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Diffusion of Internet Technologies in Travel Agencies in Australia

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Abstract - **The Internet appears to playing a role in the re-structuring of some traditional business sectors in which some organisations profit and some decline. Travel agencies are being subjected to increased competition from virtual on-line travel agencies. These agencies do not possess the traditional retail outlets but exist predominantly on the Web. In addition, airline companies and travel wholesalers are beginning to market their products directly to the consumer. Despite the threat of disintermediation, the Internet has created opportunities for the travel agency as it provides a method of providing service around the clock and of being accessible from home and work.**

This paper reports on an Australian wide study that has been undertaken to investigate the diffusion and adoption of Internet (Web) technologies in travel agencies. The agencies were randomly selected within each State. A questionnaire was developed and sent to almost 2000 travel agencies. Two hundred and forty seven questionnaires were returned. The findings are examined against traditional IS/IT diffusion models and frameworks. The results highlight that a significant number of travel agencies have adopted the use of the WWW but most only use a fraction of its business potential. It would appear that traditional frameworks for analysing technology diffusion do not help explain the reasons behind either the lack of Internet adoption or the simplicity with which these systems have been implemented. Sophisticated Internet technologies involve the adoption of a new business model which may compete with the business model currently used by travel agencies. These aspects of conflict create a barrier for the small businesses to adopt Internet technology.

Whilst the pessimists forecast a very bleak outlook for travel agencies, those that do re-engineer with a new vision and strategy have the opportunity to be amongst the leaders in the sector. Focusing on becoming information service providers is one option that travel agents can take. However, given the rapid rate of change in electronic commerce and the varying patterns of adoption and strategies used, it is still not clear how severe the shake out of this important industry sector will be.

I. INTRODUCTION

Traditionally, retail travel agencies have acted as intermediaries between airline companies and wholesale travel companies and the consumer. The Internet and the World-Wide-Web provide a whole new set of challenges and opportunities for this business sector. The major threat stems from airlines and wholesale travel companies offering their products and services directly to the customer without the assistance of travel agencies. Large on-line agencies have gained significant attention in the travel industry and provide some evidence of a re-structuring of the travel industry sector.

The paper starts by providing information on the travel agency sector within Australia. The threats and opportunities of the Internet are outlined for travel agencies and models of technology diffusion are presented. The results of an Australia wide study are presented. The survey involved a questionnaire that was mailed to travel agencies around Australia and completed by the owner/managers. There is discussion on the inadequacies of current models of technology diffusion for examining the adoption of Internet technologies. The paper concludes with the implications of the findings for travel agencies, other business sectors, and academics.

II. THE TRAVEL AGENCY SECTOR IN AUSTRALIA

Travel agencies play an important role as intermediaries within the travel and tourism industry in Australia. The 1996/97 Australian Bureau of Statistics (ABS) [1] study found that there were 3,266 businesses in the travel agency services industry of which 2,842 (or 87%) were engaged primarily in the distribution of travel products in Australia. Of this, 2,393 or (84%) were retail agencies that distributed travel products, 158 businesses were wholesalers of travel products and 170 were inbound tour operators. The travel agency services industry is concentrated in the eastern states of New South Wales, Victoria and Queensland (78% of the locations) and employed a total of 24,451 people during the same period.

Seventy percent of the retail travel agents had less than 5 people and generated only a quarter or 25.4% of income generated by all travel agents. Ninety-eight percent (98%) of retail travel agents employed fewer than 20 persons and a mere 19 businesses employed 100 persons or more. On the other end of the scale, ten large agents employed more than 100 people and generated 33% of the total income for travel agents in the country.

Virtual travel agencies such as Microsoft's Expedia, Yahoo Travel, and Travelocity have the potential to pass economies of scale on to the consumer. Reduced fares coupled with the

convenience of making reservations from home after office hours are further challenges for the traditional retail travel agency that is operating on a small profit margin.

Travel agencies are no strangers to using information technology as they are highly dependent on up-to-date, accurate information. Information technology is widely used within travel agencies for reservations, accounting and inventory management functions. Raymond and Bergeron [2] refer to the types of systems used by travel agents as:

i) global distribution systems (GDS) such as Galileo, Sabre and Amadeus which are used for reservations, information search, client management and reporting;

ii) organisational information systems (OIS) which are used for accounting, reporting, record management and billing.

Information technology (IT) has helped in reducing costs and improving service to [2].

The Internet created both opportunities and threats for travel agencies in Australia. A report by Datamonitor predicts that travel will be the largest online product by 2002 [3]. They expect that the travel industry will account for 35% of all on-line sales by the year 2002. If this is correct there is huge potential for travel agencies to increase their business via the WWW. There are various aspects of electronic commerce that can be exploited by travel agents. Some of these are listed below.

1) Using the Internet to build customer relationships - by having customers interact directly with the web site.
2) Gathering information from customers and potential customers to create customer profiles which can be used in marketing and product development.
3) Information partnerships - cooperation between organisations to provide a better service to the customer.
4) Transactions - selling of products and services.
5) Specialised information provision according to the profile of the user.
6) Information and products that can be down-loaded by the user.

The changes in the global travel industry, and especially the growth of the Internet, have created a threat to travel agencies and have led some to suggest that travel agencies must radically change their business practices if they are to survive at current numbers [4]. The study by O'Brien involved exploratory interviews with travel industry leaders who suggested a number of warning signs for the travel agencies:

Simple point-to-point bookings are expected to be increasingly made via the Internet;

The number of travel agents that exist today will decline;

Customers are tending to do research on the Internet and then book through a retail travel agent at the moment;

Niche marketing will become increasingly necessary and this can be done via the Web.

The study reported in our paper is part of wider project which is investigating the influences of electronic commerce in the travel and tourism sector. We examine how seriously travel agencies are taking the opportunities and threats created by the growth of the WWW and whether disintermediation is a likely scenario for the travel agency sector within Australia.

III. DIFFUSION MODELS

There have been a number of studies and papers that have proposed frameworks to examine diffusion and innovation. Rogers [5] highlights five general characteristics of innovation:

- Relative advantage - the extent to which the new idea is perceived as better than the current operation;
- Compatibility - how the new idea fits with current operations;
- Complexity - how complex the idea is;
- Trialability - whether the idea can be piloted;
- Observability - how visible the results are to others.

There have also been many different factors identified as affecting IT adoption in SMEs. A summary of these factors is presented by Van Akkeren and Cavaye [6] (presented later in the paper). They can be broken down into owner/manager characteristics such as perceived benefits, firm characteristics such as organisational readiness and other factors. These factors are used to explain the adoption patterns of Internet technology by travel agencies.

IV. DETAILS OF THE STUDY

An Australian wide study has been undertaken to investigate:

1) The take-up rates of Web technology within travel agencies.
2) The perception of travel agents of the significance of the WWW on the industry.
3) The levels of planning and strategies used by travel agencies when investigating the use of the WWW.
4) The perceptions of the key obstacles and barriers to adopting the WWW.
5) The key issues in the process of implementing the technology in travel agencies.

The agencies were randomly selected within each State. A questionnaire was developed and sent to almost 2000 travel agencies. Two hundred and forty seven questionnaires were returned. Not all questions were answered correctly in every questionnaire but the number of invalid responses was very low.

A. Questionnaire

The questionnaire was structured into several sections to reflect the objectives of the survey.

i) Company information

Questions about the company, such as number of employees, company turnover, type of agency, and percentage of business for the leisure or corporate sector.

ii)   Adoption rates and Perceptions of significance

Questions related to the various forms of Web technology adopted by the agents. Those that employed Web technology were asked to provide information on the types of functions it fulfilled.

iii)   Strategy

Questions related to general planning and strategy in the organisation as well as the form of planning and strategies that were used in relation to the adoption of Web technology.

iii)   Barriers and key factors for successful implementation

B. Industry Profile of Respondents

Travel agencies are small businesses typically employing less than ten people (table 1). Three quarters of the respondents had a turnover less than five million (A$) (table 2).

TABLE 1
NUMBER OF EMPLOYEES AT TRAVEL AGENCIES

Employees	1 to 2	3 to 4	5 to 6	7 to 10	>10
Percentage	14	37	19	13	17

TABLE 2
TRAVEL AGENCY TURNOVER

Turnover A$ millions	<1	1-2	2-5	6-10	11-20	>20
Percentage	16	25	34	10	8.5	6.5

III. RESULTS OF THE STUDY

The figures in table 3 show that the majority of travel agencies have access to email, file transfer and the WWW. Just over a third have a Web site but 28% expect to have one within the next six months. Overall, it would appear that travel agencies have been active in becoming connected to the Internet. A small percentage have no plans at present to connect to the WWW and have a Web site developed. This latter point is in contrast to a study conducted of travel agencies in Western Australia in April of 1998 [7]. The likely explanation for this discrepancy in the two sets of findings is the most recent survey may include a high proportion of Internet users as these are motivated and enthusiastic in relation to Web technology use. It is suggested that the non-respondents contained a higher proportion of businesses that are not on the Internet. This point is further substantiated by recent efforts to search for travel agents' Web sites by the authors. These searches produced only a few links to Web sites.

A. Uses Of The Internet

The top three uses of the Internet when accessing other sites are:
- Accessing tourist attraction information.
- Fare information.
- Package tour information.

The most common functions provided by travel agents' Web sites include fare and holiday package information, timetable information, and airline and hotel reservations. Less than half of the Web sites allowed for payment by credit card.

B. Budget

Over 72% of travel agencies that had a Web site had spent less than $2000 on its development (table 4). Considering the turnover the businesses this is a very small amount and suggests that they have been developed by non-professionals or by small businesses with a minimum of time spent on strategic planning and requirements analysis. To develop a system that had full transaction capabilities would cost considerably more than the average amount spent. Some travel agencies have developed Web front ends that actually connect to the Web Computer Reservation Systems such as the one created by Sabre.

TABLE 3
USE OF E-MAIL AND WEB TECHNOLOGY

	Electronic mail (e-mail) as part of a WWW browser or separate email package. (%)	Electronic file transfer – sending computer files and documents (e.g. by ftp or attachments with email) (%)	World Wide Web Browser (to search for and read documents) (%)	World Wide Web Server (to make information available) (%)
Now	66	47	64	37
Soon (within 6 months)	10	12	14	28
Within 7-12 months	5	7	7	6
Long term (within 12-24 months)	15	5	7	9
No plans at present	4	29	9	20

TABLE 4
AMOUNT SPENT ON DEVELOPING A TRAVEL AGENCY WEB SITE

Amount A$	0-500	501-1000	1001-1500	1501-2000	2001-2500	2501-3000	3001-3500	3501-4000	4001-5000	5001-10,000	10,101-15,000	15,000-40,000
Percentage	19	23	4	24	4	4	0	4	8	4	2	4

C. Strategy

From the data (tables 5, 6, 7) it can be seen that a significant number of travel agencies have done some strategic planning but most have not tried to quantify the benefits in the form of a cost benefit analysis. The depth and breadth of planning also appears to be limited since Web technology is viewed by many as an add-on to current operations, as low risk and not radical, and not involving an enterprise wide examination of the its impact on the business. However, top management support is seen by most to be important in successful adoption of the technology. This would be especially true for a small business where the owner manager has great control over the business.

D. Perception Of Significance

Travel agents perceive that the WWW will have a profound influence on their own business but also on the travel agency sector as a whole (tables 8 and 9). These perceptions are interesting when considered with the low levels of planning undertaken and the relatively small amount of money invested in Web sites.

E. Barriers

The most significant barriers in the adoption of Web technology are implementation costs, operating costs, the lack of expertise and difficulties in providing adequate training (table 10). It appears that travel agencies are very concerned about cost issues and feel that they have not got the expertise to make informed judgements. Training and education is therefore an important issue but travel agencies have got to be prepared to invest in this area.

F. Factors For Successful Implementation

The key factors for successful implementation of Web technology in travel agencies are ranked in table 11 Customer support is seen as the most important factor.

TABLE 5
PLANNING APPROACH FOR USE OF WWW

No Planning	Have done a little	Have planned in relation to certain functions	Enterprise wide (a thorough plan of how WWW will influence business) (%)
17	31	41	11

TABLE 6
USE OF STRATEGIC PLANS AND FEASIBILITY STUDIES

	Has any Feasibility Study (CBA) been conducted for use exploitation of WWW?	Is there a strategic plan for the organisation?	Has WWW Electronic Commerce been identified as part of this?
No	73	28	44
Yes	27	72	56

TABLE 7
TRAVEL AGENTS PERCEPTION ABOUT WWW ADOPTION

Perceptions of travel agents	Yes	No
You perceive adopting the WWW in your business to be high risk?	9	91
You see the WWW as an add-on to current operations?	95	5
You see the planning involved in adopting the WWW as requiring a clean slate approach? (A complete rethink of the business)	30	70
You believe an organisation has to review its entire operations when considering adopting the WWW as part of its business?	37	63
You think that implementing the use of the WWW takes a long time?	28	72
You believe adopting the WWW requires a cultural (attitude) change in your business?	55	45
You perceive adopting the WWW in your business to be a radical level of change?	31	69
Adopting the WWW involves a structural change in your business?	34	66
Top management participation in adoption of Web technology is essential for success?	88	12

TABLE 8
PERCEIVED BENEFITS OF USING THE WWW IN THEIR OWN BUSINESS OVER NEXT 5YRS

No Benefits (%)	Very Little (%)	Moderate (%)	Significant (%)	Very Significant (%)
3	9	28	29	31

TABLE 9
PERCEIVED INFLUENCE OF THE WWW ON THE TRAVEL AGENCY SECTOR OVER NEXT 5 YEARS

No Benefits (%)	Very Little (%)	Moderate (%)	Significant (%)	Very Significant (%)
2	8	27	28	35

TABLE 10
BARRIERS TO ADOPTING WWW

Barriers	The main barriers to adopting the WWW 1 - most important
Application software package WWW capability	10
Integration of WWW with internal applications	6
WWW service provider products and services	5
WWW service provider performance	8
Start-up costs (implementation)	1
Providing adequate training	4
Operating costs	3
Inter-connection among WWW service providers	15
Lack of WWW-capable business partners	13
Difficulties with WWW document standards	18
Need for re-engineering of business processes	14
Space for computer	19
Time consuming to adopt the WWW	7
Lack of staff expertise	2
Not enough benefits	9
Security problems associated with using WWW	11
Staff resistance	12
Customer resistance	16
Other: (specify)	17

TABLE 11
FACTORS FOR SUCCESSFUL IMPLEMENTATION OF WEB TECHNOLOGY

Factor	Rank 1 most important 5 least important
Top management support	2
Effective consultants	4
Quality of vendor support	3
Employee support	5
Customer support	1

V. DISCUSSION

A main aim of the paper is to investigate how the adoption of Internet technologies by traditional travel agencies compares with the frameworks expressed in the literature for IT adoption by SMEs. Table 12 shows a summary of factors influencing IT adoption in SMEs [6]. The findings of our study are presented along with these factors.

Travel agencies would appear to possess most of the characteristics conducive to change and IT adoption, especially in relation to Internet technology. However, the reality is that most travel agencies have not adopted Web technology or have implemented a simplistic site that does not have transaction capabilities.

Travels agents see the impact of the WWW as being significant on the industry but they have not utilised it as a major catalyst for change. Travel agents use the WWW as an add-on to current business operations. This add-on mentality is further substantiated by the lack of detailed planning and enterprise wide perspective. The low budget approach suggests that travel agents do not see adopting the WWW as a. strategic initiative with transformational capabilities. The Web sites' functions are mainly concerned with providing information and email reservations. Much fewer Web sites allow credit card transactions to be performed. A cultural transformation does not appear to be taking place either. Only one travel agency took on a new member of staff to help in the new initiative, and training on the use of the Internet was rarely given

TABLE 12
SUMMARY OF FACTORS INFLUENCING IT ADOPTION IN SMES (EXTENDED VERSION OF TABLE BY VAN AKKEREN AND CAVAYE TO COVER TRAVEL AGENCIES)

Category	Individual Factor (Van Akkeren & Cavaye, 1999)	Travel Agencies
Owner/Manager Characteristics	Perceived Benefits (Ease of use, usefulness)	Benefits recognised
	Computer literacy of business owner	Some IT literacy due to CRSs
	Level of assertiveness, rationality and interaction of business decision processes	Medium-high level of assertiveness
	Perceived control regarding IT adoption - resources and funding	Control is apparent but some minor financial constraints
	Subjective norm	Medium-high desire to adopt
Firm Characteristics	Organisational readiness	High use of technology already
	External pressure to adopt	Externals pressure exists
	Dependency of the small business customer on supplier	Perceived benefits for consumer
	Structural sophistication of the firm in terms of centralisation and complexity	Simple structure
	Sector	Reasonably innovative sector
	Status	Franchise arrangement may complicate adoption
	Information intensity	High intensity
Other factors	Return on investment	Good return if adopted as a transaction based system

What is the explanation for the discrepancy between possessing the characteristics for change and the low levels of implementation and sophistication?

Travel agencies adopting complex transaction systems are adopting new technology but also a new business model along with the technology. The on-line model forms a new business model which may compete with the existing operations. Hence, a number of agencies explained that the two business models would be difficult to maintain, require different skill sets and resources. As a result, many agencies adopted a very simplified type of Web site that was an add-on to current operations rather than choose a system that would create an alternative business model that would need considerable support.

The rationale for piecemeal adoption could be explained by lack of resources, both skills and financial. Although this is partially true, it is not the main reason being proposed. The key factor is the perception that an on-line travel business (complex transaction system) is substantially different to the traditional travel agency business model. This would require an organisational and cultural transformation as well as creating competition for resources between the two business models.

The frameworks for IT adoption [6] are limited in this respect. They are usually applicable to IT adoption that supports the current business model in some way. Internet commerce when adopted at a transformational level requires far reaching organisational and cultural change to develop the new business paradigm. Travel agencies appear reluctant to adopt a new business model that will take time to produce significant returns but which demands considerable inputs. Therefore most of the characteristics in favour of adoption can be present but the technology may not be adopted because of a perceived clash of business models.

A. *Lack Of Strategic Planning*

For information technology to be effective in business organisations there needs to be planning in relation to its integration with other business processes [8]. Travel agents are not doing this in most cases. Although many respondents stated the major barriers to Internet adoption were related to matters of implementation their most significant problems in reality were related to strategic planning and the use of the Internet. Disintermediation seems a likely scenario for many traditional travel agencies who are slow to respond to the opportunities provided by electronic commerce.

Travel agency managers should become aware of the transformational capabilities of the Internet. Too many managers are spending too much time on day to day business operations. They need to take time out to think about or be educated on business strategy via the Internet. The managers also need to train their staff about the capabilities of the World Wide Web. Far too many travel consultants were ignorant of its potential within the travel industry sector. Finally, individual travel agencies should investigate the option of forming consortiums to jointly explore the potential of electronic commerce.

Travel agencies need to have a business strategy and the Web site should be an implementation of that strategy. It is clear from the study that travel agencies are not using the Web as a transformation agent but rather a way of promoting awareness of their businesses on the Internet. However, given the competition they are facing this is unlikely to be enough to make a significant business impact. It could be argued that small businesses, should make some step to adopting an Internet presence since they will learn from the experience and be better positioned to advantage of future opportunities and Internet developments. Just how effective this method is open to debate since if the Web presence fails to provide adequate returns it may create a deterrent to future, more strategic developments.

B. *Strategic Possibilities*

Various Internet roles that travel agencies could usefully adopt were proposed as far back as 1996 [9]. These roles included:

The Communicator - using the Web with email as a communication channel;

The Navigator - providing the customer with a guided tour via the Web;

The Aggregator - virtual travel agency model;

The Advisor - to help corporate customers set up there own automated Web travel systems.

Although these options are useful as a starting point for some agencies, they may not be far-reaching enough or in the case of the aggregator, a feasible option.

The problem arises that if all, or at least many travel agencies start using the Web, how will any individual business gain a competitive advantage? Although aspects of a travel agency's core business can be translated to the Web environment this is unlikely to be sufficient. They should focus their attention on building a strategic advantage. This can be done in several ways by using such methodologies as SWOT analysis (strengths, weaknesses, opportunities, threats) [10] and Business Process Re-engineering (BPR) analysis [11].

Strategies that could be adopted by travel agencies to cope with the threat of disintermediation are business specialisation, information specialisation and innovation. Travel and tourism is becoming increasingly specialised. Some travel agencies could, for example, specialise in the seniors market, backpackers, or specialise in certain tourist destinations or activities. For example, if the agency is trying to attract windsurfers then information about the sport as well as links to other windsurfing sites would be useful. Windsurfing chat, comments from top windsurfers, video downloads could also be used to good effect. The aim should be to build a Web site that caters for a community, in this case windsurfers. Most travel agents examined in the study were trying to appeal to a broad general market and hence face great competition from other travel agencies and virtual travel agencies.

Currently most traditional retail travel agencies focus on providing a transaction and reservation service to their customers. Instead they could shift the emphasis to providing an information service. This could be done by providing a wealth of information via a Web site with relevant links to other sites. It would be the information that draws potential customers to the site. There is also the question whether travel agents can in the future charge customers for that information or for packaging travel itineraries where a great deal of research is involved.

C. Lessons For Other Business Sectors

Small businesses are typically concerned with day to day issues and many lack a long-term outlook. In today's rapidly changing environment all businesses need to take time and make an effort to explore new opportunities for growth [10]. The leaders in adopting new technologies can secure a competitive advantage, therefore, being one of the leaders is vital for [12]. The Internet provides opportunities for cyber intermediation. That is, a company can start up without stock but can take cash orders and source the goods from suppliers. The profit on the stock and the fact money is held in the bank for a period before the goods are paid for means that these can be very profitable businesses.

There are dangers for organisations when new developments, such as Web technology, are driven by the information technology without due consideration of the strategic directions of the business. These types of projects can result in systems that:

1) Take too much time and money to develop because they do not have the full backing of senior people.
2) Do not provide a significant return to the organisation because they are peripheral to the core business needs.
3) Displace other, perhaps more worthwhile, projects from being developed as they consume organisational resources.
4) Are not maintained effectively and eventually become a problem for the business. The Web developments may be badly perceived by the customers and/or employees.

Some organisations have rushed too quickly into developing an Internet presence without due consideration of aligning the new initiatives with sound business strategy. In some cases Web site projects have been abandoned because they are not providing a sufficient return to the business. In other cases, Web sites have undergone radical changes. For example, Gibson musical instruments offered guitars at 10% below the list price on their Web site. There were so many complaints from their existing retail dealers that the sale of guitars was taken off the Web site within a month [13].

D. Lessons for Other Countries

Many industrialised nations have a travel agency sector that is similar to Australia's. As far as the authors are aware there are no similar studies that have been made of travel agencies outside of Australia. There is some evidence to suggest, however, that the number of retail travel agencies in the USA has declined in recent years, although there is no way knowing if this can be entirely attributed to the growth of Intranet travel related sales. In 1997, the number of travel agencies in operation in the USA dropped by 6% and at the same time Travelocity had three straight weeks of at least $3 million in sales and Microsoft's Expedia had $2 million of sales per week [14]. A number of industry analysts suggest the decline in travel agencies is due to the increasing number of on-line offerings.

VI. CONCLUSIONS

The results from our study of the Internet and travel agencies indicate that this business sector is not coping well with the rapidly changing environment. The difficulties arise from the sophisticated technologies which travel agencies must adopt. To be effective these technologies require the development of a new business model which may compete with existing operations for resources and finances. Existing IT adoption frameworks are usually from the view of supporting existing business models rather than setting up additional business models. The lack of strategic business planning and their poor understanding of the potential of

Internet commerce mean that travel agencies are likely to face decline over the next few years.

The growth of cybermediaries (virtual travel agents) is a challenge both to developed and developing economies. The key for governments is to put investments in information technology and communications infrastructure, and IT education and training at the top of the national agenda.

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