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ELECTRONIC COMMERCE

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ABSTRACT

Rapid advances in technology profoundly affect the way businesses are conducted and the way industry structures evolved. The air travel distribution industry experienced two major technology waves in its evolution, the Computer Reservations System (CRS) and electronic commerce. This paper considers various frameworks used to explain structural features of the US air travel distribution industry and the competitive forces within it. We then describe the historical context within which the structural changes occurred as a result of IT innovations. The current and relative strengths of the industry forces are examined to explain an IT-induced power shift in the industry. We then consider the impact of IT on the air travel distribution industry in the Asia-Pacific region.

Based on a comparison with the US experience, we forecast that variances in geography, culture and psychology will limit the extent to which IT can be used to manipulate the balance of power in the industry in the short- to medium-term. We expect, however, that a uniform industry structure will prevail in the long-run.

Keywords: Computer reservation systems, electronic commerce, the virtual air travel distribution industry, Internet, disintermediation, cybermediation, strategic alliances.

I. INTRODUCTION

Today, IT applications are fundamental in helping businesses lower costs, increase efficiency, and improve service quality. With the constant quest for competitiveness and competitive advantage, the impact of IT transcends the organization and the behavior of a firm to the structure of the industry. Moreover, continuous advancements in IT tend to render the concept of "industry" elusive. The notion of industry boundary is increasingly being blurred by substitute products from other industries [Bettis & Hitt, 1995]. It is now widely accepted that the adoption of IT shapes both the boundary and the structure of an industry [Audretsch, 1995; Bettis & Hitt, 1995; Farhoomand and Lee, 1999a, Farhoomand and Lee, 1999b, Segars & Grover, 1994, 1995]. However, conceptual frameworks analyzing and describing the industry-level impact of IT initiatives are lacking [Bettis, 1998; Segars & Grover, 1995]. The fundamental units of analysis are also confined by traditional models and methodologies, that may no longer be suitable, thus limiting the ways research and analysis are conducted [Bettis, 1998]. As advances in IT continue to alter the competitive landscape, many frameworks used in the past may no longer be able to describe and explain the emerging network of business relationships and the new roles that businesses are assuming within this network.

Over the past three decades, the travel industry experienced the sweep of two major waves of technological innovation.

1. The first wave, computer reservation systems (CRSs), started in the late 1950s, with widespread adoption by the late 1970s. CRSs were commonly regarded as the technological innovation with the most far-reaching consequences [William, 1994].

2. The second wave is the power of the Internet and the World Wide Web, that continues to have enormous impact on the air travel distribution industry.

This paper examines how these two waves of IT innovation affected the structure of the air travel distribution industry. First, a brief review of literature is presented (Section II). Then, through a historical examination, the inner workings of the air travel distribution industry are discussed (Section III) . Next, the impact of information technologies on the balance of power in the industry is explored and a comparison is made between the US and Asia Pacific regions (Section IV). The paper closes with a discussion highlighting the impacts of CRSs and the Internet on the structure of the industry (Section V). Section V predicts that the variances in geography, psychology and culture will determine the degree to which IT can shape the network of business relationships.

II. LITERATURE REVIEW

Based on the concept of strategic group analysis, Segars and Grover (1995) put forth a model of strategic group dynamics explaining how industry structure changes in response to an innovation in strategy by certain members of a strategic group. Generally, firms within an industry can be categorized into different strategic groups depending on their bases of competition. Similarities pull them together and differences set them apart. While strategic groups can be stable over a long period of time, changes and realignments are triggered from environmental, technological, and competitive factors. Segars and Grover suggested that four possible outcomes can result from an innovative strategy by member(s) of a strategic group. Depending on whether the strategy is being matched by others or is similar to that of another group,

- *consolidated restructuring* (merging of groups),
- *redefinition* (a change in group strategy),
- *re-membership*[1] (a change in group membership), and
- *differentiated restructuring* (formation of new strategic group)

may occur.

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[1] Re-membership occurs when a subset of firms within a strategic group adopts a strategic orientation that is parallel to that of another strategic group.

Bloch and Segev [1996] specifically analyze the impact of Web-based e-commerce on the travel industry using a modified version of Porter's Five Forces model [Porter, 1980]. They examine how business trends and new technologies give rise to new actors, new value-chain configurations, and new strategies. Their analysis suggests that e-commerce tends to have both disintermediation and reintermediation effects on the industry structure and that it also creates opportunities for new actors and products. Others, however, argue that certain social factors prevent disintermediation from occurring [Lewis & Talalayevsky, 1995; Vernon, 1998] and that Web-based e-commerce only facilitates an industry with new intermediaries [Bailey, 1996].

More recently, a Delphi study conducted by McCubbrey (1999) on an industry expert panel predicted that traditional travel agents were likely to lose market share to new e-commerce-based competitors, and that disintermediation was occurring. At the same time, panelists deemed cybermediaries as viable competitors in the overall reintermediation scheme. They expected that even though there may be a substantial reduction in the number of travel agency locations and entities, it did not necessarily mean that the locations and entities that disappeared would be disintermediated. The study estimated that the reduction could result from a wave of consolidation in the air travel distribution industry, with larger agencies absorbing smaller agencies in an attempt to gain economies of scale. Traditional travel agents were forecast to lose market share to either airline direct services or cybermediaries in the large corporate segment, SME corporate segment, knowledgeable business/leisure traveler segment, occasion/leisure traveler segment, and package/adventure tour segment. Reinforcing the opinion that traditional travel agents were most vulnerable to incursions from airline direct services and cybermediaries was the notion that the widest acceptance of e-tickets would be in both the corporate market segment and in the knowledgeable business/leisure travelers segment. The most redeeming quality for the traditional travel agent mentioned in this

study was that travelers were more likely to use a travel agent for more complex transactions.

III. HISTORY OF ENABLING TECHNOLOGIES

THE FIRST WAVE: COMPUTER RESERVATION SYSTEMS

In 1976, when Jimmy Carter was elected president of the US, the US airline industry was very much similar to a public utility (Air Transport Association 1998). The routes that airlines flew and the prices they charged were determined and monitored by the Civil Aeronautics Board (CAB). But change was presaged when Jimmy Carter appointed a proponent of deregulation, Alfred Kahn, as the head of the CAB [Verchère, 1994]. Kahn maintained that the regulatory environment then denied consumers of choices, and was conducive to high fares and inefficiency. So he started to push for changes in the airline industry. Congress passed the Air Cargo Deregulation Act in 1977 and the Airline Deregulation Act in 1978. Thus, the principle of free market competition was applied to both the air cargo and passenger business in the US.

After deregulation, the number of carrier choices, fare classes, and routing alternatives were beyond passengers' comprehension. Their reliance on travel agents' knowledge and expertise grew. At the same time, airlines needed to achieve operational efficiency to compete in a free market. It was under these circumstances that the CRS came to prominence. American Airlines (AA) began the development of such a system in the late 1950s to allow real-time access to flight details at all of its office locations throughout the US (www.aa.com). The resulting product, Sabre (Semi-Automated Business Research Environment), was launched in 1964. United Airlines (UA) (www.ual.com), however, was the first to announce its plan to install a CRS,

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Apollo, in travel agencies in 1976. AA was quick to follow, and Sabre and Apollo dominated the US CRS market ever since.

PROLIFERATION OF CRS

The wave of CRS development did not halt in the US. In the 1980s, national European carriers began refining and developing their own CRSs to stay competitive with their American counterparts. Two consortia were formed and two European-based systems, namely Amadeus and Galileo, were established in 1987 to compete with the Americans. Ironically, both these systems were of American origin: Amadeus was based on Texas Air's System One, while Galileo chose Apollo as its strategic partner. By 1998, about eleven major CRSs were in operation world wide. (Table 1.)

Table 1. CRS Vendors Worldwide

Region	CRS	Owner Airlines	Remarks
North America	Sabre	American	Market extended to Europe and Asia-Pacific
	WorldSpan	Delta, Northwest, TWA	Market extended to Asia-Pacific
	System One	Continental	
	Gemini	Air Canada, Canadian	
North America/ Europe	Galileo International	United, US Air, British Airways, Swissair, KLM, Alitalia, Olympic, Air Canada, Aer Lingus, Austrian, Air Portugal	Market extended to Asia-Pacific
Europe	Amadeus	Air France, Lufthansa, Iberia, SAS	Market extended to Asia-Pacific
Asia-Pacific	Abacus	Cathay Pacific, Singapore, Malaysia, Philippine, Royal Brunei, China Airlines	
	Infini	All Nippon	Japan CRS
	Axess	Japan Airlines, Korean	Japan CRS
	Topas	Korean	S. Korea CRS
	Southern Cross	Australian, Ansett	Australia CRS
	Fantasia	Qantas	Australia CRS
Africa/Eastern Europe /America	Gets	Founded by SITA (an airline telecomm co.); participants from Africa, Eastern Europe, & Latin America	

CRSs became an indispensable tool of most airlines and travel agencies. About 75-80% of all airline bookings were estimated to be made by travel agents through CRSs [Flint, 1998]. Functionally, the CRS was also evolving and expanding since it was first developed. In the 1990s, many big CRSs essentially became global information systems specializing in travel-related services. Travel agents around the world used them to check availability and pricing information, and to make bookings and issue tickets with a whole range of travel service suppliers such as airlines, cruises, hotels, railway companies, and car rental companies. The most sophisticated CRSs also accepted special meal requests, managed seat allocation, and performed back-office accounting functions for travel agents.

MAKING SENSE OF THE FIRST WAVE

Segars and Grover (1995) identified three distinct strategic groups in the US airline industry during the period before deregulation (1975-1978).

1. Firms that had high market power (in terms of slack resources and scope), and a high level of financing. They were also keen on innovation.

2. Firms smaller in scope and less slack in resources who were known for their high production and product efficiency, and had a moderate stance toward innovation.

3. Mostly SMEs that were able to spawn large amounts of slack resources and maintain a high level of productivity. However, they were very conservative in terms of innovation.

After CRS technology came into widespread use, the strategic group structure changed. Between 1979-1984, a new strategic group emerged. UA and AA broke away from their original strategic group and formed a new distinct group that was superior in generating slack resources and achieving high product and production efficiencies. Since the implementation of CRS technology required a high level of financial investment and technological expertise, it was difficult for others to copy and go after them. Thus, they were able to reap the first-mover advantages, consolidate their market power, and achieve a high level of

efficiency. According to the model of strategic group dynamics, such a result was one of differentiated restructuring. This view, however, is limited to what was happening in the US airline industry during that particular time period. In fact, the impact of the CRS went further.

In Europe and Asia, the dynamics of CRS innovation took a slightly different path. While each of the two dominating CRSs (Sabre and Apollo) was primarily owned by a major US airline (or its parent company), reigning regional CRSs in Europe and Asia, e.g., Amadeus, Galileo, and Abacus, were jointly owned by a consortia of airlines. As the industry continues to evolve today, CRS is clearly more than a business but an industry in its own right with CRS providers vying for bookings for airlines, hotels, cruises, etc.

Perhaps a different and complementing perspective can be obtained by adopting the analysis methodology of Bloch and Segev (1996). First, consider the business drivers and the available technology. Before CRS became available to them, travel agencies relied primarily on printed material, telephone, and telex to determine availability and make bookings for their customers. The need for a more efficient means was clearly there. In fact, the US travel agency community first initiated a joint effort to develop an industry-wide reservation system in the late 1970s [Petzinger, 1995] that did not materialize for political reasons. (American Airlines, realizing the potential threat of a travel agency owned network, responded quickly to block the initiative by proposing an industry-wide network owned by the airlines that later failed to materialize.) The technology, however, was mature and both AA and UA managed to develop the technology for internal use. Eventually, AA and UA went their separate ways to install their systems in travel agencies.

Looking at the environmental factor, deregulation seemed to provide a trigger that led to the burgeoning of the CRS business. The resulting US airline industry, where airlines were free to choose which routes to fly and how much to charge, became too complicated for travelers and therefore their needs for travel agents' assistance increased. This made CRS a desirable tool for travel agents,

since flight information, seat availability, and price were the key pieces of information that they needed to serve their customers. At the same time, CRS became an important distribution tool for airlines to distribute its products to travelers. In essence, a new link was formed between airlines and travel agencies facilitating efficient information flow between the two parties. The travel industry structure has since gone through a metamorphosis and three major indicators could be observed: creation of a powerful intermediary, reinforcement of the role of an existing intermediary, and formation of strategic alliances.

Creation of a powerful intermediary

Although CRS was originally an airline initiative, it quickly became a venture profitable enough to form a distinctive CRS industry. On one hand, CRS vendors installed terminals at travel agents' offices and charged them a subscription fee. On the other, they charged participating airlines fees for bookings made through their systems. Most airlines and travel agencies simply could not survive without them. Today, the amount of bookings going through CRSs is still massive (about 75-80% of all airline tickets). To govern the conducts of CRS vendors, regulations have been issued in different countries [e.g., Transport Canada, 2000; ECAC, 2000].

Reinforcement of the Role of an Existing Intermediary

Another intermediary that benefited from the CRS movement was the travel agency. Traditionally, travel agencies played three main roles [Bloch & Segev, 1996].

1. As information brokers, they passed information from product suppliers to customers.

2.   As transaction processors, they issued ticket and forwarded money.

3.   As travel consultants, they provided value-added information to their customers, assisting them in their choice of specific products and destinations.

The advent of the CRS technology not only made the first and second roles of travel agents much easier, but also reinforced both the customers' and the service providers' reliance on travel agencies as their intermediary.

Formation of Strategic Alliances

The proliferation of CRS led to the formation of alliances. Airlines from around the world looked to others to share development cost and provide technological expertise. The more prominent examples today are major regional CRSs like Amadeus, Galileo, and Abacus, each of which is owned by a consortium of airlines (Table 1). Furthermore, to achieve genuine global presence and competitiveness, alliances also began to form between CRSs. The merger between Apollo and Galileo announced in March 1992 to form Galileo International was but a prelude to other similar mergers. In February 1998, Sabre announced its latest alliance with Abacus, in addition to its existing affiliation with Axess. Sabre hoped this new alliance would help it become a major player in travel technology in Asia. Apart from collaborating with other CRS vendors today, it is also common for CRS vendors to partner with technology companies and other service providers. Such examples include the Sabre partnership with IBM, EDS, and AT&T, and the Amadeus partnership with START (a reservation system for German Rail and Tour).

THE SECOND WAVE: THE WORLDWIDE WEB

Traditionally, the income of travel agencies was derived mainly from commissions offered by service suppliers. Specifically, commissions from air sales formed the largest share (60%) of their income [Gee, et al., 1990]. But to airlines, agency commissions were the fourth largest operating expense, after labor, fuel and maintenance (Lewis, 1998). In the US, for example, it was estimated that airlines spent US$6.4 billion annually on agency commissions (1998). As the middle person, CRS vendors' revenue came primarily from booking fees paid by airlines. To get travel agents to make bookings on one's CRS, CRS vendors introduced incentive schemes in which travel agencies were rewarded if they were able to make a certain volume of bookings. To benefit from these schemes, travel agents resorted to creating non-revenue-generating bookings, that is, bookings which were fictitious. For example, booking entries would be made with no real intent to travel, only to be cancelled later. But since airlines were charged by volume of bookings, airlines had to pay for such abuses. Thus, it is not difficult to see that the relationship between travel agencies and airlines was not entirely mutually beneficial. The ability for airlines to bypass travel agencies and CRS vendors, and still reach the potential customers at a low cost was therefore ideal. The technological innovation of Web-based e-commerce was therefore timely.

Before the Internet became available for business use, e-commerce was usually conducted over a proprietary network connecting a group of related organizations. Such transactions were mostly business-to-business. Nonetheless, the Internet has made it possible to reach a vast customer base electronically, 24 hours a day, across geographical boundaries and at a low cost.

MAKING SENSE OF THE SECOND WAVE

The process of traditional channel intermediaries being by-passed by suppliers seeking to reach end customers directly, is referred to as disintermediation [Bloch & Segev, 1996; McCubbrey, 1999]. The process, in effect, removes layers of transactional fat between the maker and ultimate buyer. At the same time, another process is emerging: hypermediation that presents the proliferation of transactional channels in an industry. Indeed, the emergence of cybermediaries introduced a faster, cheaper and greater variety of choices for customers, and in many cases businesses are clearly pursuing this opportunity to do more business better and faster.

The travel industry and its players were among the earliest to jump on the Internet bandwagon. Airlines had valid, cost-related reasons to tap into this new virtual distribution channel. Unique features of the Web, such as interactivity and the ability to link from one Website to another, provide a platform for companies to package and market their products in new ways that go beyond conventional communication media such as TV, newspaper and magazines. Indeed, hypermediation is changing the industry structure in profound ways still not readily fathomable.

Currently, e-commerce appears to be having a dual effect on the fundamental structure of the travel industry. Both airline direct services (disintermediation) and Web-based e-commerce (hypermediation) seem to be increasing their pressure on the travel agent as the air travel industry's key distributor. In addition, more varied forms of strategic alliances and partnerships present new forces of competition. Of course, there is still the argument that for enduring social reasons, the traditional travel agent will prevail with his/her allegedly indispensable personal touch. Which school of thought will prevail? Insights may perhaps be obtained upon close examination of the current situation.

IV. THE IMPACT OF INTERNET TECHNOLOGIES ON THE BALANCE OF POWER IN THE AIR TRAVEL DISTRIBUTION INDUSTRY

PLAYERS IN THE VIRTUAL TRAVEL INDUSTRY

Many airlines, hotels, car rental companies, CRSs, and national or municipal tourist organizations are online. They provide travel tips and information of all kinds, and accept inquiries and bookings online. A growing number also accept payments online. With abundant information available in the comfort of one's home or office, even travel agents agree that more and more people now seek travel-related information from the Web. These travel-related Websites may be categorized into three types: (1) service suppliers, (2) travel destinations, and (3) virtual travel agencies.

Service Suppliers

In their earlier forms, Websites of service suppliers such as airlines, hotels, and car rental companies, aimed primarily at providing information. They advertised their companies and allowed Websurfers to check service schedules or room rates and availability, e.g., Cathay Pacific Airways Ltd (www.cathaypacific.com/schedules). and Hilton Hotel chains (www.hilton.com/reservations/index.html) (Appendix I lists the URL's of Websites mentioned in this paper). They evolved to accept reservations and payments online. Some even sell more than just their core business. For example, Japan Airlines even made its in-flight merchandise available online (www.jlt.co.jp/shopping/).

Travel Destinations

Destination marketing is an important aspect of the travel industry. Destination-related Websites also appeared on the Web. Such Websites

provide information and travel services related to a destination country, city, or area. The nature of information ranges from transportation, accommodation, sightseeing and dining, to local cultural and sports events. Since destination marketing is usually the responsibility of national or local tourism organizations, their Websites, like the ones by the Japan National Tourist Organization (www.jnto.go.jp) and by the London Tourist Board (www.londontown.com), embody this flavor. France.com (www.france.com) is a similar Website but without the official tone. Some of these Websites advertise a specific resort area. The Websites of the Bintan resorts (www.bintan-resorts.com) and the Whistler resorts (www.whistlerblackcomb.com), for example, emphasize the outdoor activities available at these destinations. While all of these sites list traditional means of contact for the various service suppliers in the respective cities or countries, i.e., address, telephone or fax, some accept online reservation and/or purchases either through their own Websites or through links to the service suppliers' Websites.

Virtual Travel Agencies

The Web represents a virtual marketplace for new types of travel agencies– virtual travel agencies. Unlike traditional travel agencies, virtual travel agencies conduct their business solely on the Web. In addition to selling normal travel services, such as air tickets and hotel rooms, these Websites offer travel tips, destination information, and other value-adding services, such as maps, directions, and even paging services, that will come in handy for travelers once they are on the road. Three of the largest and most well known ones are Internet Travel Network (ITN) (www.itn.com), Travelocity (www.travelocity.com), and Microsoft Expedia (www.expedia.com).

Virtual travel Websites already achieved a vital position in the industry. In 1999, 52.2 million people in the US used the Internet for travel planning, an increase of 54 percent over 1998 [Wilson, 2000]. People are also becoming more likely to purchase travel-related services online. An estimated 16.5 million

people booked tickets online in 1999 [Wilson, 2000]. Online travel sales are expected to account for 35 percent of all online sales globally by 2002 [Asia Computer Weekly, 1999].

The Internet is changing the rules in the travel industry because travel is an information-based business, and the Internet is a transporter of information. As these changes unfold, a number of trends are emerging:

- the entry of the travel-related cybermediaries
- the ability of airlines to cut out the middle men and to sell directly to customers
- the formation of strategic alliances between IT companies and travel intermediaries
- the re-focusing of the traditional travel agencies to compete more effectively in the market place.

TRADITIONAL TRAVEL AGENCIES VS. CYBERMEDIARIES

The key reasons for people wanting to purchase travel services on the Web are convenience and control. The proliferation of travel Websites, operating round the clock, allow customers to access them24/7. They can also take their time to look around before reaching the buying decision. Advances in IT, especially the Internet, reduce the importance of face-to-face human interaction. Travel agents also recognize that more and more travelers are browsing the Web for travel-related information before visiting their offices. In effect, the Web can perform the information broker role, the money forwarder role and, to some extent, the travel consultant role, of travel agencies. These "cybermediaries" are morphing into what looks like traditional travel agents with a Web presence. They compete with traditional travel agents and airline direct services (ess enxt section) They stake territory in cyberspace between the airlines and the traveler. Cybermediaries offer several advantages over an airline's direct services including:

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- Permitting travelers to book flights on almost any airline
- Providing features to assist travelers in searching for lowest prices
- Notifying travelers by email when a discount fare is posted for a particular destination of the traveler's interest

The sidebar shows examples of cybermediaries.

BTS, described in the sidebar, is an example of how Sabre is differentiating its services and business strategy to target the corporate travel market. It remains to be seen whether the Sabre BTS strategy will become a leader in the redefinition of the strategy of CRS businesses.

AIRLINES: SELLING DIRECTLY

Another important technological advancement enabled by the Internet is ticketless travel. Airlines around the world embrace the idea of ticketless travel through the implementation of electronic ticketing (e-ticketing). The advantage that airlines have over other industries when selling online is that with e-ticketing, there is nothing to deliver [Ott, 2000]. Travelers can purchase their e-tickets directly off the Web, and only need to produce a picture ID or credit card to receive their boarding passes at the check-in counter or boarding gate. Some airlines automated the boarding pass issuance process through the use of self-service machines. By eliminating the need for a paper ticket, travelers save the cost of replacing lost tickets and airlines save the massive cost of issuing and distributing paper tickets. When e-ticket takes off in full swing globally, there will be one less reason for travelers to go to travel agencies. The ticket issuer and money forwarder role that they assume may soon become obsolete.

EXAMPLES OF CYBERMEDIARIES

Priceline.com Priceline.com Inc. (www.priceline.com), reportedly sold 3.2 million air tickets in the 12 months up to 31 March, 2000, making it the largest travel agency in the world [Rosen and Sweat, 2000]. The company allows consumers to make below-market offers for air tickets. Priceline.com would then query the inventory of various airlines in the private section of the respective airline's CRS. If a fare below that offered by the customer can be found, Priceline.com would pocket the difference. In 2000, Priceline.com reported margins averaging 15 percent.

REI.com and Adventureseek.com REI.com (www.rei.com) and Adventureseek.com (www.adventureseek.com), are online booking agents targeted at the adventure travelers [Harris, 2000]. Their Websites allow customers to request advanced searches on adventure travel excursions. Adventureseek.com's "Trip Wizard" first searches the site database of trips and travel providers by desired activity and destination. Then it narrows the search further based on parameters such as price, dates and length of the trip. The two companies entered a partnership to share content and proprietary technology to become the exclusive travel and outdoor gear e-commerce partner on the Web.

Backroads Online Traveler and CORP Backroads Online Traveler (www.backroads.com), another activity-centered travel company, offers more than 142 itineraries every year for cyclists, walkers, hikers and multisport enthusiasts in 34 countries and territories around the world. Similarly, CORP, a leading Internet site for outdoor activists who recently acquired American Wilderness Experience (www.awetrips.com), now provides a network of trips from over 150 tour operators, online travel reservations and bookings. Such innovative and specialist travel services provide value to the customer, filling a niche in the market which traditional travel agents have otherwise overlooked.

Business Travel Solutions (BTS) Virtual travel agencies also brought a new venture to the online market – an online travel product designed for corporate clients. Business Travel Solutions (BTS) is one such package. It maintains company policies, accepts online bookings, and provides business reports for management purposes. In essence, it is designed to replicate, and, in the long term, supersede services provided by traditional travel agencies to their corporate clients. In early 1997, Sabre BTS scored a landmark victory in signing General Electric (www.ge.com), the second largest travel account in the United States, as its corporate client [Travel Distribution Report, 1997]. Since then and more recently, Sabre BTS signed up a number of major clients including NEC (www.nec.com), Citigroup (www.citigroup.com) and Bausch and Lomb (www.bauschandlomb.com) in the latter part of 2000.

Smart cards are following on the heels of e-ticketing as a major component in the vision of a seamless travel industry [Ott, 2000]. With full implementation of such technologies, customers would be able to transfer funds from a bank onto the card and make travel purchases online by transferring value from the smart card through a smart card reader installed in a computer. In addition, customer's frequent flier information, mileage record, as well as seating and meal preferences, would already be on the card, thus expediting the online purchasing process. Once completed, an e-ticket and any necessary legal notices would then be transmitted and stored in the smart card. At the airport, the card would accelerate the check-in process, enable the use of automated kiosks, store other travel documentation and serve as a boarding pass and baggage receipt, as well as provide access to club lounges and other benefits.

With the advent of Wireless Applications Protocol (WAP), airlines are starting to let customers book and change tickets via wireless devices [Rosen & Sweat, 2000; Bray, 2000]. Galileo, in conjunction with Trip.com (www.trip.com), a travel Website it acquired, rolled out such a system in June 2000. A business traveler whose meeting ended early, can dial in using a cell phone while en route to the airport, to rebook a ticket on an earlier flight. With the same system, the traveler can access his hotel and car-rental reservations. Anticipated services would show the cost differentials for ticket changes and upgrades, and even allow passengers to pick seats. Similarly, UA is testing a WAP-enabled rebooking system that includes pricing information, while SAS and Singapore Airlines (www.singaporeair.com) already allow passengers to book flights via WAP-enabled cell phones. Speech-enabled systems are also under development [Ott, 2000]. With speech recognition and WAP being the major focus of attention, technology is driving the airlines' vision of customer-relationship management.

Using technology as an enabler, airlines are rapidly adopting strategies and re-engineering businesses to focus on adding more value to customers. The benefits of e-ticketing, smart cards and the like, for customers and airlines are clear. For customers, it improves value, such as enhanced customer service through easier access, personalized information and other integrated travel information and services. For airlines, the main benefit is the transfer of a proportion of travel agency commissions and segment booking fees to direct sales channels. Airline Websites now offer features such as direct ticket sales, frequent flier program administration, flight-tracking, promotional releases and online gift catalogues and online ticket auctions. These sites, such as UA, now aim to provide a one-stop service for flight bookings and vacation requirements. By tailoring services to customer requirements, customer satisfaction and loyalty are created   [Girard, 1999]. Competition on the Internet is increasingly focusing attention on delivering service satisfaction. For example, Northwest Airlines has redesigned its Website (www.nwa.com), to allow users to access any information on its Website in three mouse clicks or less.

STRATEGIC ALLIANCES AND INTERNET PARTNERSHIPS

The new wave of IT innovations also reinforces the need for some airlines and travel agencies to form strategic alliances with IT companies, Internet companies, and even competitors [Ott, 2000]. This development is perhaps a reflection of the key to success in the information age: a firm needs to possess not only the critical information but also the processing power to manipulate it and deliver new information-based products. By teaming up Worldspan (www.worldspan.com) and Microsoft (www.microsoft.com) to form a formidable online venture, Microsoft Expedia is able to leverage the brand name recognition and technological expertise of Microsoft and achieve dominance in the cybermarket.

Similarly, American Express (www.americanexpress.com/travel/index.html) partnered with Microsoft to develop the American Express Interchange (AXI) – an online product that targets the corporate travel market. In essence, Web technology made it easier for hi-tech companies to enter the travel industry.

In addition to airline direct services, the five biggest airlines – American, Continental (www.continental.com), Delta (www.delta.com), Northwest and UA – are working together on Orbitz (http://www.orbitz.com/), a huge new consumer Website that will offer the services of 450 airlines, 22 car rental companies and 22,000 hotels [Rosen & Sweat, 2000]. Orbitz would utilize an unbiased search software to search through 100,000 times more options than the CRS does and travelers would have more choices over their travel itinerary [Mann, 2000]. By keeping the information in the hands of the airlines, Orbitz will mitigate the shift of information from the airlines to the customers. In essence, the coalition will establish a new form of online travel agency [Rosen & Sweat, 2000; Ott, 2000]. The benefits include shared development costs, improved knowledge of customers and thus, better customer services. In addition to offering ticket sales, Orbitz would also sell inventory from other suppliers in every category, including hotel and car rental. The value added to customers would be better fares and commissions negotiated with large suppliers. By combining the convenience of a one-stop-shop with the "insider" deals of a supplier-direct site, Orbitz is designed to outrun firms such as Travelocity and Expedia.

However, airlines experienced some friction in setting up Orbitz. Because it involves just five major US carriers, the US government views Orbitz as a potential cartel. Online travel mediaries, such as Travelocity and Expedia, fear that the airlines will restrict their lowest airfares exclusively to Orbitz, driving them out of business and bringing in anticompetitive practices. The central concern is that Orbitz would repeat the problems experienced previously with the CRS, that is display bias and excessively high fees.

Hotwire (www.hotwire.com) is another airlines Website run by the Texas Pacific Group (www.texaspacific.com). Some of its partners also support Orbitz, including AA, Continental, UA and Northwest. Hotwire offers empty seats at up to 40 percent off published prices. Airline partners are challenged to make the best discount offer and customers are shown the winning low price without obligation to buy.

In Asia, eight major airlines are coming together to form an online travel agency similar to Orbitz and Hotwire called Asian Travel Exchange [Travel Trade Gazette Asia, 2000].

Airline Websites or travel agencies possess a unique advantage over their competitors because they have the power to honor requests for upgrades or to give preferential treatment to frequent-flyer members. They may also grant bonus frequent flier miles and offer discounted tickets at their choosing. Qantas (www.qantas.com), for example, operates a frequent flyers program that has a membership of 24 million, who are regular users of the Internet. Its online award booking service now accounts for almost 1,000 frequent flyer redemption bookings each week [M2 Presswire, Aug 10, 2000]. Undoubtedly, such loyalty programs are helping airlines to build up their direct relationship with customers. Furthermore, Qantas predicts that within three years, 10 to 15 percent of its consumer ticket sales would be transacted through the Internet, generating cost savings of $35 million per annum.

Within the CRS industry itself, changes are also taking place that will alter the competitive landscape of the travel industry. At the time of Sabre's spin-off, it processed more than 38 percent of all reservations made by the world's travel agents [Nairn, 2000]. It now has more than 200 specialized applications in areas such as yield management, flight scheduling, fare pricing, passenger reservation systems, revenue management, crew management, passenger revenue accounting and so on. Its expertise convinced several airlines, such as

Aerolineas Argentinas (www.aerolineas.com.ar) and US Airways (www.usairways.com), to outsource their entire planning and management of IT functions to Sabre. Even hotels and car rental companies are partnering with Sabre to secure the technological edge required to compete in the information age. Beyond traditional outsourcing, Sabre wants to provide new services based on Internet applications and e-business.

Airlines are now acquiring the IT capabilities of companies such as Sabre to compete in the changing industry environment. The short-term barriers to entry may at first generate differentiated restructuring, as we are witnessing at present. But this may later transform into consolidations or re-membership of groups as other airlines and CRSs follow Sabre's lead. Such changes signal that the travel consultant role of travel agencies in the corporate market is also being threatened. Of even greater threat travel agents, however, is the ability of airlines to communicate and sell directly to its customers through the Web.

TRAVEL AGENCIES: COMPETING ON NEW GROUND

Through the advent of e-commerce, the very survival of the traditional travel agent has been threatened by disintermediation. In the year ending May 1999, Airlines Reporting Corp. reported a drop in the number of travel agents in the US from 32,364 to 31,227 [Wilson, 2000]. The decline is attributed to business closures and industry consolidation. Other predictions suggest that some 5,000 agencies will be out of business over the 24 months ending September 2002 [Javier, 2000]. Agents are having to provide new value. Because commissions are dropping, travel agents may be compensated through other means based on revenue generation for a particular airline. On the premise that travel agents will still be of value to airlines, it is likely that alliances will form. For example, in August 2000, British Airways (www.britishairways.com) announced a deal with ebookers.com (www.ebookers.com), the pan-European travel company, to act as its "preferred travel online partner". As such, the site will offer the full range of BA's fares, promotions and information.

Some travel agencies view the Internet as the enemy. But even though evidence seems to suggest that traditional travel agencies may be totally replaceable, they too can compete on the Web and re-position themselves in the market place. Bloch (1996) suggests four different Internet-based strategies that travel agencies can adopt depending on the markets they serve and their technological expertise. These strategies range from a simple Internet presence to full-blown virtual travel agencies.

One travel agency planning manager recognizes the growing trend for potential travelers to seek travel information from the Web. By putting his travel agency online, he hopes that people will come to his Website instead of the others. This viewpoint more or less summarizes the rationale behind the need to get online. According to the American Society of Travel Agents, 49 percent of travel agencies offered their own Websites in 2000, compared with 37 percent in 1998. The travel agencies that will survive will be those that embrace customer relationship management technology to better serve their customers. Some would argue that at the end of the day, customers would keep going back to the person who gives them the best service [Rosen & Sweat, 2000].

THE ASIA PACIFIC REGION

Amidst all the hype about the cybermarket, one should not downplay the importance of the physical market. Consumers may continue to choose to deal with traditional travel agencies and/or Web-based equivalents because they represent different suppliers and products [Lewis & Talalayevsky, 1995]. Bloch (1996) has also pointed out that the real world market is still important. A lot can be learned from successful innovations in other retail industries. And even though a lot has been said about travel agencies being the threatened intermediaries, travel agencies have not succumbed to online threats.

In the Asia Pacific region (excluding Australia and New Zealand) the World Wide Web has had limited effect on the structure of the air travel

distribution industry as a whole. While surveys show that 45 percent and 34 percent of air travelers in the US and Europe respectively used the Internet to book at least one business flight in 1999, the corresponding figure in Asia Pacific was only 19 percent [Bray, 2000]. Why is it that air travelers in Asia Pacific are more reluctant to purchase online?

A number of factors can be offered as explanations. Unlike the vast geographical expanse of the US and the European Union, Asia consists of a large number of fragmented independent countries (with hundreds of languages) that lack a large domestic-travel market. The robust nature of the travel market in the US has helped sustain the growth of air travel distribution Websites. In Asia Pacific, almost all air travel itinerary fall within the category of international travel, which some would argue entails greater complexity [Ling, 2000]. Under these conditions, customers appear to prefer to buy through travel agents.

In addition, shopping for travel services off-line in cities such as Hong Kong is convenient. Travel agents tend to congregate, with as many as five or six agents located next to each other in shopping malls. This physical presence negates the need to search through Websites to compare prices and packages, particularly as the majority of the population lives in high-rise flats above or close to the shopping malls. Furthermore, prices are competitive and special deal packages are displayed in-store.

"People still look for an experienced agent to handle their holiday." [Ecila Chan, general manager of DHL Travel quoted in Bun, 1999] People are not buying tours on price alone, but they are looking for extra value from their agents.

AdM@rt Travel

adM@rt Travel was intended to be a discount online travel agency operated by Hong Kong-based media tycoon, Jimmy Lai. The site (www.admarttravel.com) was part of a broader initiative (www.admart.com.hk) to establish a virtual shopping mall that involved renting out virtual store space to niche marketers. Lai's intention was to transform everyday shopping in Hong Kong and change the way people buy. Following the takeover of registered travel agency, Citilink International Travel, adM@rt Travel was launched in December 1999. Its goal was to provide value and convenience to its customers by offering air tickets, tours and hotel bookings through adM@rt's online services, call centre and outlets. The Website allowed searching for airfares, tours and hotels, and reservations could be made online. Within a few hours of making the reservation, an adM@rt agent would email the customer with confirmation of the booking, reservation details as well as contact information in the event of a query. Its Website was also enhanced with payment facilities. Apart from convenience and speedy response, adM@rt also offered competitive pricing. At its peak, the travel business employed 180 people, including sales staff and tour escorts.

adM@rt's online travel business was intended to reshape the basis for competition in the travel industry in Hong Kong. By going directly to airlines for flight prices, adM@rt hoped to gain a price advantage. In practice, the airlines would not entertain any dealings with adM@rt. Hence, the company had to resort to sourcing its air tickets and tour packages through the consolidators or wholesalers. Prices offered by adM@rt were not competitive and the service offerings did not generate any competitive advantage [Farhoomand and McCauley, 2000].

In July 2000, adM@rt Travel announced that it would stop offering tour packages on its Website and focus on selling air tickets and hotel bookings. Its vice-president, Ms Harriet Chong, said that adM@rt's business model was "not suitable for guided group tours", adding that, "Tourists would prefer to go to premises where many travel agents are located" [Travel Trade Gazette Asia, July 6, 2000]. Customers searching for a vacation or a flight could conveniently make one visit to a shopping mall and compare all the options available from agent to agent.

A short while later, in October 2000, adM@rt announced it would close its travel business. Its downfall was blamed on high operating costs and the intense competition found in the travel industry. adM@rt could not compete on price, value, or convenience.

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adM@rt was not the first online travel agent to go bust in the region. ID Travel, one of the largest online travel cybermediaries in Taiwan, closed in August 2000. Others in the region, such as GoChinaGo.com (www.gochinago.com), are downsizing and consolidating. Online travel cybermediaries are finding it difficult to compete with the traditional travel agents because few airlines are prepared to sell through the cybermediaries given that the low rate of commission charged by traditional agents is considered to be worth the cost of their services. Cybermediaries are therefore sourcing their tickets from the same consolidators as the traditional agents, thus offering little or no price advantage.

The greatest threat to travel cybermediaries and traditional travel agents in Asia Pacific, and one trend that the region has in common with Europe and the US, is airline direct services. Regional airlines, such as Singapore Airlines and Cathay Pacific, are investing huge amounts in developing their e-business strategies. The latter announced spending of $256 million over three years and aimed to sell between 25 and 30 percent of all tickets online by 2005. It estimated that operating costs would be cut by $64 million annually starting 2003 [Odell, Oct 2000]. Competition is also coming from further afield. UA launched an aggressive marketing campaign in Hong Kong to promote its online-booking service that undercuts discount agents' prices. In addition, the planned launch of Asian Travel Exchange, a portal made up of nine airlines from the region, will have a definite impact on the traditional structure of the industry.

Without a doubt, the new Asian economy is still in its infancy. The Internet presents new rules and regulations that are radically different from traditional business conduct. These rules include cutting out the middlemen roles that are characteristic of many Chinese trading empires. e-Commerce requires an open, non-hierarchical and flexible organization structure, while, for example, the Chinese company is closed, hierarchical and rigid. The adM@rt experience and many others testify to the strengths of the "Establishment"

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players who refuse to play by the new rules. However, competition, particularly from outside the region, will keep coming. It seems they may be able to fend off the initial wave of startups, but the force of technology cannot be reversed or made to standstill.

Aside from cultural barriers, other factors are standing in the way of the Internet revolution in Asia Pacific. In many countries the necessary physical infrastructure is not in place and may take many years to mature. In some parts of Asia, securing a decent phone connection is a problem, let alone linking up to the Net. Computerization in offices is still low, with only 20 percent of employees in Asian companies connected to the Internet, compared with 60 percent in the US [Belson, 2000]. Even in the more advanced cities that have the physical network in place, the cost of connecting may take many years to come down. In Hong Kong and Seoul, for example, logging on costs a third more than in the US. Online payment systems are immature with few banks wired to the Internet, thus limiting the ability to carry out sale and purchase transactions.

The conclusion that many Internet startups in Asia Pacific are coming to realize is that, for one reason or another, there is insufficient critical mass to build an e-business.

V. THE FUTURE STRUCTURE OF THE AIR TRAVEL DISTRIBUTION INDUSTRY

The impact of the Internet on the future structure of the air travel distribution industry will be two-pronged. The changes will be more significant in the US and Europe than in Asia Pacific due to the geographic, psychological and cultural differences we mentioned. From our analysis of current trends, we developed the following two scenarios of the characteristics of the air travel distribution industry, one for the West and one for the East. Note that these

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scenarios represent our best estimates, based on both data and our knowledge of the industry.

SCENARIO FOR EUROPE AND THE US

Currently many alliances and partnerships are being formed among various players in the travel industry. These changes are resulting in a diverse range of business models, unprecedented business relationships, and a multiplicity of channels to reach the consumer. However, we believe that a major shakeout in the industry in the coming months will identify the viable business models in the new network economy. Analysts predict that global online travel sales will quadruple to $29 billion in 2003 and fewer than 200 of the current 1,000 online travel Websites would be around by then [Soto, 2000]. We believe that online travel Websites will be dominated by airlines and airline travel agencies or joint portals, such as Orbitz. Because all Web-based channels will deliver the same or similar package of service offerings to customers, including hotel reservations, car rentals and air ticket sales, competition can be expected to be based on the quality of service rather than the service offerings themselves. We expect innovative strategies to establish and maintain customer loyalty.

Online travel cybermediaries or online consolidators will focus less on airline commissions to survive and be profitable. Their revenue will increasingly come from other service suppliers such as hotels and car rentals. However, these cybermediaries will need to forge stronger ties with airlines in order to deliver value-added service to their customers. To this end, we may expect that many of the more prominent cybermediaries will become the "preferred" travel agent of certain airlines. Bargaining power with airlines will rest largely on branding and marketing strategy, as well as membership base.

CRSs are also transforming. We believe CRS technology is likely to be superceded by Internet-based technology, as the latter becomes a cheaper and

more consumer-accessible means of communication. The traditional travel agents can be expected to lose significant market share in airline travel distribution. Many travel agents are currently venturing online, but they will find it increasingly difficult to compete with the airline Websites, the joint airline portals and the online consolidators. As a result, we predict that in the long run, traditional travel agents will play a less important role in the industry.

The obvious winners in all of this are the airlines. The Internet opened up many new channels for them to reach their customers and to serve them better. Competition between airlines will no longer rest on establishing the best network of traditional travel agents to distribute and sell air tickets, but on how technology can deliver the best service from initial search for a vacation or an air ticket to the point of completing the journey.

SCENARIO FOR ASIA PACIFIC

In Asia Pacific (excluding Australia and New Zealand), the transition to the new economy for the air travel distribution industry would be slightly different. The proliferation of cybermediaries that we are seeing in Europe and in the US will not be as pronounced in Asia Pacific due to the more complex nature of the region in terms of geography, culture, and psychology. For these reasons, the status of the traditional travel agents will remain albeit on a less profitable footing. As the physical infrastructure for supporting Internet technology becomes more commonly accessible and people change their purchasing habits to embrace e-commerce, airlines, joint portals, and online consolidators will take a more prominent role in the marketplace. However, we anticipate that whereas the US and Europe may reach this stage of maturity in the industry by around 2003, Asia Pacific will lag behind by about five years.

VI. DISCUSSION AND CONCLUSION

Information technology led to intensification of rivalry among the participants in the industry. The previously unchallenged role of the travel agent

as the intermediary between supplier and buyer was shaken by the entry of re-intermediaries, such as the cybermediaries and the CRSs. In the process, the boundary of the air travel distribution industry becomes increasingly blurred as the balance of power among the travel agencies, the airlines, the CRSs, and the cybermediaries, and their respective roles are unclear.

The suppliers of services (airlines, hotels, car rental companies) also gained strength by selling directly to consumers. As alternative means of purchasing travel services became available on the Web, the bargaining power of consumers rose.

While the final outcome of the various group activities on the structure of the industry remain to be seen, a number of observations using strategic group analysis may be made:

1. Internet technology, e-ticketing, smart cards, and WAP allow airlines to redefine themselves. Most of the major airlines now plan their business strategies around the Internet by going online and by constantly exploiting Web-based technologies to manage their customer relationship.

2. Contrary to Segar and Grover's (1995) proposition relating to the reduction of strategic groups made possible through restructuring of an industry, the Internet encouraged a proliferation of new strategic groupings previously unimaginable. These B-webs (see sidebar), as Tapscott et al. [2000] describe them, are driven by disaggregation and reaggregation of the firm. The process of reaggregation via the Internet releases the power of strategic partnering in ways not observed before. One interesting characteristic of B-webs is that their participants cooperate and compete with one another. Thus we see a wide variety of re-aggregation models, each seeking to offer a distinct form of value-added.

B-Webs

B-webs are networks of collaborating companies whose value is founded on the nonphysical and knowledge-based content of the design and production of the physical goods. To win in the new economy, firms must deliver better value at much lower prices. B-webs cut transaction costs because the Internet creates a digital infrastructure of collaboration for changing the way in which we search transactions and manage knowledge in the course of design, manufacture, distribution, market and support of products and services. Hence, companies create value through a disaggregated business architecture. The digital economy makes it easier and cheaper to disaggregate the value-creating activities of a firm and even entire industries. While this poses a threat, the opportunities presented to them enable them to expand in highly focused areas of competency by scales previously unimaginable. Thus, disaggregation begins with the end-consumer's experience, and reaggregation creates a new set of value offerings along every step of the value-proposition. In this way, firms are realizing the power of strategic partnering via the Internet, particularly as each participant of the b-web focuses on a limited set of core competencies. Thus emerges a peculiar scenario in which participants cooperate and compete at the same time.

Source: Tapscott et al. [2000].

3. A number of re-membership groupings occurred as some travel agents and airlines partner with IT companies and CRS firms to establish a presence on the Web that can help them compete more effectively with the cybermediaries and airline direct services. These travel agents and airlines are shifting their group membership. The more obvious example is the Orbitz project.

4. Differentiated restructuring[2] occurred in several areas of the travel industry, notably the appearance of cybermediaries and the independence of CRSs, such as Sabre, from their founder airlines. Cybermediaries gained first mover advantages because their Websites embody special functionalities such as:

   - Priceline.com allows customers to search for lowest price tickets;

   - Travelocity offers options such as Alternate Airports;

   - Expedia offers the Build Your Own Trip option and the Team Up to Travel option which enables two or more travelers to go online, shop for a destination and discuss options in a chat box or

   or specialist information and/or expertise such as Adventureseek.com's site for outdoor pursuits.

5. Through disintermediation and hypermediation, the traditional travel agents are under pressure to relinquish the title of core distributor in the travel industry's supply chain. As survival of traditional agents is called into question, two powerful new competitors enabled by e-commerce technologies, airline direct services and travel cybermediaries, entered vociferously into the industry equation. Hence, the assessment of the tensions and power shift occurring within the travel industry today can be summed up within the realm of hyper-liberalization due to technology, as distribution channels in the supply chain multiply and become increasingly competitive amongst one another.

6. IT changed the power dynamics of the entire industry. More specifically, IT innovations complicated the travel industry structure in at least two instances. After the first wave, a new strategic group emerged (UA and AA), and a new breed of intermediary (the CRSs) came into existence. In the middle of the second wave, new strategic groups appear to have formed

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[2] Differentiated restructuring occurs when an innovation in strategy forms a new basis of

(evolving from the existing groups like the AA/UA group and the Amedeus/Galileo group), and yet another new breed of intermediary evolved (Websites providing online travel services).

In sum, the Internet revolution is transforming the basis of competition in the air travel distribution industry. We found that such transformation is not uniform across the globe, and can be limited by complexities in geography, culture, and psychology.

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EDITOR'S NOTE: The following reference list contains hyperlinks to World Wide Web pages. Readers who have the ability to access the Web directly from their word processor or are reading the paper on the Web, can gain direct access to these linked references. Readers are warned, however, that
1. these links existed as of the date of publication but are not guaranteed to be working thereafter.
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APPENDIX

LIST OF URLS

Company Name/Site Name	URL
AdM@rt	www.admart.com.hk
Adventureseek.com	www.adventureseek.com
Aerolineas Argentinas	www.aerolineas.com.ar
American Airlines	www.aa.com
American Express Travel Services	www.americanexpress.com/travel/index.html
American Wilderness Experience	www.awetrips.com
Backroads Online Traveler	www.backroads.com
Bausch and Lomb	www.bauschandlomb.com
Bintan Resorts	www.bintan-resorts.com
British Airways	www.britishairways.com
Cathay Pacific Airways Co. Ltd. (Flight Schedule)	www.cathaypacific.com/schedules/
Citigroup	www.citigroup.com
Condé Nast Traveler	www.cntraveler.com
Continental	www.continental.com
Delta	www.delta.com
DragonAir	www.dragonair.com
Ebookers.com	www.ebookers.com
Expedia	www.expedia.com
France.com	www.france.com
General Electric	www.ge.com
GoChinaGo.com	www.gochinago.com
Hilton Hotel (Reservations)	www.hilton.com/reservations/index.html
Hotwire	www.hotwire.com
Internet Travel Network	www.itn.com
Japan Airlines (World Shopping Club)	www.jlt.co.jp/shopping/
Japan National Tourist Organization	www.jnto.go.jp
London Tourist Board	www.londontown.com
Microsoft	www.mircrosoft.com
NEC	www.nec.com
Northwest Airline	www.nwa.com
Orbitz	www.orbitz.com
Priceline.com Inc	www.priceline.com
Qantas	www.qantas.com
REI.com	www.rei.com
Singapore Airlines	www.singaporeair.com
Texas Pacific Group	www.texaspacific.com
Travelocity	www.travelocity.com
Trip.com	www.trip.com
United Airlines	www.ual.com
US Airways	www.usairways.com
Whistler Resorts	www.whistlerblackcomb.com
Worldspan	www.worldspan.com

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