับสนุนการใช้อินเทอร์เน็ตและเว็บไซต์สำหรับกิจกรรมการตลาดในโรงแรมของท่านอย่างไร?
- 3.3 ทรัพยากรที่ถูกจัดสรรสำหรับการใช้อินเทอร์เน็ตและเว็บไซต์สำหรับกิจกรรมการตลาดในโรงแรมของท่านได้แก่อะไรบ้าง? (เช่น งบประมาณ เครื่องมือ พนักงาน และการอบรม)
- 3.4 ทรัพยากรอื่นๆที่ท่านคิดว่าจำเป็นได้แก่อะไรบ้าง?

#### 4. ความซับซ้อน

- 4.1 พนักงานของท่านคิดอย่างไรกับการใช้อินเทอร์เน็ตและเว็บไซต์สำหรับกิจกรรมการตลาดในโรงแรมของท่าน?
- 4.2 พนักงานของท่านมีทัศนคติอย่างไรกับการใช้อินเทอร์เน็ตและเว็บไซต์? ทิศทางบวกหรือลบ? ถ้าบวก อะไรคือสิ่งที่แสดงว่าเป็นบวก? ถ้าลบ อะไรคือสิ่งที่แสดงว่าเป็นลบ?
- 4.3 ท่านคิดว่าระบบนี้มีความยากสำหรับพนักงานของท่านในการใช้อย่างไร?
- 4.4 ท่านต้องจัดการอบรมการใช้อินเทอร์เน็ตและเว็บไซต์มากน้อยเพียงใด? ท่านจัดการอบรมในรูปแบบไหนบ้าง?

#### 5. ความเข้มข้นของข้อมูล

- 5.1 ทำไมโรงแรมของท่านจึงใช้อินเทอร์เน็ตและเว็บไซต์เพื่อการติดต่อสื่อสารและแสดงข้อมูลของโรงแรม?
- 5.2 ท่านคิดว่าโรงแรมของท่านมีข้อมูลจำนวนมากที่ต้องแสดงให้หรือไม่? ทำไม?
- 5.3 ปัจจัยอะไรที่ลูกค้าตระหนักเมื่อเขาค้นคว้าเกี่ยวกับข้อมูลของโรงแรม?
- 5.4 ท่านได้รับการประเมินเกี่ยวกับความเร็วของการส่งข้อมูลและคุณภาพของการได้รับข้อมูลจากลูกค้าอย่างไร?

## 6. ทัศนคติของซีอีโอ

- 6.1 โรงแรมของท่านใช้อินเตอร์เน็ตและเว็บไซต์เพื่อกิจกรรมการตลาดอย่างไร?
- 6.2 การใช้อินเตอร์เน็ตและเว็บไซต์เพื่อกิจกรรมการตลาดมีส่วนสนับสนุนธุรกิจของโรงแรมของท่านอย่างไร?
- 6.3 ท่านคาดการณ์การใช้อินเตอร์เน็ตและเว็บไซต์เพื่อกิจกรรมการตลาดของโรงแรมในอนาคตอย่างไร?
- 6.4 ท่านคาดการณ์การใช้อินเตอร์เน็ตและเว็บไซต์เพื่อกิจกรรมการตลาดในโรงแรมของท่านในอนาคตอย่างไร?

## 7. ความสอดคล้อง

- 7.1 ท่านคิดว่าการใช้เทคโนโลยีเหล่านี้มีความสอดคล้องกับกิจกรรมการตลาดในโรงแรมของท่านอย่างไร?
- 7.2 ท่านคิดว่าเทคโนโลยีเหล่านี้มีความสอดคล้องและตรงกับความต้องการของโรงแรมของท่านใช่หรือไม่?  
อย่างไร?
- 7.3 ท่านคิดว่าเทคโนโลยีเหล่านี้มีความสอดคล้องกับการทำงานของพนักงานของท่านอย่างไร?

## 8. ประโยชน์

- 8.1 ท่านคาดหวังอะไรจากการใช้อินเตอร์เน็ตและเว็บไซต์เพื่อกิจกรรมการตลาดในโรงแรมของท่าน?
- 8.2 ปัจจุบันท่านได้รับประโยชน์อะไรจากการใช้อินเตอร์เน็ตและเว็บไซต์เพื่อกิจกรรมการตลาดในโรงแรมของท่าน?
- 8.3 ประโยชน์อะไรบ้างที่ท่านได้รับโดยไม่ได้คาดหวัง?
- 8.4 ประโยชน์อะไรบ้างที่ท่านคาดหวังแต่ยังไม่ได้รับ?

## 9. ภาพพจน์

- 9.1 ท่านคิดว่าลูกค้าของท่านคิดอย่างไรกับโรงแรมที่ใช้อินเตอร์เน็ตและเว็บไซต์?
- 9.2 ท่านคิดว่าลูกค้าของท่านคิดอย่างไรกับโรงแรมที่ไม่ใช้อินเตอร์เน็ตและเว็บไซต์? ความแตกต่างของโรงแรมที่ใช้และไม่ใช้อินเตอร์เน็ตและเว็บไซต์คืออะไร?
- 9.3 ท่านคิดว่าลูกค้าของท่านคิดอย่างไรกับโรงแรมของท่านเกี่ยวกับการใช้อินเตอร์เน็ตและเว็บไซต์เพื่อกิจกรรมด้านการตลาด?
- 9.4 ท่านคิดว่าลูกค้าของท่านยอมรับโรงแรมของท่านเกี่ยวกับการใช้อินเตอร์เน็ตและเว็บไซต์เพื่อกิจกรรมด้านการตลาดอย่างไร?

## 10. ความเข้มข้นของการแข่งขัน

- 10.1 ถ้าโรงแรมไม่ใช้อินเตอร์เน็ตและเว็บไซต์เพื่อกิจกรรมด้านการตลาด ท่านคิดว่ามันจะส่งผลต่อการแข่งขันอย่างไร?
- 10.2 ก่อนที่โรงแรมของท่านจะใช้อินเตอร์เน็ตและเว็บไซต์เพื่อกิจกรรมด้านการตลาด มีจำนวนร้อยละเท่าไรของกลุ่มแข่งที่ใช้อินเตอร์เน็ตและเว็บไซต์เพื่อกิจกรรมด้านการตลาด?
- 10.3 ปัจจัยของการแข่งขันมีอิทธิพลต่อการตัดสินใจใช้อินเตอร์เน็ตและเว็บไซต์เพื่อกิจกรรมด้านการตลาดของโรงแรมของท่านใช่หรือไม่?

## 11. อุปสรรค

- 11.1 ท่านคิดว่าอะไรคืออุปสรรคที่จำกัดการใช้อินเทอร์เน็ตและเว็บไซต์เพื่อกิจกรรมด้านการตลาด?
- 11.2 ปัญหาหลักที่โรงแรมต้องเผชิญและต้องจัดการเมื่อเริ่มใช้อินเทอร์เน็ตและเว็บไซต์เพื่อกิจกรรมด้านการตลาดคืออะไร?
- 11.3 ท่านคิดว่าอะไรคือความเสี่ยงจากการใช้อินเทอร์เน็ตและเว็บไซต์เพื่อกิจกรรมด้านการตลาด?
- 11.4 ท่านคิดอย่างไรกับการลงทุนเพื่อการใช้อินเทอร์เน็ตและเว็บไซต์เพื่อกิจกรรมด้านการตลาด?

## 12. ลูกค้า

- 12.1 ลูกค้าของท่านชอบใช้ช่องทางไหนในการจองโรงแรมของท่าน? ทำไม?
- 12.2 ใครคือกลุ่มลูกค้าเป้าหมายหรือส่วนแบ่งการตลาดของท่าน? สัดส่วนของลูกค้าที่จองโรงแรมทางออนไลน์และไม่ใช้ทางออนไลน์ เป็นเท่าไร?
- 12.3 มีจำนวนร้อยละเท่าไรของลูกค้าที่จองโรงแรมของท่านทางออนไลน์ในปัจจุบัน? ในอนาคต?
- 12.4 ท่านได้รับการประเมินเกี่ยวกับการบริการและการตลาดจากลูกค้าของท่านอย่างไร?

## 13. การสนับสนุนจากรัฐบาล

- 13.1 ท่านคิดอย่างไรเกี่ยวกับสิ่งอำนวยความสะดวกที่ถูกจัดสรรโดยรัฐบาลเพื่อการใช้อินเทอร์เน็ตและเว็บไซต์เพื่อกิจกรรมด้านการตลาดในอุตสาหกรรมโรงแรม?
- 13.2 สิ่งอำนวยความสะดวกที่ถูกจัดสรรโดยรัฐบาลมีอะไรบ้าง?
- 13.3 จุดแข็งของสิ่งอำนวยความสะดวกที่ถูกจัดสรรโดยรัฐบาลเพื่อการใช้อินเทอร์เน็ตและเว็บไซต์ในประเทศไทยคืออะไร? จุดอ่อนคืออะไร?

## 14. การสนับสนุนด้านเทคโนโลยี

- 14.1 ท่านคิดอย่างไรเกี่ยวกับโครงสร้างพื้นฐานด้านเทคโนโลยีเพื่อการใช้อินเทอร์เน็ตและเว็บไซต์ในประเทศไทย?
- 14.2 ความสามารถของเทคโนโลยีด้านอินเทอร์เน็ตและเว็บไซต์เพื่อกิจกรรมด้านการตลาดในโรงแรมเป็นอย่างไร?
- 14.3 ท่านประเมินความสามารถของเทคโนโลยีด้านอินเทอร์เน็ตและเว็บไซต์เพื่อกิจกรรมด้านการตลาดในโรงแรมของท่านอย่างไร? (เช่น ความทันสมัย ความเร็ว ความปลอดภัย)
- 14.4 เทคโนโลยีของท่านมีจุดแข็งและจุดอ่อนอย่างไร?

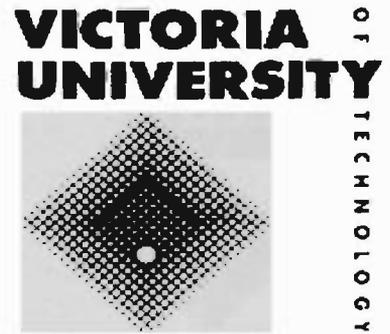
## 15. ความพร้อมขององค์กร

- 15.1 สิ่งสำคัญที่โรงแรมต้องตระหนักและเกี่ยวข้องก่อนที่จะใช้อินเทอร์เน็ตและเว็บไซต์เพื่อกิจกรรมด้านการตลาดในโรงแรมของท่านคืออะไร?
- 15.2 ท่านวางแผนเกี่ยวกับการติดตั้งเทคโนโลยีเหล่านี้อย่างไร?
- 15.3 ท่านวางแผนโรงแรมของท่านเพื่อที่จะใช้เทคโนโลยีเหล่านี้อย่างไร?
- 15.4 อะไรเป็นสาเหตุหลักที่โรงแรมของท่านตัดสินใจใช้อินเทอร์เน็ตและเว็บไซต์เพื่อกิจกรรมด้านการตลาด?
- 15.5 อะไรคือปัญหาหรืออุปสรรคที่อาจจะขัดขวางโรงแรมของท่านที่จะใช้อินเทอร์เน็ตและเว็บไซต์เพื่อกิจกรรมด้านการตลาด?

## Appendix C3: Letter Requesting Interviews in Australia

Victoria University of Technology  
PO Box 14428 Telephone:  
Melbourne City (03) 9248 1066  
MC 8001 Facsimile:  
(03) 9248 1064

City Flinders Campus  
Faculty of Business and Law  
300 Flinders Street  
Melbourne



March 1, 2005

Dear General Manager

Thank you very much for your participate in the questionnaire survey "Internet and Web Technologies in Hotel Marketing". The aim of this study is to examine the use of Internet and Web based marketing activities by the hotel industry. The results will be very useful in developing global hotel Internet marketing strategies.

For this purpose, I will be also conducting in-depth interviews with the people who make a decision in hotel marketing. In-depth interview and questionnaire survey will be used for my research. The information given by your hotel will be treated in strict confidence and will only be used for this study.

Please be assured that this information is sought for research purposes only and your responses will be strictly confidential. No individual's responses will be identified as such and the identity of individuals responding will not published or released to any one. Protecting the confidentiality of your answers is very important to me, as well as the University.

An appropriate time for the interview will be during the period of **1-30 April 2005**. If you have a grant permission, please e-mail to me in order to arrange the date and time of the interview. If you have any queries regarding the research project, please feel free to contact me at the below address or my principal supervisor, Associate Professor Linda Roberts, on e-mail: [linda.roberts@vu.edu.au](mailto:linda.roberts@vu.edu.au).

I am looking forward to hearing from you and thank you very much for your time and cooperation.

Yours Faithfully,  
Suree Khemthong  
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School of Hospitality, Tourism and Marketing  
Victoria University, Melbourne, Australia  
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## Appendix C4: Letter Requesting Interviews in Thailand

**Victoria University**  
 PO Box 14428 Telephone: (03) 9248 1066  
 MELBOURNE CITY MC VIC 8001  
 Australia Facsimile: (03) 9248 1064



**Faculty of Business and Law**  
 City Flinders Campus  
 300 Flinders Street Melbourne

1 มิถุนายน 2549

เรื่อง ขอบความอนุเคราะห์เข้าพบเพื่อสัมภาษณ์เกี่ยวกับการศึกษาวิจัยเรื่อง "การใช้เทคโนโลยีด้านอินเทอร์เน็ตและเว็บไซต์เพื่อการตลาดของโรงแรม"

เรียน ท่านผู้จัดการทั่วไป

ดิฉัน (ผู้วิจัย) นางสุรีย์ เข้มทอง ผู้ช่วยศาสตราจารย์ประจำสาขาวิชามนุษย์นิเวศน์ศาสตร์ มหาวิทยาลัยสุโขทัยธรรมาธิราช กำลังศึกษาในระดับปริญญาเอกด้านการโรงแรมและท่องเที่ยว ณ มหาวิทยาลัยวิกตอเรีย ประเทศออสเตรเลีย ขอขอบคุณที่ท่านได้สละเวลาตอบแบบสอบถามเบื้องต้นการศึกษาวิจัยเรื่อง "การใช้เทคโนโลยีด้านอินเทอร์เน็ตและเว็บไซต์เพื่อการตลาดของโรงแรม: กรณีศึกษาโรงแรมในประเทศไทยและออสเตรเลีย (Adoption and Diffusion of Internet and Web Technologies in Hotel Marketing: A Study of Hotels in Thailand and Australia)" ซึ่งการจัดทำวิทยานิพนธ์หัวข้อดังกล่าวนี้ จะเป็นประโยชน์ต่อการพัฒนางานด้านการตลาดของโรงแรมในประเทศไทยให้มีความทันสมัย เป็นที่ยอมรับของนักท่องเที่ยวทั้งในและต่างประเทศ ดังนั้นการวิจัยครั้งนี้จะใช้ทั้งแบบสอบถามและการสัมภาษณ์ เพื่อให้ได้ข้อมูลที่เป็นประโยชน์ต่อการทำวิทยานิพนธ์ในเรื่องดังกล่าว

ดิฉันจึงใคร่ขอความอนุเคราะห์จากท่านได้อนุญาตให้ดิฉันได้เข้าพบเพื่อสัมภาษณ์ในเรื่องที่เกี่ยวข้องกับการใช้เทคโนโลยีด้านอินเทอร์เน็ตและเว็บไซต์เพื่อการตลาดในโรงแรมของท่านระหว่างวันที่ 1-31 กรกฎาคม 2549 โดยดิฉันจะเป็นผู้ประสานงานการนัดหมายวันเวลาในการสัมภาษณ์อีกครั้งหนึ่ง

จึงเรียนมาเพื่อโปรดพิจารณา และขอขอบคุณในความอนุเคราะห์ของท่านมา ณ โอกาสนี้

ขอแสดงความนับถือ  
 ผู้ช่วยศาสตราจารย์สุรีย์ เข้มทอง  
 ผู้วิจัย

E-mail: Suree.Khemthong@research.vu.edu.au

## Appendix D: Analysis of Hotel Web Sites

### Features provided on Independent and Chain Hotel Web Sites in Thailand

**Table D-1: Features provided on Independent and Chain Hotel Web Sites in Thailand**

Categories	Features	Number of Independent Hotel Web Sites (n=85)	(%)	Number of Chain Hotel Web Sites (n=22)	(%)	Pearson Chi-Square value ( $\chi^2$ )	Asymp. Sig (2-sided)
<b>Basic Information</b>	Own URL	77	90.6	22	100.0	2.238	.135 <sup>a</sup>
	E-mail address	75	88.2	22	100.0	2.855	.091 <sup>a</sup>
	Maps of Location	73	85.9	18	81.8	.227	.634 <sup>a</sup>
	<b>Tourism information</b>	<b>42</b>	<b>49.4</b>	<b>22</b>	<b>100.0</b>	<b>18.607</b>	<b>.000</b>
	Feedback form	8	9.4	3	13.6	.338	.561 <sup>a</sup>
	Shown Page updated	6	7.1	2	9.1	.104	.747 <sup>a</sup>
	Safety & security tips	0	0	0	0	-	-
<b>E-Commerce</b>	Reservation offered	80	94.1	22	100.0	1.358	.244 <sup>b</sup>
	<b>Reservations functioning</b>	<b>20</b>	<b>23.5</b>	<b>19</b>	<b>86.4</b>	<b>29.788</b>	<b>.000</b>
	<b>Secure payment system</b>	<b>17</b>	<b>20.0</b>	<b>19</b>	<b>86.4</b>	<b>34.477</b>	<b>.000</b>
<b>Promotions</b>	Restaurant Promotions	65	76.5	22	100	6.366	.012 <sup>a</sup>
	Special Promotions	59	69.4	19	86.4	2.542	.111
	<b>Business Promotions</b>	<b>55</b>	<b>64.7</b>	<b>19</b>	<b>86.4</b>	<b>3.843</b>	<b>.050</b>
	What's new	3	3.5	1	4.5	1.213	.271 <sup>b</sup>
	Family or Kids Promotions	3	3.5	2	9.1	.050	.823 <sup>b</sup>
	Group travel Promotions	1	0	1	4.5	3.900	.048 <sup>b</sup>
<b>Secondary information</b>	<b>Links to partners</b>	<b>29</b>	<b>34.1</b>	<b>21</b>	<b>95.5</b>	<b>26.413</b>	<b>.000</b>
	List of all hotels	14	16.5	0	0	4.169	.041 <sup>a</sup>
	Hotel search capability	3	3.5	3	13.6	3.373	.066 <sup>b</sup>
<b>Services</b>	Direct e-mail address	66	77.6	21	95.5	3.647	.056 <sup>a</sup>
	Multilingual Site	18	21.2	7	31.8	1.105	.293
	E-mail Newsletter	4	4.7	6	27.3	10.505	.001 <sup>a</sup>
	Frequently asked questions	3	3.5	5	22.7	9.311	.002 <sup>a</sup>
	Gift certificates	0	0	4	18.2	16.055	.000 <sup>b</sup>
	Frequent visitor program	0	0	0	0	-	-
	Online forum	0	0	1	1.0	-	-
<b>Technology</b>	<b>Download information</b>	<b>14</b>	<b>16.5</b>	<b>14</b>	<b>63.6</b>	<b>20.123</b>	<b>.000</b>
	Video	3	3.5	3	13.6	3.373	.066 <sup>b</sup>
	Audio	0	0	1	4.5	3.900	.048 <sup>b</sup>
<b>Management Functions</b>	Employment opportunities	5	5.9	10	45.5	22.705	.000 <sup>a</sup>
	Shareholder information	0	0	4	18.2	16.055	.000 <sup>b</sup>
	Employee of the month	0	0	0	0	-	-
<b>Degree of Freedom (df) = 1</b>							
a. 1 cell (25.0%) have expected count less than 5.							
b. 2 cells (50.0%) have expected count less than 5.							

## INDEPENDENT AND CHAIN HOTEL WEB SITES IN THAILAND

### **Basic Information (Thailand)**

As shown in Table D-1, most independent and chain hotel Web sites in Thailand provided basic information including *own URL*, *e-mail address*, *map of location* and *tourism information*. However, of the independent hotel Web sites, only 49.4% provided *tourism information*, whereas all of the chain hotel Web sites provided such information. Most independent and chain hotel Web sites in Thailand did not provide a *feedback* form nor *the date when the Web pages were last updated*. Furthermore, no Thai independent or chain hotel Web sites provided *safety and security tips*. However, there was a significant difference between the hotel Web sites of the chain and independent hotels in Thailand in the provision of *information for tourists* ( $\chi^2 = 18.607$ ,  $df = 1$ ,  $p\text{-value} = .000$ ). This indicates that basic information in terms of *own URL*, *e-mail address*, *maps of location* and *information for tourists* were the most features frequently provided on hotel Web sites in both independent and chain hotels in Thailand.

### **E-Commerce (Thailand)**

For the e-commerce systems, as shown in Table D-1, the results show that of the 107 Web sites in Thailand that were assessed, *online reservations* were offered on most of the independent (94.1%) and all of the chain hotel Web pages. There were two main types of online reservations offered by hotel Web sites: 1) some Web sites could confirm bookings immediately; and 2) other Web sites could not confirm bookings immediately, but only respond to the enquiry by using “contact us” or using an enquiry form and requesting that it be submitted to the hotel while still online either from the Web site or by e-mail.

More chain hotel Web sites *provided reservation functions* (86.4%) that could confirm bookings immediately than independent hotel Web sites (23.5%) did. Similarly, a *secure payment system* was provided on more of the chain hotel Web sites (86.4%) than on the hotel Web sites of the independent hotels (20.0%). Specifically, there were

significant differences between hotel Web sites of the chain and independent hotels in the provision of *reservation functions* ( $\chi^2 = 29.788$ ,  $df = 1$ ,  $p\text{-value} = .000$ ) and also in the provision of *a secure payment system* ( $\chi^2 = 34.477$ ,  $df = 1$ ,  $p\text{-value} = .000$ ).

This indicates that in Thailand, more chain hotel Web sites provided the features for the full functioning of e-commerce including *full reservation functions* and *a secure payment system* than independent hotel Web sites did.

### **Promotion (Thailand)**

Results in Table D-1 show that the majority of promotions provided on independent and chain hotel Web sites in Thailand were *restaurant promotions*, *special promotions* and *business promotions*. Most sites of the independent and chain hotels neither offered *group travel promotions*, *family or kids promotions*, nor *what's new*. Specifically, more chain hotel Web sites provided *business promotion* (86.4%) than independent hotel Web sites (64.7%) did, and the difference was significant ( $\chi^2 = 3.843$ ,  $df = 1$ ,  $p\text{-value} = .050$ ). The results indicate more chain hotels focus on business customers than independent hotels do. However, neither independent nor chain hotels provided various promotions for different customers such as “family and kids or group travel promotions”.

### **Secondary Information (Thailand)**

For secondary information, the results in Table D-1 show that most sites of the independent and chain hotels neither included the features of *listing of all hotels* nor a *hotel search capability* function. Specifically, the feature of *linking to partners* was available as secondary information in more Thai chain hotel Web sites (95.5%) than independent hotel Web sites (34.1%), and there was a significant difference between hotel Web sites of the chain and independent hotels in the provision of *linking to partners* ( $\chi^2 = 26.413$ ,  $df = 1$ ,  $p\text{-value} = .000$ ). The results indicate that secondary information features were not considered as important features by either independent or chain hotels. Nevertheless, the feature of *linking to partners* was the majority of

additional information sources provided on most chain hotel Web sites to their customers.

### **Services (Thailand)**

For Services offered, the results in Table D-1 show that most independent and chain hotels in Thailand provided a *direct e-mail address*, but few offered *e-mail newsletters*, *frequently asked questions*, *gift certificates*, *an online forum* or *frequent visitor program*. Of the sites surveyed, 77.6% of independent and 95.5% of chain hotel Web sites provided direct e-mail back to their hotels without having to go through any intermediaries. More chain hotel Web sites (31.8%) in Thailand provided information in more languages than independent hotel Web sites (21.2%) did. However, there was no significant difference between independent and chain hotel Web sites in the provision of multilingual facilities. Provision of an *online forum* and a *frequent visitor program* were less common than e-mail facilities. Only 1% of chain hotel Web sites incorporated online forum features while none of the independent hotel Web sites incorporated these features. The results indicate that although service features provided an important channel for directly contacting and attracting customers, most independent and chain hotels had not provided them. However, chain hotels did offer more service features than independent hotels did.

### **Technology (Thailand)**

For technology, the analysis focused on the provision of information for downloading information, video and audio features. As shown in Table D-1, more chain hotel Web sites (63.6%) than independent hotel Web sites (16.5%) allowed users to download information which included a directory of hotels, download a brochure, download corporate information, fact sheets and hotel maps. Also, there was significant difference between hotel Web sites of the chain and independent hotels in the provision of downloading information ( $\chi^2 = 20.123$ ,  $df = 1$ ,  $p\text{-value} = .000$ ). However, only 4.5% of chain hotel Web sites incorporated audio features and 13.6% provided video features while none of the independent hotel Web sites incorporated audio features and only 3.5% provided video features. These results indicate that the technological feature for

downloading information was available on the majority of hotel Web sites only for chain hotels, and those other video and audio features were provided by very few hotels whether independent or chain.

### **Management Functions (Thailand)**

For management functions, the results in Table D-1 show that the use of hotel Web sites in both chain and independent hotels in Thailand was extremely low. No independent or chain hotel Web sites provided the facility for displaying *employee of the month*. Few hotel Web sites in Thailand presented corporate information for shareholders. However, nearly half (45.5%) of chain hotel Web sites, compared to only 5.9% of independent hotel Web sites featured employment opportunities. These results indicate that more chain than independent hotels provided management function features in terms of information for shareholders and employment opportunities.

### **SUMMARY (Thailand)**

The current use of Web technologies in the Thai hotels has been explored, based on a representative sample of 107 Web sites including 85 independent hotel Web sites and 22 chain hotel Web sites. It was found that chain hotels provided a wider range of features on their hotel Web sites than independent hotels. Table D-2 summarises the significant differences of hotel Web site features between independent and chain hotel Web sites in Thailand.

<b>Features</b>	<b>Independent Hotel Web Sites (n=85) (%)</b>	<b>Chain Hotel Web Sites (n=22) (%)</b>	<b>Pearson Chi-square value</b>
1. Tourism Information	49.4	100.0	$\chi^2 = 18.607, p = 0.000$
2. Reservations functioning	23.5	86.4	$\chi^2 = 29.788, p = 0.000$
3. Secure payment system	20.0	86.4	$\chi^2 = 34.477, p = 0.000$
4. Business Promotions	64.7	86.4	$\chi^2 = 3.843, p = 0.050$
5. Links to partners	34.1	95.5	$\chi^2 = 26.413, p = 0.000$
6. Download information	16.5	63.6	$\chi^2 = 20.123, p = 0.000$

*Degree of Freedom (df) = 1*

## Features provided on Independent and Chain Hotel Web Sites in Australia

Table D-3: Features provided on Independent and Chain Hotel Web Sites in Australia

Categories	Features	Number of Hotel-Independent Web Sites (n=76)	(%)	Number of Hotel-Chain Web Sites (n=23)	(%)	Pearson Chi-Square value ( $\chi^2$ )	Asymp. Sig (2-sided)
<b>Basic Information</b>	Own URL	75	98.6	22	95.7	.820	.365 <sup>b</sup>
	E-mail address	72	94.7	23	100.0	1.261	.261 <sup>b</sup>
	Maps of Location	66	86.8	20	87.0	.000	.989 <sup>a</sup>
	Tourism information	55	72.4	21	91.3	3.550	.060
	Feedback form	13	17.1	4	17.4	.001	.975 <sup>a</sup>
	Shown Page updated	5	6.6	2	8.7	.120	.729 <sup>a</sup>
	Safety & security tips	0	0	0	0	-	-
<b>E-Commerce</b>	Reservation offered	72	94.7	23	100.0	1.261	.261 <sup>b</sup>
	Reservations functioning	63	82.9	22	95.7	2.367	.124 <sup>a</sup>
	Secure payment system	35	46.1	20	87.0	11.964	.001
<b>Promotions</b>	<b>Restaurant Promotions</b>	53	69.7	23	100	9.067	.003
	<b>Special Promotions</b>	44	57.9	20	87.0	6.525	.011
	<b>Business Promotions</b>	42	55.3	18	78.3	3.911	.048
	What's new	6	7.9	4	17.4	1.754	.185 <sup>a</sup>
	Family or Kids Promotions	5	6.6	1	4.3	.154	.694 <sup>b</sup>
	Group travel Promotions	1	1.3	1	4.3	.820	.365 <sup>b</sup>
<b>Secondary information</b>	<b>Links to partners</b>	34	44.7	19	82.6	10.181	.001
	List of all hotels	9	11.8	0	0	2.996	.083 <sup>a</sup>
	Hotel search capability	5	6.6	2	8.7	.993	.319 <sup>a</sup>
<b>Services</b>	Direct e-mail address	67	88.2	22	95.7	1.092	.296 <sup>a</sup>
	Multilingual Site	4	5.3	4	17.4	3.497	.061 <sup>a</sup>
	E-mail Newsletter	3	3.9	7	30.4	13.642	.000 <sup>a</sup>
	Frequently asked questions	5	6.6	7	30.4	9.433	.002 <sup>a</sup>
	Gift certificates	2	2.6	6	26.1	13.078	.000 <sup>a</sup>
	Frequent visitor program	0	0	2	8.7	6.745	.009 <sup>b</sup>
	Online forum	0	0	1	4.3	3.338	.068 <sup>b</sup>
<b>Technology</b>	<b>Download information</b>	13	17.1	16	69.6	23.460	.000
	Video	6	7.9	6	26.1	5.486	.019 <sup>a</sup>
	Audio	3	3.9	3	13.0	2.566	.109 <sup>b</sup>
<b>Management Functions</b>	Employment opportunities	10	13.2	8	34.8	5.550	.018 <sup>a</sup>
	Shareholder information	0	0	2	8.7	6.745	.009 <sup>b</sup>
	Employee of the month	0	0	0	0	-	-

Degree of Freedom (df) = 1

a. 1 cell (25.0%) have expected count less than 5.

b. 2 cells (50.0%) have expected count less than 5.

## INDEPENDENT AND CHAIN HOTEL WEB SITES IN AUSTRALIA

### Basic Information (Australia)

As shown in Table D-3, most of the independent and chain hotel Web sites in Australia provided basic information including *own URL*, *e-mail address*, *maps of location* and *tourism information*. However, there were no significant differences between chain and independent hotel Web sites in Australia in providing their *own URL*, *e-mail address*, *maps of location* and *tourism information*. Nearly 100% of the independent and chain hotels used their own URL and provided their e-mail address on their hotel Web sites. Also, 86.8% of the independent and 87% of the chain hotels provided maps of their hotel locations. However, more chain hotels (91.3%) provided *information for tourists* than did independent hotels (72.45). Of the 99 Australian hotel Web sites that were assessed, most hotel Web sites did not provide the date when the Web pages were last updated. Only 8.7% of chain and 6.6% of independent hotel Web sites provided the dates for when the page was updated. In addition, no Web sites of either chain or independent hotels provided *safety or security tips*. This indicates that *own URL*, *e-mail address*, *maps of location* and *information for tourists* were the most frequently basic information features provided on hotel Web sites in both independent and chain hotels in Australia.

### 2.2) E-Commerce (Australia)

For the e-commerce systems, the results in Table D-3 show that of the 99 Web sites in Australia that were assessed, online *reservations* were offered on most of the independent (94.7%) and all of the chain hotel Web page. Most chain (95.7%) and independent (82.9%) hotel Web sites in Australia provided *reservation functions* that could confirm bookings immediately. However, *a secure payment system* was provided on more of the chain hotel Web sites (87%) than on the hotel Web sites of the independent hotels (46.1%). Also, there was a significant difference between hotel Web sites of the chain and independent hotels in Australia in the provision of *a secure payment system* ( $\chi^2 = 11.964$ ,  $df = 1$ ,  $p\text{-value} = .001$ ). This indicates that both independent and chain hotel Web sites in Australia had a fully functioning reservation

system in terms of offering online reservations and confirming bookings immediately, but significantly more chain hotel offered a secure payment system.

### **Promotions (Australia)**

Results show that the majority of promotions provided on independent and chain hotel Web sites in Australia were *restaurant promotions*, *special promotions* and *business promotions*. However, of the 99 Web sites in Australia that were assessed, *restaurant promotions* were offered on most of the independent (69.7%) and all of the chain hotel Web pages, and there was a significant difference between hotel Web sites of the chain and independent hotels in the provision of *restaurant promotions* ( $\chi^2 = 9.067$ ,  $df = 1$ ,  $p\text{-value} = .003$ ). In addition, more chain hotel Web sites provided special promotions (87.0%) and business promotions (78.3%) than independent hotel Web sites (57.9%, 55.3%) did. Specifically, there was a significant difference between hotel Web sites of the chain and independent hotels in the provision of special promotions ( $\chi^2 = 6.525$ ,  $df = 1$ ,  $p\text{-value} = .011$ ) and also in the provision of business promotions ( $\chi^2 = 3.911$ ,  $df = 1$ ,  $p\text{-value} = .048$ ). Nevertheless, most Web sites of the independent and chain hotels did not offer *group travel promotions*, *family or kid promotions* or *what's new*. These results indicate that more chain hotels offered a range of promotions than independent hotels including *restaurant*, *special* and *business promotions*. This implies that more chain hotels focused on business and leisure customers than independent hotels.

### **Secondary Information (Australia)**

Results in Table D-3 show that most sites of the independent and chain hotels in Australia did not include the features of *listing of all hotels* and a *hotel search capability* function. Specifically, the feature of *linking to partners* was available as secondary information on more Australian chain hotel Web sites (82.6%) than independent hotel Web sites (44.7%), and there was a significant difference between hotel Web sites of the chain and independent hotels in the provision of linking to partners ( $\chi^2 = 10.181$ ,  $df = 1$ ,  $p\text{-value} = .001$ ). This indicates that the feature of

linking to partners was the most frequently used additional information sources provided on most chain hotel Web sites for their customers.

### **Services (Australia)**

For Services offered, the results in Table D-3 show that most independent and chain hotels in Australia provided a *direct e-mail address*, but few offered *information in various language, e-mail newsletters, frequently asked questions, gift certificates, an online forum* or *frequent visitor program*.

Of the sites surveyed, 88.2% of independent and 95.7% of chain hotel Web sites provided direct e-mail back to their hotels without having to go through any intermediaries. More chain hotel Web sites (17.4%) in Australia provided information in more languages than independent hotel Web sites (5.3%) did. However, there was no significant difference between independent and chain hotel Web sites in the provision of multilingual facilities. Provision of an *online forum* and a *frequent visitor program* was less common than e-mail facilities. Only 4.3% of chain hotel Web sites incorporated online forum features and 8.7 % provided frequent visitor programs while none of the independent hotel Web sites incorporated these features.

Although there were not many hotel Web sites that provided the service features, the results indicate that more chain hotels offered a range of service features than independent hotels did.

### **Technology (Australia)**

For technology, the analysis focused on the provision of information for downloading, video and audio features. In Australia more chain hotel Web sites (69.6%) allowed users to download information including a directory of hotels, a brochure, corporate information, fact sheets and hotel maps than independent hotel Web sites (17.1%) did. Also, there was a significant difference between hotel Web sites of the chain and independent hotels in the provision of downloading information ( $\chi^2 = 23.460$ ,  $df = 1$ ,  $p\text{-value} = .000$ ). However, more than one quarter provided video features of chain

hotel Web sites and only 13% incorporated audio features while just 3.9% of the independent hotel Web sites incorporated audio features and 7.9% provided video features.

These results indicate that the technological feature for downloading information was available on the majority of chain hotel Web sites in Australia.

### **Management Functions (Australia)**

For management functions, the results show that the use of Web sites by both chain and independent hotels in Australia was extremely low. None of the hotel Web sites in Australia provided the facility for displaying *employee of the month*. Few Australian chain and independent hotel Web sites presented corporate information for shareholders. However, while 34.8% of chain hotel Web sites featured employment opportunities only 13.2% of independent hotel Web sites did. The results are summarised in Table D-3.

These results indicate that the feature of employment opportunities was a more frequent management function feature on both independent and chain hotel Web sites in Australia.

### **SUMMARY (Australia)**

**Table D-4** summarises the results of significant differences of hotel web site features between independent and chain hotel Web sites in Australia.

<b>Features</b>	<b>Independent Hotel Web Sites (n=76) (%)</b>	<b>Chain Hotel Web Sites (n=23) (%)</b>	<b>Pearson Chi-square value</b>
Secure payment system	46.1	87.0	$\chi^2 = 11.964, p = 0.001$
Restaurant Promotions	69.7	100.0	$\chi^2 = 9.067, p = 0.003$
Special Promotions	57.9	87.0	$\chi^2 = 6.525, p = 0.011$
Business Promotions	55.3	78.3	$\chi^2 = 3.911, p = 0.048$
Links to partners	44.7	82.6	$\chi^2 = 10.081, p = 0.001$
Download information	17.1	69.6	$\chi^2 = 23.460, p = 0.000$
<b><i>Degree of Freedom (df) = 1</i></b>			

## Comparison of 107 Thai and 99 Australian Hotel Web Sites

Table D-5: Comparison of features on 206 Hotel Web Sites between Thailand and Australia

Categories	Features	Number of Thai Web Sites (n=107)	(%)	Number of Australian Web Sites (n=99)	(%)	Pearson Chi-Square value ( $\chi^2$ )	Asymp. Sig (2-sided)
<b>Basic Information</b>	Own URL	99	92.5	97	98.0	3.315	.069 <sup>a</sup>
	E-mail address	97	90.7	95	96.0	2.285	.131
	Maps of Location	91	85.0	86	86.9	0.141	.707
	<b>Tourism information</b>	<b>64</b>	<b>59.8</b>	<b>76</b>	<b>76.8</b>	<b>6.789</b>	<b>.009</b>
	Feedback form	11	10.3	17	17.2	2.079	.149
	Shown Page updated	8	7.5	7	7.1	0.013	.911
	Safety & security tips	0	0	0	0	-	-
<b>E-Commerce</b>	Reservation offered	102	95.3	95	96.0	0.049	.824
	<b>Reservations functioning</b>	<b>39</b>	<b>36.4</b>	<b>85</b>	<b>85.9</b>	<b>52.394</b>	<b>.000</b>
	<b>Secure payment system</b>	<b>36</b>	<b>33.6</b>	<b>55</b>	<b>55.6</b>	<b>10.011</b>	<b>.002</b>
<b>Promotions</b>	Restaurant Promotions	87	81.3	76	76.8	0.642	.423
	Special Promotions	78	72.9	64	64.6	1.635	.201
	Business Promotions	74	69.2	60	60.6	1.655	.198
	What's new	5	4.7	10	10.1	2.244	.134
	Family or Kids Promotions	4	3.7	6	6.1	0.600	.438 <sup>a</sup>
	Group travel Promotions	1	0.9	2	2.0	0.422	.516 <sup>b</sup>
<b>Secondary information</b>	Links to partners	50	46.7	53	53.5	0.953	.329
	List of all hotels	14	13.1	9	9.1	0.827	.363
	Hotel search capability	6	5.6	7	7.1	0.186	.666 <sup>b</sup>
<b>Services</b>	Direct e-mail address	87	81.3	89	89.9	3.050	.081
	<b>Multilingual Site</b>	<b>25</b>	<b>23.4</b>	<b>8</b>	<b>8.1</b>	<b>8.929</b>	<b>.003</b>
	E-mail Newsletter	10	9.3	10	10.1	0.033	.855
	Frequently asked questions	8	7.5	12	12.1	1.265	.261
	Gift certificates	4	3.7	8	8.1	1.768	.184
	Frequent visitor program	0	0	2	2.0	2.183	.140 <sup>b</sup>
	Online forum	0	0	1	1.0	1.086	.297 <sup>b</sup>
<b>Technology</b>	Download information	28	26.2	29	29.3	0.251	.616
	Video	6	5.6	12	12.1	2.736	.098
	Audio	1	0.9	6	6.1	4.116	.042 <sup>b</sup>
<b>Management Functions</b>	Employment opportunities	15	14.0	18	18.2	0.662	.416
	Shareholder information	4	3.7	2	2.0	0.537	.464 <sup>b</sup>
	Employee of the month	0	0	0	0	-	-

**Degree of Freedom (df) = 1**

a. 1 cell (25.0%) have expected count less than 5.

b. 2 cells (50.0%) have expected count less than 5.

## Comparison of 22 Thai Chain and 23 Australian Chain Hotel Web Sites

Table D-6: Comparison of features on Chain-Hotel Web Sites between Thailand and Australia

Categories	Features	Number of Thai Web Sites (n=22)	(%)	Number of Australian Web Sites (n=23)	(%)	Pearson Chi-Square value ( $\chi^2$ )	Asymp. Sig (2-sided)
<b>Basic Information</b>	Own URL	22	100	22	95.7	0.978	0.323 <sup>b</sup>
	E-mail address	22	100	23	100	-	-
	Maps of Location	18	81.8	20	87.0	0.226	0.634 <sup>b</sup>
	Tourism information	22	100	21	91.3	2.002	0.157 <sup>b</sup>
	Feedback form	3	13.6	4	17.4	0.121	0.728 <sup>b</sup>
	Shown page updated	2	9.1	2	8.7	.002	.963 <sup>b</sup>
	Safety & security tips	0	0	0	0	-	-
<b>E-Commerce</b>	Reservation offered	22	100	23	100	-	-
	Reservations functioning	19	86.4	22	95.7	1.198	0.274 <sup>b</sup>
	Secure payment system	19	86.4	20	87.0	.003	.953 <sup>b</sup>
<b>Promotions</b>	Restaurant Promotions	22	100	23	100	-	-
	Special Promotions	19	86.4	20	87.0	.003	.953 <sup>b</sup>
	Business Promotions	19	86.4	18	78.3	.505	.477 <sup>b</sup>
	What's new	2	9.1	4	17.4	.670	.413 <sup>b</sup>
	Family or Kids Promotions	1	4.5	1	4.3	.001	.974 <sup>b</sup>
	Group travel Promotions	1	4.5	1	4.3	.001	.974 <sup>b</sup>
<b>Secondary information</b>	Links to partners	21	95.5	19	82.6	1.879	0.170 <sup>b</sup>
	List of all hotels	0	0	0	0	-	-
	Hotel search capability	3	13.6	2	8.7	0.278	0.598 <sup>b</sup>
<b>Services</b>	Direct e-mail address	21	95.5	22	95.7	.001	0.974 <sup>b</sup>
	Multilingual Site	7	31.8	4	17.4	1.267	0.260
	E-mail Newsletter	6	27.3	7	30.4	.055	0.815
	Frequently asked questions	5	22.7	7	30.4	0.342	0.559
	Gift certificates	4	18.2	6	26.1	0.407	0.524 <sup>a</sup>
	Online forum	0	-	1	4.3	.978	.323 <sup>b</sup>
	Frequent visitor program	0	-	2	8.7	2.002	0.157 <sup>b</sup>
<b>Technology</b>	Download information	14	63.6	16	69.6	0.178	0.673
	Video	3	13.6	6	26.1	1.089	0.297 <sup>b</sup>
	Audio	1	4.5	3	13.0	1.003	0.317 <sup>b</sup>
<b>Management Functions</b>	Employment opportunities	8	34.8	10	45.5	0.534	0.465
	Shareholder information	4	18.2	2	8.7	0.876	0.349 <sup>b</sup>
	Employee of the month	0	0	0	0	-	-

**Degree of Freedom (df) = 1**

a. 1 cell (25.0%) have expected count less than 5.

b. 2 cells (50.0%) have expected count less than 5.

## Comparison of 85 Thai and 76 Australian Independent Hotel Web Sites

Table D-7: Comparison of Features on Independent Hotel Web Sites between Thailand and Australia

Categories	Features	Number of Thai Web Sites (n=85)	(%)	Number of Australian Web Sites (n=76)	(%)	Pearson Chi-Square value ( $\chi^2$ )	Asymp. Sig (2-sided)
<b>Basic Information</b>	Own URL	77	90.6	75	98.7	4.983	.026 <sup>a</sup>
	E-mail address	75	88.2	72	94.7	2.136	.144
	Maps of Location	73	85.9	66	86.8	0.031	.860
	<b>Tourism information</b>	<b>42</b>	<b>49.4</b>	<b>55</b>	<b>72.4</b>	<b>8.829</b>	<b>.003</b>
	Feedback form	8	9.4	13	17.1	2.094	.148
	Shown page updated	6	7.1	5	6.6	0.015	.904
	Safety & security tips	0	0	0	0	-	-
<b>E-Commerce</b>	Reservation offered	80	94.1	72	94.7	0.029	.864
	<b>Reservations functioning</b>	<b>20</b>	<b>23.5</b>	<b>63</b>	<b>82.9</b>	<b>56.618</b>	<b>.000</b>
	<b>Secure payment system</b>	<b>17</b>	<b>20.0</b>	<b>35</b>	<b>46.1</b>	<b>12.455</b>	<b>.000</b>
<b>Promotions</b>	Restaurant Promotions	65	76.5	53	69.7	0.929	.335
	Special Promotions	59	69.4	44	57.9	2.309	.129
	Business Promotions	55	64.7	42	55.3	1.494	.222
	What's new	3	3.5	6	7.9	1.449	.229 <sup>b</sup>
	Family or Kids Promotions	3	3.5	5	6.6	0.790	.374 <sup>b</sup>
	Group travel Promotions	0	0	1	2.2	1.125	.289 <sup>b</sup>
<b>Secondary information</b>	Links to partners	29	34.1	34	44.7	1.900	.168
	List of all hotels	14	16.5	9	11.8	0.702	.402
	Hotel search capability	3	3.5	5	6.6	0.790	.374 <sup>b</sup>
<b>Services</b>	Direct e-mail address	66	77.6	67	88.2	3.085	.079
	<b>Multilingual Site</b>	<b>18</b>	<b>21.2</b>	<b>4</b>	<b>5.3</b>	<b>8.613</b>	<b>.003</b>
	E-mail Newsletter	4	4.7	3	3.9	0.056	.814 <sup>b</sup>
	Frequently asked questions	3	3.5	5	6.6	0.790	.374 <sup>b</sup>
	Gift certificates	0	0	2	2.6	2.265	.132 <sup>b</sup>
	Online forum	0	0	0	0	-	-
	Frequent visitor program	0	0	0	0	-	-
<b>Technology</b>	Download information	14	16.5	13	17.1	0.012	.914
	Video	3	3.5	6	7.9	1.449	.229 <sup>b</sup>
	Audio	0	0	3	3.9	3.419	.064 <sup>b</sup>
<b>Management Functions</b>	Employment opportunities	5	5.9	10	13.2	2.514	.113
	Shareholder information	0	0	0	0	-	-
	Employee of the month	0	0	0	0	-	-

*Degree of Freedom (df) = 1*

a. 1 cell (25.0%) have expected count less than 5.

b. 2 cells (50.0%) have expected count less than 5.

**Comparison of Features of Customer's Information Needs on 107 Thai and 99  
Australian Hotel Web Sites**

<b>Table D-8: Comparison of Customer's Information Needs provided on 107 Thai and 99 Australian Hotel Web Sites</b>						
Customer's Information Needs	Thailand (n=107)	(%)	Australia (n=99)	(%)	Pearson Chi- Square value ( $\chi^2$ )	Asymp. Sig (2-sided)
<b>Web Design and Format</b>						
1. No frames	107	100	98	97.8	1.086	.297 <sup>b</sup>
2. Provided text-only version of the site	107	100	99	100	-	-
3. No noise	107	100	99	100	-	-
4. No banner	106	98.8	99	100	0.930	.335 <sup>b</sup>
<b>General Web Information Quality</b>						
5. Quick response time	107	100	99	100	-	-
6. 2-3 clicks for needed information	107	100	99	100	-	-
7. On-line reservation was provided	102	95.3	95	96.0	0.049	.824 <sup>b</sup>
8. Phone number provided on main page	100	93.5	98	99.0	4.216	.040 <sup>b</sup>
9. Mailing address provided	100	93.5	99	100	6.704	.010 <sup>b</sup>
10. I could find the e-mail of a hotel easily	97	90.7	95	96.0	2.285	.131
11. Provided security of personal information	38	35.5	53	53.5	6.772	.009
12. Confirmation of reservation immediately	34	31.8	50	50.5	7.470	.006
13. Date of last update provided	6	5.6	7	7.1	0.186	.666
<b>Hotel Facility Information and Services</b>						
14. I got information on hotel facilities	102	95.3	96	97.0	0.372	.542 <sup>b</sup>
15. I could find the room service menu of a hotel easily	96	89.7	88	88.9	0.037	.847
16. I found the pictures of hotel facilities easily	91	85.0	80	80.8	0.655	.418
17. Personal reservation history was provided	90	84.1	85	85.9	0.123	.726
18. On-Site restaurant information was provided	87	81.3	76	76.8	0.642	.423
19. I got information on the type of the hotel	77	72.0	80	80.8	2.219	.136
20. Nearby attractions or businesses were provided	64	59.8	76	76.8	6.789	.009
<b>Room Information</b>						
21. Room type was provided	103	96.3	94	94.9	0.212	.645
22. I got information on the in-room amenities	97	90.7	96	97.0	3.469	.063
23. Room rate was provided	87	81.3	94	94.9	8.974	.003
24. Special room rate was provided	73	68.2	53	53.5	4.671	.031
25. I could find non-smoking accommodations	47	43.9	55	55.6	2.783	.095
26. I got information on the room availability	41	38.3	58	58.6	8.462	.004
<b>Locality</b>						
27. I got information on the direction to the hotel	97	90.7	97	98.0	5.030	.025
28. I could find the map of surrounding area	91	85.0	86	86.9	0.141	.707
29. I could link to hotel partners	44	41.1	39	39.4	0.064	.801
30. Local weather information was provided	22	20.6	14	14.1	1.469	.225
31. Local mass transportation was provided	7	6.5	7	7.1	0.023	.880
32. I could link to car rental	2	1.9	7	7.1	3.330	.068 <sup>b</sup>
<b>Degree of Freedom (df) = 1</b>						
a. 1 cell (25.0%) have expected count less than 5.						
b. 2 cells (50.0%) have expected count less than 5.						

**Comparison of Features of Customer's Information Needs on 22 Thai Chain and  
23 Australian Chain Hotel Web Sites**

<b>Table D-9: Assessment of Customer's Information Needs on Chain Hotel Web Sites in Thailand and Australia</b>						
Customer's Information Needs	Chain Hotel Web Sites				Pearson Chi-Square value ( $\chi^2$ )	Asymp. Sig (2-sided)
	Thailand		Australia			
	n=22	%	n=23	%		
<b>Web Design and Format</b>						
1. Provided frames	0	0	0	0	-	-
2. Provided banner	0	0	0	0	-	-
3. Provided noise	0	0	0	0	-	-
4. Provided Text-only version of the site	20	90.9	22	95.7	.407	.524 <sup>b</sup>
<b>General Web Information Quality</b>						
5. Quick download	22	100	23	100	-	-
6. 2-3 clicks for needed information	22	100	23	100	-	-
7. I could find the e-mail of a hotel easily	22	100	23	100	-	-
8. Phone number provided on main page	22	100	23	100	-	-
9. Mailing address provided	22	100	23	100	-	-
10. Date of last update provided	20	90.9	21	91.3	.002	.963
11. On-line reservation was provided	22	100	23	100	-	-
12. Provided security of personal information	19	86.4	19	82.6	.121	.728 <sup>b</sup>
13. Confirmation of reservation immediately	19	86.4	19	82.6	.121	.728 <sup>b</sup>
<b>Hotel Facility Information and Services</b>						
14. I could find the room service menu of a hotel easily	22	100	21	91.3	2.002	.157 <sup>b</sup>
15. I found the pictures of hotel facilities easily	21	95.5	21	91.3	.311	.577 <sup>b</sup>
16. I got information on the type of the hotel	20	90.9	21	91.3	.002	.963 <sup>b</sup>
17. I got information on hotel facilities	22	100	23	100	-	-
18. Personal reservation history was provided	22	100	23	100	-	-
19. On-Site restaurant information was provided	22	100	23	100	-	-
20. Nearby attractions or businesses were provided	22	100	21	91.3	2.002	.157 <sup>b</sup>
<b>Room Information</b>						
21. Room type was provided	22	100	23	100	-	-
22. Room rate was provided	22	100	22	95.7	.978	.323 <sup>b</sup>
23. Special room rate was provided	18	81.8	18	78.3	.089	.766 <sup>b</sup>
24. I got information on the in-room amenities	22	100	23	100	-	-
25. I could find non-smoking accommodations	16	72.7	18	78.3	.186	.666
26. I got information on the room availability	19	86.4	20	87	.003	.953 <sup>b</sup>
<b>Locality</b>						
27. Local weather information was provided	12	54.5	6	26.1	3.794	.051
28. Local mass transportation was provided	4	18.2	0	-	4.590	.032 <sup>b</sup>
29. I could find the map of surrounding area	18	81.8	20	87	.226	.634 <sup>b</sup>
30. I got information on the direction to the hotel	21	95.5	23	100	1.069	.301 <sup>b</sup>
31. I could link to car rental	2	9.1	1	4.3	.407	.524 <sup>b</sup>
32. I could link to hotel partners	20	90.9	19	82.6	.670	.413 <sup>b</sup>
Degree of Freedom (df) = 1						
b. 2 cells (50.0%) have expected count less than 5.						

**Comparison of Features of Customer's Information Needs on 85 Thai  
Independent and 76 Australian Independent Hotel Web Sites**

**Table D-10: Comparison of Customer's Information Needs provided on Independent Thai and  
Australian Hotel Web Sites**

Customer's Information Needs	Thailand (n=85)	(%)	Australia (n=76)	(%)	Pearson Chi- Square value ( $\chi^2$ )	Asymp. Sig (2-sided)
<b>Web Design and Format</b>						
1. No frames	85	100	75	97.8	1.125	.289 <sup>b</sup>
2. Provided text-only version of the site	85	100	76	100	-	-
3. No noise	85	100	76	100	-	-
4. No banner	84	98.8	76	100	0.900	.343 <sup>b</sup>
<b>General Web Information Quality</b>						
5. Quick response time	85	100	76	100	-	-
6. 2-3 clicks for needed information	85	100	76	100	-	-
7. On-line reservation was provided	80	94.1	72	94.7	0.029	.864
8. Phone number provided on main page	78	91.8	75	98.7	4.068	.044 <sup>b</sup>
9. Mailing address provided	78	91.8	76	100	6.543	.011 <sup>b</sup>
10. I could find the e-mail of a hotel easily	75	88.2	72	94.7	2.136	.144
11. Provided security of personal information	19	22.4	34	44.7	9.104	.003
12. Confirmation of Reservation immediately	15	17.6	31	40.8	10.530	.001
13. Date of last update provided	4	4.7	5	6.6	0.267	.606 <sup>b</sup>
<b>Hotel Facility Information and Services</b>						
14. I got information on hotel facilities	80	94.1	73	96.1	0.318	.573 <sup>b</sup>
15. I could find the room service menu of a hotel easily	74	87.1	67	88.2	0.045	.833
16. I found the pictures of hotel facilities easily	70	82.4	59	77.6	0.562	.454
17. Personal reservation history was provided	68	80.0	62	81.6	0.064	.800
18. On-Site restaurant information was provided	65	76.5	53	69.7	0.929	.335
19. I got information on the type of the hotel	57	67.1	59	77.6	2.227	.136
20. Nearby attractions or businesses were provided	42	49.4	55	72.4	8.829	.003
<b>Room Information</b>						
21. Room type was provided	81	95.3	71	93.4	0.267	.606 <sup>b</sup>
22. I got information on the in-room amenities	75	88.2	73	96.1	3.303	.069
23. Room rate was provided	65	76.5	72	94.7	10.554	.001
24. Special room rate was provided	55	64.7	35	46.1	5.663	.017
25. I could find non-smoking accommodations	31	35.3	37	48.7	2.453	.117
26. I got information on the room availability	22	25.9	38	50.0	9.983	.002
<b>Locality</b>						
27. I got information on the direction to the hotel	76	89.4	74	97.4	3.991	.046
28. I could find the map of surrounding area	73	85.6	66	86.8	0.031	.860
29. I could link to hotel partners	20	26.3	24	28.2	0.074	.785
30. Local weather information was provided	10	11.8	8	10.5	0.062	.803
31. Local mass transportation was provided	3	3.5	7	15.6	2.223	.136 <sup>a</sup>
32. I could link to car rental	0	0	6	7.9	6.970	.008 <sup>b</sup>
<b>Degree of Freedom (df) = 1</b>						
a. 1 cell (25.0%) have expected count less than 5.						
b. 2 cells (50.0%) have expected count less than 5.						

## Appendix E:

### Testing Assumption of MANOVA for Level of Adoption of IWMA by Hotels (Early Adopter & Non-Early Adopter Hotels)

Factors Affecting the Use of IWMA	Levene's Test of Equality of Error Variances	
	F	Sig
Hotel Size	.402	.527
Top Management Support	4.658	.033
CEO's Attitude	1.219	.271
Organisational Readiness	2.763	.099
CEO's IS Knowledge	2.684	.103
Perceived Benefits	3.644	.058
Perceived Compatibility	6.114	.015
Perceived Complexity	1.974	.162
Perceived Barriers	.023	.880
Image	.417	.519
Customers Power	4.547	.035
Competition Intensity	.242	.624
Level of Government Support	4.654	.033
Level of technology Support	.016	.901
Df1 = 1, df2 = 150		
Box's M = 189.804, F = 1.448, df1 = 105, df2 = 7645.994, Sig = .002		

Factors Affecting the Use of IWMA	Levene's Test of Equality of Error Variances	
	F	Sig
Hotel Size	9.940	.002
Top Management Support	4.426	.037
CEO's Attitude	12.058	.001
Organisational Readiness	.000	.985
CEO's IS Knowledge	7.532	.007
Perceived Benefits	3.187	.076
Perceived Compatibility	20.492	.000
Perceived Complexity	1.781	.184
Perceived Barriers	.091	.763
Image	.904	.343
Customers Power	8.821	.004
Competition Intensity	4.924	.028
Level of Government Support	.267	.606
Level of technology Support	8.309	.005
Df1 = 1, df2 = 141		
Box's M = 171.352, F = 1.457, df1 = 105, df2 = 52251.158, Sig = .002		

## Appendix F: Pearson Product-Moment Correlations (Thailand)

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1.Top Management Support														
2. CEO's Attitude	.41**													
3. Organisational Readiness	.31**	.58**												
4. CEO's IS Knowledge	.13	.33**	.28**											
5. Size of Hotel (number of rooms)	.02	.09	.07	.14										
6. Perceived Benefits	.22**	.54**	.49**	.28**	.03									
7. Compatibility	.35**	.67**	.58**	.20**	-.01	.68**								
8. Complexity	.27**	.44**	.47**	.20*	.04	.35**	.53**							
9. Perceived Barrier	-.00	.01	.00	-.00	-.04	.22**	.12	.08						
10. Image	.14	.34**	.27**	.08	.04	.47**	.49**	.16*	.08					
11.Customer Power	.44**	.67**	.54**	.24**	.01	.56**	.71**	.46**	.06	.40**				
12.Competition Intensity	.26**	.46**	.34**	.36**	.19*	.45**	.48**	.23**	-.00	.39**	.46**			
13.Level of Government Support	.18*	.31**	.42**	.29**	.18*	.39**	.31**	.32**	-.05	.25**	.32**	.27**		
14.Level of Technology Support	.31**	.39**	.41**	.25**	.08	.47**	.51**	.39**	.15	.39**	.42**	.43**	.41**	
15. Level of Using the Internet	.15	.13	.21**	.11	.27**	.20*	.27**	.09	.16	.08	.20*	.15	.17*	.11

\*\*Correlation is significant at the 0.01 level (2-tailed)

\*Correlation is significant at the 0.05 level (2-tailed)

## Appendix F: Pearson Product-Moment Correlations (Australia)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
<b>1. Top Management Support</b>														
<b>2. CEO's Attitude</b>	.62**													
3. Organisational Readiness	.21**	.31**												
<b>4. CEO's IS Knowledge</b>	.49**	.47**	.128											
<b>5. Size of Hotel (number of rooms)</b>	.19*	.15	.063	.16										
6. Perceived Benefits	.46**	.60**	.28**	.47**	.09									
<b>7. Compatibility</b>	.56**	.59**	.22**	.48**	.21**	.52**								
8. Complexity	.53**	.45**	.11	.37**	.07	.43**	.42**							
9. Perceived Barrier	.01	-.02	.02	.13	.06	.04	.06	.09						
10. Image	.15	.30**	.30**	.18*	.12	.35**	.29**	.14	-.22**					
<b>11. Customer Power</b>	.59**	.68**	.27**	.46**	.18*	.64**	.63**	.38**	.00	.24**				
<b>12. Competition Intensity</b>	.44**	.49**	.42**	.39**	.31**	.47**	.45**	.21**	-.02	.28**	.54**			
13. Level of Government Support	.29**	.29**	.20*	.25**	.12	.35**	.26**	.33**	.04	.18*	.32**	.38**		
<b>14. Level of Technology Support</b>	.53**	.54**	.15	.42**	.09	.52**	.50**	.33**	.10	.20*	.54**	.45**	.28**	
15. Level of Using the Internet	.188*	.294**	.076	.27**	.35**	.17	.42**	.14	.13	.10	.27**	.25**	.06	.22**

\*\*Correlation is significant at the 0.01 level (2-tailed)

\*Correlation is significant at the 0.05 level (2-tailed)

## Appendix G:

### Factors Affecting the Adoption of IWMA for Independent and Chain Hotels in Thailand and Australia

#### *Independent and Chain Hotels in Thailand: Testing Assumption for MANOVA*

Factors Affecting the Use of IWMA	Levene's Test of Equality of Error Variances	
	F	Sig
Size of Hotel	5.405	.021
Top Management Support	2.982	.086
Organisational Readiness	.477	.491
CEO's Attitude	1.007	.317
CEO's IS Knowledge	3.303	.071
Perceived Benefits	1.843	.177
Complexity	.027	.871
Compatibility	6.198	.014
Perceived Barriers	.329	.567
Image	.250	.618
Customers Power	6.410	.012
Competition Intensity	.398	.529
Level of Government Support	1.469	.227
Level of technology Support	.239	.625
Df1 = 2, df2 = 150		
Box's M = 165.068, F = 1.356, df1 = 105, df2 = 19167.068, Sig = .009		

#### *Independent and Chain Hotels in Thailand: MANOVA and ANOVA Results*

Types of Hotels	Variables (organisational Factors)	Sum of Square	df	Mean Square	F	Sig (p)
Independent and Chain	<b>Size of Hotel*</b>	64.101	1	64.101	17.330	<b>.000</b>
	Top Management Support	2.054	1	2.054	2.459	.119
	Organisational Readiness	3.692	1	3.692	2.501	.116
	CEO's Attitude	1.173	1	1.173	2.146	.145
	<b>CEO's IS Knowledge*</b>	5.115	1	5.115	3.904	<b>.050</b>
	Perceived Benefits	3.790	1	3.790	3.122	.079
	Complexity	1.385	1	1.385	1.553	.215
	<b>Compatibility*</b>	4.849	1	4.849	5.219	<b>.024</b>
	Perceived Barriers	.037	1	.037	.017	.895
	Image	.843	1	.843	.508	.477
	<b>Customer Power*</b>	9.476	1	9.476	8.340	<b>.004</b>
	<b>Competition Intensity*</b>	8.708	1	8.708	8.623	<b>.004</b>
	Level of Government Support	4.300	1	4.300	1.905	.170
	Level of Technology Support	1.285	1	1.285	1.756	.187
<b>MANOVA: Pillai's Trace = .188, F = 2.260, Sig = .008</b> Wilks' Lambda = .812, F = 2.260, Sig = .008 Hotelling's Trace = .231, F = 2.260, Sig = .008 Roy's Largest Root = .231, F = 2.260, Sig = .008						

\* Significant at  $p < .05$

### *Independent and Chain Hotels in Thailand: t-test Results*

**Table G-3: The t-test Results for Differences in Factors Affecting the Adoption of IWMA between Independent and Chain Hotels in Thailand**

Thailand (N = 152)					
Factors	Mean		Mean Difference	t-value	P-value
	Chain (n=41)	Independent (n=111)			
<b>Organisational factors</b>					
Size of Hotel*	5.04	3.58	-1.46	-4.395	.000*
Top Management Support	6.57	6.31	0.26	-1.568	.119
Organisational Readiness	5.58	5.23	0.35	-1.582	.116
CEO's Attitude	6.50	6.30	0.20	-1.465	.145
CEO's IS Knowledge*	5.92	5.51	0.41	-1.976	.050*
<b>Technological Innovation factors</b>					
Perceived Benefits	5.86	5.50	0.36	-1.767	.079
Complexity	5.82	5.60	0.22	-1.246	.215
Compatibility*	6.15	5.75	0.40	-2.285	.024*
Perceived Barriers	4.26	4.22	0.04	-.132	.895
Image	6.07	5.90	0.17	-.712	.477
<b>Environmental factors</b>					
Customers Power*	6.26	5.70	0.56	-2.888	.004*
Competition Intensity*	5.87	5.33	0.54	-2.936	.004*
Level of Government Support	5.10	4.72	0.38	-1.380	.170
Level of technology Support	6.19	5.98	0.21	-1.325	.187

\*Significant at  $p < .05$ 

### *Independent and Chain Hotels in Australia: Testing Assumption for MANOVA*

**Table G-4: Testing Assumption of MANOVA by Independent and Chain Hotels in Australia**

Factors affecting the use of IWMA	Levene's Test of Equality of Error Varian	
	F	Sig
Size of Hotel	19.649	.000
Top Management Support	3.674	.057
Organisational Readiness	.284	.595
CEO's Attitude	6.276	.013
CEO's IS Knowledge	.731	.394
Perceived Benefits	3.309	.071
Complexity	.014	.907
Compatibility	6.202	.014
Perceived Barriers	3.171	.077
Image	1.001	.319
Customers Power	1.710	.193
Competition Intensity	2.382	.125
Level of Government Support	.722	.397
Level of technology Support	2.588	.110
<b>Df1 = 1, df2 = 141</b>		
<b>Box's M = 150.617, F = 1.282, df1 = 105, df2 = 55305.472, Sig = .027</b>		

### Independent and Chain Hotels in Australia: MANOVA and ANOVA Results

Types of Hotels	Variables (organisational Factors)	Sum of Square	df	Mean Square	F	Sig (p)
Independent and chain	Size of Hotel*	65.848	1	65.848	22.054	.000
	Top Management Support	1.244	1	1.244	1.249	.266
	Organisational Readiness	5.235	1	5.235	2.835	.094
	CEO's attitude	2.290	1	2.290	3.317	.071
	CEO's IS Knowledge	.459	1	.459	.341	.560
	Perceived Benefits*	7.359	1	7.359	8.955	.003
	Complexity	.066	1	.066	.061	.805
	Compatibility	4.254	1	4.254	3.641	.058
	Perceived Barriers	1.126	1	1.126	.737	.392
	Image	.121	1	.121	.057	.811
	Customer Power*	10.180	1	10.180	13.725	.000
	Competition Intensity*	14.710	1	14.710	14.005	.000
	Level of Government Support	.842	1	.842	.591	.443
	Level of Technology Support	1.075	1	1.075	1.148	.286

MANOVA: Pillai's Trace = .275, F = 3.466, Sig = .000  
 Wilks' Lambda = .725, F = 3.466, Sig = .000  
 Hotelling's Trace = .379, F = 3.466, Sig = .000  
 Roy's Largest Root = .379, F = 3.466, Sig = .000

\* Significant at  $p < .05$

### Independent and Chain Hotels in Australia: t-test Results

Factors	Mean		Mean Difference	t-value	P-value
	Chain (n=80)	Independent (n=63)			
<b>Australia (n=143)</b>					
<b>Organisational factors</b>					
Size of Hotel	3.28	1.92	-1.36	-4.881	.000*
Top Management Support	6.36	6.17	0.19	-1.118	.266
Organisational Readiness	4.71	4.33	0.38	-1.684	.094
CEO's Attitude	6.50	6.24	0.26	-1.821	.071
CEO's IS Knowledge	5.81	5.69	0.12	-.584	.560
<b>Technological Innovation factors</b>					
Perceived Benefits	5.84	5.38	0.46	-2.992	.003*
Complexity	5.53	5.48	0.05	-.248	.805
Compatibility	5.96	5.61	0.35	-1.908	.058
Perceived Barriers	4.47	4.29	0.18	-.859	.392
Image	4.60	4.54	0.06	-.240	.811
<b>Environmental factors</b>					
Customers Power	6.34	5.80	0.54	-3.705	.000*
Competition Intensity	5.50	4.85	0.65	-3.742	.000*
Level of Government Support	4.66	4.50	0.16	-.769	.443
Level of technology Support	5.86	5.68	0.18	-1.071	.286

\* Significant at  $p < .05$

## Appendix H: Factors Affecting the Adoption of IWMA: Size of Hotel

### *Size of Hotel in Thailand: Testing Assumption of MANOVA*

Factors Affecting the Use of IWMA	Levene's Test of Equality of Error Variances	
	F	Sig
Top Management Support	.120	.887
Organisational Readiness	3.215	.043
CEO's Attitude	2.547	.082
CEO's IS Knowledge	.498	.608
Perceived Benefits	1.021	.363
Complexity	1.242	.292
Compatibility	2.455	.089
Perceived Barriers	.044	.957
Image	.481	.619
Customers Power	4.083	.019
Competition Intensity	3.749	.026
Level of Government Support	1.214	.300
Level of technology Support	.491	.613
Df1 = 2, df2 = 149		
Box's M = 254.611, F = 1.166, df1 = 182, df2 = 15652.514, Sig = .064		

### *Size of Hotel in Thailand: The Results of MANOVA and ANOVA*

Factors	Mean Score				F-value	Sig.
	Small hotels (n = 24)	Medium hotels (n = 54)	Large hotels (n = 74)	All Hotels (n = 152)		
Top Management Support	6.40	6.29	6.44	6.38	.416	.660
Organisational Readiness	5.50	5.01	5.50	5.32	2.771	.066
CEO's Attitude	6.32	6.21	6.47	6.35	2.039	.134
CEO's IS Knowledge	5.37	5.55	5.75	5.62	1.142	.322
Perceived Benefits	5.77	5.45	5.65	5.60	.861	.425
Complexity	5.61	5.61	5.71	5.66	.228	.796
Compatibility	6.09	5.69	5.89	5.85	1.486	.230
Perceived Barriers	4.73	4.00	4.23	4.23	2.147	.120
Image	5.95	5.89	5.98	5.95	.073	.929
Customer Power	6.08	5.64	5.94	5.85	1.804	.168
Competition Intensity	5.21	5.31	5.69	5.48	3.096	.048
Level of Government Support	4.54	4.61	5.08	4.82	2.065	.130
Level of technology Support	6.06	5.87	6.16	6.04	1.840	.162
MANOVA: Pillai's Trace = .181, F = 1.058, Sig = .392 Wilks' Lambda = .827, F = 1.051, Sig = .401 Hotelling's Trace = .200, F = 1.044, Sig = .409 Roy's Largest Root = .114, F = 1.214, Sig = .275						

**Size of Hotel in Australia: Testing Assumption of MANOVA**

**Table H-3: Testing Assumptions of MANOVA by Different Hotel Sizes in Australia**

Factors Affecting the Use of IWMA	Levene's Test of Equality of Error Variances	
	F	Sig
Top Management Support	13.839	.000
Organisational Readiness	.278	.757
CEO's Attitude	7.146	.001
CEO's IS Knowledge	3.878	.023
Perceived Benefits	4.419	.014
Complexity	3.452	.034
Compatibility	5.991	.003
Perceived Barriers	.193	.825
Image	.175	.840
Customers Power	4.252	.016
Competition Intensity	.751	.474
Level of Government Support	.203	.816
Level of technology Support	3.1444	.046
Df1 = 2, df2 = 140		
Box's M = 290.903, F = 1.371, DF1 = 182, DF2 = 33797.229, Sig = .001		

**Size of Hotel in Australia: The Results of MANOVA and ANOVA**

**Table H-4: MANOVA and One-Way ANOVA Results for Differences in Factors Affecting the Adoption of IWMA among Different Hotel Sizes in Australia**

Factors	Mean Score				F-value	Sig.
	Small hotels (n = 55)	Medium hotels (n = 55)	Large hotels (n = 33)	All Hotels (n = 143)		
<i>Organisational Factors</i>						
<b>Top Management Support*</b>	5.90	6.53	6.47	6.27	6.932	<b>.001</b>
Organisational Readiness	4.52	4.41	4.80	4.54	.826	.440
<b>CEO's Attitude*</b>	6.12	6.60	6.47	6.39	5.025	<b>.008</b>
<b>CEO's IS Knowledge*</b>	5.36	6.09	5.87	5.76	6.059	<b>.003</b>
<i>Technological Innovation Factors</i>						
<b>Perceived Benefits*</b>	5.39	5.88	5.65	5.64	3.980	<b>.021</b>
Complexity	5.35	5.61	5.60	5.51	1.049	.353
<b>Compatibility*</b>	5.44	6.02	6.06	5.80	5.438	<b>.005</b>
Perceived Barriers	4.17	4.52	4.55	4.39	1.443	.240
Image	4.39	4.60	4.86	4.58	1.109	.333
<i>Environmental Factors</i>						
<b>Customer Power*</b>	5.78	6.33	6.25	6.10	6.306	<b>.002</b>
<b>Competition Intensity*</b>	4.73	5.45	5.63	5.21	10.732	<b>.000</b>
<b>Level of Government Support*</b>	4.28	4.83	4.71	4.59	3.202	<b>.044</b>
Level of Technology Support	5.54	5.97	5.86	5.78	2.951	.056
MANOVA: Pillai's Trace = .287, F = 1.663, Sig = .026 Wilks' Lambda = .726, F = 1.709, Sig = .020 Hotelling's Trace = .359, F = 1.754, Sig = .016 Roy's Largest Root = .298, F = 2.961, Sig = .001						

\*Significant at p < .05

*Size of Hotel in Australia: The Results of t-test*

<b>Table H-5: The t-test Results for the Differences in Factors Affecting the Use of IWMA Among the Different Hotel Sizes in Australia</b>			
<b>Variable</b>	<b>Mean difference between Small &amp; Medium</b>	<b>Mean difference between Small &amp; Large</b>	<b>Mean difference between Medium &amp; Large</b>
<i>Organisational Factors</i>			
Top Management Support	.002*	.008*	.617
Organisational Readiness	.665	.375	.215
CEO's Attitude	.006*	.044*	.288
CEO's IS Knowledge	.002*	.061	.296
<i>Technological Innovation Factors</i>			
Perceived Benefits	.007*	.255	.171
Complexity	.196	.327	.968
Compatibility	.008*	.008*	.800
Perceived Barriers	.147	.160	.900
Image	.449	.130	.426
<i>Environmental Factors</i>			
Customers Power	.002*	.028*	.578
Competition Power	.000*	.000*	.386
Level of Government Support	.017*	.123	.632
Level of technology Support	.051	.161	.542

\*Significant at  $p < .05$