

Association for Information Systems AIS Electronic Library (AISeL)

AMCIS 2007 Proceedings

Americas Conference on Information Systems
(AMCIS)

December 2007

E-Business Use in Small and Medium-Sized Tourism Enterprises: A Post Adoption Perspective

Laddawan Kaewkitipong
Lancaster University

David Brown
Lancaster University Management School

Follow this and additional works at: <http://aisel.aisnet.org/amcis2007>

Recommended Citation

Kaewkitipong, Laddawan and Brown, David, "E-Business Use in Small and Medium-Sized Tourism Enterprises: A Post Adoption Perspective" (2007). *AMCIS 2007 Proceedings*. 97.
<http://aisel.aisnet.org/amcis2007/97>

This material is brought to you by the Americas Conference on Information Systems (AMCIS) at AIS Electronic Library (AISeL). It has been accepted for inclusion in AMCIS 2007 Proceedings by an authorized administrator of AIS Electronic Library (AISeL). For more information, please contact elibrary@aisnet.org.

E-BUSINESS USE IN SMALL AND MEDIUM SIZED TOURISM ENTERPRISES: A POST ADOPTION PERSPECTIVE

Laddawan Kaewkitipong

Department of Management Science, Lancaster University Management School

Lancaster University, Lancaster LA1 4YX, UK

l.kaewkitipong1@lancaster.ac.uk

and

Prof. David Brown

Department of Management Science, Lancaster University Management School

Lancaster University, Lancaster LA1 4YX, UK

d.brown@lancaster.ac.uk

Abstract

In the context of ongoing research into e-business technologies in use by Thai SMEs in the travel service sector, this paper starts with an overview of e-business technology impact on the travel sector generally before focusing on the Thai context. Of primary interest in this paper is the user experience from the introduction of new technologies and their post-adoption evaluation. The analysis starts with consideration of the stakeholders in the travel industry and an understanding of the business models, including both the users and the providers of the e-business technologies. Two detailed case studies demonstrate how e-business technologies benefit both firms. In each company the decision on the degree of IT integration differs and this is shown to have considerable impact on benefits realised. In the post adoption evaluation, however, each has its own frame of reference. Formal methods of assessment for both SMEs are problematic and not in evidence.

Keyword: E-business use, IT evaluation, SMEs, travel industry

Introduction

The research reported here is part of ongoing work into the use of e-business technologies by Thai SMEs in the travel service sector. In 2005 Thailand generated US \$9,134 million from this sector. The travel sector is interesting in that large numbers of SMEs are active and the use of e-business technologies is widespread. Of primary interest in this paper, is the user experience of SMEs following the introduction of these new technologies and their post adoption evaluation. This is of significance in two ways. Firstly, there is little in the IT evaluation literature that centres on SMEs, and secondly the particular issues associated with introducing e-technologies in developing economies are also under-represented.

Two detailed cases, both SME travel agencies in the Bangkok area, provide a basis for the research. The paper is structured into 5 parts. The first part starts with a consideration of the stakeholders in the travel industry and an understanding of the business models of both the users and the technology providers. There are considerable tensions here as companies of very different sizes are required to both compete and to collaborate. Part two introduces some selected relevant literature on IT evaluation that informed both the empirical design and the subsequent interpretation. Parts three and four outline the case based methodology and the description of the two detailed cases. Finally, part five summarises the research findings and their implication.

Stakeholders in the travel industry: business models and e-technology impacts

By nature, the travel industry has a similar structure to conventional retail/ wholesale businesses. The products include flight tickets, room reservations, package tour bookings, car hire, cruise tickets, and other related services. The distribution channel can be direct or indirect through intermediaries. Stakeholders in the travel industry involve suppliers, intermediaries, including wholesalers, retail travel agencies, and technology providers, and customers or travellers. Traditionally, the hotels and airlines use wholesalers and travel agencies as main distribution channels and as the means to access existing and new and expanding markets. Particularly in the airline industry, the travel agents provide the focus for airline reservations, ticketing, transactions, travel advice, market presence and packaging (Vasudavan and Standing 1999). Customers or travellers, therefore, continue to make booking with travel agencies, as well as direct contact with their preferred hotels or airlines. The relationship of each player in the industry can be illustrated as below.

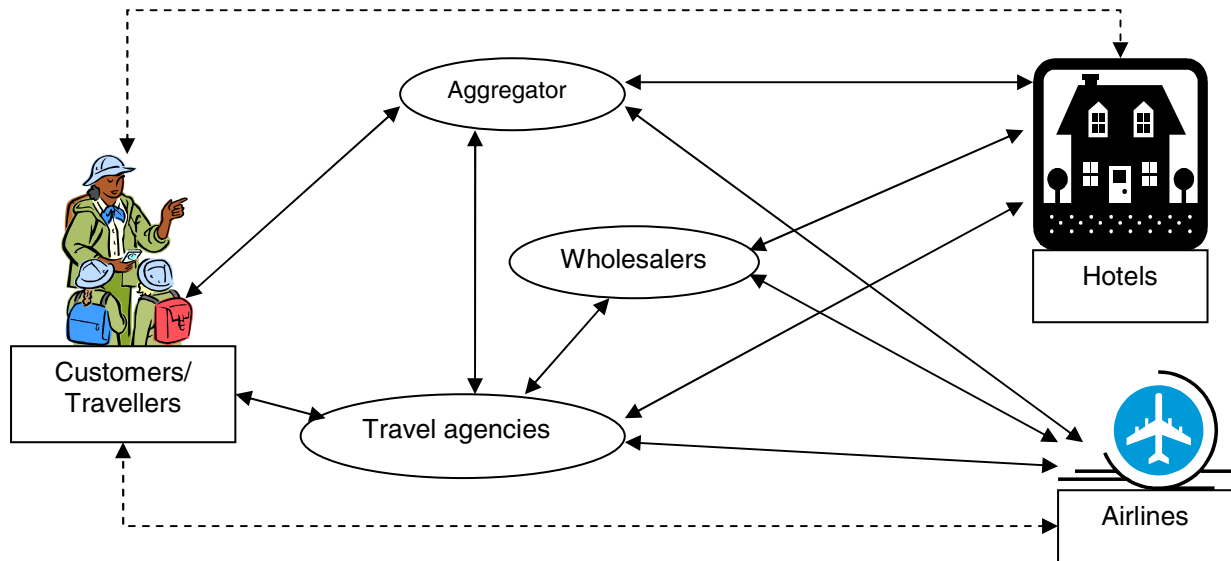


Figure I: Relationship among stakeholders of the travel industry

Suppliers

Suppliers are those who provide products or services for others in the supply chain. In the travel industry, suppliers encompass hotels, airlines, car rental, cruise, and so on. Only hotels and airlines are of particular interest to this paper.

Hotels

Traditionally, the hotels relied on travel agencies as their selling channels. However, with the Internet, hotels can easily provide room information and room availability online. The huge number of online travellers thus attracts the hotels, especially those in the chains. These hotels provide an online booking channel on their website to gain more direct customers, which yield more margin than the customers who make reservation via travel agencies.

As the hotels' room reservation market is a highly information-based industry (Werthner and Ricci 2004), the better information the travel agencies can provide, and the more customers they are likely to gain. In addition, the company that can provide a comparison feature on its website is likely to be able to attract more online travellers. Many operational activities, such as reservation confirmation or reply to customers' queries, can be sent electronically via the Internet. Thus, it is likely that the more technologically perceptive agents have a better chance to succeed, whilst leaving behind the small companies which are less technologically capable (Elliott and Boshoff 2005). However, the market for securing reservations is both price and service quality sensitive. The Internet technology only allows both hotels and travel agencies to be able to reach more customers; therefore, it is believed that with the better service quality and closer relationship with customers, the small travel agencies can still compete with many large travel agencies, which are more technologically capable.

Airlines

Strategically, e-business technology can be used to help the airlines develop and manage their business as well as to monitor the external environment and competition. The revenue analysis and forecasting, including predicting demand and determining desirable products for customers, are also supported by the e-business technology (Buhalis 2004). The most extensively used e-business application in the airline sector is the Computerised Reservation System (CRS), which is used by each airline in managing its flight schedule as well as tickets and prices. CRS operations that book and sell tickets for multiple airlines are known as Global Distribution Systems (GDS). Currently, four major GDSs are SABRE, Worldspan, Amadeus, and Galileo (Buhalis 2004). Each GDS is strong depending on where its parent airlines are operating. (Buhalis 1998). SABRE, for example, is strong in the American market, while Amadeus is strong in the Europe Market (Starkov 2001). Unsurprisingly, these compete vigorously to recruit as many travel agencies as possible to penetrate into broader markets (Buhalis 2004).

However, the Internet has emphasised the opportunities for cost reduction (Mazhatul and Suraya 2005). Airlines, which have long relied on travel agencies as their gateway and distribution channels to customers, have realised that the Internet allows greater chances to reach customers directly and to cut the cost of intermediaries. Thus, the airlines are taking advantages from such an open, beneficial channel by launching their online booking system to increase direct bookings and diminish the travel agents' power. Nevertheless, the major limitation of the airlines' own online booking system is that they provide information and options of their own flights only. Many airlines therefore further compete using reward or loyalty programs in order to encourage direct purchasing with the airlines and to obtain repeated customers (Buahlis 1998; Bennett and Lai 2005). Overall, the airlines market is characterised by the large-sized players. Each has competed on gaining more customers, within a growing market, with a focus on lowering costs within the distribution channels. The challenge for most airlines is to manage the tensions associated with dual distribution channels that are potentially competitive with each other.

Intermediaries

According to Wynne et al. (2002), intermediaries are those who facilitate the searching process of both the buyers and the sellers by combining and compiling information, which is of interest to both parties in a systematic and comparable form. Importantly, the intermediaries support the efficient and effective exchange process, including issuing tickets and forwarding money, as well as help reduce uncertainty for both parties (Lewis et al. 1998). Major intermediaries in travel industry are in the main either travel agencies or aggregators.

Travel agencies

Travel agencies can be usefully divided into wholesalers and retailers. Wholesale agencies typically have a large number of contracts with many suppliers including the big, five-star hotel chains (which do not normally contract with small travel agencies) and conduct their business on a B2B model. These agencies resell their inventory to the retail travel agencies. Examples of wholesalers are Gullivers Travel Associates (GTA), Kuoni, etc. The retail travel agencies, however, have either direct or indirect contacts with suppliers. Generally, the travel agencies are closest to the travellers and assist them on searching and booking their choices of products or services (Wynne et al. 2002).

Operationally, the e-business technology facilitates for the agent online booking transactions and payments. However, the Internet is exerting an influence on the structure of distribution as it enables the opportunities for travellers to easily contact to suppliers (Bennett and Lai 2005). Therefore, the technology profoundly affects the agencies and their strategic position. It helps them provide a more informed service but at the same time empowers the traveller. As the searching and buying transactions are made easier, and travellers become more computer-literate, it is contended that the travel agencies' power on the distribution channels is to be diminished unless they can offer complimentary advice which satisfies customers' need (Lewis et al. 1998). In other words, to prevent the disintermediation, they have to be more service-based and technologically-oriented in their advisory role (Bennett and Lai 2005).

Aggregators

According to figure I, the aggregators have come into play as another kind of intermediary. Normally, they specialise in searching the websites of suppliers and other travel agencies and combining, organising as well as sorting information of various special deals offered on those websites (Beirne 2005). The aggregators do no direct selling but directing customers to the online agents or suppliers and charge them a referral fee (Beirne 2005). Examples of well-known aggregators are Cheapflights.com, Kayak.com, and Yahoo! Travel. The emergence of the aggregators has been a significant development.

Technology providers

According to Wyckoff (1997), the Internet technology not only changes the way these companies conduct their business, but also creates new kinds of intermediary such as providers of electronic payment system and service for authentication and certification of transactions. In the online travel industry, this kind of intermediary includes the e-payment provider, the application service provider, which provides (mostly web-based) online booking system for travel agencies, wholesalers and suppliers. The GDS provider can also be classified as a technology provider. Typically, these service providers do not link directly to the travellers, but they support the suppliers and/ or travel agencies' business activities. The revenue model of these providers is varied, depending on the application/ service they provided, and how they contract with their customers (e.g. hotels, airlines, travel agencies). Tariffs are typically based on combinations of transactions and service rentals. Examples of the technology providers are Hotel Booking Solutions, Pelican and Pegasus.

Customers

Customers in the travel industry are any travellers, either individual or corporate, who search and shop for travel products/ services. As the Internet allows the prompt and direct communication to anyone at anywhere around the globe, the customers, especially in the online travel market, play an increasingly important role in selecting products and suppliers. Furthermore, they have become more IT-literate and more accustomed to automation and therefore have increasing expectations in terms of convenience and value for money (Wynn et al. 2002). Such changes in consumers' behaviour, resulted partially from the more widespread use of the Internet and e-business technology, affect directly the future roles of travel agencies as well as the suppliers. Generally, it can be said that the trend of the market is mainly driven by the travellers' behaviour which may differ in each region.

Overall, the Internet has opened up opportunities for all players to present themselves, offer their products online, and improve many of their business activities. The competition between suppliers and travel agencies has increased. Furthermore, they have to be able to offer distinctive value to their customers, based on a well-defined and robust business model. Obviously, the expertise on the Internet and e-business technology, if used properly, can be of great help in achieving this goal. Nevertheless, it is the case that most benefits and impacts of e-business use as discussed above are reported in the context of large-sized enterprises in the industry. Hence, although the Internet can help the small travel agencies to be able to expand their market worldwide and to run 24-7 stores, they still seem to be less competitive in such a highly information-based market. The main reason is that small travel agencies usually lack technology expertise and cannot offer as complex, full-option price comparison system as large travel agencies like Expedia.

Selected literature

In the context of the travel service industry Bierne (2005), Vasudavan and Standing (1999), Werthner and Ricci (2004), Elliott and Boshoff (2005) have all made contributions on related business models and the impacts of technology, and are referred to above. Buhalis (2004) have provided a comprehensive analysis of the strategic and tactical use of ICTs in the airline industry. A general framework for linking Tourism and IT has also been provided by Buhalis (1998), and this is used later to conceptualise e-technology use.

Of main interest in this paper is the literature on post adoption evaluation. This is an area of continued interest for researchers and supports a dedicated journal (*Electronic Journal of Information Systems Evaluation*); the interest for practitioners, however, is less well understood. The broad problem of evaluation has been termed a 'wicked problem' (Farbey et al. 1999). An excellent overview of the nature of IS evaluation problems is provided by Brown, who comments 'The theoretical basis for IS Evaluation has been well established, but organizational practice seems to support the judgement that it is not worth the effort - it is perceived to yield too little value' (Brown 2005, p. 169). Paradoxically, the contribution of IT to business objectives remains a key top 5 management issue (CSC 2001). Overall, there is little doubt that the long term cumulative impact of IT investments is positive (the productivity paradox) (Brynjolfsson and Hitt 2003), but at the specific investment level IT business value can be expected/ unexpected, desirable/ undesirable or quantifiable/ unquantifiable (Zhu and Kraemer 2005). To date the discourse on IT contribution at the project level has largely taken place in terms of either market or resource perspectives. For the former the focus is on IT as a means of operational effectiveness and strategic positioning (Porter 1996; Levy 1999); for the latter the emphasis has been on IT resources and performance, and the comparison with other firms. The crucial characteristic of a resource view is the heterogeneity of resources between firms and their immobility, which makes replication of advantageous resources economically prohibitive (Mata et al. 1995; Wade and Hulland 2004; Spanos and Lioukas 2001). Rivard et al (2005) have brought both these perspective together to produce an integrated model of contribution. Complementing these is a third perspective that relates to alignment. In this argument it is the relationship and fit between technology systems and business processes that matters (Henderson and Venkatraman 1999).

In terms of evaluation tools steady progress has been made in identifying the weaknesses of 'simple' ROI based techniques (Hochstrasser 1990), and developing more managerial based approaches based on business value judgements (Parker et al. 1988; Remenyi et al 1995). Most recently there has been useful work to explain the slow adoption of new evaluation

techniques, including the problems of practical application (Magrill and Brown 1998), barriers to changing evaluation methods (Serafeimidis and Smithson 2000) and problems of attributing business value (Cronk and Fitzgerald 2002).

Finally, in terms of evaluation and SMEs this is much smaller literature. Examples include Rivard et al (2005) who based their work on an SME survey sample of 96. Hillam and Edwards (1999), who looked at evaluation processes, is an example of case-based work. The authors could find no previous research on IT evaluation of SMEs specifically in Thailand or developing economies generally.

Methodology

As indicated in the literature survey above insufficient is known about 'evaluation in practice' within SMEs. The aim of this study is to develop this understanding and in particular to establish whether the techniques and practices of larger firms have any relevance. This in turn depends upon a detailed understanding of the e-technology in use within the SME firms and its impact and business value. Given these requirements a case study approach (Yin 2003) is therefore deemed appropriate. This is a view shared by Schlenker and Crocker (2003) who advocate the approach when business value assessments are required.

The choice of firm cases in this research is through a network of personal contacts and a 'snowballing' method, approaches that are acceptable in Thailand. The selection bias is, however, acceptable considering that the targeted firms for this research are SMEs which have adopted and been using the e-business technology to facilitate their business processes and that the e-business adoption in Thai SMEs is low. Regarding the criteria, two companies were chosen from the technology they adopted and the industry they are in. The first company (case study I) is a medium-sized online travel agency, focusing on hotel booking. It provides online booking, accepts electronic payment and distributes booking confirmations, receipts and vouchers via e-mail. The second company (case study II) is a small-sized travel agency. It has been offered only flight bookings and has just expanded to provide hotel booking on the final quarter of last year (2006). The company sources its products from the Global Distribution System as well as suppliers' online booking system. The companies exhibit different levels of commitment to technology and this distinction is a deliberate variable in the on-going wider research sample that these two cases are drawn from.

Qualitative data are obtained from semi-structured interviews (see Table I). At least three interviews are conducted for each firm case with the semi-structured questions, and the tape record is applied on a voluntary basis. The interviewees are a managing director, an operational manager, and a reservation manager or other positions with similar responsibility. Mainly, the user experience has been explored, and the managers are asked to identify the post-adoption impacts of the adopted technology. Besides, the reservation staff (the main users of the adopted technology) are also asked to show and explain how they use the technology to facilitate their daily tasks, how they perceive the impacts or value of the technology as well as how their work has been changed after the adoption. The notes are taken during the investigation and are summarised and written up after each interview.

Table I: Questions for semi-structured interviews

Question modules	Objectives	List of questions
-Start- Factual data of Organisation and its business strategy	To gather - General info of the company and its industry context - General competitive situation in the business sector - Business strategy of the company	- What is your main business (product/ service)? - How do you position your firm? - How would you go about expanding market? - What are your competitors doing? - How do you compete in the market?
Pre-adoption of e-business	To understand - The relationship of IT/ IS strategy with business strategy - Initial expectation of the adoption - What can or should be done to accommodate the adoption	- How do you plan your IS/ IT strategy? - Why did you implement and adopt the technology? - What were your initial expectations of the adoption? - How did you plan for the adoption? - How did you justify your IT costs? - How did the firm plan and do to reach the effective and efficient use of the adopted technology?
Use experience	To understand - How the firm uses e-business - How e-business assists or transforms business processes - Issues or problems in changing the way of conducting businesses	- How does the adopted technology help your business (At which business process)? - How did the process run before the adoption? - How do you use the adopted technology to achieve or to serve business goals? - Have you found any difficulties using the technology? - Are you satisfied with the usefulness of the adopted technology?
Post-adoption	To inquire into - Impacts or perceived values of the adopted technology - How the firm assesses the perceived value - The relationship of expected value and perceived value	- What are the impacts or values that you perceive after the adoption? - Are the impacts similar to your initial expectations? - Do you find any negative impacts of the adoption? What are they? - How do you evaluate or measure those impacts? - Do you compare the impacts with the initial expectations? How? - How do you relate business strategy and IS/ IT strategy to the evaluation?
-Closure- General comments on the issues	End of questions - Future plan for other IT adoptions - Comment on e-business use in Thai SMEs - Other comments contribute to academic	- Do you have any plan for future adoption? - Do the impacts affect your decision on future adoption? - How do you think about e-business opportunity for Thai SMEs? - As an e-business adopter, what is your opinion regarding the evaluation issues? Do you think it is problematic? Why or why not?

Finding and Analysis

The research findings are outlined below. Each case is described within the broad context of the stakeholders shown in Fig1 and the two cases are then compared in terms of their experience of the technology in use and the business value.

Case study 1 – the medium-sized online travel agency, Bangkok, Thailand

Established in June 2000, the company has perceived the opportunities to reach a numerous number of travellers around the world via the Internet and therefore positioned itself as an online travel agency. Strategically, while other companies compete by offering a wide variety of products, the company focuses on providing the best-quality, 24-7 services with personalisation. Hence, the company needs to be strong at its operations which are mainly about dealing with the incoming bookings and queries. Furthermore, the company decides not to compete with the lower price. Rather, the company believes that the better services create trust, attract more customers, and in turn generate more sales. In 2005, the company had around 110 employees and had an approximate turnover of £5.3 million.

In regard to the product and market scope, the company focuses more on hotel booking especially in Asia as it knows the Asian market better than other markets and has good relationships with suppliers and local tour operators in the Asian market, particularly Thailand, China, Hong Kong, and Singapore. Therefore, it is not surprised that 70 percent of the bookings sold are for products in Thailand and another 30 percent are for products in other countries.

Technology in use experience

In terms of intra-organisation use, the company had developed a web-based application to facilitate activities throughout the supply chain, including supplier management, production/ operation, sales and marketing support, and customer relation. Intensive use is on dealing with bookings and queries. The incoming bookings and queries are kept in an online database which can be tracked and viewed by the reservation team. Products' information, such as room types, room rates, list of hotels, and attractions of each place, is stored in a centralised database, enabling various websites (of the company) to retrieve these data for displaying purpose. Importantly, the application is also used to manage the inventory on the database.

For customer relationship marketing, the company's websites keep track repeated actions such as the top-search hotels, the top-selling hotels, and returning customers. These kinds of data are statistically analysed so that the marketing team can then create newsletters or even offer promotions which are of particular interest to the customers. The live chat application is another communication channel to customers available via the Internet, allowing the firm to be more responsive to customers and creating an impressive, professional image for the firm.

Post-adoption Evaluation and impacts of e-business use

Firstly, it can be seen from this case that costs are affected by the use of the web-based application in assisting the back-end processes. Operational costs are obviously lower as much of the paperwork become unnecessary and the number of phone calls is reduced, meaning that reservation staff can spend time to deal with more important or urgent activities. Furthermore, the e-mail and live chat program also allows telephone cost saving both for customers and for the company.

On the competitive edge, the company becomes more competitive and more capable of acquiring customers. Although the competitive edge is subjective depending on management's perception and cannot be measured quantitatively, the adoption in this case shows obvious positive impacts on the firm's competitive stance. For example, the online allotment system makes the instant confirmation feature possible and thus attracts more customers to confirm the bookings with the websites. In addition, the live chat program as well as the web-based application allows the firm to become more responsive, helps shorten the operational processes, and therefore makes the firm be in a better position than its competitors in offering the best-quality and speedy service.

At the business process, positive impacts are also realised. Many tasks are automated by the application, thus shortening the process time. Additionally, quality of the process is enhanced as the number of operational errors has been decreased. It is also easier for the sales and reservation team to deal with the bookings and queries as the back-end application shows the status (i.e. waiting for reply, waiting for hotel's confirmation) for everyone to see and therefore reduces redundancy in dealing with the same booking.

Organisational structure has also been changed to suit the business processes. Some functions are merged while some teams are split depending on the new operational flows. For example, before the adoption of the web-based application, a sales person who creates a booking needs to deal with a customer and also confirm booking to the hotel. However, after the adoption, those who deal with the customer and those who confirm booking to the hotel does not have to be the same. In other words, anyone can take the incoming booking to process at any status, and the web-based application will show the current status of the booking as well as the previous actions done to the booking. Although redundancy in workforce might happen, excess people have been moved to join other teams or functions which might need more resource to deal with more workloads resulting from the better service enabled by the adopted technologies.

Productivity is obviously increased. It can be clearly seen from the number of booking which is increased comparing to the same figure at the same time of the previous year. Not only has the number of booking been increased, one sales and reservation officer can also deal with around triple of the number of bookings they could previously do per day.

Ultimately, the well-designed websites as well as the instant confirmation function impress the customers and thus help the company to establish trust among customers and suppliers. Additionally, the company can create a better, more professional business image by showing its capability of developing many functions online to provide the best-quality services.

On the whole, it can be seen that the web-based application can be helpful for both operational and managerial activities as well as for intra-organisation, inter-organisation, customer relationship marketing functions. Importantly, using the IT to facilitate and link many work functions together allows the better chance for the IT business value to be realised. Interestingly, it can be seen, in this case, that many applications and functions reinforce each other, and therefore obvious post-adoption impacts can be realised. For example, the online availability system at the front-end site allows the customers to check for availability by themselves and make instant bookings, reducing the workload of the reservation team. At the same time the web-based application at the back-end office also makes it easier for the production team to deal with these bookings. With these two functions, it can be easily noticed that the booking management is faster and more effective. Lastly, it should be noted that the higher productivity does not necessarily yield more profitability. Moreover, profitability is not directly impacted by the adopted technology. It is therefore quite difficult to determine whether the increase on profitability results from the e-business use, from other changing factors, or from both. However, at least it can be seen that after the adoption, the company can create more sales with the same amount of human resource, meaning that the company obtain more profits as the costs remain the same.

Table II: Evaluation measures with reference to adoption expectations (Case study I)

Expectation	Measure
Operational Excellence	<i>Quantifiable</i>
	Number of bookings per sales person per day
	Time consumed to confirm and close one booking
	Number of errors (in dealing with booking) per month
	Revenue
	Number of complaints from customers
	Telephone and paper costs
	Number of booking per day or per month
	<i>Unquantifiable</i>
	Employee Satisfaction (Better work flows)
Strategic Positioning	<i>Quantifiable</i>
	Number of new customers from new regions or countries (Market reach)
	<i>Unquantifiable</i>
	Competitive Edge
	Differentiation
Best-quality service	<i>Quantifiable</i>
	Ability to provide 24-7 support
	Number of hours a new booking or query waits to be taken
	Elapsed time to deliver each reply (via email)
	Number of repeated customers

Expectation	Measure
	<i>Unquantifiable</i>
	Customer Satisfaction
	Relationship with customers
	Business image

Considering the post-adoption evaluation, no formal method or procedure has been used, either quantitative or qualitative. In the words of the manager there was ‘no need for to conduct formal evaluation’. Informally the benefits have been recognised. Figures which are used for evaluation purposes, mentioned during the interview, are actually set in accordance with the pre-adoption expectations. Table II summarises the measures used to evaluate each pre-adoption goal.

Case study II – the small-sized travel agency, Bangkok, Thailand

Established in 2003, the company has firstly focused on selling flight tickets for corporate customers. Currently, it has around 20 employees and has expanded its focus to cover hotel reservation. An approximate turnover in 2004 was around £580,000 and grew up to around £880,000 in 2005. In term of market platform, the competition is high, and the margin which can be marked up per ticket is quite low. In other words, the market is fragmented, shared by a large number of travel agencies. Consequently, the company needs to obtain a large volume of tickets in order to create sufficient and satisfied-level profits. Thus, due to the low margin of flight tickets, the company decides to expand its product to cover hotel bookings. The hotels from more than 70 countries worldwide are offered on the company’s website. The customers can request for booking via an online request form or via telephone. Therefore, two main products of the company are flight tickets and room bookings. Related services such as applying for travelling visa are also provided with an additional service charge.

Technology in use experience

For customer, the company’s website provides an online request form for both hotel booking and flight booking. Furthermore, basic information about hotels and flights such as price and room rates can be searched from the website. Simply speaking, the website is used as an online interactive catalogue of the company. The tickets and invoice are delivered to the customer’s physical address, and the customer can pay immediately upon the delivery or choose to pay later within an agreed credit term. The e-business use for supporting the customer relationship and marketing is inactive. The customer can register as a member of the website, but no statistic analysis or tracking report is done on such data. Rather, the relationship with customer is built and maintained offline.

For Intra-organisation functions, most applications used to facilitate the operation are stand-alone applications such as MS Excel and ACCPAC¹ (the accounting software). However, main operation of the company is about connecting to suppliers to search and reserve for what the customers have requested. Therefore, the major use of e-business technology is on the inter-organisation functions. Simply put, the operation team uses the GDS for flight bookings and the wholesalers’ online booking system for room bookings. Installed on each computer, the GDS connects to each airline’s database via the Internet. Thus, it

is used regularly by the customer service team to retrieve flight information and other related information such as weather condition and visa requirement of each destination. Similarly, the online hotel booking system is used by the customer service team to check availability as well as confirm booking on behalf of the customers. The latter system is however run on the wholesalers’ website and therefore no need for any further installation.

Figure II shows a holistic flow of a completed transaction and the points at which IT is brought into use. The flow starts when a customer either emails, calls, or makes an online request to the customer service team. The team takes the request and looks up on the GDS or on the online room booking system to search or confirm bookings per request. The Pro Control applicationⁱⁱ then extracts flight and customer details from the GDS to generate an invoice. Nevertheless, the operation team still needs to key in details which do not exist in the GDS such as the customer’s address (The GDS requires only passenger’s name and flight details to issue the ticket). At this stage, the operational activities have all been done. The invoice data will be transferred to the ACCPAC, and the rest activities related to the selling transaction are managed by an accounting team.

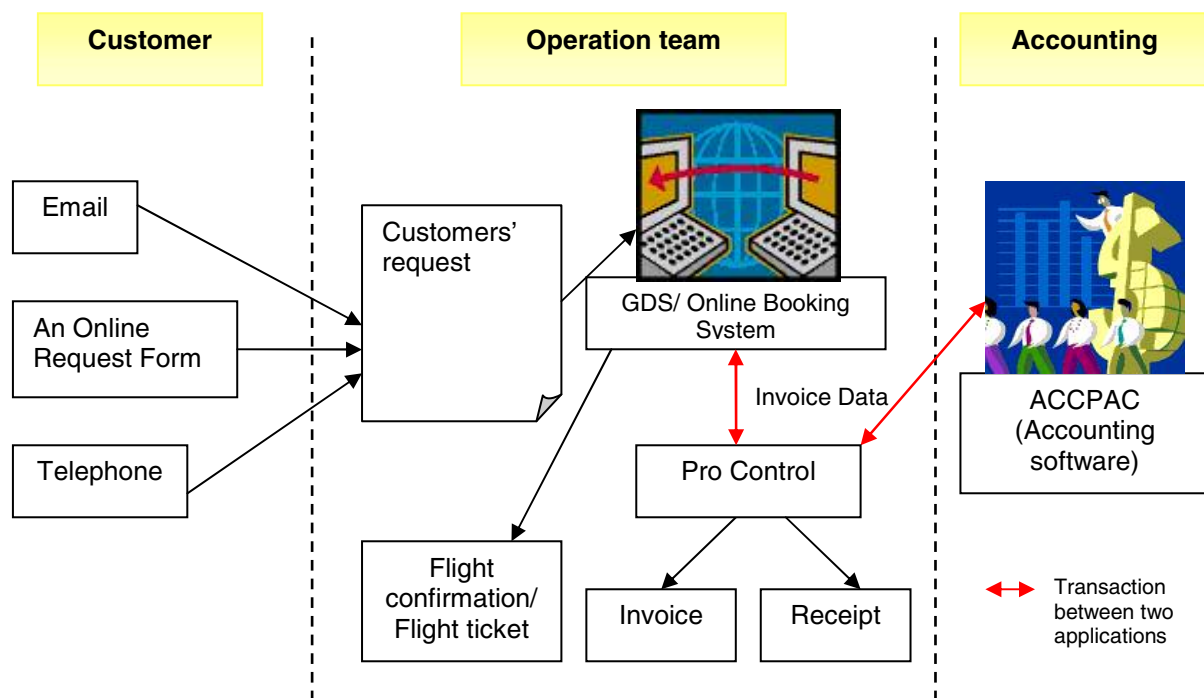


Figure II: Technology uses of the firm in case study II

Currently, flight and hotel confirmation is still printed out and delivered together with the invoice as the company does not implement an online payment feature yet. However, Pro Control is adopted to help create and manage invoice as well as receipt. The application can also export the invoice data and convert them into format which is compatible with and can be used by accounting software, ACCPAC.

Post-adoption Evaluation and impacts of e-business use

For post-adoption evaluation, the company does not formally conduct the post-adoption evaluation of these adoptions yet. For the GDS, the application is a must for the flight booking business and can be used for free. Therefore, evaluating the sales performance of flight booking team directly reflects the impacts, including benefits, of the GDS. For the online booking system, the company chose to use this system, provided by the wholesaler, in order to be able to book the hotels with which the company do not have direct contact for its customers, and such system serves the purpose favourably.

Considering impacts on competitive edge, the current use does not benefit the company on their strategic position, because it is the mandatory system required or used by every travel agency in making a reservation. However, the owner-manager is convinced that the advanced use of e-business technology can benefit the firm on their strategic position as well as on other business aspects. The company is therefore presently developing a more advanced technology such as the back-end inventory control application, shopping cart and e-payment function on the website.

For the business process, no radical changes or impacts are evidenced. At the flight booking business unit, it is because the GDS has been used as the main tool since the company has started up, while the online booking system used for the hotel booking is as simple as surfing the Internet, and therefore it does not change any of the original operational activities but adds more jobs for the reservation team (which previously dealt with only flight booking).

Table III: Evaluation measures with reference to adoption expectations (Case study II)

Expectation	Measure
Profitable business	<i>Quantifiable</i>
	Revenues
	Profits
	Number of customers
Strategic Positioning	<i>Quantifiable</i>
	Number of new customers from new regions or countries (Market reach)
	Number of products the company can offer (A variety of choices)
	<i>Unquantifiable</i>
	Competitive Edge
	Business Image

In summary, the adoption of e-business technologies in this firm is relatively low cost. Major costs are for the Internet fee (which is quite low in Thailand), learning the system and setting up IT infrastructure. Although the post-adoption evaluation is currently tied with the company's performance in making profits, according to the management, the evaluation of return on

investment of the adoption by comparing costs of the adoption with its impacts has never been formally done. The underlying reason stated by the owner-manager is that most of the current use comes at almost no cost but the Internet connection fee, and that the real adoption of a more integrated e-business application is yet to come. Nevertheless, the owner-manager is satisfied with the company’s revenues and profits.

Comparing the two cases

Using the framework provided by Buhalis (1998) the two cases are overlaid on the framework below in Figure III. This provides a useful input into the conclusions and implications in the final section.

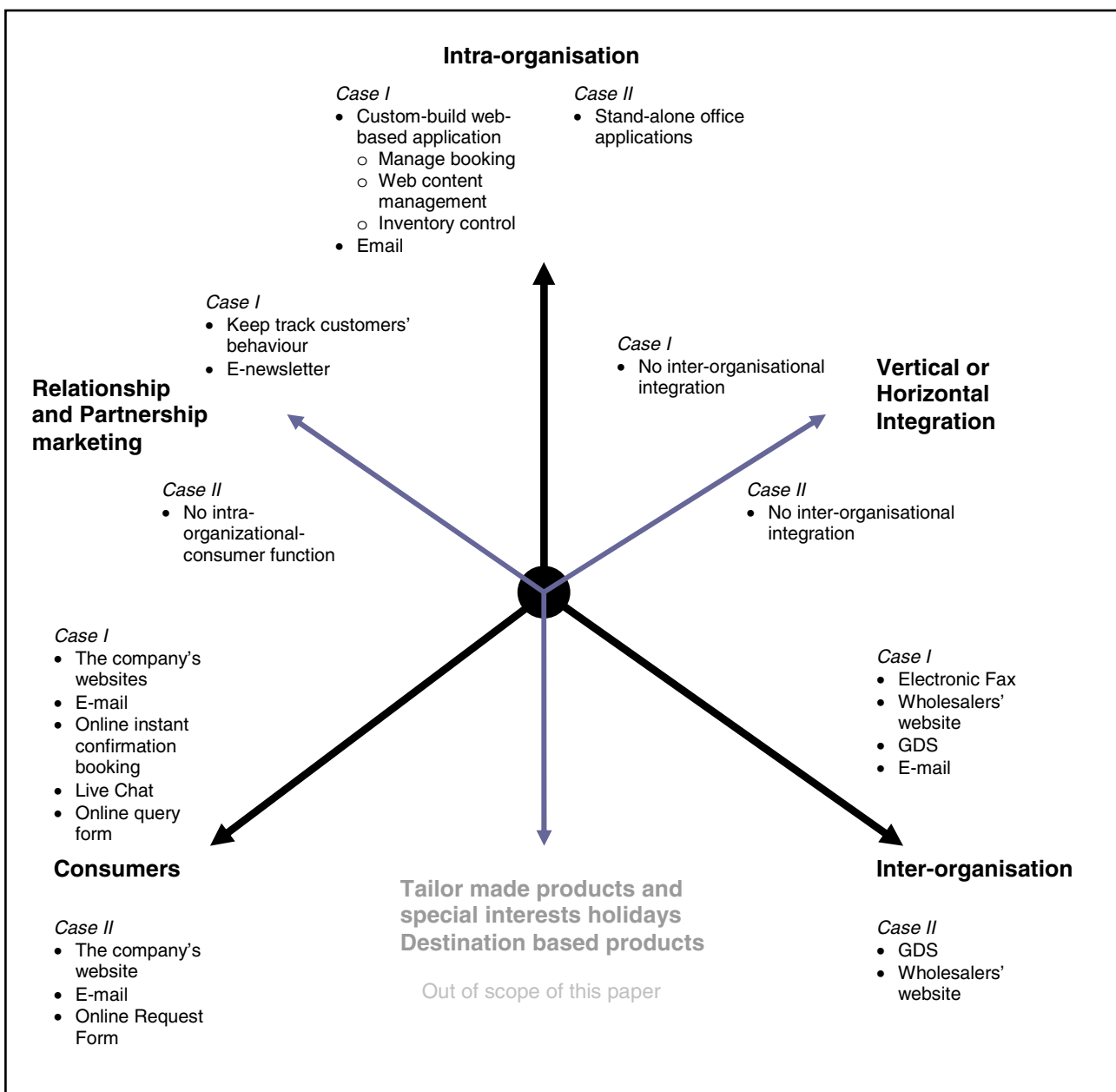


Figure III: E-business uses of the two firm cases based on the Tourism and Information Technologies strategic framework (Adapted from Buhalis, 1998)

Conclusion and Implications

The paper is part of the ongoing research set out to explore the e-business technologies in use by Thai SMEs in the travel service sector, to understand the impacts of these technologies and their post implementation evaluation. To achieve the research objective, the prior literature on e-business use and its impacts on the travel industry are reviewed, and the stakeholders of the travel industry are studied to understand their roles, business models as well as how they are affected by the Internet and e-business technology. The two in-depth case studies are conducted to investigate the issues in the Thai context. The implications of the research are identified in three main themes.

The importance of strategic IT use for SMEs

The different level of impacts and realised benefits resulted from the e-business adoption in the two firm cases confirms the important of strategic IT use for SMEs. Case study I confirms that the comprehensive use of e-technologies, which allows the firm to better understand its clients, the needs of the supply chain and the costs and benefits of its activities, provides the firm with an improved competitive stance in its industry (Soh and Markus 1995; DeLone and McLean 2003; Schlenker and Crocker 2003), and perhaps enhances firm growth. In contrast, the restricted use of e-business technology in the second case study, in which little new business value can be demonstrated, suggests a defensive use of the technology. This agrees with Schlenker and Crocker (2003) who point out that SMEs that usually use the Internet for limited applications, e.g. for e-mail and electronic brochures (“Web sites”), often obtain little long term competitive value from the adoption. A further factor evidenced in these two cases is that a significant barrier to IT business value creation is related to human resource factors, including knowledge of the technology (Chircu and Kauffman 2000).

The link between application complexity and subsequent benefits

Comparing the two case studies and developing the argument above, it can be seen that the adoption which facilitates the more holistic process is likely to yield clearer positive impacts than that which supports only a certain function or part of the process. Moreover, considering each process along the value chain, it can be seen that in the second case study the post-adoption impacts are shown on few processes and do not reinforce each other, whilst the firm in the first case study has evidenced distinct improvements in their operation as well as an increase in revenues and profits. Schlenker and Crocker (2003) also agree that the Internet applications which integrate functions on human resources, finance, and the supply chain are a primary source of the real IT business values. However, the authors argue that the adoption of such advanced, complex technology might be of little value to SMEs, which do not manage all of these core activities internally. This raises interesting research questions about service providers and ASPs generally.

The slow adoption of evaluation tools and practice

In the post adoption evaluation, each firm uses its own frame of reference when evaluating or at least when being asked about their perception of post-adoption impacts of the e-business use. The use of formal methods of assessment for both SMEs and the clear relevance between evaluation techniques used in large firms and small firms have not been evidenced in these two

cases. It may well be that for the two SMEs the evaluation is selective, not comprehensive and maybe outside original parameters. In this respect, the finding asserts that it is common and natural that instinct or intuition will be used in decision making processes, in particular, the management decision making process (Bannister and Remenyi 2000). Hence, it is not surprising that the managers of the two firm cases have not formally used any evaluation methods but focused on the perceived assessment of IT business value. The latter is deeply complicated and subject to different stakeholder views, which although likely to be implicit, are frequently more consistent in SMEs than in larger organisations. The implicit evaluation or informal evaluation witnessed in the two case studies mirrors the slow adoption of evaluation tools for larger firms (Smithson and Hirschheim 1998), or a willingness to change existing practices (e.g. Farbey et al. 1999). Finally, significance of the developing country context is not obvious from these two examples except in so far that adoption of technology is seen as desirable by the Thai government and that this munificent environment may have speeded adoption.

Ultimately, it should be noted that the findings and implications are indicative based on the two firm cases from a larger research programme. We do not generalise but seek to map our findings on the general literature, reinforcing some points and raising some new ones. Overall, however, this research adds to our understanding of e-technology adoption, application complexity, business value and evaluation methods in the particular context of the Thai travel sector.

References

- Bannister, F. and Remenyi, D. "Acts of faith: instinct, value and IT investment decisions," *Journal of Information Technology* (15), 2000, pp. 231 – 241.
- Beirne M (2005) Meet the AGGREGATORS, *Brandweek*, 46, 22, 24 – 32.
- Bennett, M. M. and Lai, C. K. "The impact of the internet on travel agencies in Taiwan," *Tourism and Hospitality Research* (6:1), 2005, pp. 8 – 23.
- Brown, A. "IS Evaluation in Practice," *Electronic Journal of Information Systems Evaluation* (8:3), 2005, pp. 169-178.
- Brynjolfsson, E. and Hitt, L. "Computing productivity: Firm level evidence," MIT Sloan Working Paper No 4210-01, 2003.
- Buhalis, D. "eAirlines: strategic and tactical use of ICTs in the airline industry," *Information & Management* (41), 2004, pp. 805 – 825.
- Buhalis, D. "Strategic use of information technologies in the tourism industry," *Tourism Management* (19:5), 1998, pp. 409 – 421.
- Chircu, A. M. and Kauffman, R. J. "Limits to value in electronic commerce-related IT investments," *Journal of Management Information Systems* (17:2), 2000, pp. 59 – 80.
- Cronk, R. and Fitzgerald, E. "Constructing a 'Theory of Business value' from the literature," *Electronic journal of Business Research Methods* (1:1), 2002, pp. 11-17.
- CSC, "Critical issues of information systems management. 14th Annual Survey," Computer Sciences Corporation, 2001, Retrieved from http://www.csc.com/aboutus/uploads/CI_report.pdf.
- DeLone, W. H. and McLean, E. R. "The DeLone and McLean model of information systems success: A ten-year update," *Journal of Management Information Systems* (19:4), 2003, pp. 9 - 30.

- Elliott, R. and Boshoff, C. "The utilisation of the Internet to market small tourism businesses," *South African Journal of Business Management* (36:4), 2005, pp. 91 – 104.
- Farbey, B., Land, F., and Targett, D. "Moving IS evaluation forward: learning themes and research issues," *The Journal of Strategic Information Systems* (8:2), 1999, pp. 189-207.
- Henderson, J. and Venkatraman, N. "Strategic Alignment: leveraging information technology for transforming organisations," *IBM Systems Journal* (38:2/3), 1999, pp. 472-484.
- Hillam, C. and Edwards, H. "A case study approach to evaluation of information technology/information systems evaluation processes in SMEs," *Proceedings of the Sixth Conference on Information Technology Evaluation*, A. Brown and D. Remenyi (eds), MCIL (Reading), 1999.
- Hochstrasser, B. "Evaluating IT investments – matching techniques to projects," *Journal of Information Technology* (5), 1990, pp. 213-221.
- Levy, M., Powell, P., and Galliers, R. "Assessing information systems strategy development frameworks in SMEs," *Information and Management* (36), 1999, pp. 247-261.
- Lewis, I., Semeijn, J., and Talalayevsky, A. "The impact of information technology on travel agents," *Transportation Journal* (37:4), 1998, pp. 20 – 25.
- Magrill, H. and Brown, A. "Evaluating Intranet Applications," *The Proceedings of the Fifth European Conference on the Evaluation of Information Technology*, Reading University, 1998, pp. 77-109.
- Mata, F., Fuerst, W., and Barney J. "Information technology and sustained competitive advantage: a resource based analysis," *MIS Quarterly* (19:4), 1995, pp. 487-505.
- Mazhatul, R. and Suraya, Y. "Internet Diffusion and E-Business Opportunities Amongst Malaysian Travel Agencies," *Journal of American Academy of Business* (6:1), 2005, pp. 78 – 84.
- Parker, M., Trainor, H., and Benson, R. *Information Strategy and Economics*, Prentice-Hall International, 1988.
- Porter, M. E. "What is Strategy?," *Harvard Business Review* (63:4), 1996, pp. 149 - 160.
- Remenyi, D., Money, A., and Twite, A. *Effective Measurement and management of IT Costs and benefits*, Butterworth Heinmann, 1995.
- Rivard S, Raymond, L., and Verreault, D. "Resource base view and competitive strategy: An integrated model of the contributin of information technology to firm performance," *The Journal of Strategic Information Systems* (15:1), 2005, pp. 29-50.
- Schlenker, L. and Crocker, N. "Building an e-business scenario for small business: The IBM SME Gateway project," *Qualitative Market Research* (6:1), 2003, pp. 7 – 17.
- Serafeimidis, V. and Smithson, S. "Information Systems evaluation in practice: a case study of organizational change," *Journal of Information Technology* (15:2), 2000, pp. 93-105.
- Smithson, S. and Hirschheim, R. "Analysing information systems evaluation: another look at an old problem," *European Journal of Information Systems* (7:3), 1998, pp. 158-176.
- Soh, C. and Markus, M. L. "How IT creates business value: A process theory synthesis," *Proceeding 16th International conference of Information Systems*, Association for Information Systems, Amsterdam, 1995.
- Spanos, Y. and Lioukas, S. "An examination into the causal logic of rent generation: contrasting Porter's competitive strategy framework and the resource-based perspective," *Strategic management Journal* (22:10), 2001, pp 907-934.
- Starkov, M. "If I were Henry R. Silverman...", 22 June 2001, Retrieved 30 Jan 2007 from www.eyefortravel.com.

Vasudavan, T. and Standing, C. "The impact of the Internet on the role of travel consultants," *Participation & Empowerment* (7:8), 1999, pp. 213.

Wade, M. and Hulland, J. "The resource based view and information systems research: review, extension and suggestions for future research," *MIS Quarterly* (28:1), 2004, pp. 107-142.

Werthner, H. and Ricci, F. "E-Commerce and Tourism," *Communications of the ACM* (47:12), 2004, pp. 101 – 105.

Wyckoff, A. "Imagining the impact of electronic commerce," *Organisation for Economic Cooperation and Development: The OECD Observer* (208), Oct/ Nov 1997, pp. 5 – 8.

Wynne, C., Berthon, P., Pitt, L., Ewing, M., and Napoli, J. "The impact of the Internet on the distribution value chain: The case of the South African tourism industry," *International Marketing Review* (18:4), 2002, pp. 420 – 431.

Yin, R. *Applications of case study research*, Beverly Hills, CA: Sage Publishing, 1993.

Zhu, K. and Kraemer, K. L. "Post-Adoption Variations in Usage and Value of E-business by Organisations: Cross-Country Evidence from the Retail Industry," *Information Systems Research* (16:1), 2005, pp. 61 – 84.

ⁱ ACCPAC is an accounting software solution mainly for small and medium sized businesses. It is one of the Sage ACCPAC ERP modules. More details can be found at www.sageaccpac.com.

ⁱⁱ Pro Control is a stand-alone application which is used to connect to GDS system like AMADEUS. The application imports data from the GDS into the specified format by users and facilitates the invoice activities.